

Problem Solving Ability, Study Habits And Academic Achievement in Science of Tribal and Non Tribal Students

Abstract: All the academic pursuits are modelled towards the attainment of eminence in academic sphere. Although many factors influence academic achievement in science of secondary school students but problem solving ability and study habits are found to be more influential. The present study focuses on the academic achievement, problem solving ability and study habits of adolescents. Survey method was employed by the researcher for the present study. The sample of study consisted of 400 tribal and non-tribal students selected randomly from higher secondary schools of Koraput district. Data were collected by administering the standardised tools, i.e., Problem Solving Ability Test and Study Habits Inventory (SHI) developed by the researcher. Collected data were analysed and interpreted by applying descriptive statistics and analysis of variance. The findings of the study disclose that problem solving ability and study habits of non-tribal students are better than the tribal students. Also the results of the study reveal that problem solving ability and study habits largely contribute for better academic achievement in science of secondary level students. Students having high problem solving ability and good study habits exhibit better academic achievement than the students having low problem solving ability and poor study habits.

Keywords: Problem Solving Ability, Study habits, Academic Achievement

In the current era of science and technology, understanding of science is essential to adopt and initiate prime professional and applied courses. Secondary level is exceptionally important as students tend to shift towards diversification. Hence, students are expected to accomplish the fundamental skills, ability to think logically and use science to solve problems and link the classroom knowledge with the real world. In Indian condition the students belong to scheduled tribe sections are generally considered as socially disadvantaged group as they are deprived to avail such facilities which is essential for their all round development.

Conducted research studies in this field reveal that students from this community always possess poor academic achievement. Several research studies have shown that the achievement level of students belong to scheduled tribe is much lower as compared to those of other children (Devi, 2015; Shukla, 2016; Azad, 2015). Even various interventions which have been made have not been able to lead the achievement level as is shown in the study conducted by Seshadri, C and Ramamani (1995). Findings of the studies in this direction reveal that cognitive as well as non-cognitive factors significantly influence the academic achievement of tribal children. It is felt that though many factors contribute to achievement of scheduled tribe students, but problem solving ability and study habits are found to be more influential.

Present day education secures the utmost importance to the development of problem solving ability. Developing problem solving skills and ability is very much applicable for academic achievement in science and to solve day to day problems. Dutt (1989) conducted a study on school achievement in science and noted significant relationship between problem solving ability and achievement in science. Johnson, Skon and Johnson (1980) found significant and positive relationship with achievement. As well, Study habits have significant role in the academic performance of the students. Learner's involvement in study and learning style has been considered as one of the important factors which determines success or failure of the students in academic pursuance. Study habits determine the academic success and learning of students and also useful for learning throughout one's life. It tells us how do the students work at studies. These above mentioned factors play a notable role in the academic performance of the students (Aggarwal, 2010). Students belong to non-tribal category possess significantly better study habits and academic accomplishment than their counterparts (Kumari Anita, 2004; Bhan and Gupta, 2010).

It becomes imperative to study problem solving ability and study habits of the tribal and non-tribal students. Results of most of the research studies reveal that the

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above said variables play significant role in the education of students and affect the students' accomplishments in science in the long run. Hence, It can be stated that the problem solving ability and study habits have different effects on academic achievement in science in segregation and also when integrated with other factors.

Objectives of the Study: The objectives of the study were:

- To make a comparative assessment between tribal and non-tribal adolescents with respect to problem solving ability and study habits.
- To study the influence of problem solving ability on academic achievement in science of students studying at secondary level.
- To find out the influence of study habits on academic achievement in science of students studying at secondary level.

Hypotheses: The following hypotheses have been formulated for the study:

1. There is no significant difference in academic achievement in science of non-tribal and tribal students.
2. Students having high problem solving ability manifest better achievement in science than the students having low problem solving ability.
3. Students having good study habits show better achievement in science than the students having poor study habits.

Delimitation of the Study: The present study is delimited to Koraput district of Odisha. It is delimited to the students studying in 11th class. Scheduled tribe students and general caste students only were included in the study.

