Research Article

Relationship between Problem Solving Ability and Anxiety of High School Students' In Pondicherry Region

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Abstract

The study has been conducted in Pondicherry region only. The researcher has taken 196 samples and it follow simple random sampling technique was utilised in the present study. The major findings are as follows, there is significant difference among the high school students' problem solving ability with respect to their Community (FC and SC&ST, BC and SC&ST, MBC and SC&ST). There is no significant difference among the high school students' anxiety with respect to their Community (FC/BC/MBC/SC&ST). There is no significant relationship between problem solving ability and anxiety of high school students' in Pondicherry region.

Keywords: *Problem Solving Ability, Anxiety, High School Students, Community Differences, Pondicherry Region, Educational Research*

INTRODUCTION

World educators and environment specialists have repeatedly pointed out that a solution to environmental crisis will require an environmental awareness and its proper understanding which should be deeply rooted in the education system at all levels of school education (Shukla, 2001). Problem solving involves efforts to develop or choose among various responses to attain desired goals. A person who develops a creative solution to an important problem generally spends long periods of time immersed in the problem, gathering knowledge relevant to it, and working on it. A person has an individual way of thinking, and although the methods followed depend on the kinds of problems to be solved, great thinkers seem to have a recurring pattern of approach to problem solving (Wallas, 1926). According to Polya (1962), solving a routine problem did not contribute to the mental development of the student. He believed that to provide an opportunity for students to develop higher-order thinking in the process of

understanding, analysis, exploration and application of mathematical concepts, non-routine problems should be employed. However, students generally fear the idea of solving non-routine problems because these problems are usually non-standard, involving unexpected and unfamiliar solutions. Besides, students are also apprehensive, anxious and extremely uncomfortable because they are not able to recall and apply learned procedures in a straightforward way.

Anxiety disorders are among the most common psychiatric disorders affecting children and adolescents with an average prevalence rate of about 8% (Albano, Chorpits, & Barlow, 2003). Children with internalizing disorders such as depression and anxiety are often overlooked, and because anxiety presents in many different ways, including irritability (Tomb & Hunter, 2004). Symptoms and impairments are not addressed. Negative effects of anxiety in school aged children include deficiencies in learning achievement and verbal and nonverbal problem solving, heightened dependence on adult attention seeking, increased aggressive feelings and low self-concept (Allen & Klein, 1996). It is particularly difficult to recognize anxiety symptoms in the school environment,

While students' naive ideas or preconceptions may interfere with their understanding of general concepts and thus influence their problem solving, anxiety may also high school students. Gabel and Sherwood investigated the effectiveness of four instructional strategies for teaching problem solving to students of various proportional reasoning abilities, visual and verbal preferences, and levels of anxiety. They suggested that teachers need to incorporate teaching strategies into lessons to reduce the level of students' anxiety. Students with high levels of anxiety and the absence of another aptitude (visual preference or proportional reasoning ability) profit by methods containing supportive material that is not mathematical in nature. Teachers should use supplemental materials and more visual approaches with high anxious students also deficient in proportional reasoning ability or with low visual preference (1983:175).

STATEMENT OFTHE PROBLEM

The problem has selected for the present investigation is, "Relationship between Problem Solving Ability and Anxiety of High School Students' in Pondicherry Region"

OBJECTIVES OF THE STUDY

The following objectives were formulated for the present study:

1. To find out whether there is any significant difference in problem solving ability of high school students with respect to their:
   - ♦ Gender (Boys/Girls)
   - ♦ Community (OC/BC/MBC/SC&ST)
2. To find out whether there is any significant difference in the anxiety of high school students with respect to their:
   - ♦ Gender (Boys/Girls)
   - ♦ Community (OC/BC/MBC/SC&ST)
3. To find whether any relationship between problem solving ability and anxiety of high school students' in Pondicherry region.

