

A Study the Effect of Scientific Aptitude on Academic Achievement in Science Subject of Senior Secondary School Students

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ABSTRACT

This paper focused on to study the effect of scientific aptitude on Academic Achievement in Science Subject of Senior Secondary School Students. The main objective of research paper is to compare the scientific aptitude and Academic Achievement in male and female and correlation between the scientific aptitude and Academic Achievement in Science Subject of Senior Secondary School Students. Our sample size is 100 Senior Secondary School Students. The tool was used scientific aptitude scale made by S. Chatterjee and M. Mulerjee and use academic record (Science Subject) for Academic Achievement. The main finding of the study is girls are better than boys according their scientific aptitude and Academic Achievement in Science Subject and there is positive correlation between the scientific aptitude and Academic Achievement in Science Subject of Senior Secondary School Students. This means that the present study shows that the scientific aptitude is very important role in academic achievement in science subject and overall achievement. So that it is very necessary to develop scientific aptitude and attitude in students.

Keywords: scientific aptitude and Academic Achievement in Science Subject, Boys and Girls students etc

I INTRODUCTION

Education is as old as human race. It is an essential human virtue. Man has become 'man' through education. Education fashions and models him for society or transforms him into a social and cultural being. Education in real sense is to humanize humanity, to make life progressive, cultured and civilized. It is very important for the progress of individual and society. It is through education that man develops his thinking and reasoning, problem solving ability and creativity, skills, values, and intelligence etc. It is through education that man is transformed into human, social, moral and spiritual being. Man learns something every day and every moment. Education is a continuous and dynamic process. It is concerned with ever-growing man in ever growing society.

- (a) **Scientific Aptitude** - It is as difficult to measure scientific aptitude as to measure scientific aptitude as to define it. Because of its unlimited scope and boundaries it presents problems which are characteristics of all the human science and there have been very few attempts at the development of techniques for predicting success in science. Scientific aptitude, defined as potentiality for future accomplishment in science without regards to the past training and achievement in the field, appears to be dependent upon a variety of factors. These factors are not necessarily unique potential success in science but may be equally function in determining success in other areas.
- (b) **Academic Achievement in Science Subject**- Academic achievement is a component of the wider term-Educational Growth. it is the unique, prime and perennial responsibility of a school or any other educational institution to promote a wholesome scholastic growth and development of the child. Academic achievement is the point

and centre of educational growth and development. It is the most important goal of education.

II STATEMENT OF THE PROBLEM

The problem of present study is stated as "To study the effect of scientific aptitude on Academic Achievement in Science Subject of Senior Secondary School Students".

III OBJECTIVES OF THE STUDY

The objectives formulated for this study are:

- (a) To study the difference between mean of scientific aptitude scores in male and female Science Subject of Senior Secondary School Students.
- (b) To study the difference between mean of Academic Achievement scores in male and female Science Subject of Senior Secondary School Students.
- (c) To study the correlation between the scientific aptitude and Academic Achievement in Science Subject of Senior Secondary School Students.

IV RESEARCH METHODOLOGY

- (a) **Hypothesis of the Study**:-The following null hypothesis has been formulated in the context of present study's objective:
- (i) There will be no significant difference between mean of scientific aptitude scores in male and female Science Subject of Senior Secondary School Students.
 - (ii) There will be no significant difference between mean of Academic Achievement scores in male and female Science Subject of Senior Secondary School Students.

- (iii) There will be no significant correlation between the scientific aptitude and Academic Achievement in Science Subject of Senior Secondary School Students
- (b) **Methodology:** - In the light of objectives and to test hypothesis of the present study, the researcher adopted survey method for data collection.
- (c) **Delimitations of the study:-**
 - (i) This study focused only on the Science Subject of Senior Secondary School Students.
 - (ii) This study focused only on the selected school of Jalhander city.
- (d) **Sample Design:-**
 - (i) Sample size: 100
 - (ii) Sample frame: School students in Jalandhar city

- (e) **Research Tool:-** For the purpose of data collection the following tool was used.
 - (i) Scientific aptitude :- S. Chatterjee and M. Mulerjee
 - (ii) Academic Achievement in Science Subject :- **Academic record use for data**
- (f) **Statistical Tools:-** After collection of data mean, S.D. & 't' test and correlation was applied for statistical analysis.

