



Comparison of performance of students of class x in mathematics between rural and urban areas of Karimganj district

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Abstract

We are living in 21st century and in 21st century, mathematics plays an important role. In the fifties of the last century, economics was taken by non science students. In the seventies, nobody is even admitted to economics stream unless the person is good in mathematics. The turning point was econometrics. Economic science is based on mathematical model, analyzed by statistics. Different equations are used for prediction and weight age is given to various factors mathematically. At present we have a galaxy of excellent mathematicians.

Although the study of mathematics is essential for each and every human being of the world, but it is found that most of the secondary student felt that mathematics is very tough and they want to stay far away from mathematics. Most of the time the reasons behind this toughness are due to lack of interest of the subject, lack of understanding of the various problems of mathematics, not getting of appropriate care from the teachers etc. Even the secondary students are not actually aware of the above discussed application of mathematics. Mathematics is not just arithmetic calculation no more. Now learning of mathematics is like learning philosophy. But this fact is unknown for most of the students. They actually do not know that this subject is how much essential for their future study, not only in science and commercial stream, but also in arts stream. So this mathematics phobia which varies from school to school, student to student should be removed.

Keywords: education, mathematics, academic performance, students

Introduction

Concept of Mathematics

Aristotle defined mathematics as: The science of quantity. Mathematics in the real sense is a science of space and quantities that helps us in solving the problems of life needing numeration and calculation. It is an exact science and involves high cognitive abilities and powers. It is numerical calculation of parts of men's life and knowledge and provides with the exact interpretation of his ideals and conclusions. Mathematics as an expression of human mind reflects the active will, the contemplative reasons, and desire for the aesthetic perfections. Its basic elements are logic and intuition, analysis and construction generally and individually. Thus, mathematics is a science of all science and arts of all arts. From our observation of physical and social environment which form certain intuitive ideas for postulations and axioms and by the process of reasoning we move upwards and work out mathematical result at the abstract level. Mathematics is mental activity which consists in carrying out, one after the other, and those mental constructions which are inductive and effective.

Significance

The Indian Parliamentary and Scientific Committee was formed in August, 1961 stated that at the high school stage, science should be compulsory for all students but it has to take the form of separate subjects as mathematics, physical, biological science etc. along with the other humanistic subjects. Report of the Committee of the Members of

Parliament on Education, 1967 mentioned that science and mathematics should be integral part of general education till the end of class – X. According to National Policy on Education (1968) science and mathematics should be made an integral part of general education till the end of class – X. According to Report of the National Policy on Education 1986 science and mathematics are compulsory up to Class – X. Mathematics is a subject of great social importance. It helps in the proper organization and maintenance of social structure. The world transaction exchange, commercial trade and business depend on mathematics. Great Napoleon once said “the progress and the improvement of mathematics are linked to the prosperity of the state.”

Study of mathematics also helps in character formation and moral development. In mathematics right is right and wrong is wrong forever. The answer is always either right or wrong; it cannot be right and wrong at the same time. The study of mathematics also helps us to develop our intellectual powers like power of imagination, memorization, observation, invention, concentration, originality, creativity, logical thinking and systematized reasoning.

Mathematics is a gateway and key to all sciences. Mathematics is called mirror of our civilization. It shapes our culture. The word Mathematics has been derived from the Latin word 'MATHEMEIN' which means 'to learn'. According to Webster's dictionary, "Mathematics" is a science of numbers and their operations, interrelations, combinations, generations and abstractions, and of space configuration and their structure, measurement,

transformations and generalizations”. Mathematics today is the key to learning of sciences – physical, biological, technological, social and medical. Mathematics is the study of topics such as quantity (numbers), structure, space and change. Mathematics seeks out patterns and uses them to formulate new conjectures. Mathematics resolves the truth or falsity of conjectures by mathematical proof. When mathematical structures are good models of real phenomena, then mathematical reasoning can provide insight or predictions about nature. Through the use of abstraction and logic, mathematics developed counting, calculation, measurement and the systematic study of the shapes and motions of physical objects.

Statement of the Problem

Comparison of performance of students of class X in the subject mathematics between rural and urban areas of Karimganj district.

Objectives of the Study

1. To find the performance level of student in subject mathematics in rural and urban areas.
2. To compare whether the student of rural areas are leading the student of urban area or urban students leading the rural students by their performance in the subject mathematics.

Methodology

The effectiveness of any research depends mainly on the methodology and procedure adopted in the study. A sound and well-organized methodology includes the opportunities strategy in stepwise execution of the investigation. It leads the investigator to the target he/ she aim at. A good research always follows a sound methodology and procedure; otherwise the findings of the study will be of generalized facts.

Present study falls in the areas of survey cum comparative research. It falls on the area of survey research because here the researcher will make a survey to collect data from six schools, three from urban and three from rural area. The researcher collects the final marks of the students from each school on the subject mathematics of class X. The researcher will then compare the performance of student on mathematics of class X students of urban with rural areas of six different schools of Karimganj district.

The researcher interprets the collected data into simple statistical table and shows the achievement level of each school by drawing bar diagram, Ogive, Pie diagram and comes in a conclusion whether rural students leading the urban students on their performance of mathematics or the urban students lead the rural students.

