

A STUDY ON PROBLEM SOLVING ABILITY AMONG SECONDARY SCHOOL STUDENTS IN AIZAWL CITY WITH REFERENCE TO GENDER

M.S.Dawngliani, Prof. Lallianzuali Fanai
Research Scholar, Professor.
MA (Edu.)

1913(P) IGNOU Centre, Institute of Advanced Studies in Education, Republic Veng, Aizawl Mizoram 796005.

Abstract: The aim of this research is to study the problem-solving ability among secondary school students in Aizawl city. For this purpose, the sample was selected from different secondary school within Aizawl City. The sample consisted of 180 students. Out of 180 students, 85 male students and 95 female students were taken. Problem Solving Ability Test (PSAT) developed by L.N. Dubey was used as a tool for data collection. Mean and t-test were used to analysed the data. The findings of the study reveal that no significant difference was found in in relation to gender and there is high ability of problem-solving ability of secondary school students.

Keywords - Problem solving ability, gender.

Introduction:

Problem solving includes integration of concepts and skills to get over the unusual complete situations. Solving a problem means to find or create new solutions for the problem or to apply the new rules to be learned. According to Woodsworth and Marquis (1948) "Problem Solving behaviour occurs in novel or difficult situations in which a solution is not obtainable by the habitual methods of applying concepts and principles derived from past experience in very similar situation." Problem-solving ability is the level of intelligence of learner which can affected on the achievement of learner in their studies. According to Skinner (1968) "Problem Solving is a process of overcoming difficulties that appear to interface with the attainment of a goal. It is a procedure of making adjustment in spite of interferences," Problem Solving is the main core in the study of mathematics. A primary objective of mathematics learning and teaching is to develop the ability to solve a wide variety of complex mathematical problems. Mathematics is essential in the modern world. In the present era of computers, memorization of facts and principles is not sufficient. Problem solving skill is one of the generic life skills as reported by world health organization in 1999. It is the phenomenon of understanding the gaps and queries in academic minds, which need to be addresses well.

Rationale of the Study:

Students at the secondary stage are generally between 14-16 years old. Adolescence period brings the development of cognitive, social and emotional changes. There a lot of difficulty can occur in the thinking process. In day-to-day life, a learner who are in adolescence period faces many problems and tries to solve them. It cannot be done by own thinking process. While there are many lessons to study in the school. It needs to develop thinking process to handle their various problem even in daily life or in their study. The responsibility of the teacher is to find out the level of problem-solving ability of the students with a view to the needs of help according to their level. Is there any difference between male and female students? Is an important question. Therefore, it is necessary to study about problem solving ability among secondary school students. Regarding the study of problem-solving ability, there were some studies which are taken up in India and abroad. In Mizoram there is no research study about the problem-solving ability among the students. The investigator felt that the importance to study on that areas.

Objectives of the study:

1. To investigate the level of Problem-solving ability of secondary school students in Aizawl City.
2. To compare problem solving ability of secondary school students in relation to gender.

Hypotheses of the study:

There is no significant difference between problem-solving ability of male and female students of secondary school students in Aizawl city.

Research Design:

The investigator adopted descriptive survey approach for the present study as it surveys and inquire problem solving ability of secondary school students.

Population and Sample:

The population of the present study comprise of all the class 9 students in Government and Private school in Aizawl city. The investigator selected randomly 6 Secondary Schools, 3 are Government and the other 3 are Private School.

Tools used:

The investigator used consumable booklet of PSAT-d (English version) design by L.N.Dubey published by National Psychological Corporation, Agra.

Reliability: the reliability coefficient of the test was calculated by two methods in which .78 was the reliability coefficient in Spearman-Brown formula (split-half method) while .76 was Kudar-Richardson formula (Rational equivalent method).

Validity: The coefficient of validity was calculated by correlation the scores were .68 and .85 in Group Intelligence test (R.K Tandon) and Test of Reasoning Ability respectively

Data Collection:

The investigator randomly selected different Secondary school in Aizawl city and visited them to ask for the permission of the Principal to administer the tool on the selected sample students of class IX. After getting permission, the investigator had made a good rapport, and administered the test on the students. The test scored were collected and entered as a raw score for further analysis.

