International Journal of Academic Research and Development
ISSN: 2455-4197
Impact Factor: RJIF 5.22
www.academicsjournal.com
Volume 3; Issue 2; March 2018; Page No. 286-288

Analysis on problem solving ability of undergraduate students

[1] N Rajkumar, [2] Dr. K Nachimuthu
[1] Ph.D. Scholar, Department of Education, Periyar University, Periyar Palkalai Nagar, Salem, Tamil Nadu, India
[2] Professor and Head, Department of Education, Periyar University, Periyar Palkalai Nagar, Salem, Tamil Nadu, India

Abstract
Mathematics plays an important role in accelerating the social, economical and technological growth of a nation. It is more so in India as the nation is rapidly moving towards globalisation in all aspects. Therefore, it is necessary to prepare the students with a strong base of mathematical knowledge to face the challenges of the modern technological society. Therefore the investigator survey method was used to collect information to measure a study on problem solving ability of under graduate students. Purposive sampling technique was used for selected the sample from the population. The sample consists of 489 undergraduate students studied in I, II and III years, selected from arts and science college in Salem District, Tamil Nadu. The researcher has constructed and standardized the following research tool (Questionnaire for problem solving ability) to collect data from the sample. The collected data was tabulated then the data was analyzed statistically used both descriptive analysis (mean & standard deviation) and differential analysis ('t' and 'F' test).

Keywords: mathematics, technological growth and purposive sampling technique

Introduction
Mathematics plays an important role in accelerating the social, economical and technological growth of a nation. It is more so in India as the nation is rapidly moving towards globalisation in all aspects. Therefore it is necessary to prepare the students with a strong base of mathematical knowledge to face the challenges of the modern technological society. Life is nothing but a series of problems. Experience in dealing with problems will help the individual in cultivating strategies, which may prove to be of great value at crucial moments of life. A major objective of instruction, especially in mathematics and science, is to strength of students' skills in solving problems. A variety of basic thought processes like perceiving, remembering, reasoning, inferring are involved while solving a problem. The ability to formulate creative solutions to problem is considered as the central aspect of thinking. Problem solving is an exciting area in psychology because it is a basic, universal characteristic of all humans. To understand how people solve problems is, to a large degree, to understand basic human behaviour, the goal of every psychologist. The importance of problem solving strategies and obstacles lie at the foundation of understanding humankind.

Need and Significance of the Study
Students are frequently troubled with their problems because they do not have the capacity and training to solve problems. Students should be encouraged to develop and discover their own problem solving strategies and become adept at using them for problem-solving. Citizens of tomorrow must be effectively altered to control emotions and ways of adjusting to situations in the society. As a consequence of this, they may aware of anxious conditions and becomes emotionally balanced and problem solving in their behaviour favouring good fame for them in the society. This will help them with their confidence in tackling problem-solving tasks in any situation, and enhance their reasoning skills. As soon as the students develop and refine their own repertoire of problem-solving strategies, teachers can highlight or concentrate on a particular strategy, and discuss aspects and applications of the strategy. As necessary, the students should develop flexibility to choose from the variety of strategies they have learned. Hence the researcher studied in this study.

Objectives of the Study
- To find out the level of problem solving Ability of undergraduate students.
- To find out if any significant difference in problem solving ability of undergraduate students with respect to their gender, locality of student, stream of study, types of institution, nature of institution, nature of stay, parental Qualification and nature of family.

Hypotheses of the Study
- The level of problem solving ability of undergraduate students is low.
- There is no significant difference in the problem solving Ability of undergraduate students with respect to their gender, locality of student, stream of study, types of institution, nature of institution, nature of stay, parental Qualification and nature of family.

Methodology
The investigator survey method was used to collect information to measure a study on problem solving ability of under graduated students. Purposive sampling technique was

used for selected the sample from the population. The sample consists of 489 undergraduate students studied in I, II and III years, selected from arts and science college in Salem District, Tamil Nadu. The researcher has constructed and standardized the following research tool (Questionnaire for problem solving ability) to collect data from the sample. The collected data was tabulated then the data was analyzed statistically used both descriptive analysis (mean & standard deviation) and differential analysis ('t' and 'F' test).

Testing of Hypotheses

Hypothesis: 1

The level of problem solving ability of undergraduate students is low

Table 1: Mean score of problem solving ability of undergraduate students (Maximum Score-100)

Background Variables		N	Mean	SD
Gender	Boys	187	75.83	8.968
	Girls	302	75.88	10.100
Locality of Student	Urban	263	75.87	9.408
	Rural	226	75.85	9.994
Stream of Study	science	248	75.58	10.076
	Arts	241	76.15	9.253
Type of Institution	Government	144	75.00	9.029
	Aided	122	77.39	10.354
	private	223	75.58	9.639
Nature of Institution	Single	186	77.39	9.688
	Co-Education	303	74.92	9.559
Nature of Stay	Hosteller	62	75.68	9.538
	Days scholar	427	75.89	9.703
Parental Qualification	Un educated	162	75.44	10.301
	School education	285	75.98	9.273
	Collegen education	42	76.67	9.994
Nature of Family	Joint Family	137	76.45	9.266
	Nuclear Family	352	75.63	9.830
Average			75.95	9.67

From the table shows that mean and standard deviation of demographic variable score is 75.95 and 9.67 respectively. The mid score is 50. So, it can be concluded that undergraduate students have high problem solving ability.

