



A STUDY OF GENDER DIFFERENCE AND ACHIEVEMENT IN MATHEMATICS AND REASONING ABILITY OF THE IX STANDARDS STUDENTS IN SOLAPUR CITY

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INTRODUCTION

Background: Mathematics has an important place in the secondary level. After the study of last few years result of SSC Board that mathematics has continuously down result than other subject. That is very essential for increasing standards of achievement in mathematics.

Mathematics has an important role in everyday life. Mathematics is an important subject for the progress of our present day world. Kothari commission had an important view on this matter. "We cannot overstress the importance of mathematics in relation to science, education and research.

Need of Research: The syllabus of mathematics at higher primary and secondary level is the foundation of higher secondary education, vocational education as well as higher education. The careful observation of objectives of syllabus of mathematics at this level implies the emphasis on development of reasoning ability.

Psychologically generally up to the age of fourteen years, reasoning ability is developed among the students knowledge gives rise to the questions like how for the reasoning ability is related to achievement in geometry, how for the reasoning ability is developed among the students of IX standard. To find out the logical answers, to these questions there is need have research.

Significance of Research: The present research will create new attitude towards mathematics among the Government society, the educationalist, the college of education viz. D. Ed., B. Ed., M. Ed. The council of curriculum text book, teachers at different levels, professors, headmasters, principals and the education officers. Mathematics is basic subject in secondary, higher secondary level, B. Ed., D. Ed., colleges and engineering. So, progress in mathematics is essential for the success in life of student's present research is useful for the guidance.

Statement of Problem: A study of Gender difference and achievement in mathematics and reasoning ability of the IX standards students in Solapur city.

OBJECTIVES:

1. To verify achievement in algebra of IX standard boys and girls.
2. To verify achievement in geometry of IX standard boys and girls.
3. To verify achievement in Mathematics of IX standard boys and girls.
4. To verify achievement in reasoning ability of IX standard boys and girls.

HYPOTHESES:

The hypotheses of the present study were:

1. There is no significant difference in achievement in algebra between boys and girls.
2. There is no significant difference in achievement in geometry between boys and girls.
3. There is no significant difference between algebra and geometry achievement of boys.
4. There is no significant difference between algebra and geometry achievement of girls.
5. There is no significant difference in the mathematics achievement between boys and girls.
6. There is no significant difference in the reasoning ability between boys and girls.

SCOPE AND LIMITATIONS OF RESEARCH:

Present study is related to all grantable Marathi medium secondary schools. Scope of present study research is bound to mathematics achievement and its correlation with reasoning ability but indirectly its scope is wide. The results of present research are also useful to other subject because mathematics correlates with other school subject. Present research study is bound to IX standard but its results are useful for other standards. Present research study makes contribution to all secondary and higher secondary schools of Marathi as well as other medium schools.

LIMITATIONS:

1. Only Marathi medium and grantable secondary schools shall be selected in the present research study.
2. The standard IX algebra and geometry textbook which is prepared by Maharashtra state board of Secondary and Higher Secondary revised curriculum 2005 is proved authentic.
3. For measuring achievement in mathematics only some units related to second semester from standard IX algebra and geometry textbook are included in the present research.

METHODS OF RESEARCH, TOOLS AND SAMPLING

Research Method: The researcher has conducted present research works using descriptive method. Also the achievement in algebra, geometry, mathematics and reasoning ability of girls and boys of IX standard has been studied by descriptive methods of research.

Tools of Research: According to objectives of the present researcher, the researcher as selected the tools as follow:

1. A standardized reasoning ability test by Dr. Miss. Sadhana Bhatnagar.
2. Achievement test of algebra for IX standard.
3. Achievement test of geometry for IX standard.

Sampling: Sampling is the fundamental process in the educational research. It is difficult to study to whole population in case of educational problems. The researcher has collected the list of all aided Marathi medium schools in Solapur city from department of secondary education of Z. P. Solapur. Then first division selected randomly then others division is selected keeping the difference of ten. The number of respondents is given following table 3.1.

