

Problem Solving Ability Of Higher Secondary School Teachers

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Abstract

Everybody can benefit from having good problem solving skills as all encounter problems on a daily basis; some of these problems are obviously more severe or complex than others. It would be wonderful to have the ability to solve all problems efficiently and in a timely fashion without difficulty, unfortunately there is no one way in which all problems can be solved. In this context, the study was conducted to find out the problem solving ability of higher secondary teachers. Survey method was adopted. The sample consists of 900 higher secondary teachers of Kanyakumari district. Simple Random Sampling Technique was used. Self-made Problem Solving Ability Assessment Scale was used to collect the data. The statistical techniques used were percentage analysis and 't' test. The educational implications and suggestions for further study are also given at per with the findings of the study.

Key words: *Problem solving skills, higher secondary teachers, simple random sampling technique and statistical techniques.*

I. Introduction

Problems are at the center of what many people do at work every day. Whether one solving a problem for a client (internal or external), supporting those who are solving problems, or discovering new problems to solve, the problems one face can be large or small, simple or complex, and easy or difficult.

A fundamental part of every manager's role is finding ways to solve them. So, being a confident problem solver is really important to

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one success. Much of that confidence comes from having a good process to use when approaching a problem. With one can solve problems quickly and effectively. Without one solutions may be ineffective, or one will get stuck and do nothing, with sometimes painful consequences. Problem solving consists of using generic or ad hoc methods, in an orderly manner, for finding solutions to problems. Some of the problem solving techniques developed and used in artificial intelligence, computer science, engineering, mathematics, medicine, etc. are related to mental problem-solving techniques studied in psychology.

II. Need For The Study

The key to a good problem definition is ensuring that you deal with the real problem not its symptoms. For example, if performance in one department is substandard, one might think the problem is with the individuals submitting work. However, if one looks a bit deeper, the real issue might be a lack of training, or an unreasonable workload. All solve problems on a daily basis, in academic situations, at work and in our day-to-day lives. **Most problem-solving skills are developed through everyday life and experience.**

Everybody can benefit from having good problem solving skills as all encounter problems on a daily basis; some of these problems are obviously more severe or complex than others. It would be wonderful to have the ability to solve all problems efficiently and in a timely fashion without difficulty, unfortunately there is no one way in which all problems can be solved.

The present study, therefore, is conceived and carried out to find out the problem solving ability of higher secondary teachers.

III. Statement Of The Problem

The problem of the study is stated as, **“PROBLEM SOLVING ABILITY OF HIGHER SECONDARY SCHOOL TEACHERS”**.

III. a. Operational Definitions Of Key Terms Problem Solving Ability

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. Being able to solve problems sometimes involves dealing with pragmatics (logic) and semantics (interpretation of the problem). The ability to understand what the goal of the problem is and what rules could be applied represents the key to solving the problem. Sometimes the problem requires some abstract thinking and coming up with a creative solution.

Higher Secondary School Teachers

It refers to the teachers who are handling the XI, XII Classes in higher secondary school. Affiliated to secondary board of education in Tamil nadu.

IV. Objectives

1. To find out the level of dimensions of problem solving ability of higher secondary teachers with respect to gender.
2. To find out the differences, if any, in the problem solving ability of higher secondary teachers with respect to the following background variables.
 - a. Gender and
 - b. Locality

V. Null Hypotheses

1. There is no significant difference between male and female higher secondary teachers in their problem solving ability of organizational environment, team work, teaching strategies, student needs, attitude, challenges and working with student's parents.
2. There is no significant difference between rural and urban teachers in their problem solving ability of organizational environment, team work, teaching strategies, student needs, attitude, challenges and working with student's parents.

VI. Materials And Methods

(i) Methodology

The researcher adopted the survey method to study the problem solving ability of higher secondary teachers.

(ii) Population and Sample

The population for the present study consisted of the higher secondary teachers of Kanyakumari district. 900 higher secondary teachers were taken for this investigation. The investigator collected the data from higher secondary school in Kanyakumari district. They were selected randomly from each school.

(iii) The Tool

The investigator has used a self-made tool. The Problem Solving Ability Assessment Scale (PSAS) developed by Vimala and Thamodharan (2015). The content validity of the tool was established by experts' opinion. Test-re-test method was followed for establishing the reliability of the tool. For this, the tool was administered on higher secondary teachers of Kanyakumari district randomly selected and got the response. After 20 days, the investigator gave the same tool to the same set of teachers for establishing reliability of the tool. Thus, the tool was taken as reliable. The tool has seven dimensions, each dimension has 10 statements totally 70 statements. The statements are scored based on 5 point Likert – type scale. An individual may get the lowest score of 70 and the possibility of highest score of 350.

