Science Appreciation of High School Students

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Abstract

The main objective of this study was to find out the science appreciation of high school students. An attempt was also made to study the influence of background variables like gender, locality and type of school management on science appreciation of high school students. The study revealed that majority of high school students have medium level of science appreciation. It was also found that there exists significant difference in the science appreciation of high school students with respect to gender and locality. But there is no significant difference between government, aided and self-financing school students in their science appreciation.

Keywords: Science Appreciation, High School Students.

INTRODUCTION

We live in a world of Science and Technology. Science has revolutionised our lifestyle and also brought about tremendous changes in our way of thinking, attitudes, outlook etc. Science has brought about changes in important aspects such as health, communication transportation etc. Science is defined as a process or method adopted in the search for truth (Mangal, 2005) It is an endless process of observation, exploration and acquisition through empirical and conceptual means. Science with the development of accurate technical appliances and invention of improved techniques has become more numerical, quantitative and objective with time (Das, 1990). The effect of science on human life have become so great, hence those who have no understanding of science cannot be considered educated. Because of the rapid advancement of science and technology, Science education is given an importance

place in the school curriculum. Science education is believed to serve as the foundation of technological development and a key factor in economic growth.

NEED AND SIGNIFICANCE OF THE STUDY

Development of appreciation of science is one of the objectives of teaching science. "Appreciation of science" is defined as recognising the value or excellence of science and therefore choosing the scientific explanation between the clashing worldviews in question (Mugaloglu, 2014). Oxford English dictionary (2010) defines Science Appreciation as recognizing the value or excellence of science. Science appreciation has been operationally defined as the level to which one recognizes the importance of science and the level to which one values and respects scientific research and those who hold authoritative positions in the fields of science (Hcllmuth, 2014).

Science education must provide the means and opportunities to enhance the students' creative expression and capacity for science appreciation. Providing science education to learners with learning experiences in relevant situations beyond the four walls of the classroom can give them idea of the context of the concept being transacted along with a sense of environmental and scientific appreciation. This promotes learners creativity, participation, appreciation and interest in science classroom, which help them to shift away from the rote memorisation and have a feel and appreciation of science. Experiences of the learners can be used in the teaching-learning of science to provide them first-hand experience and to develop a sense of appreciation of science.

When students engage in the practices of science, they develop a better appreciation for how scientific knowledge is produced. Students enjoy working together with their peers with some freedom of action. Encouraging them to observe, investigate and think critically on a laboratory activity can facilitate them to construct some abstract concepts and principles of science, to awaken curiosity about the world around them and to gain a feel and appreciation of science. The present study has been undertaken to find out the level of science appreciation among high school students.

OBJECTIVES OF THE STUDY

1. To study the level of science appreciation of high school students.
2. To find out whether there is any significant difference in the mean scores of science appreciation of high school students with respect to the background variables gender, locality and type of management of the school.

HYPOTHESES

1. There will be significant difference in the mean scores of science appreciation of male and female high school students.

2. There will be significant difference in the mean scores of science appreciation of rural and urban high school students.

3. There will be significant difference in the mean scores of science appreciation of high school students studying in government, aided and self-financing schools.

METHODOLOGY

The normative survey method was adopted for conducting the present study. The sample consisted of 200 high school students studying in different schools of Kanyakumari district. The tool used for the collection of data was science appreciation scale (2017) constructed and validated by the investigators. The collected data were analysed by using the statistical techniques such as percentage, arithmetic mean, standard deviation and t-test.

RESULT AND DISCUSSION

Table-1: Percentage wise distribution of sample according to different levels of Science appreciation.

Science Appreciation	Count	Percent
Low	25	12.50
Medium	146	73.00
High	29	14.50
Total	200	100.00

From the above table it is seen that the percentage of samples according to low, medium and high level of science appreciation were 12.5%, 73% and 14.5% respectively. This indicates that the majority of high school students have medium level of science appreciation.

Table-2: Comparison of science appreciation based on gender

Gender	Mean	SD	N	t	P	Level of significance
Male	122.84	21.05	91	2.223	0.027	Significant at 0.05 level
Female	116.75	16.95	109			

From Table-2 it is seen that the obtained t-value (t=2.223) is significant at 0.05 level. This result indicates that there is significant difference between the male and female high school students in their science appreciation.

Table-3: Comparison of science appreciation based on locality

Locality	Mean	SD	N	t	P	Level of significance
Rural	116.1	18.74	108	2.783	0.006	Significant at 0.01 level
Urban	123.53	18.88	92			

From Table-3 it is seen that the obtained t-value (t=2.783) is significant at 0.01 level. This result indicates that there is significant difference between the rural and urban students in their science appreciation.

Table-4: Comparison of science appreciation based on type of management of school

Type of management	Mean	SD	Source	Sum of squares	df	Mean square	F	P	Level of significance
Government	119.33	21.21	Between GP	81.31	2	40.66	0.110	0.896	Not significant at any level
Aided	119.99	19.61	Within GP	72646.61	197	368.76			
Self-financing	118.19	12.49	Total	72727.92	199				

From Table-4 it is seen that the obtained F-value (F=0.110) is not significant at any level. This result indicates that, there is no significant difference in the mean scores of science appreciation of high school students studying in government, aided and self-financing schools. So it can be concluded that the type of school management has no influence on science appreciation of high school students.

FINDINGS

1. Majority of the high school students have medium level of science appreciation.
2. There exists significant difference between the male and female high school students in their science appreciation.
3. There exists significant difference between the rural and urban high school students in their science appreciation.
4. There exists no significant difference between the high school students studying in government, aided and self-financing schools in their science appreciation.

CONCLUSION

The study revealed that, the majority of high school students have medium level of science appreciation. It was also found that locality and gender have influence on science appreciation of high school students but, type of school management has no influence on science appreciation of high school students. Since the high school students have only medium level of science appreciation, the teachers should take necessary steps to develop science appreciation among students. Teacher should make the students conscious of the contribution of science for the welfare of mankind. The adventures of scientists in exploring truth should be explained by the teacher, so as to enable the students to appreciate the contribution of scientists. For achieving the aims of teaching science, Science appreciation must be developed among the students.

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