RESEARCH STUDY: ATTITUDE TOWARDS SCIENCE AND TECHNOLOGY AMONG STUDENTS

[1]Sangeeta Gupta, [2]Sweta Srivastav,
[1, 2]Assistant Professor
[1] Department of Mathematics,
[1]Sharda University, Greater Noida, India

Abstract:

This study assessed student's attitudes towards science and technology of school students. The population includes the research of around 200 students randomly picked from a government schools. Students belong to class IX and X. Students were provided with several set of questions. These questions were used to assess their attitude toward learning science. The data collected was subjected to statistical analysis; namely, mean, standard deviation, correlation coefficient etc. This study aim at investigating student's attitude towards science and technology. The results of this research provide important information about students' attitude towards science and could be used by science teachers and educators to development of science curricula and science books.

Keywords: Science and Technology, Attitude, Science Education, Among student gender.

Introduction

Science education is a perennial challenging issue. It is an inclusive subject matter. It is a subject matter; it is also the name of pedagogy as well as an attitude. Science education is about the gradual development of dynamic scientific temperament among common people. It gives the idea of construction and reconstruction of everything in the light of new experiments. Thus, it empowers human beings to overcomes the challenges and move forwards uninterruptedly finally leading to domination over any kind of obstacle and challenge. The successful development of scientific temperament through science education ultimately instils the idea of being makers of own destiny in common human beings.

Science education in India has always been an important issue and challenge in education. Sound scientific education is considered as the backbone of developments including the development of scientific study at the higher education level itself.

One of the fields to achieving the desired curriculum is attitudes of students towards science and technology. Knowing and awareness of these areas would enable science curriculum planners to develop better and appropriate curricula. Indeed, concerning element of learner in curriculum development is based on the theoretical background that considers learner, knowledge and society as science education (Eisner, 1984). Learner is one of the elements that it believes have most important position in structure of curriculum. Science is in the curriculum because it *is* relevant and, it should be added, relevant to *people*. Relevance is the very reason for its existence, and it should be the very backbone of science teaching (Newton 1988: 7).Research on students' interest in science and technology increased from the 1960s (Osborne and others, 2003). Studies aimed at increasing the education of hearing the "student voice" in education. Such as study Flutter and Rudduck (2004), ESRC (2004), and Fielding (2004). Identifying and responding to the student voice may be seen as a means of reducing the alienation that some students feel from their schooling and thus of helping to overcome the associated problems. From this perspective, accommodating the student voice becomes a means of transforming schooling (Fletcher 2003) and of making the curriculum more relevant to students' needs and interests. The investigation of students' attitudes towards studying science has been a substantive feature of the work of the science education research community for the past 40 years. (Osborne et al, 2003). Students' increasing reluctance to choose science courses, and physical science courses in particular, in their final years of secondary education has important implications not only for the continuity of scientific endeavor but also for the scientific literacy of future generations. As a result, development of positive attitudes towards science, scientists, and learning science, which has always been a constituent of science education, is increasingly a subject of concern (Trumper, 2006).

Students' learning interests and attitudes toward science have both been studied for decades. However, the connection between them with students' life experiences about science and technology has not been addressed much (Chang et al, 2009). Many researches like as TIMSS (Trends in Mathematics and Science study) and PISA[5] conducted to assess the students' abilities in science.

In this paper we investigate correlation between the student's interest in learning science and science knowledge.

I. Background of research

Lavonen et al. (2008) studied the interests and experiences of students in physics and chemistry. Their research showed diversity of science and technology experiences among students. Manninen et al. (2005) examined conceptions of students about technology and environmental issues and school science. Their results showed that girls showed more concern towards environmental issues. Their results also showed that both boys and girls believed in science and technology capacities and capabilities. Ogava and Shimode (2008), in their study on Japanese students with average of 15 years old, examined their views about the various components of ROSE project. Results showed that there was not meaningful difference between girls and boys in attitude toward science. They considered school science important and easy to learn but were opposite to increasing the science content in science curriculum.

Chang et al. (2009) in their study on Taiwanese students examined their attitudes about science and technology, learning interests and life experiences. The results indicated that boys showed higher learning interests in sustainability issues and scientific topics than girls. However, girls recalled more life experiences about science and technology in life than boys.

There was a lower level of agreement that the benefits of science are greater than its possible harmful effects, although a majority of both boys and girls hold this view. Only a minority of boys and girls agreed that science and technology will help to eradicate poverty and famine in the world. Students' positive views about science, technology and society are not reflected in their opinions about their school science education. While this is regarded as 'relevant' and 'important' by most students.

Most students did not agree that school science is a difficult subject. Most boys and girls disagreed that school science has made them more critical and skeptical, opened their eyes to new and exciting jobs or increased their appreciation of nature.

II. NEED FOR STUDY:

One of the major causes for concern is the enduring 'swing away from science' in many countries. Since only those students, who take Science, or Science and Mathematics, are able to pursue further in scientific education and scientific careers, the decline in the number of science-based student as a proportion of all students eligible for higher education in the country has raised concerns about the nation's economic future. At the core of such concerns is recognition that the nation standards of 'achievement and competitiveness, is based on a highly educated, well-trained and adaptable work force', and that the low uptake of mathematics and science and the negative attitude towards these subjects poses a serious threat to economic prosperity.

