

Study Of Attitude Of The Students Towards Science In Relation To Certain Non-School Factors

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ABSTRACT

The purpose of the present study is to study of attitude of the students towards science in relation to certain non school factors. The sample consisted of 100 students. In order to visualize the nature of score distribution of the data collected, numerical determinations of normality like mean and standard Deviation were worked out t-test was used to test the significance of difference between means in relation to gender, locality and socio-economic status of students. The main findings of the study were that significant difference exists between urban and rural students but no significant difference was found on the basis of gender and socio-economic status.

Key Words:- Attitude Towards Science Certain Non School Factors like gender, locality and S. E. S.

INTRODUCTION

Education has great importance in our life. Education is as old as human race. Man goes on acquiring education in one way or other from birth to death. It is never an ending process of inner growth and development. According to Swami Dayanand, The baby starts getting his/her education in the womb of the mother. The garden of life appears ugly in the absence of education. Education helps in developing thinking, reasoning, problem solving & creativity, intelligence, skills of attitudes in man.

As Dewey Said, “ Food is essential for physical development, in the same way education is essential for social development. ” Education develops an individual like a flower which distributes its fragrance all round.

While education is process, curriculum is a means to the process, while education is learning, curriculum signifies situations for learning. While education deals with ‘how and ‘when’ curriculum deals with ‘what’. While education is a product & curriculum is a plan.

But today as we live in the scientific world, life of every individual is fashioned by science. All the activities in life from cradle to grave are controlled by science. Science & technology have been playing an important role in our lives & hence become integral parts of our social & cultural lives.

Science and technology has changed the man's way of life and his abilities to do work. As each time a technology is introduced and adopted.

Science is a systematized body of knowledge. This knowledge may pertain to any subject or field of life.

According to Columbia Encyclopedia, “ Science is an accumulated and systematized learning in general usage restricted to natural phenomenon. ”

Science enables the man to study various phenomenon in the space and establish various relationships between them. It explains that science is a byproduct of our empirical knowledge and deals with logical reasoning.

Science is useful in character formation and moral development. It helps in developing moral attitude as there is no place of biased attitudes, prejudiced feelings etc. in the solution of problems in science.

Attitude has been defined as ideas with emotional content, important beliefs, prejudices, biases, predisposition and as state of readiness. Sometimes attitudes are thought to be habitual way of looking at an object.

William James of Harvard University Said, ” The greatest discovery of my generation is that human beings can alter their lives by altering their attitudes of mind. ”

Attitudes are generally regarded as an enduring thought modifiable by experiences and by persuasion as learned rather than innate. They are also seen as predisposition to action. They are formed as a result of same kind of learning experiences.

Allport (1935) has defined” Attitude as a mental or neural state of readiness to respond, organized through experiences exerting directive and dynamic influence upon behavior. ” Attitude towards Science.

The term ‘ attitude’ towards science ‘ is used to indicate all that an individual feels and thinks about science and scientists. The term attitude towards science is very much dependent upon school as well as non school factors. School atmosphere are like atmosphere of school, motivation by teachers, teaching methods etc. Non school factors are like home environment, gender, locality and socio-economic status etc.

Saxena, A. K. (1986) measured attitude towards science and correlated it with cognitive development of high school children. The data from the study revealed a higher correlation between attitude towards science and cognitive development.

Simon, S. and Collins, S. (2003) In their study considered the problems inherent to their measurement, what is known about students attitude towards science, and many factors of influence such as gender, teachers, curricular, cultural and other variables. This study also offers implications of attitudes towards science over the past 20 years.

Crettaz, F. (2004) studied the attitude of students towards science. Initial results of this study showed that men have more positive attitude towards science and greater levels of scientific knowledge than women. Scientific knowledge and education have an independent effect on attitude towards science. Results show that interaction

between gender and scientific knowledge is significant. So the effect of scientific knowledge on attitude towards science depends on gender.

NEED OF THE STUDY

The achievement in science is very much dependent upon scientific background and attitude towards science.

According to NPE science should be visualized as a vehicle to train a student in thinking, reasoning, analyzing and articulating logically. One of the several universally recognized aims of teaching science is helping the students in developing scientific attitude to meet the demands of daily life, new scientific knowledge and work in related field of knowledge has special significance. It is reality that science is felt to be difficult to absorb. Many students find science very difficult and uninteresting and perform poorly in it. The study will be useful in locating the objectives of curricula of teaching of science. This may help of setting some issues and misbelieve. There is great effect of non school factors like gender, locality and socio – economic status on the attitude of students towards science. The present attempt is in this direction only is to see the effect of some non school factors on the attitude of students towards science.