Hypothesis: 2

There is no significant difference in the problem solving Ability of undergraduate students with respect to their gender, locality of student, stream of study, types of institution, nature of institution, nature of stay, parental Qualification and nature of family.

Table 2: Significant difference in problem solving ability of undergraduate students with respect to their selected demographic variables

Demographic Variables		Mean	SD	t - value	F – value
Gender	Boys	75.83	8.968	0.59*	===
	Girls	75.88	10.100		
Locality of Student	Urban	75.87	9.408	0.24*	===
	Rural	75.85	9.994		
Stream of Study	Science	75.58	10.076	0.66*	
	Arts	76.15	9.253		
Type of Institution	Government	75.00	9.029	===	2.188*
	Aided	77.39	10.354		
	Private	75.58	9.639		
Nature of Institution	Single	77.39	9.688	2.75**	===
	Co-Education	74.92	9.559		
Nature of Stay	Hosteller	75.68	9.538	0.16*	
	Days scholar	75.89	9.703		
Parental Qualification	Un educated	75.44	10.301	===	0.322*
	School education	75.98	9.273		
	College education	76.67	9.994		
Nature of Family	Joint Family	76.45	9.266	0.87*	===
	Nuclear Family	75.63	9.830		

***** NS – Not Significant at 5% level, ** S – Significant at 5% level

From the table (2) showed that the calculated 't' values 0.57 (gender), 0.24 (locality of students), 0.66 (stream of study), 0.16 (nature of stay) and 0.87 (nature of family) are less than tabulated value 1.96 at 0.05 level of significant. So the null

hypothesis is accepted. Hence it can be concluded that there is no significant difference in problem solving ability of undergraduate students with respect to their demographic variables such as gender, locality of students, stream of study, nature of stay and nature of family. Consequently the calculated 't' value 2.75 (nature of institution) is greater than table value 1.96 at 0.05 level of significant. So the null hypothesis is not accepted. Hence it can be concluded that there is a significant difference in problem solving ability of undergraduate students with respect to their nature of institution.

From the analysis inferred that the calculated 'F' values 2.188 (type of institution) and 0.322 (parental qualification) are less than table value 2.98 at 0.05 level of significant. So the null hypothesis is accepted. Hence is no significant difference in problem solving ability of undergraduate students with respect to their respect to their type of institution and parental qualification.

Discussion

From the analysis indicated that the undergraduate students have high problem solving ability.

Gender wise analysis the girl's undergraduate students (75.88) were higher than boys under graduate students (75.83) towards their problem solving ability. Locality of student wise analysis the urban undergraduate students (75.87) were better than rural under graduate students (75.85) towards their problem solving ability. Stream of study wise analysis the arts stream undergraduate students (76.15) were superior to science stream undergraduate students (75.58) towards their problem solving ability. Type of Institution wise analysis the aided college undergraduate students (77.39) were greater than private and government college undergraduate students (75.00 & 75.58) towards their problem solving ability. Nature of stay wise analysis the days scholar undergraduate students (75.89) were higher to hosteller undergraduate students (75.68) towards their problem solving ability. Parental Qualification wise analysis the college education parents' undergraduate students (76.67) were higher to school education parents' (75.98) and uneducated parents (75.44) undergraduate students towards their problem solving ability. Nature of family wise analysis the joint family undergraduate students (76.45) were higher to nuclear family undergraduate students (75.63) towards their problem solving ability. Hence it is concluded that there was significant difference in problem solving ability of undergraduate students with regard to demographic variables such as gender, locality of student, stream of study, types of institution, nature of stay, parental Qualification and nature of family.

Thus from the analysis concluded that the nature of institution revealed that there is significant difference in women college undergraduate students (77.39) better than co-education college undergraduate students (74.92) toward problem solving ability.

References

1. Amin Bunga Dara, Mahmud Alimudin. The Development of Physics Learning Instrument Based on Hypermedia and Its Influence on the Student Problem Solving Skill. Journal of Education and Practice, 2016; 7(6):22-28.
2. Badru, Ademola. Predicting academic success of junior secondary school students in mathematics through cognitive style and problem solving technique, Journal of Education and Practice, 2015; 6(4):72-78.
3. Chaube SB. A textbook of educational and vocational guidance. New Delhi: Oscar publication Private Limited, 2013.
4. Guerra, Paula, Lim, Woong. Latinas and Problem Solving: What They Say and What They Do. Journal of Urban Mathematics Education. 2014; 7(2):55-75.
5. Holbert, Sydney M., Barlow, Angela T. Engaging Reluctant Problem Solvers. Teaching Children Mathematics. 2012; 19(5):310-315.
6. Mayer RE. Thinking, Problem-Solving, Cognition. 2., New York: Freeman, 1992.
7. Parkash Chandra J. Cognitive styles and problem solving ability of undergraduate students. International Journal of Education and Psychological Research. (2014): 3(2):71-76.