

A STUDY ON INTEREST OF HIGHER SECONDARY STUDENTS IN PHYSICS AND SCIENTIFIC ATTITUDE

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Introduction

The role of science is of utmost importance in raising the level of country from developing to advanced. All doors of economic growth and development pass through the gateway of Physics and scientific advancement. Pt. Jawaharlal Nehru was a firm believer of the crucial importance of science and technology for social transformation. He helped in laying a firm foundation of science education in our county. Science teaches children the necessary skills which they can use in other areas of their lives. Systematic exposure of science to children at early levels of education help in developing lifelong interest for the subject in them. The general observation reveals that not all students perform well in science subject during examination.

Objectives of the Study

The main objectives of the present study are

1. To find the physics and scientific attitude among higher secondary students in
2. To find out if there is any significant difference between male and female Higher secondary students in their mean score of physics and Scientific Attitude
3. To find out if there is any significant association between Medium of Instruction of physics and scientific attitude of Higher secondary students
4. To find out if there is any significant association between Type of school management about physics and Scientific attitude of Higher secondary students
5. To find out if there is any significant association between Location of school physics and Scientific attitude of Higher secondary students
6. To find out if there is any significant association between Parents' Education physics and Scientific attitude of Higher secondary students
7. To find out if there is any significant association between physics and Scientific attitude and participation in Science club activities

Hypotheses of the Study

The following are the Hypotheses of the study

1. The physics and Scientific attitude among Higher secondary students is Positive
2. There is no significant difference between male and female Higher secondary students in their mean score of physics and Scientific Attitude

3. There is no significant association between Medium of Instruction physics and Scientific attitude of Higher secondary students
4. There is no significant association between Type of school management physics and Scientific attitude of Higher secondary students
5. There is no significant association between Location of school physics and Scientific attitude of Higher secondary students
6. There is no significant association between Parents' Education and physics and Scientific attitude of Higher secondary students
7. There is no significant association between Scientific attitude of Higher secondary students and participation in Science club activities

Method Used for the Study

Effective use of the survey method depends on the following points:

- Availability and utilization of adequate source of information
- Definitive objectives
- A clearly defined problem
- An expert's imaginative planning
- Careful analysis and interpretation of data
- Logical and skillful reporting of the findings

Tools Used for the Present Study

The tools are used for the present study to collect data which are given in the below. The tools are meant for the higher secondary students.

- Personal data form
- Science Attitude Scale (SAS) prepared and standardized by Dr.Avinash Grewal (2012)

Description of the Tools

- Personal Data Form
- Physics and science attitude scale

Scoring Procedure of the SAS

The total of score on the scale gives the physics and Scientific Attitude of the Student. The minimum and maximum range of possible Score is 0 -80

Type of Statement	Strongly agree	agree	Undecided	Disagree	Strongly disagree
positive	4	3	2	1	0
negative	1	2	3	4	5

The higher score indicates more positive attitude of students towards Science.

Hypotheses Testing

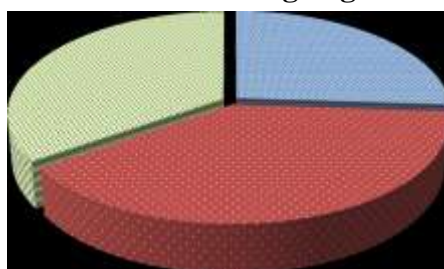
Hypothesis 1

The Physics and Scientific attitude among Higher secondary students is Positive

Table 4.1 Physics and Scientific Attitude among Higher Secondary Students

Negative Attitude		Neutral Attitude		Positive attitude	
N	%	N	%	N	%
78	26	118	39.3	104	34.7

Physics and Scientific Attitude Among Higher Secondary Students



Null Hypothesis 1

There is no significant difference between male and female higher secondary students in their mean score of physics and Scientific Attitude

Table 4.2 Difference among Higher Secondary Students in their Mean Score of Physics and Scientific Attitude in Terms of Gender

Gender	N	Mean	SD	Calculated T Value	Table value	Remark @5% Level
Male	135	52.12	16.464	1.025	1.96	NS*
Female	165	50.16	16.498			

Null Hypothesis 2

There is no significant association between Medium of Instruction and physics and Scientific attitude of higher secondary students

