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Learning Performance of Students in final examination Marks in different Branches of Mathematics at Secondary Level

ORIGINAL ARTICLE



Authors

Md. Habibur Rahaman
Ph D, Research Scholar,
Department of Education,
Seacom Skills University,
Bolpur, West Bengal, INDIA

and

Professor Dr. Manjusha Tarafdar
Professor & Formar, Hon'ble Vice Chancellor,
Seacom Skills University
Bolpur, West Bengal, INDIA

Abstract

Mathematics is very important subject. It is used in daily life in whole time. The discipline nation cannot move an inch without mathematics. So the world cannot move one step without mathematics. The objective of the study was examined to find out the performance of students in Geometry, verbal & non-verbal problems of Arithmetic and Algebra at secondary level school students in relation to their gender, management and locale variation. To achieve the goal of the study researcher used comprehensive data collected through final examination marks in different Branches of Mathematics from the schools under WBBSE Board. It is descriptive survey method. According to the above considerations the findings of the study in that in the below 50% marks Boys are strong to Girls in non-verbal problems of Arithmetic and Algebra and also in the above 50% marks Boys are strong to Girls in non-verbal problems of Arithmetic and Algebra. Hence, Boys score > Girls score. According to management variation, in the below 50% marks Govt. School Students are strong to Pvt. School Students in non-verbal problems of Arithmetic and Algebra and also in the above 50% marks Govt.

School Students are strong to Pvt. School Students in non-verbal problems of Arithmetic and Algebra. Hence, Govt. School Students score > Pvt. School Students score. Lastly to locale variation, In the below 50% marks Urban School Students are strong to Rural School Students in non-verbal problems of Arithmetic and Algebra and also in the above 50% marks Urban School Students are strong to Rural School Students in non-verbal problems of Arithmetic and Algebra. Hence, Urban School Students score > Rural School Students score. It is importance to note that teacher's about the teaching and learning process to enhance better performance in Geometry, Verbal problems of Arithmetic and Algebra in secondary level schools.

Key Words

Learning, Performance, final examination, Branches of Mathematics, Secondary level.

Introduction

Mathematics is a relevant subject, not only use in daily life but the whole universe itself based on mathematics. It enhances the nation brightness towards the vertical upwards of the world; discipline of mathematics plays a crucial role without the discipline nation cannot move an inch.

The objective of the study was examined to find out the performance of students in Geometry, verbal & non-verbal problems of Arithmetic and Algebra at secondary level school students in relation to their gender, locale and management variation. To achieve the goal of the study researcher used comprehensive data collected through final examination Marks in different Branches of Mathematics from the schools under WBBSE Board. It is descriptive survey method.

Causes of Learning Problems in Mathematics

Causes of learning problems in mathematics i.e. stable, irregular attendance, sequential disorder, low recall, recognition and memorization, lack of daily practices, Mathematics Phobia and anxiety etc., are the learning problems in mathematics to the students.

Review of Related Literature

The Review of Related literature refers to the knowledge of a particular area of investigation of any discipline, and its researcher studies. Some review of literature is given bellow.

Study Conducted in Inside India

Rao (1996) Conducted, "Investigator into the relative effectiveness of guided discover and expository approaches of teaching Mathematics." The study revealed that the efficiency of the programmed learning method over the conventional learning method in the instruction of Mathematics in school education he design an experimental cum field investigation. Study reviled that the mean performance course of the programmed learning group and conventional group on the achievement test were less than the normative means of the tests and subjects of high general mental ability private school were the highest be efficiency of the programmed learning method of instruction in Mathematics.

Shastri (2010) conducted, "A study of delay of feedback and retention in understanding in Mathematics." For the effect of time gap on retentively in the learning of Mathematics he noticed his study. (on Gender Variations). The major findings were the retentive capacity of the girls was more than that of the boys, in the following order, namely decimal, numerals and geometry in the memory ability there was a small but consistent sex difference, the girls being higher than the boys over the entire range in the entire three standards.

Singh, Mr. R (2011) conducted. "Intervention strategy for removing learning Problems in Mathematics of standard-1 students". Researcher found out that Poor achievements even from early stages of schooling need this as it is the primary problem in case of many students. The primary academic problem of numerous students is learning difficulties in Mathematics.

