

# A Study on Achievement in Science of Higher Secondary School Student

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Received August 5, 2017

Accepted August 29, 2017

## ABSTRACT

*The present study focuses on the students' achievement in Science of Higher Secondary school of West Bengal. The sample consists of 160 school students of Purba & Paschim Medinipur District of West Bengal in India. The investigators have used "Achievement Test in Science" (ATC) developed by Dr. S. C. Gakhar and Dr. Rajnish. The researchers analyzed the data using statistical technique's test. The major finding of the study is that there is no significant difference by considering the gender of the students from both the area and medium.*

**Key words:** Achievement, Higher secondary school, Science.

## Introduction

Achievements are the end product of all education endeavors. The main concern of all educational efforts is to see that learner achieves quality control, quality assurance and total quality managements in education. After exploring the concept of achievements in the cognitive, affective and psychomotor aspects of human behavior, researchers have proved further and have attempted to understand the 'black box' of achievement. The studies on how of achievement have brought to light the correlates of achievement and paved the way for control and manipulation of variables for quality management of achievement with a view to identifying the emerging trends. According to Begum (1990) conducted a study on "problem of teaching new science syllabus for standard VII in Andhra Pradesh and their impact on pupils achievement. It was observed that achievement in science favoured of scientific attitude test score of the pupils of urban and rural areas of the average group. Mandila (1998) conducted a study on "Attitude of secondary stage students towards science curriculum and its relationship with achievement motivation" results showed that enriched academic programme helped in developing favourable attitudes. The researchers found out that the achievement in science of higher secondary school students in West Bengal.

## OBJECTIVES OF THE STUDY-

1. To study the achievement in Science of higher secondary school students.
2. To determine the relationship of Bengali medium & English medium students in their Science achievement.
3. To determine the relationship of Bengali medium Male and Female school students of Rural area in their achievement in Science.

4. To study the relationship among Bengali medium Male and Female school students of Urban area in their achievement in Science.

## HYPOTHESIS

**Ho1:** There does not exist any significant difference between the Rural and Urban students of higher secondary school in their achievement in Science.

**Ho2:** There does not exist any significant difference between the Male and Female students of higher secondary school in their achievement in Science.

**Ho3:** There does not exist any significant difference between the Bengali and English medium students of higher secondary school in their achievement in Science.

**Ho4:** There does not exist any significant difference between the Rural and Urban Bengali medium students of higher secondary in their achievement in science.

**Ho5:** There does not exist significant difference between the Male and Female Rural Bengali medium students of higher secondary schools in their achievement in Science.

**Ho6:** There does not exist any significant difference between the Male and Female Urban Bengali medium students of higher secondary school in their achievement in Science.

**Ho7:** There does not exist any significant difference between the Male and Female Urban English medium students of higher secondary school in their achievement in Science.

## METHODOLOGY

The researchers used the survey type method has been applied to conducted the study.

## Sample and sampling procedure

The sample of the study comprised of 160 school Science student, out of 160 science students, 80

students from PurbaMedinipur and 80 students from PaschimMedinipur District of West Bengal, India. The investigators have applied the stratified random sampling method.

### Tools used

The aim of this study was to investigate students achievements in science of higher secondary school for reached up to the objectives we used an adapted questionnaire (transformed into Bengali Version ) developed by Dr.S.C.Gakhar and Dr. Rajnish with converting into regional language and the researcher made it in standardized form. It is "Achievement Test in Science" (ATC).

### Statistical techniques applied

The researchers used the inferential statistical such as t- test, was used for interpretation of the data. In this study, for analysis of collected data quantitatively, the researchers used the descriptive statistics and inferential statistics. Other suitable technique may also be used according to the need of research situation.

### Description of the Scale

The test was constructed keeping in view the objectives of the teaching of science (Physics&Chemistry) of the senior secondary stage. The items prepared for the Achievement test in Science were based upon the content of the class 10+ and only that content was taken which the students had already learnt.

### Item analysis

The 160 students for the final tryout were arranged in descending order of the performance. The students getting highest marks was ranked

first, the student getting next higher marks was ranked second and so on. Thus, the student getting lowest marks was ranked 160<sup>th</sup> in order to find out the discriminative value of the various items, the two groups -higher and lower students were compared.

### Reliability

Achievement test in Science being heterogeneous and test items having been arranged logically, the two halves could not have been identical. Therefore, test -retest method of reliability was found to be most suitable for the Achievement test in Science. The reliability study of the achievement test in Science was conducted over a sample of 30 students. The second administration of the test was given after a week. The product moment coefficient of correlation for the two score was computed. The coefficient of correlation between two test score was found to be .78. This coefficient of correlation is fairly high, which testifies the soundness of the test.

### Validity

The purpose of the present investigation and the nature of the test items restricted the use of very exhaustive statistical techniques to validate the test. Factorial validity could not be ascertained as in general each concept was represented by only two or three items.

### Analysis and interpretation

The researchers analyzed the obtained data on inferential statistics such as SD and t-test and results are summarized in science achievement of higher secondary school students.