Data analysis:

Statistical analysis through t-test was used to test the hypothesis. Percentage and mean were adopted to find out the level of problem-solving ability of the students.

Analysis and interpretation:

Analysis and interpretation are done in accordance with the objectives of the study as follows:

1. *To investigate the level of Problem-solving ability of secondary school students in Aizawl City.*

In order to find out the level of problem-solving ability of secondary school students in Aizawl city the scores obtained from the scale are analysed and interpreted in accordance with the norms provided in the manual of the scale and the finding are presented in the following table:

Table 1
Level of Problem-solving ability of secondary school students

Sl.no	Level of PSAT	No. of students	Percentage
1	Very High	80	44.44
2	High Ability	41	22.77
3	Average Ability	44	24.44

4	Low Ability	11	6.11
5	Very low Ability	4	2.22

Analysis of the above table No. 2 shows that 44.44 % of the students have very high problem-solving ability while 22.77 % have High Ability of problem-solving ability whereas 24.44 % of the students have Average Ability of problem-solving ability while 6.11 % percent of the students have low ability and 2.22 % of the students have Very low ability of problem-solving ability.

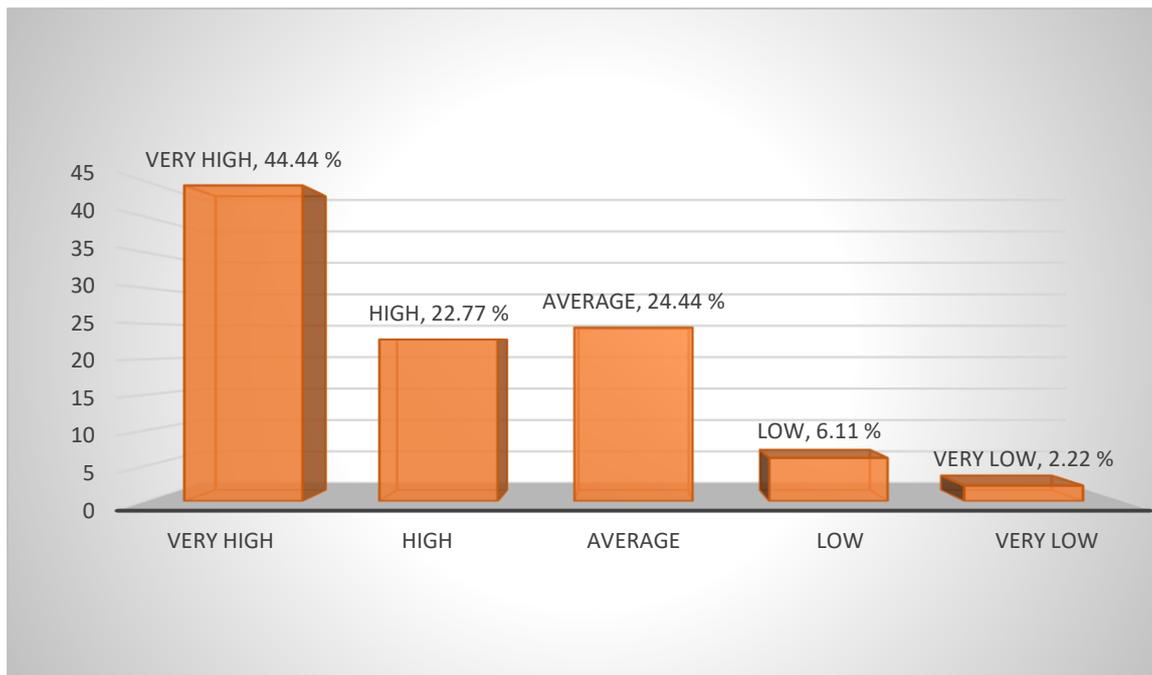


Figure 1: Percentage Scores of problem-solving Ability of the Students.

2. To compare problem solving ability of secondary school students in relation to Gender

The difference in the level of teaching interest between male and female students was compared. For this mean was calculated and the mean differences were tested by applying ‘t’ test and the detailed are presented in the following table no. 2

Table 2
Comparison of problem-solving Ability of Male and Female Students.