Analysis and Interpretation of Data

Consequence upon the collection of data, there arise a need to organize, analysis and interpretation of the same, followed by formulation of conclusions and generalizations to get a true picture of the raw materials collected. The analysis and interpretation of data involve the objective material in the possession of the researcher and his subjective reaction and desires to derive from the data. The analysis of data means

studying the tabulated material in order to determine inherent facts of meaning. It involves breaking down existing complex factors into simpler parts and pulling the parts together in new arrangement for purpose of interpretations.

The process of interpretation is essentially one of the stating what the result show, what do they mean? What is their significance? What is the answer to original problem?

**a) The following data collected from three urban schools
i) Data collected from Govt. Higher Secondary School, Karimganj**

The final marks on the subject Mathematics out of 100 marks in the final exam held on 2016.

Table 1: Tabular form of data collected from Govt. Higher Secondary School, Karimganj

Sl. No.	Class interval	Class boundary	Mid value	Frequency	Cumulative frequency
1	0-9	- 0.5-9.5	4.5	7	7
2	10-19	9.5-19.5	14.5	1	8
3	20-29	19.5-29.5	24.5	8	16
4	30-39	29.5-39.5	34.5	9	25
5	40-49	39.5-49.5	44.5	6	31
6	50-59	49.5-59.5	54.5	17	48
7	60-69	59.5-69.5	64.5	15	63
8	70-79	69.5-79.5	74.5	11	74
9	80-89	79.5-89.5	84.5	8	82
10	90-99	89.5-99.5	94.5	9	91
11	100-109	99.5-109.5	104.5	2	93

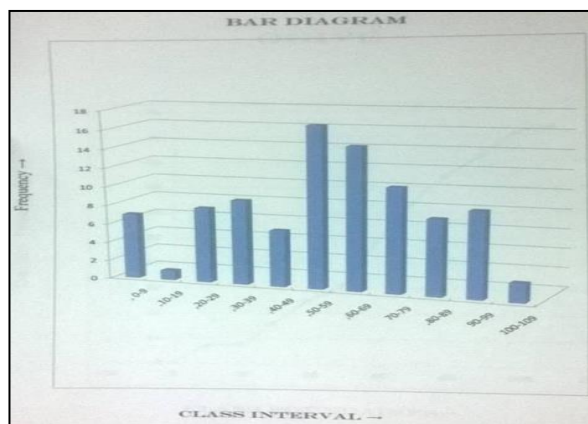


Fig 1

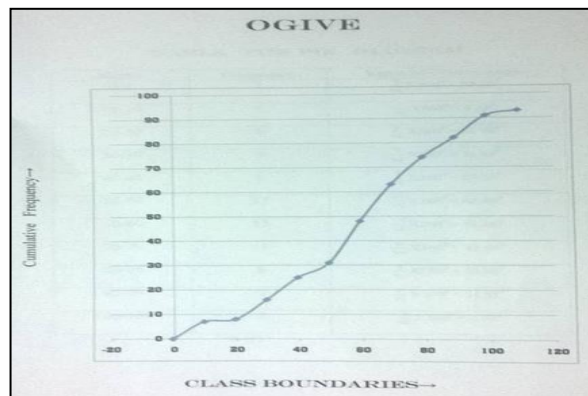


Fig 2

Table 2: for pie diagram

Marks	Frequency	Value of central angle
0-9	7	$(7/93) \times 360^\circ = 27.10^\circ$
10-19	1	$(1/93) \times 360^\circ = 3.88^\circ$
20-29	8	$(8/93) \times 360^\circ = 30.96^\circ$
30-39	9	$(9/93) \times 360^\circ = 34.83^\circ$
40-49	6	$(6/93) \times 360^\circ = 23.23^\circ$
50-59	17	$(17/93) \times 360^\circ = 65.80^\circ$
60-69	15	$(15/93) \times 360^\circ = 58.06^\circ$
70-79	11	$(11/93) \times 360^\circ = 42.59^\circ$
80-89	8	$(8/93) \times 360^\circ = 30.96^\circ$
90-99	9	$(9/93) \times 360^\circ = 34.83^\circ$
100-109	2	$(2/93) \times 360^\circ = 7.75^\circ$

