



Attitude Towards Science of Secondary School Students in Puducherry Region

KEYWORDS

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ABSTRACT *This paper is undertaken with a view to find out whether differences exist in the science attitude of secondary school students with respect to gender, locality, religion, father educational qualification, father's annual income. The study carried out on a sample of secondary government school students in Pondicherry region. The findings reveal that(i) there is no significant difference between male and female secondary school students in their science attitude.(ii) there is no significant difference between rural and urban secondary school students in their science attitude.(iii) there is no significant difference between fathers educational qualification in their science attitude.(iv) there is no significant difference between fathers income in their science attitude.(v) there is no significant difference between Religions in their science attitude. This study reflects on the relevance of learning by doing method with theoretical learning from the secondary school stage.*

Science:

Science is the activity where truthfulness is obviously an essential condition for success. Its success in fact is measured by its truthfulness.

Science is a cumulative and endless series of empirical observations which result in the formation of concepts and theories being subject to modification in the light of further empirical observations. Science is both a body of knowledge and the process of acquiring it.

According to Henri Poincare explains the idea that way: "Science is built of facts as a house is built of stones; but an accumulation of facts is no more a science than a heap of stones."

Science Attitude: Operational Definition:

Definition of science attitude as a opinion or position taken with respect to a psychological object in the field of science(Richard W.Moore,1970).The science attitude has ,therefore, been operationally defined as a generalized attitude toward the universe of science content and being measured in terms of its favourableness or unfavourableness estimated from the scores obtained by the subjects on an attitude scale toward science comprising of the four categories from the universe of content 'Science Attitude'(i)positive intellectual;(ii)negative intellectual,(iii)positive emotional and(iv)negative emotional attitudes.

Development of Scientific attitude:

This is the second value monopolized by science which is transferable. The attitude of a scientist involve critical observation, open- mindedness, suspended judgement, free from superstition and false belief. The attitude once developed in the student proves useful in later life of the child.

Need for the study:

Thurstone (1948) has defined attitude as the degree of positive or negative effect associated with some psychological object. A psychological object according to him ,may be a person, an institution, a region, a community,

an ideal, a subject, a system, a political party or a minority community.

The purpose of this scale would be to know whether or not the students have developed favorable attitudes towards science as a discipline. The underlying assumption being that one of the outcomes of science education is the development of positive attitude towards the subject.

Many people believe that attitude has all the efforts and actions to be about something. Attitude is one of the most important factors in determining success. It affects human relations and our acceptance of a new experience. If the attitude towards a task is positive, the individual is certainly happy to do it. However, if the environment is opposite, we will try to avoid and not do the job in earnest. It is proved that the attitude is influenced by emotional intelligence. Even a cursory examination of the domain reveals that one of the most prominent aspects of the literature is that 30 years of research into this topic has been bedeviled by a lack of clarity about the concept under investigation. An early notable contribution towards its elaboration was made by **Klopfner (1971)**, who categorized a set of affective behaviours in science education as:

- ❖ the manifestation of favourable attitudes towards science and scientists;
- ❖ the acceptance of scientific enquiry as a way of thought;
- ❖ the adoption of 'scientific attitudes';
- ❖ the enjoyment of science learning experiences;
- ❖ the development of interests in science and science-related activities; and
- ❖ the development of an interest in pursuing a career in science or science related work.

Scoring:

Each of the 10 positive items(2,4,6,8,10,12,14,16,18,20)of the scale are assigned a weight ranging from '4'(strongly agree) to'0'(strongly disagree).In the case of 10 negative items(s.no.1,3,5,7,9,11,13,15,17,19) the scale scoring is reversed ranging from 0(strongly agree)to 4(strongly disagree).The attitude score of a subject is the sum total of

scores on all the twenty items of the scale.

Time for administration:

The science attitude scale is a self reporting inventory consisting of 20 items designed to assess the attitude of individuals towards science.

Objectives:

1. To find out whether there is any significant difference between male and female secondary students in their science attitude.
2. To find out whether there is any significant difference between rural and urban secondary students in their science attitude .
3. To find out whether there is any significant difference between fathers educational level of secondary students in their science attitude.
4. To find out whether there is any significant difference between fathers income level of secondary students in their science attitude.
5. To find out whether there is any significant difference among fathers educational level of secondary students in their science attitude.
6. To find out whether there is any significant difference among religions of secondary students in their science attitude.

Method used in the present study:

The method adopted in the present study is the survey method.

Sample:

The sample consists of 145 Government secondary school students from Puducherry region.

Tools Used:

Science attitude scale developed by Mrs. Avinash Grewal (1977).

Statistical techniques used:

Arithmetic Mean, Standard deviation, 't' test, ANOVA.

Data analysis:

Table-1

Science attitude scores of secondary school students of their Gender, Locality, Father's educational qualification and Father's income.