(iv) Statistical Techniques Applied

The statistical techniques applied for the study were:

- Percentage Analysis and
- 't' test

(v) Delimitations of the study

1. The study is conducted in higher secondary schools only.
2. The area chosen for conducting the study was only higher secondary schools in Kanyakumari district.
4. The study was conducted on a population of 900 higher secondary teachers only.
5. Only the limited variables namely gender and locality were taken for this study.
6. Only the limited dimensions namely organizational environment, team work, teaching strategies, student needs, attitude, challenges and working

with student's parents were taken for this study.

VII. Findings

Table 1
Level Of Problem Solving Ability Of Higher Secondary Teachers

Problem Solving Ability	Total Sample	Low		Moderate		High	
		No.	%	No.	%	No.	%
Organizational Environment	900	237	26.3	473	52.6	190	21.1
Team Work		106	11.8	582	64.7	212	23.6
Teaching Strategies		190	21.1	521	57.9	189	21.0
Student Needs		106	11.8	582	64.7	212	23.6
Attitude		190	21.1	521	57.6	189	21.0
Challenges		245	27.2	491	54.6	164	18.2
Working with Student's Parents		190	21.1	521	57.9	189	21.0

(Low = Below 40; Moderate = Between 40-60;

High = Above 60 from the 'T' Scores)

It is inferred from the above table that 26.3%, 52.6% and 21.1% of higher secondary school teachers have low, moderate and high level of problem solving ability in organizational environment respectively.

11.8%, 64.7% and 23.6% of higher secondary school teachers have low, moderate and high level of problem solving ability in team work respectively.

21.1%, 57.9% and 21.0% of higher secondary school teachers have low, moderate and high level of problem solving ability in teaching strategies respectively.

11.8%, 64.7% and 23.6% of higher secondary school teachers have low, moderate and high level of problem solving ability in student needs respectively.

21.1%, 57.9% and 21.0% of higher secondary school teachers have low, moderate and high level of problem solving ability in attitude respectively.

27.2%, 54.6% and 18.2% of higher secondary school teachers have low, moderate and high level of problem solving ability in challenges respectively.

21.1%, 57.9% and 21.0% of higher secondary school teachers have low, moderate and high level of problem solving ability in working with student's parents respectively.

Table 2
Level Of Problem Solving Ability Of Higher Secondary Teachers With Respect To Gender

Problem Solving Ability	Male (450)						Female (550)					
	Low		Moderate		High		Low		Moderate		High	
	N	%	N	%	N	%	N	%	N	%	N	%
Organizational Environment	88	24.6	190	53.1	80	22.3	149	27.5	283	52.2	110	20.3
Team Work	42	11.7	240	67.0	76	21.2	64	11.8	342	63.1	136	25.1
Teaching Strategies	73	20.4	203	56.7	82	22.9	117	21.6	318	58.7	107	19.7
Student Needs	42	11.7	240	67.0	76	21.2	64	11.8	342	63.1	136	25.1
Attitude	73	20.4	203	56.7	82	22.9	117	21.6	318	58.7	107	19.7
Challenges	100	27.9	196	54.7	62	17.3	145	26.8	295	54.4	102	18.8
Working with Student's Parents	73	20.4	203	56.7	82	22.9	117	21.6	318	58.7	107	19.7

(Low = Below 40; Moderate = Between 40-60; High = Above 60 from the 'T' Scores)

It is inferred from the above table that 24.6%, 40.2% and 22.3% of male teachers have low, moderate and high level of problem solving ability of organizational environment respectively. Regarding female teachers, 27.5%, 52.2% and 20.3% have low, moderate and high level of problem solving ability of organizational environment respectively.

11.7%, 67.0% and 21.2% of male teachers have low, moderate and high level of problem solving ability of team work respectively. Regarding female teachers, 11.8%, 63.1% and 25.1% have low, moderate and high level of problem solving ability of team work respectively.

20.4%, 56.7% and 22.9% of male teachers have low, moderate and high level of problem solving ability of teaching strategies respectively.

Regarding female teachers, 21.6%, 58.7% and 19.7% have low, moderate and high level of problem solving ability of teaching strategies respectively.

11.7%, 67.0% and 21.2% of male teachers have low, moderate and high level of problem solving ability of student needs respectively. Regarding female teachers, 11.8%, 63.1% and 25.1% have low, moderate and high level of problem solving ability of student needs respectively.

20.4%, 56.7% and 22.9% of male teachers have low, moderate and high level of problem solving ability of attitude respectively. Regarding female teachers, 21.6%, 58.7% and 19.7% have low, moderate and high level of problem solving ability of attitude respectively.