N = 93

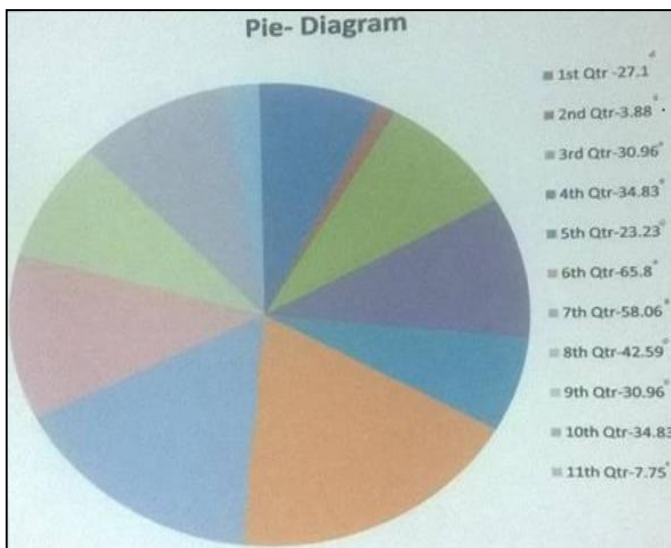


Fig 3

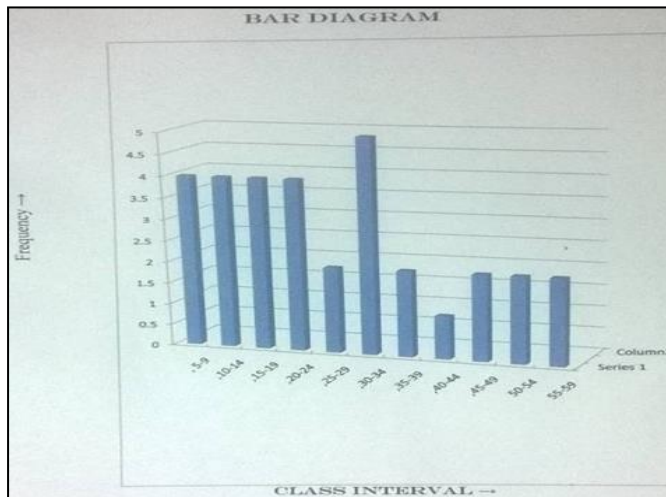


Fig 4

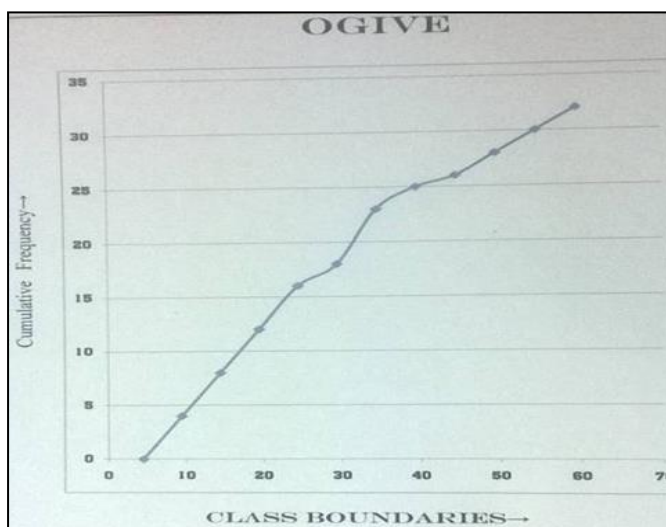


Fig 5

ii) Data collected from Nilmoni Higher Secondary School, Karimganj

The final marks on the subject Mathematics out of 100 marks in the final exam held on 2016.

Table 3: Tabular form of data collected from Nilmoni Higher Secondary School, Karimganj

Sl. No.	Class interval	Class boundary	Mid value	Frequency	Cumulative frequency
1	5-9	4.5-9.5	7	4	4
2	10-14	9.5-14.5	12	4	8
3	15-19	14.5-19.5	17	4	12
4	20-24	19.5-24.5	22	4	16
5	25-29	24.5-29.5	27	2	18
6	30-34	29.5-34.5	32	5	23
7	35-39	34.5-39.5	37	2	25
8	40-44	39.5-44.5	42	1	26
9	45-49	44.5-49.5	47	2	28
10	50-59	49.5-54.5	52	2	30
11	55-59	54.5-59.5	57	2	32

N = 32

Table 4: for pie diagram

Marks	Frequency	Value of central angle
5-9	4	$(4/32) \times 360^\circ = 45^\circ$
10-14	4	$(4/32) \times 360^\circ = 45^\circ$
15-19	4	$(4/32) \times 360^\circ = 45^\circ$
20-24	4	$(4/32) \times 360^\circ = 45^\circ$
25-29	2	$(2/32) \times 360^\circ = 22.5^\circ$
30-34	5	$(5/32) \times 360^\circ = 56.25^\circ$
35-39	2	$(2/32) \times 360^\circ = 22.5^\circ$
40-44	1	$(1/32) \times 360^\circ = 11.25^\circ$
45-49	2	$(2/32) \times 360^\circ = 22.5^\circ$
50-59	2	$(2/32) \times 360^\circ = 22.5^\circ$
55-59	2	$(2/32) \times 360^\circ = 22.5^\circ$

N = 32

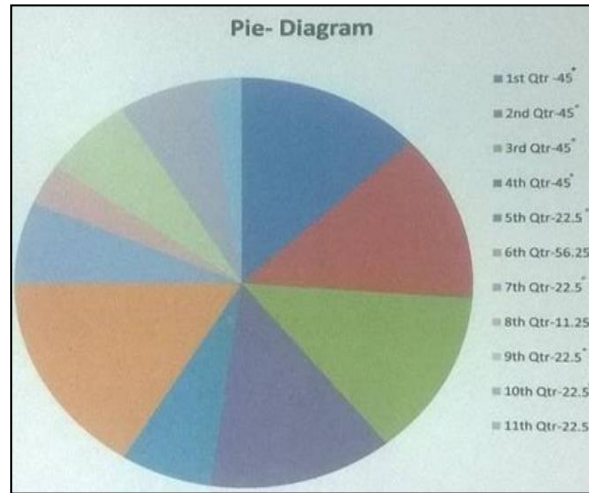


Fig 6

iii) Data collected from Public Higher Secondary School, Karimganj

The final marks on the subject Mathematics out of 100 marks in the final exam held on 2016.