Table 4.3 Association Between Medium of Instruction of Physics and Scientific Attitude of Higher Secondary Students

Variable		Physics and Scientific Attitude			Total	Chisquare	Remarks for df=2
		Negative	Neutral	Positive			
Medium	Tamil	Count	59	72	69	4.527	NS*
		Expected Count	52.0	78.7	69.3		
	English	Count	19	46	35		
		Expected Count	26.0	39.3	34.7		
Total		Count	78	118	104		
		Expected Count	78.0	118.0	104.0		

Null Hypothesis 3

There is no significant association between Type of school management of physics and Scientific attitude of Higher secondary students

Table 4.4 Association Between Type of School Management of Physics and Scientific Attitude of Higher Secondary Students

Variable			Physics and Scientific Attitude			Total	χ^2	Remarks
			Negative	Neutral	Positive			
Type of School Mgmt	Corporation	Count	34	29	37	100	8.936	NS*
		Expected Count	26.0	39.3	34.7	100.0		
	Aided	Count	25	43	32	100		
		Expected Count	26.0	39.3	34.7	100.0		
	Private	Count	19	46	35	100		
		Expected Count	26.0	39.3	34.7	100.0		
Total		Count	78	118	104	300		
		Expected Count	78.0	118.0	104.0	300.0		

Null Hypothesis

There is no significant association between Location of school physics and Scientific attitude of Higher secondary students

Table 4.5 Association Between Location of School Physics and Scientific Attitude of Higher Secondary Students

Variable			Physics and Scientific Attitude			Total	χ^2	Remarks for df=2
			Negative	Neutral	Positive			
Location of school	Rural	Count	65	103	88	256	0.652	NS*
		Expected Count	66.6	100.7	88.7	256.0		
	Urban	Count	13	15	16	44		
		Expected Count	11.4	17.3	15.3	44.0		
Total		Count	78	118	104	300		
		Expected Count	78.0	118.0	104.0	300.0		

Null Hypothesis 5

There is no significant association between Parents' Education of physics and Scientific attitude of Higher secondary students

Table 4.6 Association Between Parents' Educational Level of Physics and Scientific Attitude of Higher Secondary Students

Variable			Physics and Scientific Attitude			Total	χ^2	Remarks
			Negative	Neutral	Positive			
Educational Level of Parents	Illiterate	Count	38	61	50	149	4.034	NS*
		Expected Count	38.7	58.6	51.7	149.0		
	School Level	Count	28	47	46	121		
		Expected Count	31.5	47.6	41.9	121.0		
	College Level	Count	12	10	8	30		
		Expected Count	7.8	11.8	10.4	30.0		
Total		Count	78	118	104	300		
		Expected Count	78.0	118.0	104.0	300.0		

Null Hypothesis 6

There is no significant association between physics and Scientific attitude of Higher secondary students and participation in Science club activities

Table 4.7 Association Between Participation in Science Club Activities of Physics and Scientific Attitude of Higher Secondary Students

Variable			Physics and Scientific Attitude			Total	χ^2	Remarks for df=2
			Negative	Neutral	Positive			
Participation in Science Club Activities	Yes	Count	0	2	24	26	33.656	S**
		Expected Count	6.2	9.6	10.2	26.0		
	No	Count	71	109	94	274		
		Expected Count	64.8	101.4	107.8	274.0		
Total		Count	71	111	118	300		
		Expected Count	71.0	111.0	118.0	300.0		

Major Findings of the Study

- Physics and Scientific attitude is Neutral among Higher secondary students
- 26% of the students are found to have Negative Attitude towards science while only 34.7% of the students have Positive Attitude.
- Male and female Higher secondary students do not differ in their meanscore of physics and Scientific attitude.
- Medium of Instruction is not associated with the physics and Scientific attitude of Higher secondary students.

- Irrespective of the type of school Management, the students are having their similar level of physics and Scientific attitude.
- Location of the school is not implying any influence on the physics and Scientific attitude of Higher secondary students.
- Parents' educational level makes no difference in their wards' Scientific attitude.
- Participation in science club activities in schools surely affects the physics and Scientific attitude of Higher secondary students.

Conclusion

It is evident from the reviewed studies that the positive and significant relationship between physics and scientific attitude and academic achievement has highlighted the need to understand the role of physics and scientific attitude in enhancing the achievement of students in science subject.

References

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