Study Conducted in Outside India

Bishop, A et. al (2004) conducted, "Investigation of effective mathematics teaching and learning in Australian secondary schools". One of the major findings revealed that relations theorized to exist between factors associated with effective mathematics teaching. It can be seen that there are five broad groupings of factors, shown by the boxes of 'reversed' text across the top of the Figure. Four of these broad groupings represent independent variables and the fifth –Laming Outcomes – represents the dependent variable. In reality, the relations between these variables will be much more complex than can be depicted here. This model thus represents a compromise between the complexity of the real world and a parsimonious account that captures the main features of that world.

Linther, J (2011) conducted "University Mathematics students learning problems." The Study revealed

that the processes of learning Mathematics are immensely complex and we largely lack insights into these processes. This is an especially problematic when it comes to territory Mathematics education, which much less researched the primary and secondary Mathematics education. The present researcher reviewed some researches of the country and abroad as well as decided to take up the problem to:

- (i) To ascertain the achievement of learning performance in Mathematics of secondary school students with the help of a specially collection of marks of achievement test of Class IX students.
- (ii) To find out gender, Management and locale wise in the achievement test in Mathematics.

Delimitation of the Study

- Secondary School under WBBSE Board at Domkal Block in the Districts of Murshidabad will be select for the study.
- Government.-Private schools from Rural-Urban area under WBBSE Board will be select for the study.

Statement of the Problem

Title of the study stated as Students Learning Performance in final examination Marks in different Branches of Mathematics at Secondary level.

Objective of the Study

To find Learning performance of the students in final examination Marks in Geometry, verbal & non-verbal problems of Arithmetic & Algebra under WBBSE Board.

Hypotheses

H₀₁ There exist no significance difference among the Learning Performance of the students in Geometry, Verbal & non-verbal problems of Arithmetic & Algebra at the Secondary Level in Gender, Management and Locale Variation under WBBSE Board.

Methodology

Type of research: Survey type of research used for findings Learning performance of the students.

Population: Students of Class IX under WBBSE Boards at the secondary level.

Tools: Student Achievement test Marks of class IX in different branches of Mathematic under WBBSE Board.

Data organization: Marks were collected from the secondary school achievement of students. After collecting the data it has been placed in tabular form, under Graphical representation Bar Graph.

Study Area: There are four Secondary Schools under WBBSE Board at Domkal block in the District of Murshidabad (West Bengal) will be select for the study.

Analysis

Marks collection from School final examination Marks in Class IX Students under WBBSE Board by Private and Govt. School from Rural Urban Area.

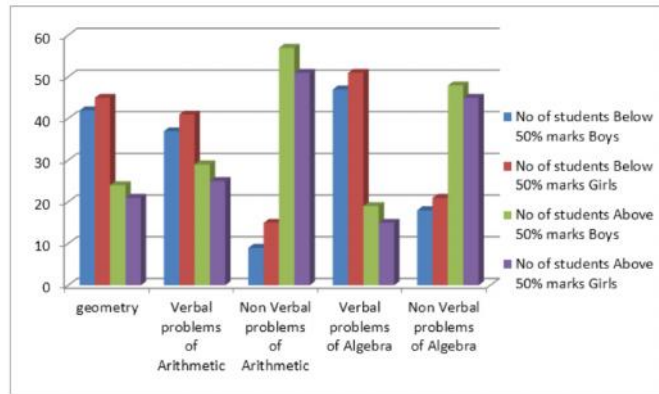
Table 1: Number of students mark obtained below 50% and above 50% from different branches of mathematics collected through Boys & Girls by the class IX students under WBBSE Board.

Variable	No of students Below 50% marks		No of students Above 50% marks	
	Boys	Girls	Boys	Girls
Geometry	42	45	24	21
Verbal problems of Arithmetic	37	41	29	25
Non-verbal problems of Arithmetic	09	15	57	51
Verbal problems of Algebra	47	51	19	15
Non-verbal problems of Algebra	18	21	48	45

(Source: Primary Data)

In the above percentage of Boys & girls Students marks in Geometry, Verbal & non-verbal problems of Arithmetic and Algebra we conclude that more than Students obtained below 50% marks. i.e. the Students are week in Geometry, Verbal problems of Arithmetic and Algebra. But percentage of Students marks in non-verbal problems of Arithmetic and Algebra we conclude that more than students obtained higher 50% marks. i.e. the students are strong in non-verbal problems of Arithmetic and Algebra.