Table 5

Section – a		Section - b		Section – c	
Roll no.	Marks obtained	Roll no.	Marks obtained	Roll no.	Marks obtained
1	83	1	50	1	30
2	62	2	28	2	28
3	54	3	40	3	30
4	33	4	14	4	36
5	24	5	26	5	14
6	30	6	48	6	14
7	30	7	26	7	42
8	30	8	30	8	26
9	30	9	28	9	22
10	30	10	16	10	22
11	22	11	28	11	26
12	30	12	32	12	26
13	25	13	28	13	14
14	25	14	32	14	06
15	34	15	48	15	05
16	20	16	28	16	12
17	21	17	34	17	22
18	20	18	08	18	22
19	20	19	36	19	14
20	22	20	28	20	10
21	20	21	08	21	28
22	22	22	28	22	08
23	20	23	20	23	18
24	20	24	14	24	22
26	22	26	24	26	28
27	20	27	36	27	12
28	20	28	36	28	20
29	20	29	34	29	24
30	20	30	12	30	14
31	20	34	28	31	28
32	20	35	26	32	22
33	20	36	30	33	30
34	20	37	44	34	28
35	22	38	46	35	20
36	21	39	24	36	46
37	20	40	30	37	18
38	22	41	30	38	36

39	24	42	26	39	22
40	22	43	24	40	34
41	22	44	20	41	26
42	82	45	16		
43	16	46	18		
44	23	47	30		
45	18	48	44		
46	18	49	16		
47	23	50	05		
48	24	51	24		
49	26	52	30		
31	16				
32	08				
33	08				

Table 6: Tabular form of data collected from Public Higher Secondary School, Karimganj

Sl. No.	Class interval	Class boundary	Mid value	Frequency	Cumulative frequency
1	5-14	4.5-14.5	9.5	20	20
2	15-24	14.5-24.5	19.5	58	78
3	25-34	24.5-34.5	29.5	45	123
4	35-44	34.5-44.5	39.5	10	133
5	45-54	44.5-54.5	49.5	6	139
6	55-64	54.5-64.5	59.5	1	140
7	65-74	64.5-74.5	69.5	0	140
8	75-84	74.5-84.5	79.5	2	142

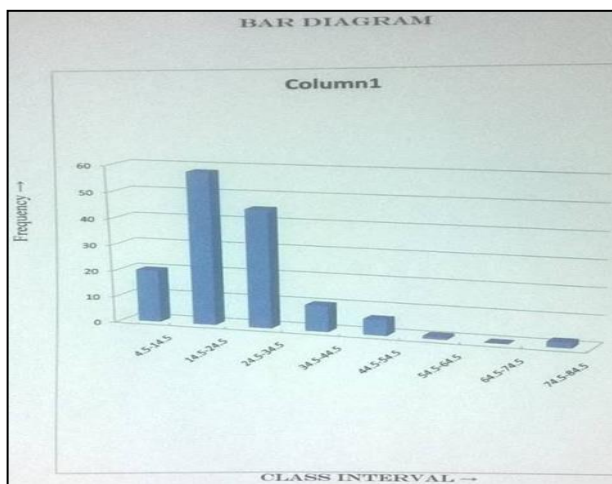


Fig 7

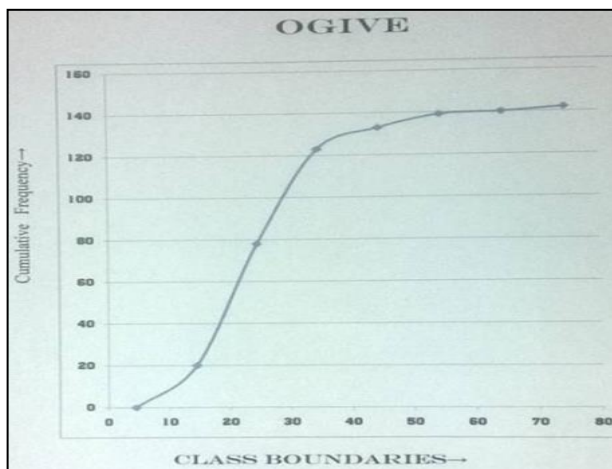


Fig 8

Table 7: for PIE diagram

Marks	Frequency	Value of central angle
5-14	20	$(20/93) \times 360^\circ = 50.70^\circ$
15-24	58	$(58/93) \times 360^\circ = 147.04^\circ$
25-34	45	$(45/93) \times 360^\circ = 114.08^\circ$
35-44	10	$(10/93) \times 360^\circ = 25.35^\circ$
45-54	6	$(6/93) \times 360^\circ = 15.31^\circ$
55-64	1	$(1/93) \times 360^\circ = 2.53^\circ$
65-74	0	$(0/93) \times 360^\circ = 0^\circ$
75-84	2	$(2/93) \times 360^\circ = 5.07^\circ$