No. of Divisions	Achievement Test				Reasoning ability test		Student present in all three tests		
	Algebra		Geometry		Boys	Girls	Boys	Girls	Total
	Boys	Girls	Boys	Girls					
19	444	504	444	504	497	548	395	471	866

Table No. 3.1

ANALYSIS AND INTERPRETATION OF DATA

Collection and Analysis of the data: The scores of 395 girls and boys in achievement test of algebra, geometry and mathematics and reasoning ability test have been converted into percentage form. Then, its frequency distribution table has been prepared. Using these tables different statistical measures have been calculated these values are given in the following table 4.1.

Achievement test	Mean		Median		Standard deviation		Skewness	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Algebra	39	46.98	36.45	45.02	18.02	22.43	0.42	0.254
Geometry	26.05	36.79	23.07	34.13	16.01	21.00	0.55	0.38
Mathematics	31.54	40.83	28.65	40.69	14.08	19.08	0.59	0.02
Reasoning ability	38.58	39.62	39.2	39.83	13.14	14.6	- 0.21	- 0.04

Table No. 4.1 Hypothesis testing:

Hypo No.	t value	Sample t value		Relation between t value and sample t	Decision
		0.05	0.01		
1	8.74	2.58	1.96	t value > sample t	Rejecting hypothesis
2	8.17	2.58	1.96	t value > sample t	Rejecting hypothesis
3	8.39	2.58	1.96	t value > sample t	Rejecting hypothesis
4	7.23	2.58	1.96	t value > sample t	Rejecting hypothesis
5	7.94	2.58	1.96	t value > sample t	Rejecting hypothesis
6	1.11	2.58	1.96	t value < sample t	Accepting hypothesis

Table No. 4.2

MAIN CONCLUSIONS:

1. There is significant difference in the means of achievement in algebra of boys and girls.
2. There is significant difference in the means of achievement in Geometry of boys and girls.
3. There is significant difference between algebra and geometry achievement of boys.
4. There is significant difference between algebra and geometry achievement of girls.
5. There is significant difference in the means of achievement in mathematics of boys and girls.
6. There is no significant difference in the reasoning ability between boys and girls.
7. The achievement in algebra of girls and boys is good as compared to that in geometry.

CONCLUSIONS ABOUT REASONING ABILITY:

1. The proportion of very high reasoning ability among boys is 0%.

2. The proportion of boys with high reasoning ability is very low
3. The proportion of boys with low and very low reasoning ability is 86.08%. This means reasoning ability is boys is of low standard
4. The average standard of reasoning ability of boys is 38.58.
5. The proportion of very high reasoning ability among girls is 0%.
6. The proportion of girls with high reasoning ability is very low.
7. The proportion of girls with low and very low reasoning ability is 81.53%. This means reasoning ability is boys is of low standard

BIBLIOGRAPHY

1. Agrawal S. M. (2001). *A Course in teaching of modern mathematics*. Dhanpat Rai Publishing Co. New Delhi Repring 2001. Page 403.
2. Best, J. W. & Khan, J. V. (2007). *Research in Education. (9th Ed.)*. Prentice hall of India Private Limited New Delhi Page 498.
3. Bhatia and Bhatia (1996). *A textbook of educational Psychology*. Doaba house, Booksellers & Publishers Delhi. P. 623.
4. Garret, H. E. & Woodworth, R. S. (1981). *Statistics in Psychology and education*. (Tenth Indian Reprint). Vakils, Feffer and simons Ltd., Bombay P. 491.
5. Sharma, R. A. (2000). *Advanced statistics in Educational and Psychology (5th Ed.)*. Surya Publication, Meerut. P. 665.
6. Sharma, R. A. (1984-85). *Fundamentals of Educational Research*, Loyal Book Depot, Meerut. P. 468.