ORIGINAL RESEARCH PAPER

Education

KEY WORDS: Scientific Terms, Scientific Attitude, Science Interest, Principles and Concepts Development of Skills.

A Study of Scientific Attitude and Science Interest of Secondary School Students In West Tripura District

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ABSTRACT

Science has its significant role in promoting quality of life either directly or indirectly. The qualities imbibed by the learner through learning science are valuable for a citizen living in the society. Therefore, science is now a compulsory subject in every system of school education right from the elementary stage. Science not only satisfies the usual needs for its inclusion as a subject in the curriculum – such as intellectual, cultural, moral, aesthetic, utilitarian as well as vocational values science learning provides training in scientific method and also helps to develop a scientific attitude of mind in the learner. Moreover, the students should develop a proper attitude towards the study of science and an active interest in the subject, besides appreciating the importance of science in human life and civilization. It also helps to improve their abilities and capacities in science. There is a need for awareness in science for the full fledged development of a child. The acquisition of the knowledge of scientific terms, principles and concepts, a clear understanding of them, the ability to use such knowledge in different situations in the life and in the development of skills should be the outcomes of teaching and learning of science. In this context "A Study of Scientific Attitude and Science Interest of Secondary School Students in West Tripura District" was conducted to identify the association of scientific attitude and science interest. For this purpose Descriptive survey method of research was used. A sample of 110 secondary school students were selected randomly from seven schools located in West Tripura district. The methodology includes chi- square (x^2) test.

INTRODUCTION

Science has made a tremendous impact on the cultural life of the present day society which is a product of science. The thinking, feeling and actions of modern man are practically guided by the effects of science. There is an involvement of science, direct or indirect, in all works as well as leisure of a modern man. Our habits and attitudes have also been affected by science. So exploring attitude, interest and ability have to be studied in the early stages of life. Science is also helping us in satisfying the natural curiosity with which we all are born. And it is only with science we can find how nature is operated. It also specifies new natural laws through experimental work and using chain of evidence. And all these can be learned in a systematic, logical, thought oriented process through study of science. Specific observations, logical thinking, spirit of investigation, enquiry, and skill of asking questions are promoted through study of science only. These can be greatly achieved and developed with the help of teachers among children through science teaching and learning at all levels in the classrooms. Efforts are being made in this direction which is also been supported by Education Commission. "There is, of course, one thing about which we feel no doubt or hesitation. Education which is science based and in coherence with Indian culture and values can alone provide the foundation, as also the instrument, for the nation's progress, security and welfare." (Education Commission, 1964-66)

Interest and attitudes in specified areas are two important determinants of school attainment and, therefore, are potential predictors of success in all forms of performance in school subject. They have close similarity on the ground that both represent mental readiness or preparation for a particular behaviour pattern. The individual usually likes the things in which (s)he is interested and the thing that interests also, activity sought. Attitudes, on the other hand, may orient and individual either favourably or uniformly towards certain objects, places, ideas etc. Scientific attitude is a complex behavioural aspect of science having so many characteristics and it can be attributed to many situations. And science interest is very essential for a successful person. It is also clear that the science interest predicts achievement of students in science and allied subjects. Hence, we can safely say that the study on these two aspects of secondary school students will trace out the problems concerned with its possession and ultimately helps in the development of such an important psychological trait.

With these aspects in mind, there is a felt need to study scientific attitude and science interest of secondary school students. The present study is limited to these two aspects of secondary school students who will be in the age group of 14+ and 15+ and to find out their inter-relationship. Importance is given to gender, locality of the school, type of management, and medium of instruction The present research work, "A Study of Scientific Attitude and Science Interest of Secondary School Students" was intended to identify whether there exists any association among scientific attitude and science interest.