N = 142

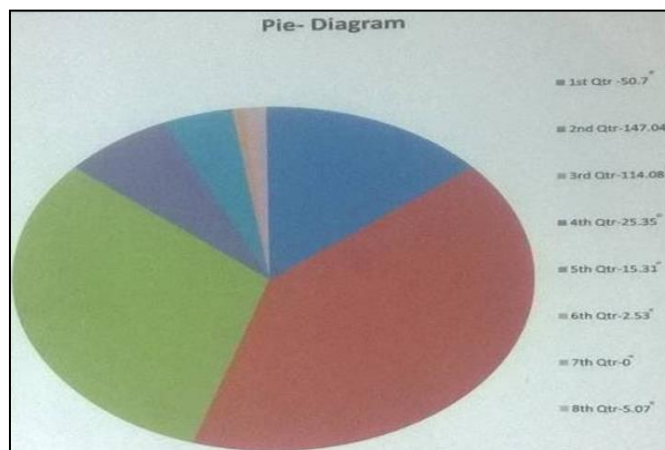


Fig 9

b) The Following Data Collected From Three Rural Schools

i) Data collected from Mahadev Higher Secondary School, Rakesh Nagar, Karimganj

The final marks on the subject Mathematics out of 100 marks in the final exam, held on 2016.

Table 8

Section – a		Section - b	
Roll no.	Marks obtained	Roll no.	Marks obtained
1	52	1	32
2	70	2	13
3	40	3	09
4	46	4	11
5	30	5	16
6	33	6	06
7	32	7	16
8	30	8	07
9	27	9	05
10	20	10	05
11	22	11	07
12	20	12	06
13	20	13	06
14	14	14	05
15	13	15	10
16	16	16	05
17	16	17	20
18	19	18	30
19	15	19	25
20	18	20	30
21	07	21	25
22	30	22	09
23	39	23	30
24	05	24	11
25	10	25	11
26	07	26	30
27	10	27	30
28	10	28	8
29	12	29	14
30	06	30	06
31	07	31	17
32	06	32	10
33	16	33	09
34	14	34	23
35	0	35	12
36	18	36	07
37	12	37	

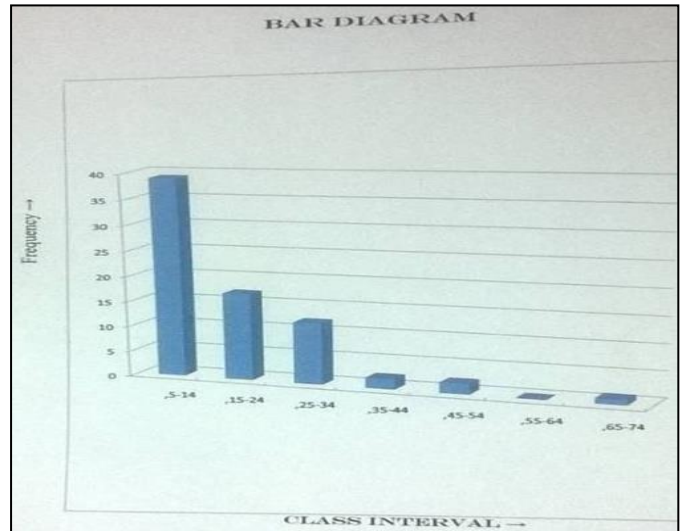


Fig 10

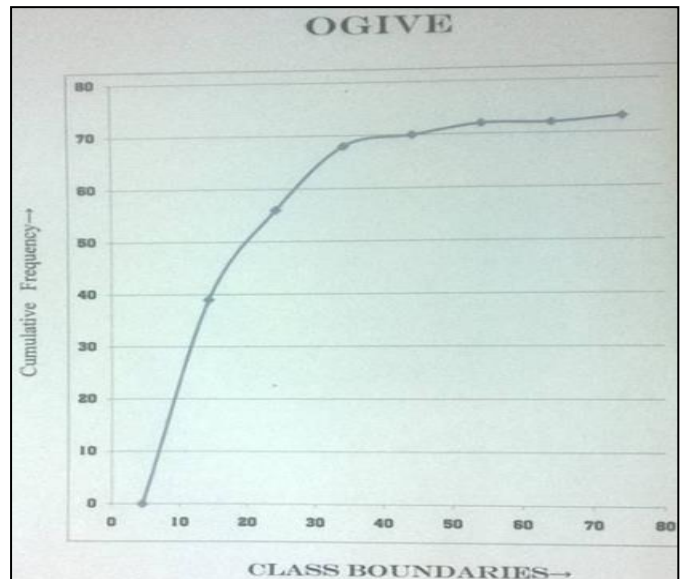


Fig 11

Table 9: Tabular form of data collected from Mahadev Higher Secondary School, Rakesh nagar, Karimganj

Sl. No.	Class interval	Class boundary	Mid value	Frequency	Cumulative frequency
1	5-14	4.5-14.5	9.5	39	39
2	15-24	14.5-24.5	19.5	17	56
3	25-34	24.5-34.5	29.5	12	68
4	35-44	34.5-44.5	39.5	2	70
5	45-54	44.5-54.5	49.5	2	72
6	55-64	54.5-64.5	59.5	0	72
7	65-74	64.5-74.5	69.5	1	73

