Research Paper

Volume : 2 | Issue : 6 | June 2013 • ISSN No 2277 - 8179

Comparative Study of Achievement Difference in Mathematics At Secondary Level In Birbhum District

Education

KEYWORDS : Achievement Difference, Mathematics Subjects, Secondary Level, 't'- test

Mr. Sonjoy Mondal	Assistant Headmaster, Banior A.K. High School,Banior, Nalhati, Birbhum, WB
Dr. Nityagopal Mondal	Assistant Professor, Siliguri B.Ed. College, Darjeeling, WB
Dr. Birbal Saha	Associate Professor, Sidho-Kanho-Birsha University, Purulia, WB

ABSTRACT

The present study was conducted to provide some information and comparison about the achievement in mathematics subjects at secondary level in Birbhum District, West Bengal. Data was collected of 160 students from four higher secondary schools in Birbhum District, by randomly. The results revealed that 1) male and female students differ significantly with regard to achievement in mathematics subjects at secondary level, 2) urban male & rural male students differ significantly in achievement in mathematics at Secondary stages, 3) urban female & rural female students does not differ significantly in achievement in mathematics at Secondary level.

INTRODUCTION:

Mathematics is the science of structure, order, and relation that has evolved from elemental practices of counting, measuring, and describing the shapes of objects. The mathematics is the fundamental subject in science. Without understanding mathematics we cannot move scientific problem and scientific solution of the daily life problems. Most of the school takes care regarding mathematics but result is not satisfactory in over.

It is a very common experience of the teachers of Secondary and higher Secondary schools that due to many constraints in our education system transaction of curriculum through instructional procedure may not always fulfill the aims of mathematics. Thus it's necessary to identify the alternatives to achieve the goal of mathematics.

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

The most serious 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 will 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:

1. To compare the achievement of rural students and urban students at the Secondary stage in mathematics subjects.
2. To compare the level of achievement of urban male and rural male students at secondary stage in mathematics subjects.
3. To compare the level of achievement of urban female and rural female students at secondary stage in mathematics subjects.
4. To compare the level of achievement of urban male and rural female students at secondary stage in mathematics subjects.
5. To compare the level of achievement of urban female and rural male students at secondary stage in Mathematics subjects.

HYPOTHESES OF THE STUDY:

H01. There is no achievement difference in mathematics at Secondary level between urban and rural students significantly.

H_{02}. There is no achievement difference in mathematics at Secondary stages between urban & rural male students significantly.

H_{03}. There is no achievement difference in mathematics at Secondary level between urban & rural female students significantly.

H_{04}. There is no achievement difference in mathematics between urban male and rural female students under Secondary stages significantly.

H_{05}. There is no achievement difference in mathematics 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 (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; Birbhum 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 Mathematics at Secondary level between rural and urban students. So, only mathematics 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 Birbhum, 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:T

i. Name of the Student
ii. Total Marks in Mathematics Subject
iii. Total Percentage of Marks in Mathematics
iv. Percentage of Marks in Science Group

DATA ANALYSIS AND INTERPRETATION:

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

Table: 1
Comparison between Urban and Rural Students

Category	N	Mean	SD	df	t	Remark
Urban Students	80	54.83	14.48	158	3.99	significant
Rural Students	80	43.30	21.39			

Interpretation:

Table-1 indicates that the Mean 54.83 & 43.30, SD 14.48 & 21.39 and calculated 't' value is 3.99 between urban and rural students in Mathematics subject 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 158, 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 Mathematics on the basis of achievement at board of Secondary Examination. Hence, the Hypothesis No.1 is rejected.

Hypothesis No 2: There is no achievement difference in mathematics 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	40	53.38	14.81	78	0.586	Not significant
Rural Male	40	55.45	16.78			

Interpretation:

Table-2 indicates that the Mean 53.38 & 55.45, SD 14.81 & 16.78 and calculated 't' value is 0.586 between urban & rural male students in Mathematics on the basis of achievement at board of Secondary Examination. Our calculated 't' value is greater than table value at 0.01 level and 0.05 level (df 78, 0.01 level 2.58 and 0.05 level 1.96). Thus, it is evident that there is no significant difference between urban and rural male students in mathematics Subject on the basis of achievement at board of Secondary Examination. Hence, the Hypothesis No.2 is accepted.

