



## Scientific Aptitude and Achievement in Science of IX Standard Students in Puducherry Region

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### ABSTRACT

The study was undertaken with the objective of studying the Scientific Aptitude and the level of Achievement in Science of standard IX students in Pondicherry region. The present study was conducted on a sample of 128 boys and 192 girls from 7 schools in Pondicherry region. Scientific Aptitude Test constructed by Dr. Nagappa, P.Shahapur and Dr.C.R.Rao was administered. The mean, median, mode and standard deviation of scientific aptitude scores of IX standard students are found to be 38.64, 39.00, 39.00 and 7.60 respectively. The mean score indicates that the students' scientific aptitude is low. Also it is found that the coefficient of correlation, 'r' between Scientific Aptitude and the level of Achievement in Science is computed to be 0.498, which is significant at 0.05 level indicating a moderate positive relationship between Scientific Aptitude and the level of Achievement in Science.

### KEYWORDS

Scientific Aptitude, Achievement in Science, IX Standard Students, Pondicherry.

### INTRODUCTION

Science is no longer confined to a few seriously devoted persons. Since life in the present world invariably warrants, to variable degrees, knowledge of scientific facts and laws, science has now become every day science for everybody. In addition science inculcates certain special values such as intellectual, cultural, moral, aesthetic, utilitarian as well as vocational values peculiar to it, which no other subject can provide. Science learning provides training in scientific method and also helps to develop a scientific attitude of mind in the learner. The qualities imbibed by the learner through learning science are of great value to a citizen living in the Society.

Scientific methods must be applied with greater vigor and imagination to the behavioural aspects of our culture. The development of the behavioural sciences and their application to education and other human affairs present some of our greatest challenges.

### NEED AND SIGNIFICANCE OF THE STUDY

Science plays a major role in inculcating hope for continuous and progressive welfare. The strength of a modern economy depends on the strengths of its industry and industrial development. It depends upon technology and on the application of new scientific knowledge. At the same time, the nation's progress, welfare and prosperity also depend on a rapid, planned and sustained growth in the quality and extent of education and research in science and technology (Kothari Commission (1964-1966)).

Science in curriculum provides certain values which are not provided by any other subject. It affords knowledge of certain facts and laws and an insight into methods and data peculiar to the domain of science. Further any subject in the curriculum should satisfy the intellectual, utilitarian, vocational, cultural, moral and aesthetic values. Besides these, teaching of science imparts training in the 'scientific method' and develops Scientific Aptitude, which are very valuable and at the same time referable to other situations of life.

The Scientific Aptitude plays a major role in science education, and in the lives of pupils pursuing science education. Science has become a compulsory subject in school curriculum, and is trying to inculcate Scientific Aptitude besides preparing the pupils for leading quality life.

### OBJECTIVES OF THE STUDY

#### The objectives of the present study are

1. To study the level of Scientific Aptitude of standard IX students.
2. To study the level of Achievement in Science of standard IX students
3. To study the relationship between Scientific Aptitude and the level of Achievement in Science of standard IX students

### HYPOTHESES OF THE STUDY

1. The level of Scientific Aptitude of standard IX students is not high.
2. The level of Achievement in Science of standard IX students is not high.
3. There is no relationship between Scientific Aptitude and Achievement in Science.

### SAMPLE OF THE STUDY

In Puducherry region seven schools were selected for the present study. The sample consisted of 320 students of which 128 were boys and 192 were girls. On the basis of Residence, students residing in rural and urban areas were taken for the study. On the basis of School locality, students of Rural and Urban schools were taken. The parental qualification has an impact on the present study; they were grouped as below high school level, higher secondary level, graduate level, and professional level. Parental Occupation was grouped as Coolie, government and private. On the basis family income the students were grouped as those family income is below Rs.37,500 and those family income is above Rs.37,500 for the present study.