V ANALYSIS AND INTERPRETATION

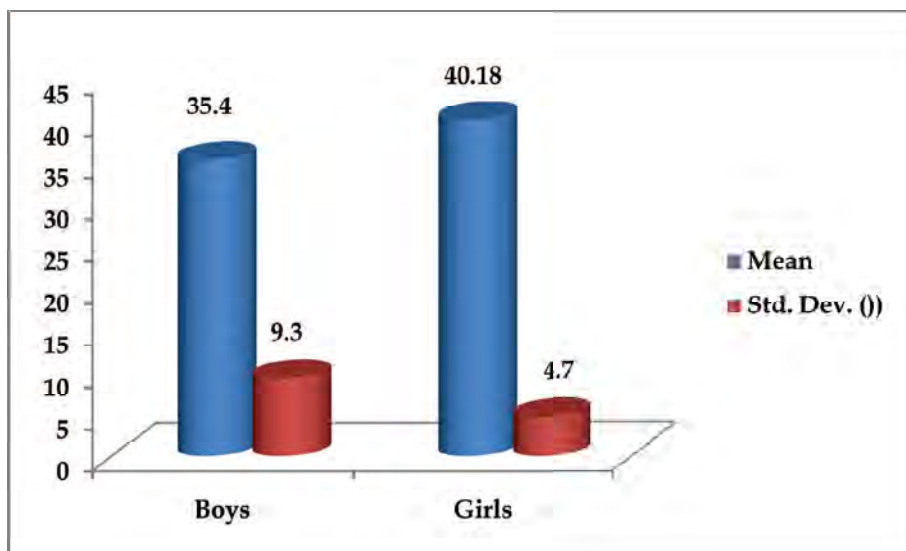
- (a) **Hypothesis: 1-** There will be no significant difference between mean of scientific aptitude scores in male and female Science Subject of Senior Secondary School Students.

Table 1

Group	No. of Cases	Mean	Std. Dev. ()	Std. Error	Calculate T Value	Significance (.05 Level)
Boys	50	35.4	9.3	1.473	3.24	Significant
Girls	50	40.18	4.7			

- (b) **Interpretation:** A table No. 1 shows that the mean score of scientific aptitude in boys student are 35.4 and girls student are 40.18. This shows that the scientific aptitude in girls have better scientific aptitude as compared to boys Science Subject of Senior Secondary School Students.

Table shows that the computed 't' value 3.24 is more than the critical value 1.98 at .05 level for df = 98. It means $3.24 > 1.98$. The results indicate that There is significant difference between mean of scientific aptitude scores in significant difference between mean of scientific aptitude scores in male and female Science Subject of Senior Secondary School Students. This implies that the Boys and girls differ in their scientific aptitude.



(c) **Hypothesis: 2** - There will be no significant difference between mean of Academic

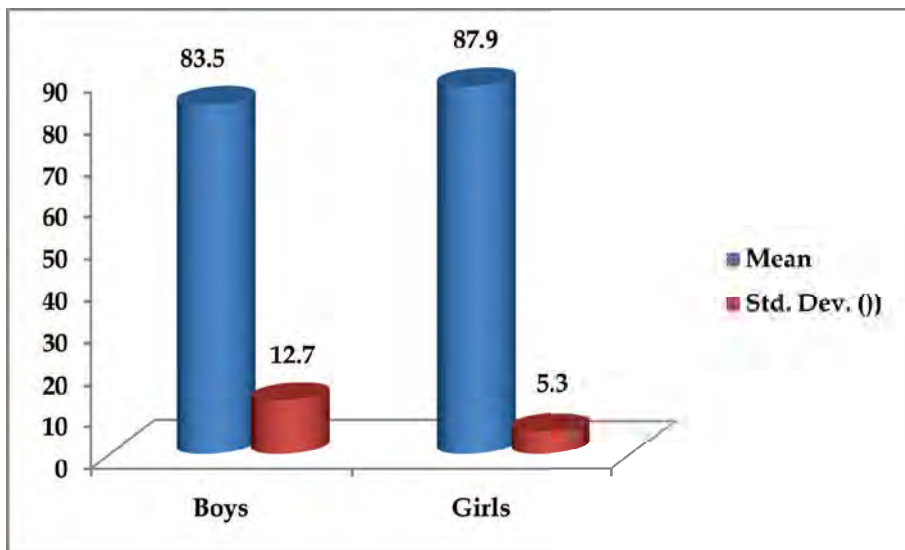
Achievement scores in male and female Science Subject of Senior Secondary School Students.