OBJECTIVES

1. To study the effect of gender on attitude of students towards science.
2. To study the effect of locality on the attitude of students towards science.
3. To study the effect of socio-economic status on the attitude of students towards science.

HYPOTHESES

1. Gender of students has significant effect on the attitude towards science.
2. Locality of students has significant effect on the attitude towards science.
3. Socio-economic status of students has significant effect on the attitude towards science.

DESIGN

Survey method was used in order to collect the necessary data for present study. As far as the present study was concerned, it was an opinion survey of students to know about their attitude towards science.

SAMPLE

The sample for present study was selected from secondary school students of urban and rural areas of Fazilka and Abohar. The random sampling technique was used for the selection of the sample. Two schools from rural areas and two from urban area

were randomly selected for collection of data. A sample of 100 students was taken for the study. Out of 100 students 50 boys (25 from urban area and 25 from rural area) and 50 girls (25 from urban area and 25 from rural area) were taken for study.

TOOLS USED

- Personal data sheet printed with socio-economic status scale.
- Socio-economic status scale prepared by Dr. Ramesh Sandhu.
- Science attitude scale prepared by Dr. (Mrs.) Avinash Grewal.

STATISTICAL TECHNIQUES USED.

The following statistical techniques were used to analyze and interpret the data.

- Computation of arithmetic mean.
- Analysis of variance (ANOVA) to see the significant differences.
- t-test.

RESULTS AND DISCUSSION

Hypothesis:-1

Significant difference between the attitude of Boys and Girls or Male and Females

Table

Sr. No	Groups	No. of Students	Means	SD	SED	t-ratio	Level of Significance
1	Boys	50	50.86	6.82	1.364	.191	Not Significant at both. 01 and. 05 level
2.	Girls	50	50.6				

The calculated value of t-ratio for main effect of gender is. 191 which is less than the table value 2.63 against 1/98 d. f. at. 01 level and 1.98 against 1/98 d. f. at. 0.5 level. It shows that gender (a single main variable) does not differ significantly on attitude towards science. Thus, the hypothesis of significant difference b/w the attitude of boys and girls cannot be accepted.

HYPOTHESIS:-2

Significant difference between attitude of urban and rural students.

Table

Sr. No	Groups	No. of Students	Means	SD	SED	t-ratio	Level of Significance
1	Urban	50	51.26				Significant at both. 01 and. 05 level
2.	Rural	50	50.4	1.98	.396	3.17	

The calculated value of t-ratio for main effect of locality is 3.17 which is more than the table value 2.63 against 1/98 d. f. at .01 level and 1.98 against 1/98 d. f. at .05 level. It shows that locality as (a single main variable) show significant difference on the attitude towards science. Thus the hypothesis of significant difference between the attitude of urban and rural students towards science is accepted.

HYPOTHESIS 3

Significant difference between attitude of high, middle and low SES Students.

Source of variation	Df	S. S.	MSV	F. ratio	Level of Significance
SS Among group	2	128.47	64.24	1.41	Not Significant At. .01 and. 05 level
SS within groups	97	4429.24	45.66		

The calculated value of F ratio for main effect of variable socio-economic status is 1.41 which is less than table value 3.94 against 1/97 d. f. at .05 level and 6.90 against 1/97 d. f. at .01 level. It shows that socio-economic status as a single main variable does not differ significantly towards science. Hence, we can say that difference in socio-economic status has no impact on the student's attitude towards science. Thus, the hypothesis of significant difference in attitude scores of different S. E. S cannot be accepted.

CONCLUSIONS

1. There is no significant difference between the attitude of boys and girls. In other words, gender does not effect the attitude of student towards science.
2. There is significant difference between the attitude of urban and rural students. Urban students have more favourable attitude towards science in comparison to rural students.
3. There is no significant difference between the mean attitude scores of different socio-economic status (high socio-economic status, middle socio-economic status and low socio-economic status). Thus socio-economic status does not affect the attitude of students towards science.

EDUCATION IMPLICATIONS

The teacher, parents and educationists should help the students to develop a favourable attitude towards the key subject like science. The favourable attitude towards science is helpful in these contexts.

1. The science is important from practical point of view. A person may belong to high or low class of the society but he utilizes the knowledge of science in one or another form.
2. By developing a positive attitude towards science, a students can meet the challenges of technological developments.
3. By developing a positive attitude, the students can distinguish between right and wrong as these get developed through science.
4. By developing a favourable attitude the qualities like truthfulness, honesty, purity of thought, cleanliness, justice and self control gets developed in the students.
5. Science is helpful in developing all our intellectual powers like power of imagination, memorization, observation, invention, concentration, creativity, logical thinking and systematized reasoning.

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