Problem-solving ability	N	Mean	t-value	Level of significant
Male	85	14.25	0.65	N.S
Female	95	14.52		

Analysis of data vide table no. 2 reflect the result for the test of significant differences between male and female students of secondary schools in relation to their level of problem-solving ability. The mean value for male and female students is 14.25 and 14.52 respectively. The table also reveals the t-value for the mean scores of male and female students towards problem-solving ability level found to be 0.65 which is not significant.

Therefore, the null hypothesis no.1, there is no significant differences in the level of problem-solving ability between male and female students of secondary schools is retained. This finding implies that problem-solving ability level of male and female students are not significantly different. Male and female students are not differed significantly in their ability of problem-solving.

Major findings:

- i. Average score on problem solving ability test is 14.39 which is lie on the High-level ability according to the interpretation given by L.N. Dubey. Meanwhile Most of the students were under the level of very high ability of problem-solving ability. 121 out of 180 number of students are lied on above average. Therefore, students of secondary school in Aizawl City were good in problem-solving ability.
- ii. In respect to gender, there is no difference in the level of problem-solving ability between male and female students within secondary schools of Aizawl City. The mean score of male and female show that female have more level of problem-solving ability than male

Discussion:

The study reveal that the level of problem-solving ability is high among secondary school students in Aizawl city. There can be many reasons and factors which influence this result. This could be because of learning mathematics as compulsory subject. Problem-solving ability test is closely related with mathematics subject. It is a task finding of numerical problem involving highly thinking skill. Besides that, Mizoram Board of School Education (MBSE) introduces Higher Order Thinking Skills (HOTS) question in the question design at the level of secondary school. Teachers try to impart to activate higher order thinking ability among the students that may be helpful to raise the level of problem-solving ability of the secondary level students.

Gender wise analysis of the results reveals that there is no significant difference between male and female students in problem-solving ability. Similar result is found in the study of (Kumari, 2016) on problem-solving ability of Senior Secondary School Students. The supporter of the result is also found on the study of (Singh & Gopalkrishnan, 2017) effect of Gender on problem-solving Skills through Integrated Teaching Program. The same result had found by (Behra, 2009) on his study on problem-solving skills in mathematics learning. Manohra and Ramganesh (2009) conducted a study on creative problem-solving ability of 11th class students and find that the boys tend to excel girl in their creative problem-solving ability which contradict the result of the present study.

Conclusion:

In the light of the findings presented in the above, the following conclusions are drawn. There is a satisfactory result in the Problem-solving ability test among secondary school students. So, the researcher felt that a study on Problem-solving ability in relation to Academic Achievement can be taken up, how the student's ability in problem solving can affect their academic achievement? Is there any relation between the two areas? There is no significant difference between boys and girls in their Problem-solving ability. So that, the educational planner or administrator can be framed same policies for male and female students in secondary stage.

Reference:

- Behra, B. (2009). problem-solving skills in mathematics learning. *Edutracks*, 8(7), 34.
- Dubey, L.N. (2015). *Manual for problem-solving Ability Test-D (English Version)*. Agra, India: National Psychological Corporation.
- Kumari, J. (2016). A study on problem-solving ability of senior secondary school students. *Edutracks*, 15(7), 21-23.
- Mangal, S.K. (2010). *Advanced educational psychology*. (2nd ed.). Delhi, India: PHI learning.
- Manohara, J.L., & Ramganesh, E. (2009). Creative problem-solving ability of standard XI students, *Edutracks*, 9(4), 29-31.
- Singh, P., & Gopalkrishnan, V.S. (2017). Effect of gender on problem-solving skills through integrated teaching program. *Edutracks*, 17, 37-40. Doi:10.21474/IJAR01/5842.
- Skinner, B.F., (1968). *The technology of teaching*. New York, NY: Appleton Century Croft.
- Woodworth, J. & Marquis, P. (1948). Psychology of Adults. In S.K.Mangal (Ed.) *Advanced educational psychology* (pp. 121-125). Delhi: PHI.