

SCIENTIFIC ATTITUDE AND ACHIEVEMENT IN SCIENCE OF UPPER PRIMARY SCHOOL STUDENTS

R. JEYANTHI

Assistant Professor, Department of Education, gandhigram Rural Institute – Deemed University,
Gandhigram, India

ABSTRACT

This paper aims to find the level of scientific attitude and relation between the scientific attitude and academic achievement of upper primary school students. The investigator chose 200 upper primary school students in Dindigul district and used Baskara Rao's scientific attitude scale (SAS) as tool. The major findings of the study were: 1. There is no significant difference between boys and girls, rural and urban and government and aided school students. 2. There is significant relationship between scientific attitude and academic achievement with respect to gender, location and type of school management at 0.01 level of significant.

KEYWORDS: Scientific Attitude, Academic Achievement in Science

INTRODUCTION

Scientific attitude is the most important outcome of science teaching. Though some people view the scientific attitude as the by-product of teaching science, yet a majority of the people consider it equally important as knowledge aspect. Scientific attitude is a very significant concern of the process of science education. In this connection, the Rethinking Science Education mentioned the characteristics of scientific attitude as "Open-mindedness, a desire for accurate knowledge, confidence in procedures for seeking knowledge and the expectation that the solution of the problem will come through the use of verified knowledge". To develop scientific attitude, the teachers should always remember that without a questioning mind and a spirit of enquiry, studies in science will only mean acceptance of dogma and will never lead to development of scientific attitude in the learner. The students should be made to practice and observe science so that they get the opportunity to feel and develop the components of scientific attitude in their minds.

In recent years science educators has included the development of scientific attitude among the general aims of science education. Some writers label this attitude as "Scientific Mindedness (Burnett 1944) that habit of scientific thinking (Noll, 1933) or 'the spirit of science' and it is most often characterized by a list of component attitudes such as objectivity, open mindedness and a willingness to suspend judgment if there is insufficient evidence.

The scientific attitude, by its very name, tends to be associated solely with the area of science. There is a general agreement among investigators that a person who has a scientific point of view – 1 looks for the natural causes of events. 2. Is open minded toward the work and opinion of others and toward information related to his problem; 3. Bases opinions and conclusions on adequate evidence; 4. Evaluates techniques and procedures used and information, obtained; and 5. Is curious concerning the things he observes.

Upper primary is the base for secondary and senior secondary classes. The learners learned the concept of science

in this stage is importance in the development of scientific attitude.

NEED FOR THE STUDY

The investigator is working as science teacher educators. She frequently visits the upper primary schools and observes the class room process. She has realized that the achievement of the upper primary school students in science subject is depends on their scientific attitude. So the investigator has undertaken to study the level of scientific attitude possessed by the VIII standard students and also to find out the relationship between achievement and scientific attitude.

OBJECTIVE OF THE STUDY

The objectives of the present study are,

- To find out the level of scientific attitude possessed by upper primary school learners.
- To find out the significant difference between the sub-groups with respect to gender, location and type of school in scientific attitude.
- To find out the relationship between scientific attitude and achievement in science of the students.

HYPOTHESES

- Upper primary school learners will possess high scientific attitude.
- There is no significant difference between the mean scientific attitude scores of the upper primary students in terms of (a) Gender (b) Locality (c) Type of schools.
- There is no correlation between the achievement in science and scientific attitude of upper primary students.

METHODOLOGY

Normative survey method will adopt for data collection.

SAMPLING DESIGN

200 students of VIII standard were selected as sample of the present study by using simple random sampling technique in Dindigul educational district.

TOOLS

In this study, the researcher used Baskara Rao's scientific attitude scale (SAS). This tool consists of 36 items with five point scale, method (SA) strongly Agree, (A) Agree, (N) Neutral, (D) Disagree, (SD) Strongly Disagree. The tool has 18 positive item, the score will be 5, 4, 3, 2, 1 are the 18 negative item, the score will be 1, 2, 3, 4, 5. The reliability and validity of the SAS tool is 0.86 and 0.83.