Method: The study is a descriptive survey type research. In the present study, the academic achievement of 11th class students is dependent variable and problem solving ability and study habits were the independent variables.

Sample: A total of 200 students including 104 non-tribal students and 96 tribal students were selected randomly from five higher secondary schools, named,

- i. Gangeswari (Junior) Mahavidyalaya, Pottangi, ii. Govt. (Junior) College, Koraput, iii. V.D. (Junior) College, Jaypore, iv. Bhairaba (Junior) College, Koraput and v. Laxmipur (Junior) College, Koraput.

Tools Used: For the collection of required data, two standardised tools (i) Problem Solving Ability Test developed by Dr. R. Garg and (ii) Study habits Inventory developed by the investigator were used. These tools were administered on +2 1st year students of the respective secondary/junior colleges. For academic achievement in science, the marks obtained in science by the students in the last HSC Board examination were taken into consideration.

Data Analysis and Interpretation : The following table depicts the CR value of the variables viz. Problem Solving Ability and Study Habits.

Findings of the Study: The findings of the study concerning Problem Solving Ability and Study Habits and its' influence on achievement in science of adolescents is mentioned below:

- There is a significant difference in problem solving ability and study habits of tribal and non-tribal students. The problem solving ability and study habits of non-tribal students are better than the tribal students.
- There is a significant difference in the academic achievement in science of students having high problem solving ability and low problem solving ability. Students having high problem solving ability exhibit higher academic achievement in science than the students with low problem solving ability.
- There is a significant difference in the academic achievement in science of students having good study habits and poor study habits. Students

Difference for Non-tribal and Tribal Adolescents in respect of Problem Solving Ability and Study Habits

Variable	Cat.	N	Mean	SD	iD	Mean Difference	CR Value
Problem Solving Ability	Non Tribal	104	68.07	10.33	2.470	16.36	6.623**
	Tribal	96	51.71	10.11			
Study Habits	Non Tribal	104	147.40	26.23	2.470	18.15	7.348**
	Tribal	96	77.10	24.62			

* Significant at 0.05 level ** Significant at 0.01 level

having good study habits exhibit higher academic achievement in science than the students with poor study habits.

The assessment of scores (mean value) discloses that the non-tribal students are having high problem solving ability and good study habits in comparison to tribal students.

Study of Influence of variables (Caste, Problem Solving Ability and Study Habits) on Achievement:

Mean Values of Varied Groups:

Mean values for Achievement Scores with regard to Problem Solving Ability and Study Habits

Variable	CASTE				
	Tribal		Non-Tribal		
	Good Study Habits (GSH)	Poor Study Habits (PSH)	Good Study Habits (GSH)	Poor Study Habits (PSH)	
High Problem Solving Ability	M=169.40	M=114.30	M=282.80	M=158.70	M=181.30
Low Problem Solving Ability	M=83.80	M=32.80	M=134.90	M=62.10	M=78.40
	M=126.60	M=73.55	M=208.85	M=110.40	

Results of ANOVA: The abstract of ANOVA for influence of Problem Solving Ability and Study Habits on achievement in Science of students is mentioned below:

Abstract of ANOVA for Achievement in Science concerning Problem Solving Ability and Study Habits

Source of Variation	Df	SS	MS	F
Caste	1	70924.05	70924.05	19.04**
Study Habits (SH)	1	114761.25	114761.25	30.80**
Problem Solving Ability	1	211768.2	211768.2	56.84**
SS Within	72	268257.2	3725.79	
SS Total	79	690126.2		

* Significant at 0.05 level ** Significant at 0.01 level

Conclusion

It is important to mention that achievement in science of secondary level students is influenced by diverse factors, out of which some are personal while others are present in the learning environment of the students. The result of the present research is associated with the measurement of the influence of problem solving ability and study habits on achievement of science of tribal and non-tribal secondary level students. The research premeditated to put on empirical compositions on problem solving ability, study habits and investigating how these variables influence the academic achievement in science.

The teacher and parents must take care of the factors which are responsible for developing high problem solving ability and good study habits among the students. □

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