HYPOTHESES

The following hypotheses were formulated for the present study:

1. There is no significant difference among the problem solving ability of the high school students with respect to their:
   - ♦ Gender (Boys/Girls)
   - ♦ Community (OC/BC/MBC/SC&ST)
2. There is no significant difference among the anxiety of the high school students with respect to their:
   - ♦ Gender(Boys/Girls)
   - ♦ Community (OC/BC/MBC/SC&ST)
3. There is no significant relationship between problem solving ability and anxiety of high school students' in Pondicherry region.

METHODOLOGY

Simple random sampling technique has been utilised by the researcher in order to draw the sample from schools. The study was conducted on a sample consisted of 196 high school students in Pondicherry region. The researcher collected sample from 3 schools (Govt./Self-finance/Govt. Aided) in Pondicherry region.

STATISTICAL TECHNIQUES USED

The investigators used the following statistical techniques for the present study. Mean (M), Standard Deviation (SD), ANOVA,'t' test.

TOOLS USED

The investigator utilized the research tool, the Problem solving ability it consists of 25 statements which was constructed and validated by L.N. Dubey. Anxiety scale standardized by Taylor (1964) and it comprises 50 items, each constructed in the form of true or false test.

ANALYSIS OF THE STUDY

Table - 1

The significance of the difference between the Means and 't' values of the Problem solving ability scores of Gender

S.No.	Sub samples	N	Mean	S.D	t Vaules	Remarks
1	Male	105	13.74	3.856	0.95	Not Significant
	Female	91	13.23	3.658		

From the 't' value of above table-I, it is seen that the gender influences the students problem solving ability. The analysis proves that gender (male/female) do not differ significantly in their problem solving ability of high school students in Pondicherry region. The null hypothesis is accepted "There is no significant difference among the high school students' problem solving ability with respect to their Gender (male/female)."

Table -2

Result of ANOVA (one way) for students of different type of Community for problem solving ability

Variable	Sub- Sample	Source of Variation	Sum of Squares	df	Mean squares	F ratio	Remarks
Problem Solving Ability	FC/BC/ MBC/ SC&ST	Between Groups	577.635	3	192.545	16.91	Significant at 0.05 level
		Within Groups	2185.36	192	11.382		
		Total	2762.995	195			

Data with respect to the above hypotheses is analysed using one way ANOVA. The F ratio obtained is 16.91. From the F value table it was found that the value required for significance is2.60. The obtained F value is higher than the table value for significance at 0.05 level. The null hypothesis is rejected. i.e. There is no significant difference among the high school students' problem solving ability with respect to their Community (FC/BC/MBC/SC&ST). As the obtained "F" value is significant, there is need for the researcher to go for't' - test.

Table - 3

The significance of the difference between the Means and't' values of the Problem solving ability scores of among community students

S. No.	Sub Samples	N	Mean	S.D	t Value
Community	FC	43	14.58	2.96	0.51
	BC	45	14.24	3.14	
	FC	43	14.58	2.96	0.03
	MBC	60	14.58	3.60	
	FC	43	14.58	2.96	5.90
	SC&ST	48	10.50	3.62	
	BC	45	14.24	3.14	0.51
	MBC	60	14.58	3.60	
	BC	45	14.24	3.14	5.33
	SC&ST	48	10.50	3.62	
	MBC	60	14.58	3.60	5.83
	SC&ST	48	10.50	3.62	

From the 't' value of above table-3, it is seen that the different community influences the students problem solving ability. The analysis proves that FC and BC, FC and MBC, BC and MBC do not differ significantly in their problem solving ability of high school students in Pondicherry region. The null hypothesis is accepted "There is no significant difference among the high school students' problem solving ability with respect to their Community (FC/BC/MBC)." It is evident that the students of FC and SC&ST, BC and SC&ST, MBC and SC&ST differ significantly in their problem solving ability of high school students in Pondicherry region. The null hypothesis is rejected "There is no significant difference among the high school students' problem solving ability with respect to their Community (FC and SC&ST, BC and SC&ST, MBC and SC&ST."