Table 2

Group	No. of Cases	Mean	Std. Dev. (s)	Std. Error	Calculate T Value	Significance (.05 Level)
Boys	50	83.5	12.7	2.071	3.57	Significant
Girls	50	87.9	5.3			

(d) **Interpretation** - A table No. 2 shows that the mean score of Academic Achievement in boys student are 83.5 and girls student are 87.9. This shows that the Academic Achievement in girls have better Academic Achievement as compared to boys Science Subject of Senior Secondary School Students.

Table shows that the computed 't' value 3.57 is more than the critical value 1.98 at .05 level for df = 98. It means 3.57 > 1.98. The results indicate that There is significant difference between mean of Academic Achievement scores in significant difference between mean of Academic Achievement scores in male and female Science Subject of Senior Secondary School Students. This implies that the Boys and girls differ in their Academic Achievement.

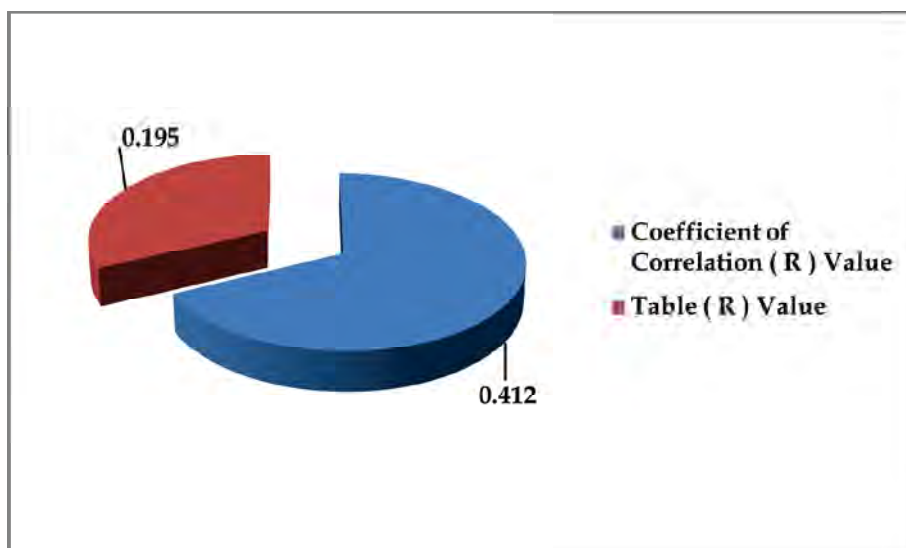


(e) **Hypothesis : 3-** There will be no significant correlation between the scientific aptitude and Academic Achievement in Science Subject of Senior Secondary School Students

Table 3

Variable	No. of Cases	Mean	Coefficient of Correlation (R) Value	Table (R) Value	Significance (.05 Level)
Scientific aptitude	100 Students	38.1	.412	.195	Significant Correlation
Academic Achievement		85.7			

(f) **Interpretation-** A table No. 3 shows that the obtained 'r' value of .412 is more than the table value of .195 for df= 98 at the .05 level. Hence it is concluded that there is significant correlation between the scientific aptitude and Academic Achievement in Science Subject of Senior Secondary School Students.



VI FINDINGS OF THE STUDY

The following major findings are reported.

- (a) Result shows that the girls have good scientific aptitude as compared to boys student
- (b) Result shows that the girls have better academic achievement as compared to boys student
- (c) Result shows that the positive correlation between scientific aptitude and Academic Achievement in science students.

VII CONCLUSION

The results show that the scientific aptitude is very important role in academic achievement in science subject and overall achievement. So that it is very necessary to develop scientific aptitude in students. Nowadays the world is undergoing changes every second. Science and technology is advancing at a fast rate. We cannot imagine our life without the comforts provided to us by science. It is the science which has made our life comfortable and modern. So students must have scientific aptitude and attitude because they are the nation builders. Science education being an important component of education system should contribute in the solution of the problems of the country by developing desirable understanding, skills, abilities and attitudes. The greatest challenge is

to 'humanize' science that is to make it relevant to human needs and aspirations. It has now been recognized as a compulsory subject right from the elementary stage and now one of the core subjects at Secondary and Higher Secondary stage. It has taken a good many years of active and persistent efforts to reach this position.

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