N = 73

Table 10: for PIE diagram

Marks	Frequency	Value of central angle
5-14	39	$(39/93) \times 360^\circ = 27.10^\circ$
15-24	17	$(17/93) \times 360^\circ = 3.88^\circ$
25-34	12	$(12/93) \times 360^\circ = 30.96^\circ$
35-44	2	$(2/93) \times 360^\circ = 34.83^\circ$
45-54	2	$(2/93) \times 360^\circ = 23.23^\circ$
55-64	0	$(0/93) \times 360^\circ = 0^\circ$
65-74	1	$(1/93) \times 360^\circ = 58.06^\circ$

N = 73

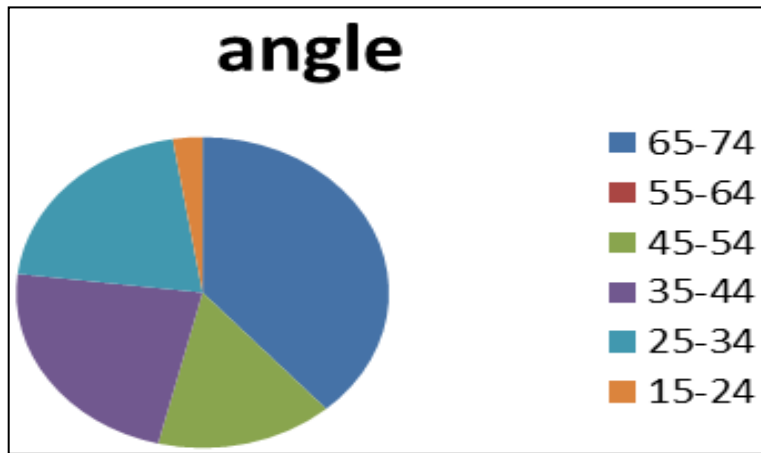


Fig 12

ii) Data collected from Modern High School, Marjatkandi, Karimganj

The final marks on the subject Mathematics out of 100 marks in the final exam, held on 2016.

Table 11

Section – a		Section - b	
Roll no.	Marks obtained	Roll no.	Marks obtained
1	85	1	30
2	59	2	47
3	47	3	50
4	38	4	20
5	43	5	36
6	30	6	30
7	45	7	30
8	30	8	25
9	20	9	36
10	32	10	46
11	25	11	25
12	35	12	24
13	25	13	25
14	30	14	20
15	30	15	30
16	20	16	35
17	15	17	15
18	15	18	14
19	10	19	14
20	30	20	15
21	10	21	16
22	30	22	30
23	20	23	35
24	30	24	20
25	15	25	30
26	25	26	35
27	15	27	32
28	25	28	15
29	15	29	16
30	10	30	14
31	16	31	14
32	30	32	10
33	13	33	15
34	25	34	16
35	10	35	16
36	36	36	20
37	12	37	10
38	20	38	14
39	30	39	15

40	15	40	30
41	20	41	10
42	20	42	15
43	25	43	30
44	30	44	20
45	30	45	15
46	15	46	12
		47	25

Table 12: Tabular form of data collected from Govt. higher Secondary School, Karimganj

Sl. No.	Class interval	Class boundary	Mid value	Frequency	Cumulative frequency
1	10-19	9.5-19.5	14.5	34	34
2	20-29	19.5-29.5	24.5	23	57
3	30-39	29.5-39.5	34.5	28	85
4	40-49	39.5-49.5	44.5	5	90
5	50-59	49.5-59.5	54.5	2	92
6	60-69	59.5-69.5	64.5	0	92
7	70-79	69.5-79.5	74.5	0	92
8	80-89	79.5-89.5	84.5	1	93