OBJECTIVES

1. To identify the association of scientific attitude and science interest at secondary school level.
2. To compare scientific attitude and science interest of secondary school boys and girls.
3. To compare scientific attitude and science interest of secondary school students studying in private and government secondary schools.
4. To compare scientific attitude and science interest of secondary school students residing in rural and urban areas.
5. To compare scientific attitude and science interest of secondary school students studying in Bengali Medium and English medium schools.

HYPOTHESIS

1. There is no significant positive association among scientific attitude and science interest of secondary school students.
2. There is no significant positive association among scientific attitude and science interest of boys and girls of secondary schools.
3. There is no significant positive association among scientific attitude and science interest of private and government secondary school students.
4. There is no significant positive association among scientific attitude and science interest of urban and rural secondary school students.
5. There is no significant positive association among scientific attitude and science interest of Bengali medium and English medium secondary school students.

DESIGN AND METHODOLOGY

Descriptive survey method of research is been employed for the present study. A sample of 110 students of IX standard was selected randomly from seven schools of West Tripura District. Sample was collected from government, and private schools

consisting of boys and girls of rural and urban areas.

SAMPLE DESIGN

Sl No:	Name of the School	No: of Students Boys	Girls
1	Berimura Higher Secondary School	7	7
2	Lembucherra High School	8	6
3	Fatikcherra High School	8	7
4	Mohanpur High School	9	8
5	Sri Krishna Mission School	9	8
6	Bhavans Tripura Vidya Mandir	8	9
7	Pranavananda Vidya Mandir	8	8

TOOLS

Among the tools developed in India, the Scientific Attitude Scale developed by J.K. Sood And R.P.Sandhya was finalized for the final administration to measure the scientific attitude of secondary school students. Scientific Attitude Scale contained 36 statements of which 18 were of positive polarity and 18 were of negative polarity.

Science Interest Test standardized by L.N. Dubey and Archana Dubey was employed to measure the Science Interest of secondary school students. There are 64 statements in the test. 32 statements show liking for science subject while 32 statements indicate disliking for the subject.

STATISTICAL ANALYSIS

The data was analyzed using chi- square (^{2}) test of independence.

ANALYSIS AND INTERPRETATION

Hypothesis -1

There is no significant positive association among scientific attitude and science interest of secondary school students.

To test the validity of hypothesis, the chi-square values are computed.

Table -1: Association in the Whole Sample (x^2 values)

Sample	Scientific Attitude with Science Interest
110	10.62#

d_i=4 P at 0.01 level is 13.28 # Not Significant

It can be seen from the above table -1, that there is a positive association among scientific attitude and science interest of secondary school students at 0.05 level of significance, but not at 0.01 level.

The hypothesis that there is no significant positive association among scientific attitude and science interest of secondary school students can be accepted.

Hypothesis -2

There is no significant positive association among scientific attitude and science interest of boys and girls of secondary schools.

To test the validity of the above hypothesis 2, chi-square values are computed and given below.

Table – 2: Association in Boys and Girls (x^2 values)

Variable	*Sample Size*	*Scientific Attitude with Science Interest*
Boys	57	6.08#
Girls	53	10.1#

Not Significant at 0.01 level

In girls more association is seen among scientific attitude and science interest, when compared to boys at 0.05 level of significance. There is no association seen among scientific attitude and science interest at 0.01 level.

The hypothesis that there is no significant positive association among scientific attitude and science interest of boys and girls of secondary schools can be accepted.

Hypothesis - 3

There is no significant positive association among scientific attitude and science interest in private and government secondary school students.

The hypothesis-3 is tested for its validity by applying the chi-square test. The results are as follows:

Table – 3: Association in the Students of Private and Government Schools (x^2 values)

Variable	*Sample Size*	*Scientific Attitude with Science Interest*
Private	50	17.12$
Government	60	7.11#

$ Significant at 0.01 level # Not Significant at 0.01 level

From the above table- 3, it is clear that there is a significant positive association of scientific attitude and science interest among the students studying in private schools. But no association is seen among scientific attitude and science interest in students of government schools.

The hypothesis that there is no significant positive association among scientific attitude and science interest in private and government secondary school students can be rejected.