## Ho1: There does not exist any significant difference between the Rural and Urban students of higher secondary school in their achievement in Science.

Table 1: *t-values of the achievement in Science of class XI students of Rural & Urban schools.*

Sl.No	Group	N	M	SD	t	Remark
1.	RURAL	70	11.59	3.20	2.63	Significant
2.	URBAN	90	13.20	4.29		
Df=158 P<0.05						

From the table -1 the null hypothesis is rejected. It says that, a significant difference between Rural and Urban school students of class XI in their achievement in Science.

## Ho2 :There does not exist any significant difference between the Male and Female students of higher secondary schools in their achievement in science.

Table 2: *t-value of the achievement in Science of class XI Male and Female students.*

Sl.No	Group	N	M	SD	t	Remark
1.	MALE	80	12.66	4.23	1.84	Insignificant
2.	FEMALE	80	12.05	3.50		
Df=158 P>0.05						

From the table -2 the null hypothesis is accepted. It says that, there exists no significant difference between the two groups Male and Female school students of class XI in their achievement in Science.

**Ho3 : There does not exist any significant difference between the Bengali medium and English medium students of higher secondary schools in their achievement in science.**

*Table-3: Value of the score on the achievement in science of class XI Bengali and English medium students.*

Sl.No.	Group	N	M	SD	t	Remark
1.	Bengali Medium	90	11.21	3.10	5.10	Significant
2.	English Medium	80	14.25	3.78		
Df=158 P<0.05						

From the table-3 the null hypothesis is rejected. It says that their exist a significant difference between the Bengali and English medium students in their achievement in Science.

**Ho4 : There does not exist any significant difference between the Rural and Urban Bengali medium students oh higher secondary schools in their achievement.**

*Table 4: t value on the achievement in Science of class XI Bengali medium students of Rural and Urban Schools.*

Sl.No	Group	N	M	SD	t	Remark
1.	Rural	40	11.25	3.25	2.60	Significant
2.	Urban	50	13.12	3.80		
Df=88 p<0.05						

Hence the null hypothesis is rejected. It says that there exist a significant difference between the Bengali medium students of Rural and Urban schools in their achievement in Science.

**Ho5: There does not exist any significant difference between the Male and Female Rural Bengali medium students of higher secondary schools in their achievement in science.**

*Table5 : t value on the achievement in Science of class XI Male and Female students of Rural Bengali medium schools.*

Sl.No.	Group	N	M	SD	t	Remark
1.	Male	20	11.70	3.52	1.64	Insignificant
2.	Female	20	10.90	2.40		
Df=38 P>0.05						

Hence the null hypothesis is accepted. It indicates that there exists no significant difference between the Male and Female students of Rural Bengali medium schools in their achievement in Science.

**Ho6 : There does not exist any significant difference between the Male andFemale Urban Bengali medium students of higher secondary schools in their achievement in Science.**

*Table6 : t vale on the achievement in Science of class XI Male and Female students of Urban Bengali medium schools.*

Sl.No.	Group	N	M	SD	t	Remark
1.	Male	25	11.15	3.10	0.77	insignificant
2.	Female	25	11.26	2.55		
Df=48 P>0.05						

From the table no-6 the null hypothesis is accepted. It indicates that there does not exist any significant difference between the Male and Female students of Urban Bengali medium schools in their achievement in Science.

**Ho7 :There does not exist any significant difference between the Male and Female Urban English medium students of higher secondary schools in their achievement in Science.**

*Table 7 : t value on the achievement in Science of class XI Male and Female students of Urban English medium schools.*

Sl.No.	Group	N	M	SD	t	Remark
1.	Male	40	15.65	4.71	1.28	Insignificant
2.	Female	40	14.10	3.75		
Df=78 P>0.05						

Table no-7 the null hypothesis is accepted. It says that there does not exist any significant difference between Male and Female students of Urban English medium schools in their achievement in Science.

### FINDING OF THE STUDY

In this study the researchers found a significant difference between the groups on the basis of area like Rural and Urban, on the basis of medium like Bengali and English and on the basis of Bengali medium Rural & Urban students in their achievement in Science at 0.05 level of significant. The researchers found that a significant difference on the basis of gender like Male and Female, on the basis of gender and medium like Male and Female students of Rural Bengali medium, Male and Female students of Urban Bengali medium and, Male and Female of Urban English medium in their achievement in Science at 0.05 level of significant.

### CONCLUSION

In the present study researchers come to the conclusion that on the basis of area and medium a significant difference by considering the gender of the students from both the area and medium. The present study also concluded that pupils belong to different area shows different interest in Science achievement. Perhaps the cause may be advanced learning and living style of the people. It may be happen due to the awareness of the Urban people regarding scientific and technical inventions. No doubt in the modern era all the individuals living in Rural or Urban areas studying in any type of schools have more or less positive interest towards Science, especially in Science achievement.

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**Nature does not hurry, yet everything is accomplished.**

~ Lao Tzu