### TOOLS

#### The tools used in the study were

1. Scientific Aptitude Test (S A T) by Dr. Nagappa P.Shahapur and Dr.C.R.Rao
2. Achievement in Science.

### STATISTICAL TECHNIQUES USED

The data collected by the researcher from the sample were analysed statistically. In the present study the relevant data collected were the scores Scientific aptitude and Achievement in Science secured by 320 students of standard IX from Puducherry Region. These data were analysed employing the following statistical tools to arrive at meaningful conclusions. The

Statistical Techniques were

- Descriptive analysis
- Correlation analysis

**RESULTS AND DISCUSSION**

The Mean, Median Mode and Standard Deviation of the Scientific Aptitude test of standard IX students (N=320) are found to be 38.64, 39.00, 39.00 and 7.60 respectively.

**Table-1**

Variable	N	Mean	Median	Mode	S.D
Scientific Aptitude	320	38.64	39.00	39.00	7.60

The obtained range is 0 to 80. The calculated Mean (38.64) of Scientific aptitude is lesser than the scale average (40.00). Therefore the level of Scientific Aptitude of standard IX students is low. Hence, the null hypothesis is accepted. It is concluded that the level of Scientific Aptitude among standard IX Students is not high.

The Mean, Median, Mode and Standard Deviation of standard IX students' Achievement in Science are 38.09, 38.00, 30.00 and 11.68 respectively.

The level of Achievement in Science of standard IX students is shown in the table-2.

**Table-2**

Variable	N	Mean	Median	Mode	S.D
Achievement in Science	320	38.09	38.00	30.00	11.68

The calculated mean 38.09 of Achievement in science is lesser than the average 40.00. Therefore the level of Achievement in Science is not high. Hence, the null hypothesis is accepted. It is concluded that the level of Achievement in Science of standard IX students is low.

The relationship between Scientific Aptitude and Achievement in Science of standard IX students is shown in Table-3.

**Table-3**

Variables	N	Correlation Co-efficient	Sig. level (0.05)
Scientific Aptitude	320	0.498	Significant
Achievement in Science			

The relationship between Scientific Aptitude and Achievement in Science is found to be significant. The computed Correlation coefficient is 0.498 which is found to be significant moderate at 0.05 level.

Therefore, the null hypothesis is rejected. Rejecting the null hypothesis, it is concluded that there is a significant moderate relationship between Scientific Aptitude and Achievement in Science.

**MAJOR FINDINGS**

**Major findings of the study are as follows:**

The level of Scientific Aptitude is low of standard IX students in Puducherry Region as their Mean score 38.64 is below average.

The level of Achievement in Science of standard IX students in Puducherry Region is low as their Mean score 38.09 is below.

The correlation coefficient 'r' (0.498) between Scientific Aptitude and Achievement in Science is found to be significant. It shows that there is a significant moderate relationship between Scientific Aptitude and Achievement in Science.

**CONCLUSION**

1. It is concluded that the level of Scientific Aptitude is low.
2. The level of Achievement in Science is low.
3. There is a moderate positive relationship between scientific aptitude and Achievement in Science i.e., the variable scientific aptitude has an effect of achievement in Science. This shows that students with good scientific aptitude can score good marks in Science. This result is supported by P.N Nataraj and G. Manjula (2012) who conducted a study on Scientific Aptitude of high school students in relation to their Achievement in Science to study the Scientific Aptitude of high school students and their achievement in science. It was found that a significant correlation is found between achievement in science and scientific aptitude of high school students.

**RECOMMENDATIONS**

1. As Scientific Aptitude is a potentiality for future achievement in a scientific endeavour, it is necessary to develop Scientific Aptitude among the students.
2. The results of many researches prove that there is a positive relationship between Scientific Aptitude and Achievement in Science, students can be trained in scientific aptitude to get more achievements in their science subjects.

**SUGGESTIONS FOR FURTHER RESEARCH**

1. The study can be conducted for Tamil medium students also.
2. A study could be conducted to study the relationship of Scientific Aptitude with intellectual and psychological factors.

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