Figure 1: Bar Graphs of the number of students mark obtained below 50% and above 50% from different branches of mathematics collected through Boys & Girls by the students of class IX under WBBSE Board



In the below 50% marks Boys are strong to Girls in non-verbal problems of Arithmetic and Algebra and also in the above 50% marks Boys are strong to Girls in non-verbal problems of Arithmetic and Algebra.

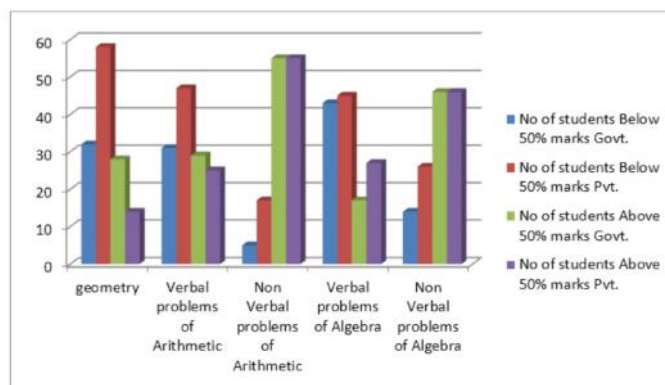
Table 2: Number of students mark obtained below 50% and above 50% from different branches of mathematics collected through Private & Govt. Schools by the students of class IX under WBBSE Board.

Variable	No of students Below 50% marks		No of students Above 50% marks	
	Govt.	Pvt.	Govt.	Pvt.
Geometry	32	58	28	14
Verbal problems of Arithmetic	31	47	29	25
Non-verbal problems of Arithmetic	05	17	55	55
Verbal problems of Algebra	43	45	17	27
Non-verbal problems of Algebra	14	26	46	46

(Source: Primary Data)

In the above percentage of Govt. & Pvt. School Students marks in Geometry, Verbal problems of Arithmetic and Algebra we conclude that more than Students obtained below 50% marks. i.e the Students are week in Geometry, Verbal problems of Arithmetic and Algebra. But percentage of Student marks in non-verbal problems of Arithmetic and Algebra we conclude that more than Students obtained higher 50% marks. i.e. the Students are strong in non-verbal problems of Arithmetic and Algebra.

Figure 2: Bar Graphs of the number of students mark obtained below 50% and above 50% from different branches of mathematics collected through Govt. & Pvt. School Students by the students of class IX under WBBSE Board.



In the below 50% marks Govt. School Students are strong to Pvt. School Students in non-verbal problems of Arithmetic and Algebra and also in the above 50% marks Govt. School Students are strong to Pvt. in non-verbal problems of Arithmetic and Algebra.

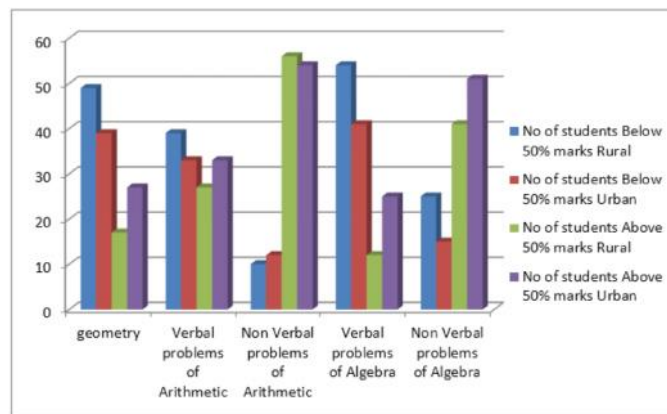
Table 3: Number of students mark obtained below 50% and above 50% from different branches of mathematics collected through Rural & Urban School Students by the class IX students under CBSE Board