27.9%, 54.7% and 17.3% of male teachers have low, moderate and high level of problem solving ability of challenges respectively. Regarding female teachers, 26.8%, 54.4% and 18.8% have low, moderate and high level of problem solving ability of challenges respectively.

20.4%, 56.7% and 22.9% of male teachers have low, moderate and high level of problem solving ability of working with student's parents respectively. Regarding female teachers, 21.6%, 58.7% and 19.7% have low, moderate and high level of problem solving ability of working with student's parents respectively.

Null Hypothesis 1

There is no significant difference between male and female higher secondary teachers in male and female teachers in their problem solving ability of organizational environment, team work, teaching strategies, student needs, attitude, challenges and working with student's parents.

Table 3
Difference Between Male And Female Higher Secondary Teachers In
Their Problem Solving Ability

Problem Solving Ability	Male (N = 358)		Female (N = 542)		Calculated 't' value	Remarks
	Mean	S.D.	Mean	S.D.		
Organizational Environment	28.68	3.332	28.51	3.308	0.753	NS
Team Work	46.98	2.147	47.30	2.191	2.166	S
Teaching Strategies	32.27	1.632	32.17	1.595	0.977	NS
Student Needs	46.98	2.147	47.30	2.191	2.166	S
Attitude	32.27	1.632	32.17	1.595	0.977	NS
Challenges	36.71	1.451	36.74	1.455	0.344	NS
Working with Student's Parents	32.27	1.632	32.17	1.595	0.977	NS

(At 5% level of significance the table value of 't' is 1.96)

It is inferred from the above table that there is no significant difference between male and female teachers in their problem solving ability of team work and student needs.

It is inferred from the above table that there is significant difference between male and female teachers in their problem solving ability of organizational environment, teaching strategies, attitude, challenges and working with student's parents.

Null Hypothesis 2

There is no significant difference between rural and urban teachers in their problem solving ability of organizational environment, team work, teaching strategies, student needs, attitude, challenges and working with student's parents.

Table 4
Difference Between Rural And Urban Teachers In
Their Problem Solving Ability

Problem Solving Ability	Rural (N = 540)		Urban (N = 360)		Calculated 't' value	Remarks
	Mean	S.D.	Mean	S.D.		
Organizational Environment	28.62	3.343	28.51	3.282	0.482	NS
Team Work	47.20	2.143	47.14	2.232	0.347	NS
Teaching Strategies	32.21	1.646	32.20	1.557	0.094	NS
Student Needs	47.20	2.143	47.14	2.232	0.347	NS
Attitude	32.21	1.646	32.20	1.557	1.165	NS
Challenges	36.78	1.459	36.66	1.442	0.094	NS
Working with Student's Parents	32.21	1.646	32.20	1.557	0.758	NS

(At 5% level of significance the table value of 't' is 1.96)

It is inferred from the above table that there is no significant difference between rural and urban teachers in their problem solving ability of organizational environment, team work, teaching strategies, student needs, attitude, challenges and working with student's parents.

VIII. Discussions And Recommendations

The main purpose of the study was to investigate the problems solving ability of higher secondary teachers. The level of dimensions of problem solving ability of higher secondary teachers with respect to gender was moderate.

Problem-solving strategies are the steps that one would use to find the problem(s) that are in the way to getting to one's own goal. Some would refer to this as the 'problem-solving cycle'. (Bransford & Stein, 1993) In this cycle one will recognize the problem, define the problem, develop a strategy to fix the problem, organize the knowledge of the problem cycle, figure-out the resources at the user's disposal, monitor one's progress, and evaluate the solution for accuracy. Although called a cycle, one does not have to do each step in order to fix the problem; in fact those who don't are usually better at problem solving. The

reason it is called a cycle is that once one is completed with a problem another usually will pop up.

IX. Suggestions For Further Research

The investigator would like to suggest the following research topics for further studies:

1. A similar study may be undertaken for high school teachers, student teachers and teacher educators.
2. This study can be extended to other ability of teachers.
3. The sample is taken from Kanyakumari district only. It can be extended to other districts and
4. Some more dimensions were included and can be taken into account for further investigation.

X. Conclusion

The problem is near impossible to solve because of how the information is represented. Because it is written out in a way that represents the information verbally, it causes us to try and create a mental image of the paragraph. This is often very difficult to do especially with all the Irrelevant Information involved in the question. This example is made much easier to understand when the paragraph is represented visually. Now if the same problem was asked, but it was also accompanied by a corresponding graph, it would be far easier to answer this question; Irrelevant Information no longer serves as a road block. By representing the problem visually, there are no difficult words to understand or scenarios to imagine. The visual representation of this problem has removed the difficulty of solving it.

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