

## Achievement Difference in Science at Secondary Level in Darjeeling District: A Comparative Study



### Education

**KEYWORDS :** Achievement Difference, Science Subjects, Secondary Level, 't'- test .

**Dr. Nityagopal Mondal** Assistant Professor, Siliguri B.Ed. College, Darjeeling, West Bengal

**Dr. Birbal Saha** Associate Professor, Sidho-Kanho-Birsha University, Purulia, W.B

#### ABSTRACT

*The present study was conducted to provide some information and comparison about the achievement in science subjects at secondary level in Darjeeling District, West Bengal. Data was collected of 140 students from four higher secondary schools in Darjeeling District, by randomly. The results revealed that 1) male and female students differ significantly with regard to achievement in science subjects at secondary level, 2) urban male & rural male students differ significantly in achievement in science at Secondary stages, 3) urban female & rural female students differ significantly in achievement in science at Secondary level.*

#### INTRODUCTION:

Most of the learners at the Secondary level unable to acquire proper concepts of science; as a result they show meager performance in their examination. It is a very universal experience of the teachers/ lesson givers of Secondary and Higher Secondary schools that due to many constraints in our educational system transaction of curriculum through instructional procedure may not always fulfill the aims of science education. Thus it's necessary to identify the alternatives to achieve the goal of science education.

The objectives of science education are best highlighted in the following manner: To develop an enquiry mind, to develop a scientific mentality, to develop a scientific approach to solve the problems, to develop an appropriate interest, attitude and aesthetic awareness, to develop the ability of observing power, explaining and interpreting findings critically and to develop open-mindedness.

The foremost problem in our class-room teaching is not to give proper attention for the development of reasoning among students. Students are instructed mainly for acquiring information according to the willing of the teachers. In the teaching-learning process there are two intrinsic structures (i) the cognitive structure of the learners and (ii) the structure of organizing of the material to be learnt i.e. curriculum. An effective organization of curriculum and an appropriate manipulation of cognitive structure would make possible the effective output of teaching.

#### OBJECTIVES OF THE STUDY:

- To compare the achievement of rural students and urban students at the Secondary stage in science subjects.
- To compare the level of achievement of urban male and rural male students at secondary stage in science subjects.
- To compare the level of achievement of urban female and rural female students at secondary stage in science subjects.
- To compare the level of achievement of urban male and rural female students at secondary stage in science subjects.
- To compare the level of achievement of urban female and rural male students at secondary stage in science subjects.

#### HYPOTHESES OF THE STUDY:

**H<sub>01</sub>**: There is no achievement difference in science at Secondary level between urban and rural students significantly.

**H<sub>02</sub>**: There is no achievement difference in science at Secondary stages between urban & rural male students significantly.

**H<sub>03</sub>**: There is no achievement difference in science at Secondary level between urban & rural female students significantly.

**H<sub>04</sub>**: There is no achievement difference in science between urban male and rural female students under Secondary stages significantly.

**H<sub>05</sub>**: There is no achievement difference in science between urban female and rural male students under Secondary stages significantly.

#### SCOPE AND DELIMITATION:

To make the study intensive it was delimited in the following areas.

##### i. School:

All the Secondary and Higher Secondary School could be included in the study. But considering the facilities and time span, two Boy's High School and two Girls High School (one Rural and One Urban) and two Girls High School (one Rural and one Urban) were taken for the study.

##### ii. Area:

This type of study could be conducted in any district of West Bengal, However considering the availability of data and cooperation from the schools in view; Darjeeling District was selected as the study area.

##### iii. Subject:

This type of study could be conducted with any subject and to estimate the achievement gaps between Urban and Rural. But initially it was decided that the study would be conducted on achievement different in science at Secondary level between rural and urban students. So, only science subjects were taken into account for calculating the achievements of the students.

#### SAMPLING:

The random sampling procedure was adopted for selection of sample from the list of Secondary schools in district of Darjeeling, two rural Secondary schools (one Boys school and one Girls school) and two urban Secondary schools (one Boys school and one Girls school) were selected randomly.

#### DATA BASE:

The data was collected through the following manners:

- i. Name of the Student
- ii. Total Marks in Secondary level
- iii. Total Marks in Science Group
- iv. Total Percentage of Marks at Secondary level
- v. Percentage of Marks in Science Group

#### ANALYSIS OF DATA INTERPRETATION:

Hypothesis No - 1: There is no achievement difference in science at Secondary level between urban and rural students significantly.

**Table: 1**

Comparison between urban and rural students in science group

Category	N	Mean	SD	df	t	Remark
Urban students	70	64.73	19.04	138	10.51	Not significant
Rural students	70	37.72	9.95			

**Interpretation:** Table 1 indicates that the Mean 64.73 & 37.72, SD 19.04 & 9.95 and calculated 't' value is 10.51 between urban

and rural students in science group on the basis of achievement at board of Secondary level. Our calculated 't' value is greater than table value at 0.01 level and 0.05 level (df 138, 0.01 level 2.58 and 0.05 level 1.96). Thus, it is evident that there is significant difference between urban and rural students in science group on the basis of achievement at board of Secondary level. Hence, the Hypothesis No.1 is rejected.