III. Research Questions:

The research investigated attitudes of students in science education and technology. Examining students' attitudes toward science education and technology can play important role in preparing information for curriculum planners to identify demands and needs of students in science education.

The research questions include:

1- What is the attitude of students towards science and technology?

2- Is there any meaningful correlation between their interest in science education and knowledge about science and technology?

IV. INSTRUMENT:

A "Personal Information Form" and "Attitude Scale for Science and Technology" the correlation coefficient of which is 0.89 was administered to the participants.

In the first stage of the study, a scale "Attitude Scale for Science and Technology" consisted of 4 items and the each item was answered in 4-category.

Strongly Agree   : 4 points.
Agree   : 3 points
Disagree   : 2 points.
Strongly Disagree : 1 point.

In the second stage students were provided with general science questions.
It consists of general M.C.Q. questions and each question was answered in 4 –category.

Correct   : 1 point
Incorrect   : 0 point

The result of constructed with statistic tools.

V. Research Methodology

This study seeks to examine attitudes towards science and technology among high school students. For this purpose, a descriptive - survey was used. The participants of the study were around 200 grades of ninth and tenth students from different government schools. Students were provided with different set of questions related to science. They were provided with some M.C.Qs which was further analyzed using statistical tools. The sample was approximately 43% female (n =86) and 57% male (n=114).We made use of statistic tools to come across the result.

VI. RESULTS AND DISCUSSION

Table 6.1

Strongly Agree		*Agree*		*Disagree*		*Strongly Disagree*	
Mean	72.4	Mean	89.8	Mean	26.2	Mean	11.6
Standard Error	9.6231203	Standard Error	3.352611	Standard Error	7.9523581	Standard Error	4.1182521
Median	79	Median	89	Median	16	Median	8
Mode	96	Mode	86	Mode	8	Mode	8
Standard Deviation	30.430978	Standard Deviation	10.60189	Standard Deviation	25.147564	Standard Deviation	13.023056
Sample Variance	926.04444	Sample Variance	112.4	Sample Variance	632.4	Sample Variance	169.6
Kurtosis	0.4667444	Kurtosis	-0.69365	Kurtosis	0.7563968	Kurtosis	6.5120351
Skewness	-1.0768794	Skewness	-0.29942	Skewness	1.4722377	Skewness	2.4021257
Range	96	Range	32	Range	68	Range	46
Minimum	12	Minimum	72	Minimum	6	Minimum	0
Maximum	108	Maximum	104	Maximum	74	Maximum	46
Sum	724	Sum	898	Sum	262	Sum	116

Table 6.2

	Agree	*Correct*
Agree	1	
Correct	-0.607404787	1
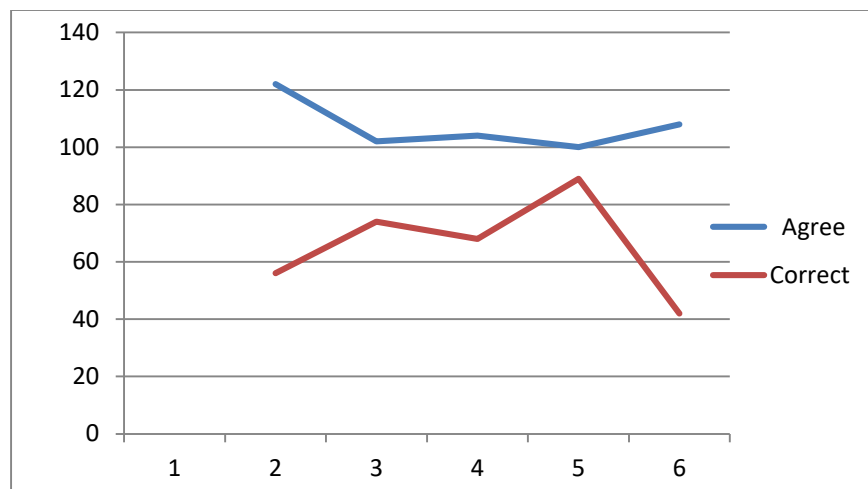
Graph 1

VII. CONCLUSION:

The results of this study showed that students show positive attitude towards science and technology. According to our survey, students strongly agree on the statement that 'Science is helpful in understanding today's world' and they strongly disagree on the statement 'I would like a job that does not use any science'. So, from this survey, it shows that the students are interested in learning science but they lack science knowledge.

VIII. SUGGESTION:

An essential element for turning students on to science is to show them how it's used in their daily lives. **Science** is behind the creation of their cell phones, tablets, and videogames—let your classroom explore and understand how this subject matter touches more in their day-to-day activities than they think. Our believes that in order for students to stay interested in science long term, they must be involved with the subject by fourth grade. We can nurture this attraction to science by making it fun and interesting—hands-on experiments and programs like **T.V.** Combines interactive media with textbook knowledge for the students. The public image of science is rather negative. Part of the problem is due to the image of nearby scientists in old films and textbooks. In order to changes society's view, teachers can portray what science has done thus far, by relating the subject back to something that interests them. For older students, try discussing popular TV shows such as "CID" that incorporate forensics. For younger minds, you can conduct fun experiments or use hands-on apps.

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