Hypothesis - 4

There is no significant positive association among scientific attitude and science interest of urban and rural secondary school students.

To test the validity of the hypothesis- 4, the chi-square values are computed.

Table – 4: Association in the Students of Urban and Rural Schools (x^2 values)

Variable	*Sample Size*	*Scientific Attitude with Science Interest*
Urban	67	18.13$
Rural	43	3.52#

$ Significant at 0.01 level # Not Significant at 0.01 level

It is evident from table-4 that more association of scientific attitude and science interest is found among the students studying in urban schools. But no significant association is found among students studying in rural school.

The hypothesis that there is no significant positive association among scientific attitude and science interest of urban and rural school students of secondary schools can be rejected.

Hypothesis - 5

There is no significant positive association among scientific attitude and science interest of Bengali medium and English medium secondary school students.

The association among scientific attitude and science interest in the students of Bengali and English medium schools is tried in the following way.

Table -5: Association in the Students Studying in Bengali Medium and English Medium Schools (x^2 values)

Variable	Sample Size	Scientific Attitude with Science Interest
Bengali	60	7.11#
English	50	17.12$

$ Significant at 0.01 level # Not Significant at 0.01 level

From the above table-5, it is clear that there is high association between scientific attitude and science interest in English medium students and no association is seen in Bengali medium students.

The hypothesis that there is no significant positive association among scientific attitude and science interest in the students of Bengali medium and English medium secondary school students can be rejected.

FINDINGS

The present study found positive and significant relationship between scientific attitude and science interest of secondary school students at 0.05 level of significance, but not at 0.01 level. This study reveals that these two factors are interrelated. If students develop their scientific attitude, this in turn leads to the development of science interest and can be successful in their academic performance. In this study, results showed that there is no influence of gender on the association of these aspects. Promotion of them must be taken into consideration. At the same time, reasons for the independent nature of association of scientific attitude with science interest must also be identified and rectified. As expected more association is seen in the students of urban schools as they have more chances of exposure to scientific experiences. Teachers and government have to realise the fact and give special focus on rural as well as government schools, to bring out and develop these factors in them. Language is a channel for communication and everybody can excel in any field with it. It was good to see positive association in English medium students than in Bengali medium students. On the whole, scientific attitude and science interest are average in the samples. There is a significant and positive association among scientific attitude and science interest.

SUGGESTIONS

Based on the findings of the study some suggestions are worth mentioning. One of the major aims of teaching science is invariably the development of scientific attitude in the student. So, special focus must be given by the teachers to promote scientific attitude in students. Science teachers must try to promote scientific attitude in the students through some procedures like taking students to science exhibitions, fairs, excursions, fieldtrips, industries, etc. And, there is also a need to arrange activities in teaching that develop science interest, which may be helpful in developing science interest among students. Due steps must be taken by the government especially in rural areas for the development of students.

Science activities give the students ability to think in new dimensions. By this, scientific attitude can be enhanced in the students, and thus get interested too. Hence there is a need to develop the facilities, and teachers should try to promote quality in science instruction to develop scientific attitude and science interest, along with the medium of instruction. Teachers and parents must try to focus on establishing and promoting the relationship between ability of thinking and learning, but not just on scoring in examinations. The science educators must try to promote the level of scientific attitude and science interest among students.

SUGGESTIONS FOR FURTHER RESEARCH

Based on the present study, a good number of new areas can be studied by the future researchers. The areas and variables which are not covered in this study may be put to test to enlighten the factors associated with inculcation and development of scientific attitude and science interest and other factors associated with them. Studies may be conducted to find out the effect of digital classrooms, to identify the impact of peers on science interest and achievement of the students. Critical observations can also be taken up at different levels, to identify the factors that influence science interest, students studying in state and central schools, to identify the influence of educated and uneducated parents on the science interest etc... Studies can also be conducted correlating scientific attitude and science interest in achievement in science.

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