**Hypothesis No 2:** There is no achievement difference in science at Secondary stages between urban & rural male students significantly.

**Table: 2**  
Comparison between urban and rural male students

Category	N	Mean	SD	df	t	Remark
Urban male	35	80.85	8.99	68	21.38	Not significant
Rural male	35	37.10	8.11			

**Interpretation:** Table 2 indicates that the Mean 80.85 & 37.10, SD 8.99 & 8.11 and calculated 't' value is 21.38 between urban & rural male students in science group on the basis of achievement at board of Secondary level. Our calculated 't' value is greater than table value at 0.01 level and 0.05 level (df 68, 0.01 level 2.58 and 0.05 level 1.96). Thus, it is evident that there is significant difference between urban and rural male students in science group on the basis of achievement at board of Secondary level. Hence, the Hypothesis No.2 is rejected.

**Hypothesis No 3:** There is no achievement difference in science at Secondary level between urban & rural female students significantly.

**Table: 3**  
Comparison between urban and rural female students in science group

Category	N	Mean	SD	df	t	Remark
Urban female	35	48.62	10.97	68	3.81	Not significant
Rural female	35	38.33	11.59			

**Interpretation:** Table 3 indicates that the Mean 48.62 & 38.33, SD 10.97 & 11.59 and calculated 't' value is 3.81 between urban & rural female students in science group on the basis of achievement at board of Secondary level. Our calculated 't' value is greater than table value at 0.01 level and 0.05 level (df 68, 0.01 level 2.58 and 0.05 level 1.96). Thus, it is evident that there is significant difference between urban and rural female students in science group on the basis of achievement at board of Secondary level. Hence, the Hypothesis No.3 is rejected.

**Hypothesis No 4:** There is no achievement difference in science between urban male and rural female students under Secondary stages significantly.

**Table: 4**  
Comparison between urban male and rural female students in science group

Category	N	Mean	SD	df	t	Remark
Urban male	35	80.85	8.99	68	17.15	Not significant
Rural female	35	38.33	11.59			

**Interpretation:** Table 4 indicates that the Mean 80.85 & 38.33, SD 8.99 & 11.59 and calculated 't' value is 17.15 between urban male & rural female students in science group on the basis of achievement at board of Secondary level. Our calculated 't' value is greater than table value at 0.01 level and 0.05 level (df 68, 0.01 level 2.58 and 0.05 level 1.96). Thus, it is evident that there is significant difference between urban male and rural female students in science group on the basis of achievement at board of Secondary level. Hence, the Hypothesis No.4 is rejected.

**Hypothesis No 5:** There is no achievement difference in science between urban female and rural male students under Secondary stages significantly.

**Table: 5**  
Comparison between urban girls and rural boys in science group

Category	N	Mean	SD	df	t	Remark
Urban female	35	48.62	10.97	68	4.99	Not significant
Rural male	35	37.10	8.11			

**Interpretation:** Table 5 indicates that the Mean 48.62 & 37.10, SD 10.97 & 8.11 and calculated 't' value is 4.99 between urban female & rural male students in science group on the basis of achievement at board of Secondary level. Our calculated 't' value is greater than table value at 0.01 level and 0.05 level (df 68, 0.01 level 2.58 and 0.05 level 1.96). Thus, it is evident that there is significant difference between urban female and rural male students in science group on the basis of achievement at board of Secondary level. Hence, the Hypothesis No.5 is rejected.

#### FINDINGS OF THE PRESENT STUDY:

Following are the findings of the present investigation:

- Male and female students differ significantly with regard to achievement in science subjects at secondary level,
- Urban male & rural male students differ significantly in achievement in science at Secondary stages,
- Urban female & rural female students differ significantly in achievement in science at Secondary level.
- Urban male and rural female students differ significantly in achievement in science group subjects at Secondary level.
- Urban female and rural male students differ significantly in achievement in science group subjects at Secondary level.

#### REFERENCE

1. MHRD, (1986), National Policy on Education, New Delhi, Govt. of India, Department of Education. | 2. Buch, M.B.; (Ed.). A Survey of Research in Education, CASE: M.S. Univ. of Baroda, 1974. | 3. Buch, M.B.; (Ed.), Second Survey of Research in Education, (1972-78). SERD: Baroda, 1979. | 4. Buch, M.B.; (Ed.), Third Survey of Research in Education, (1978-83). NCERT, New Delhi, 1987. | 5. Buch, M.B.; (Ed.), Fourth Survey of Research in Education, New Delhi, NCERT. 1991. | 6. Garrett, H. E.; Statistics in Psychology & Education, Paragon International Publishers, 2005. | 7. NCERT-Fifth Survey of Educational Research (1988-1992), New Delhi. 1997 | 8. NCERT-Sixth Survey of Educational Research (1993-2000), New Delhi. 2007 | 9. Sen, B. (2009), M.Ed. Dissertation, Kalyani University | 10. Koul K (1994), Methodology of educational Research, Vikash Publishing Pvt. Ltd., New Delhi