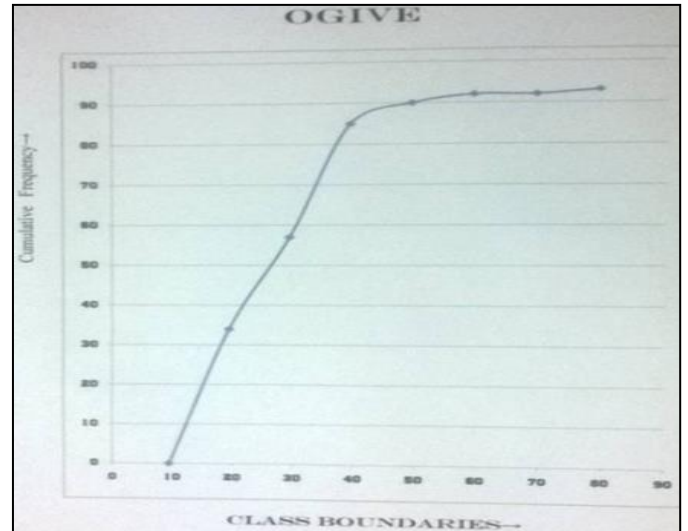


Fig 14

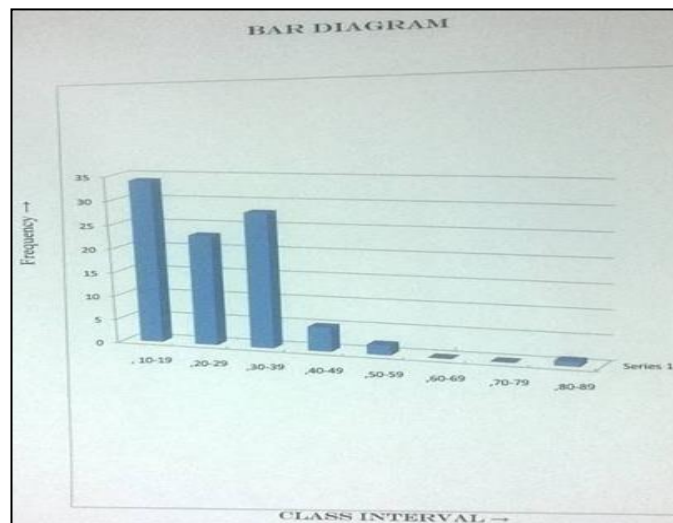


Fig 13

Table 13: for Pie Diagram

Marks	Frequency	Value of central angle
10-19	34	$(34/93) \times 360^\circ = 131.61^\circ$
20-29	23	$(23/93) \times 360^\circ = 89.03^\circ$
30-39	28	$(28/93) \times 360^\circ = 108.39^\circ$
40-49	5	$(5/93) \times 360^\circ = 19.35^\circ$
50-59	2	$(2/93) \times 360^\circ = 7.74^\circ$
60-69	0	$(0/93) \times 360^\circ = 0^\circ$
70-79	0	$(0/93) \times 360^\circ = 0^\circ$
80-89	1	$(1/93) \times 360^\circ = 3.87^\circ$

N = 93

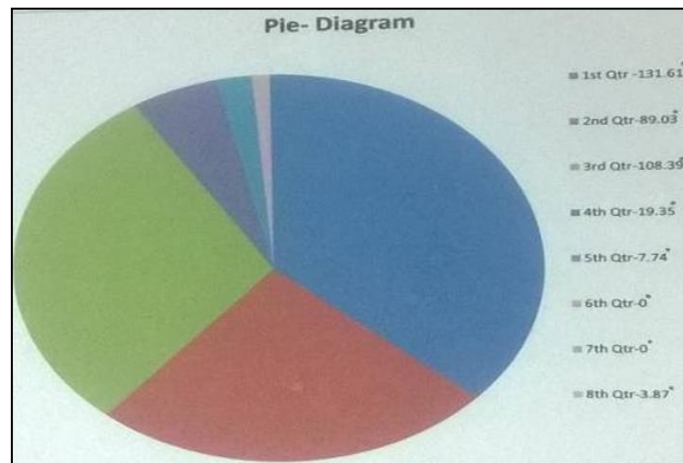


Fig 15

iii) Data collected from Ghoramara Higher Secondary School, Karimganj

The final marks on the subject Mathematics out of 100 marks in the final exam, held on 2016.

Table 14

Section – a		Section - b	
Roll no.	Marks obtained	Roll no.	Marks obtained
1	56	1	44
2	32	2	43
3	30	3	52
4	30	4	39
5	42	5	14
6	16	6	12
7	12	7	06
8	10	8	25
9	39	9	24
10	51	10	28
11	62	11	30
12	07	12	30
13	11	13	30
14	19	14	14
15	05	15	35
16	15	16	20
17	15	17	11
18	07	18	20
19	05	19	25
20	22	20	30
21	20	21	07
22	20	22	07
23	28	23	30
24	08	24	19
25	25	25	18
26	30	26	05
27	30	27	05
28	30	28	05
29	35	29	30
30	10	30	11
31	06	31	11
32	14	32	12
33	11	33	13
34	12	34	10
35	05	35	22
36	05	36	10
37	13	37	06
38	12	38	07
39	07	39	06
40	19		

Table 15: Tabular form of data collected from Ghoramara Higher Secondary School, Karimganj

Sl. No.	Class interval	Class boundary	Mid value	Frequency	Cumulative frequency
1	5-9	4.5-9.5	7	17	17
2	10-14	9.5-14.5	12	19	36
3	15-19	14.5-19.5	17	7	43
4	20-24	19.5-24.5	22	7	50
5	25-29	24.5-29.5	27	6	56
6	30-34	29.5-34.5	32	12	68
7	35-39	34.5-39.5	37	4	72
8	40-44	39.5-44.5	42	3	75
9	45-49	44.5-49.5	47	0	75
10	50-59	49.5-54.5	52	2	77
11	55-59	54.5-59.5	57	1	78
12	60-64	59.5-64.5	62	1	79