Science Attitude	N	Mean	Std. Deviation	Std. Error Mean	't' -value
Gender	145	1.5034	.50172	.04167	Not significant
Locality	145	1.5105	.50165	.04195	Not significant
Father's Educational qualification	145	2.0897	.72569	.06027	Not significant
Father's Income	145	1.5586	.49827	.04138	Not significant
Score	145	52.8966	10.99604	.91317	Not significant

(At 5% level of significance the table value of 't' is 1.96)

It is inferred from the above table that there is no significant difference between Gender, Locality, Father's Educational qualification, Father's income of government secondary school students. The null hypothesis is accepted.

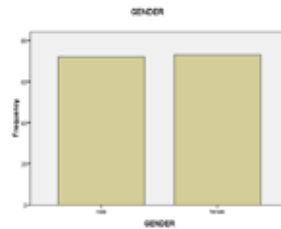
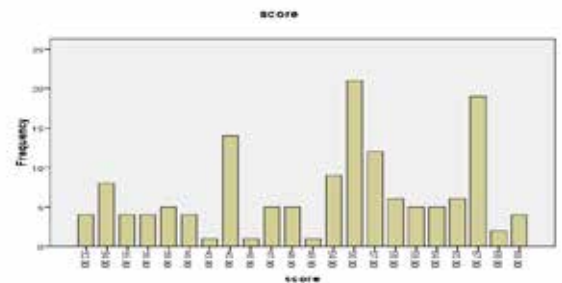
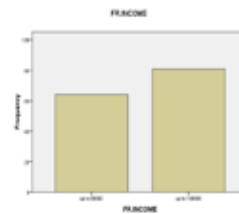


Table-2



Difference among Father Education and Religion of secondary school students.

Science Attitude		Sum of Squares	df	Mean Square	'F'	Significance
Father's educational qualification	Between Groups	7.666	21	.365	.659	.865
	Within Groups	68.168	123	.554		
	Total	75.834	144			
Religion	Between Groups	7.344	21	.350	.556	.940
	Within Groups	77.318	123	.629		
	Total	84.662	144			

(At 5%level of significance)

It is inferred from the above table that there is no significant difference between Father Education and Religion of secondary school students.

Findings and Conclusion:

't' test result reveals that there is no significant difference between male and female secondary school students in

their science attitude. This may be due to the fact that nowadays the parents are not showing any kind of partiality towards their children. Parents are providing all the facilities without any difference of their gender.

't' test result reveals that there is no significant difference between rural and urban secondary school students in their science attitude. This may be due to the fact that Equalisation of educational opportunity has been provided to all the students and equal syllabus is recommended that is 'Samacheer kalvi' is provided to all the students irrespective of rural and urban candidates.

't' test result reveals that there is no significant difference between fathers educational qualification in their science attitude. This may be due to the fact that well educated fathers are spend their whole energy throughout the day in their working environment. Because of their stress and strife they want to take rest after their working hours. So there is no difference in students science attitude of well educated and uneducated fathers.

't' test result reveals that there is no significant difference between fathers income in their science attitude. This may be due to the fact that , mass media highly influencing the students nowadays. Though learning by doing method of learning is effective, through the visual learning by television /computer itself students are getting aware of new inventions and discoveries. In this adolescent stage, the purpose of grasping love and affection from the friends ,peer groups discuss everything what they know especially the new discoveries. So, incomes of the fathers were not showing big difference in their science attitude.

'F' test result reveals that there is no significant difference between Religions in their science attitude. This may be due to the fact that students and their peer groups are not seeing any kind of discrimination during their friendship selection. This is the age for them to learn new things and curious to know about environmental issues.

Inculcation of scientific temperament:

1. Stoke scientific temperament at home. For all the outside influences and mentor-led culture prevalent in colleges and universities, school-going children and preteens often look to their parents or older siblings for guidance and influence in life. Invest in some reasonably priced encyclopedias on science and technology, how-to books for children, and illustrated books and magazines on nature and wildlife in order for them to understand the whys and how's of the science-dominated world. Also avail of the many "Popular Science" series books brought out by many publishers.

2. Encourage visits to libraries and borrowings of science books and DVDs. Despite the availability of resources on the Internet, physical public libraries provide a valuable resource in science education. Make it a point to include a book or two on science or nature along with the other books borrowed from the library. Many instructional and historical DVD series on great scientists, discoverers, naturalists and inventors are also available in libraries.

3. Visit museums and science institutions. While the best science and technology museums are concentrated in a few large cities in the United States, many states do have specialized science museums or collections in public galleries that showcase pioneering locals in the sciences and touring exhibitions borrowed from larger museums, private collections of philanthropists, specialized libraries and institutions.

4. Encourage and reward good grades in science. Very good grades in science and mathematics subjects in elementary school are possible early indicators of potential in preteens. As parents, reward such performances in the form of gifts or inducements and subtle encouragement to keep up the good grades. However, even if children or preteens do show an early interest and a scientific temperament, it is best not to pressure them too much with expectations and results. An encouraging and benevolent approach goes a long way in sustaining interest in science right up to high school and college.

5. Keep track of scholarships, grants and other financial aid in science. A number of scholarships, fellowships, grants and other financial aid are given by national non-profit organizations, government and quasi-government foundations and other philanthropy-based organizations to students and children showing aptitude in science. Many of these scholarships and financial grants continue right up to college.

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