Table 4

The significance of the difference between the Means and't' values of the Anxiety scores of Gender

S. No.	Sub samples	N	Mean	S.D	t Vaules	Remarks
1	Male	105	23.65	5.969	0.90	Not Significant
	Female	91	22.80	6.996		

From the 't' value of above table-4, it is seen that the gender influences the students anxiety. The analysis proves that gender (male/female) do not differ significantly in their anxiety of high school students in Pondicherry region. The null hypothesis is accepted "There is no significant difference among the high school students' anxiety with respect to their Gender (male/female)."

Table - 5

Result of ANOVA (one way) for students of different type of Community for Anxiety

Variable	Sub-Sample	Source of Variation	Sum of Squares	df	Mean squares	F ratio	Remarks
Anxiety	FC/BC/ MBC/ SC&ST	Between Groups	229.671	3	76.557	1.85	Significant at 0.05 level
		Within Groups	7915.574	192	41.227		
		Total	8145.245	195			

Data with respect to the above hypotheses is analysed using one way ANOVA. The F ratio obtained is 1.85. From the F value table it was found that the value required for significance is 2.60. The obtained F value is lower than the table value for significance at 0.05 level. The null hypotheses is accepted. i.e. There is no significant difference among the high school students' anxiety with respect to their Community (FC/BC/MBC/SC&ST). As the obtained "F" value is not significant, there is no need for the researcher to go for't' - test.

Table - 6

The correlation coefficient between Problem Solving Ability and Anxiety of High School Students

Variables	N	r value	Significant at 0.05 level
Problem Solving Ability	196	0.08	Not Significant
Anxiety	196		

One of the objectives of the present study was to find out whether there is any significant relationship between problem solving ability and anxiety of high school students' in Pondicherry region. To realize this objective the correlation coefficient between problem solving ability and anxiety of high school students was found out by using Pearson Product Moment Correlation. The results are given in table 6.

Table-6 shows that the correlation coefficient between attitude towards social science and anxiety is 0.08. This indicates that there is no significant relationship between problem solving ability and anxiety of high school students at 0.05 level. Therefore the null hypothesis that "There is no significant relationship between problem solving ability and anxiety of high school students in Pondicherry region." is accepted.

MAJOR FINDINGS

There is significant difference among the high school students' problem solving ability with respect to their Community (FC and SC&ST, BC and SC&ST, MBC and SC&ST).

There is no significant difference among the high school students' anxiety with respect to their Community (FC/BC/MBC/SC&ST).

There is no significant relationship between problem solving ability and anxiety of high school students' in Pondicherry region.

CONCLUSION

The aim of this study to improve social problem solving abilities can significantly reduce the severity of anxiety symptoms in young people. This study may be helpful for the teachers, parents and many others who are concerned with the education field to know the extent of anxiety among high school students.

Group and individual patterns of how students learned concepts and applied problem solving strategies were compared. We should provide guidance to high school students about the development of problem solving ability and reduce the anxiety. Problem solving strategies involve formal operational skills such as proportional reasoning, logical-deductive thinking.

They should be aware of the co-cognitive factors such as anxiety, self-concept, self-confidence, attitude, interest etc. which are responsible for the development of balanced personality. They should be properly guided to adjust to the environment and to have control over their psychological aspects. The parents, teachers, elders and all others in the society should take care of the adolescents' conflicts and should give timely guidance in order to overcome their difficulties. Reduction of anxiety is very much important to reach their goal.

The teachers and parents can give proper guidance to our students to fmish or concluded the problem without anxiety. Trial and error a method of solving problems in which possible solutions are tried until one succeeds. Means-Ends Analysis a technique for solving problems in which the overall problem is divided into parts and efforts are made to solve each part in tum. A strategy for solving problems based on applying solutions that were previously successful with other problems similar in underlying structure.

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