STATISTICAL TECHNIQUES EMPLOYED

- Percentage Analysis
- t- test and
- r – Correlation coefficient

Significant Difference between the Scientific Attitude and Academic Achievement of the Students with Respect to Gender, Management and Locality

Table 1

Variable	Sample Size	Mean	SD	T Value	Level of Significance
Boys	100	129.29	23.67	0.592	NS
Girls	100	130.74	18.39		
Govt	100	125.34	24.58	0.685	NS
Aided	100	127.63	19.98		
Urban	100	133.32	15.17	0.287	NS
Rural	100	127.63	19.98		

Correlation between the Scientific Attitude and Academic Achievement of the students with respect to Gender, Management and Locality

Table 2

Sl. No	Group	Number	Difference	'R' Value	Level of significant
1	Boys	100	98	0.661	0.01
2	Girls	100	98	0.673	0.01
3	Govt	100	98	0.691	0.01
4	Aided	100	98	0.615	0.01
5	Rural	100	98	0.683	0.01
6	Urban	100	98	0.627	0.01

FINDINGS OF THE STUDY

- There is no significant difference in the level of scientific attitude possessed by boy and girl of the middle school students. It is evident that both are having the same level of scientific attitude.
- There is no significant difference in the level by scientific attitude possessed by the students in Government and Aided schools.
- There is no significant difference in the level of scientific attitude possessed by the students of urban and rural school students. Locality has no influenced scientific attitude among middle school students.
- There is significant relationship between scientific attitude and academic achievement with respect to gender at 0.01 level of significant.
- There is significant relationship between scientific attitude and academic achievement with respect to locality at 0.01 level of significant.
- There is significant relationship between scientific attitude and academic achievement with respect to type of school management at 0.01 level of significant.

RESEARCH IMPLICATION

Based on the present investigation the following research implication and recommendations are suggested;

- As there is no significant difference between boys and girls in the level of scientific attitude, both the boys and

girls should be treated equally in science class. There should not be any gender bias. Equal importance should be given in both in classroom and laboratory based activities.

- Any programmes related to the development of scientific attitude should be implemented equally both for Government and Aided schools. Our emphasis need not be given for Government schools.
- As the locality does not influence the scientific attitude it is indispensable to provide equal facilities and amenities both for rural and urban schools.
- Science club, science forum, science exhibition and science quiz programme should be organized at upper primary school level in order to develop the scientific attitude among the students.
- There is relationship between scientific attitude and academic achievement among upper primary school students with respect to gender, locality and type of school management. Hence the development of scientific attitude would lead to the high academic achievement in science.

CONCLUSIONS

Scientific attitude is necessary to an individual to lead a smooth and comfortable life in the society. An individual with good scientific attitude can understand the phenomena of nature and human behavior. The present study has result the present status of the upper primary school student towards scientific attitude. The upper primary school students has high scientific attitude and their academic achievement has also highly correlate with scientific attitude.

REFERENCE

1. Digumarti Bhaskara Rao, **Scientific Attitude**, New Delhi, Discovery Publishing House, 1997
2. Macober, **Principles of Teaching in the Primary School**, New Delhi, Eurasia Publishing house Pvt. Ltd., 1994
3. Ostle, B. and Mensing , R.W. **Statistics in Research** , New Delhi, Oxford and IBH Publishing Co., 1975
4. Passi, B.K and Singh L.C., **Models of teaching**, New Delhi, NCERT., 1991
5. Rai, B.C., **Techniques of teaching**, Luck now, Prakashan Kendra., 1993
6. Rao, N.P., **Education and Human Resource**, New Delhi, APH Publishing Corporation., 1996
7. Reddy, R.S., **Student teaching and evaluation**, New Delhi, NCERT., 1983
8. Roa, P.T., **Classroom teaching of Effective science Teacher**, New Delhi, J.C. Kapur for Dhanpet Raj & Sons., 1987.
9. Saroja Sundararaja, **Learning concepts in Environmental Science**, Madras, Orient Longman Ltd., 1983.
10. Saroja Sundararajan, **Teaching Science in Middle School**, Madras, Orient Longman Ltd., 1985