Variable	No of students Below 50% marks		No of students Above 50% marks	
	Rural	Urban	Rural	Urban
Geometry	49	39	17	27
Verbal problems of Arithmetic	39	33	27	33
Non-verbal problems of Arithmetic	10	12	56	54
Verbal problems of Algebra	54	41	12	25
Non-verbal problems of Algebra	25	15	41	51

(Source: Primary Data)

In the above percentage of Rural & Urban School Students marks in Geometry, Verbal & non-verbal problems of Arithmetic and Algebra we conclude that more than Students obtained below 50% marks. i.e the Students are weak in Geometry, Verbal problems of Arithmetic and Algebra. But percentage of Students marks in non-verbal problems of Arithmetic and Algebra we conclude that more than students obtained higher 50% marks. i.e. the students are strong in non-verbal problems of Arithmetic and Algebra.

Figure 3: Bar Graphs of the number of students mark obtained below 50% and above 50% from different branches of mathematics collected through Rural & Urban Schools Students by the students of class IX under WBBSE Board.



In the below 50% marks Urban School Students in non-verbal problems of Arithmetic and Algebra and also in the above 50% marks Urban School Students in non-verbal problems of Arithmetic and Algebra.

Findings

According to the above considerations the findings of the study were as follows:

H_{01.1} WBBSE Board obtaining marks by the students Boys & Girls,

We observe that, Percentage of Boys & girls Students marks in Geometry, Verbal & non-verbal problems of Arithmetic and Algebra we conclude that more than Students obtained below 50% marks. i.e the Students are weak in Geometry, Verbal problems of Arithmetic and Algebra. But percentage of Students marks in non-verbal problems of Arithmetic and Algebra we conclude that more than students obtained higher 50% marks. i.e. the students are strong in non-verbal problems of Arithmetic and Algebra. In the below 50% marks Boys are strong to Girls in non-verbal problems of Arithmetic and Algebra and also in the above 50% marks Boys are strong to Girls in non-verbal problems of Arithmetic and Algebra. Hence, Boys score > Girls score.

H_{01.2} WBBSE Board obtaining marks by the students Govt. & Pvt. School

We observe that, In the above percentage of Govt. & Pvt. School Students marks in Geometry, Verbal problems of Arithmetic and Algebra we conclude that more than Students obtained below 50% marks. i.e the

Students are weak in Geometry, Verbal problems of Arithmetic and Algebra. But percentage of Student marks in non-verbal problems of Arithmetic and Algebra we conclude that more than Students obtained higher 50% marks. i.e. the Students are strong in non-verbal problems of Arithmetic and Algebra. In the below 50% marks Govt. School Students are strong to Pvt. School Students in non-verbal problems of Arithmetic and Algebra and also in the above 50% marks Govt. School Students are strong to Pvt. School Students in non-verbal problems of Arithmetic and Algebra. Hence, Govt. School Students score > Pvt. School Students score

H_{01.3} WBBSE Board obtaining marks by the students Rural & Urban School

We observe that, In the above percentage of Rural & Urban School Students marks in Geometry, Verbal & non-verbal problems of Arithmetic and Algebra we conclude that more than Students obtained below 50% marks. i.e the Students are weak in Geometry, Verbal problems of Arithmetic and Algebra. But percentage of Students marks in non-verbal problems of Arithmetic and Algebra we conclude that more than students obtained higher 50% marks. i.e. the students are strong in non-verbal problems of Arithmetic and Algebra. In the below 50% marks Urban School Students are strong to Rural School Students in non-verbal problems of Arithmetic and Algebra and also in the above 50% marks Urban School Students are strong to Rural School Students in non-verbal problems of Arithmetic and Algebra. Hence, Urban School Students score > Rural School Students score

Significance of the Study

Since the post graduate level researcher had been interested to do the research work in this context. Researcher observed that the secondary level students having low capacity to absorb and rare interest to learn geometry in mathematics. To solve the context of the problems there were many challenges to be face by the researcher. To obtain knowledge in the concern aspects researcher try to identify the problem and explore it in general through his research work.

Conclusion

Performance in gender variation Boys are better to Girls, in management variation private school students are better to government school students and in locale variation urban students are better. But generally overall Students are weak in Geometry, Verbal problems of Arithmetic and Algebra in secondary level schools.

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