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

Table: 3
Comparison between Urban and Rural Female Students

Category	N	Mean	SD	df	t	Remark
Urban Female	40	56.28	14.18	78	6.81	significant
Rural Female	40	31.15	18.50			

Interpretation:

Table 3 indicates that the Mean 56.28 & 31.15, SD 14.18 & 18.50 and calculated 't' value is 6.81 between urban & rural female students in Mathematics group on the basis of achievement at board of Secondary Examination. Our calculated 't' value is greater than table value at 0.01 level and 0.05 level (df 78, 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 mathematics on the basis of achievement at board of Secondary level Examination. Hence, the Hypothesis No.3 is rejected.

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

Table: 4
Comparison between Urban Male and Rural Female Students

Category	N	Mean	SD	Df	t	Remark
Urban Male	40	53.38	14.81	78	5.93	significant
Rural Female	40	31.15	18.50			

Interpretation:

Table 4 indicates that the Mean 53.38 & 31.15, SD 814.81 & 18.50 and calculated 't' value is 5.93 between urban male & rural female students in mathematics subject on the basis of achievement at board of Secondary level Examination. Our calculated 't' value is greater than table value at 0.01 level and 0.05 level (df 78, 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 mathematics subject on the basis of achievement at board of Secondary Examination. Hence, the Hypothesis No.4 is rejected.

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

Table: 5
Comparison between Urban Girls and Rural Boys Students

Category	N	Mean	SD	df	t	Remark
Urban Female	40	56.28	14.18	78	0.239	Not significant
Rural Male	40	55.45	16.78			

Interpretation:

Table-5 indicates that the Mean 56.28 & 55.45, SD 14.18 & 16.78 and calculated 't' value is 0.239 between urban female & rural male students in mathematics subject on the basis of achievement at board of Secondary level. Our calculated 't' value is less than table value at 0.01 level and 0.05 level (df 78, 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 mathematics group on the basis of achievement at board of Secondary level. Hence, the Hypothesis No.5 is accepted.

FINDINGS OF THE PRESENT STUDY:

Following are the findings of the present investigation:

- Male and female students differ significantly with regard to achievement in mathematics subjects at secondary level Examination.
- Urban male & rural male students do not differ significantly in achievement in mathematics at Secondary stages.
- Urban female & rural female students differ significantly in achievement in mathematics at Secondary level.
- Urban male and rural female students differ significantly in achievement in mathematics subjects at Secondary level.
- Urban female and rural male students do not differ significantly in achievement in mathematics subjects at Secondary level Examination.

Volume : 2 | Issue : 6 | June 2013 • ISSN No 2277 - 8179

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. Koul K (1994), Methodology of Educational Research, Vikash Publishing Pvt. Ltd., New Delhi | 10. Muller, Chandra, 1998. Gender differences in parental involvement and adolescents' mathematics achievement. Sociology of Education 71, 336–356. | 11. Stumpf, Heinrich, Stanley, Julian C., 1996. Gender-related differences on the college board's advanced placement and achievement tests, 1982–1992. Journal of Educational Psychology 88, 353–364. | 12. Cavanagh, S. (2009). Parents Schooled in Learning How to Help With Math. Education Week, February 23, 2009. | 13. Hyde, J. S., Fennema, E., & Lamon, S. J. (1990). Gender differences in mathematics performance: A meta-analysis. Psychological Bulletin, 107(2), 139–155. | 14. Hyde, J. S., Lindberg, S. M. Linn, M.C., Wllis, A. B., & Williams, C. C. (2008, July). Gender Similarities Characterize Math Performance. Science, 494–495. | 15. Halpern, Diane F., 2000. Sex Differences in Cognitive Abilities. Erlbaum Associates, NJ. |