N = 79

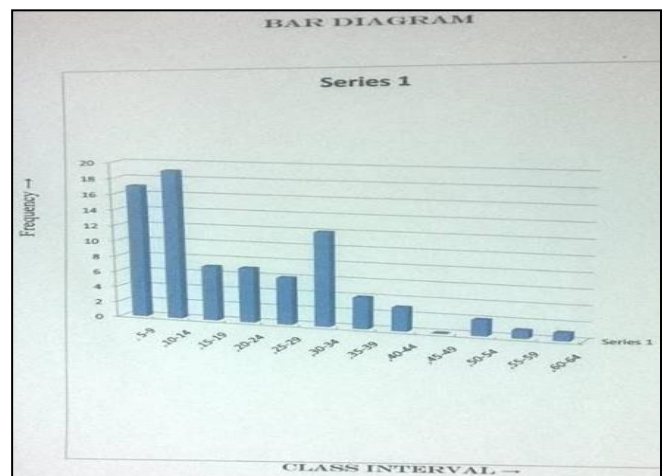


Fig 16

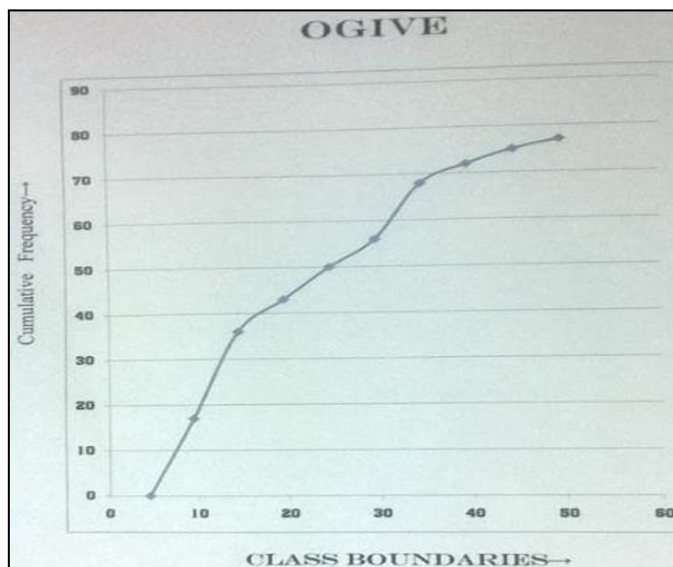


Fig 17

Table 16: for PIE diagram

Marks	Frequency	Value of central angle
5-9	17	$(17/79) \times 360^\circ = 77.46^\circ$
10-14	19	$(19/79) \times 360^\circ = 86.58^\circ$
15-19	7	$(7/79) \times 360^\circ = 31.89^\circ$
20-24	7	$(7/79) \times 360^\circ = 31.89^\circ$
25-29	6	$(6/79) \times 360^\circ = 27.34^\circ$
30-34	12	$(12/79) \times 360^\circ = 54.68^\circ$
35-39	4	$(4/79) \times 360^\circ = 18.22^\circ$
40-44	3	$(3/79) \times 360^\circ = 13.67^\circ$
45-49	0	$(0/79) \times 360^\circ = 0^\circ$
50-59	2	$(2/79) \times 360^\circ = 9.11^\circ$
55-59	1	$(1/79) \times 360^\circ = 4.55^\circ$
60-64	1	$(1/79) \times 360^\circ = 4.55^\circ$

Analysis of the Data Collected From Different Schools

1. Govt. Higher Secondary School, Karimganj – All the graphs regarding the collected data clearly show that the maximum no. of students of class X obtain 50-59 marks and minimum no. of students get 10-19 marks and in this school, the no. of students who appeared the final exam of class X on the subject mathematics were 93 and out of

them 15 students performance was below 30% and rest 78 students got above 30% marks in the subject mathematics.

2. Nilmoni Higher Secondary School, Karimganj – Here the total no. of students who set in the final exam 2016, on mathematics was 32 and out of them 22 students achieved below 30% marks. Out of 100, all the graphs clearly show that the maximum marks (55-59) obtained by 2 students and minimum marks (5-9) obtained by 4 students. Also, none of the students obtained below 5 marks.
3. Public Higher Secondary School, Karimganj – In this school, the total no. of students who set in the final exam 2016, on mathematics was 142 and out of them 98 students achieved below 30% marks and the rest 44 achieved above 30% marks. All the graphs clearly show that maximum no. of students (58) obtained in between 15-24 marks and none of the students obtained below 5 marks and above 84 marks. Also, no student obtained in between 65-74 marks and minimum no. of students (1) got in between 65-74 marks.
4. Mahadev Higher Secondary School, Rakesh nagar -The total no. of students who set in the final exam 2016, on mathematics was 73 and out of them 58 students achieved below 30% marks and the rest 15 achieved above 30% marks. All the graphs clearly show that maximum no. of students (39) obtained in between 5-14 marks and none of the students obtained above 74 marks and below 5 marks.
5. Modern High School, Marjatkandi - The total no. of students who set in the final exam 2016, on mathematics was 93 and out of them 57 students achieved below 30% marks and the rest 36 achieved above 30% marks. All the graphs clearly show that none of the students got below 10 marks and above 89 marks and the maximum no. 34 obtained in between 10-19 marks and maximum marks 80-89 is obtained by only one student.
6. Ghuramara High School – In this school, the total no. of students who set in the final exam 2016, on mathematics was 79 and out of them 56 students achieved below 30% marks and the rest 23 achieved above 30% marks. All the graphs clearly show that maximum no. of students (19) got in between 10-14 marks. And maximum marks (60-64) obtained by only 1 student. None students got below 5 marks and above 64 marks.

Table 17: Tabular Form of Achievement Level of Students of Six Schools

Name of The school	Total no. Of students	No. Of students passed	No. Of students failed	% of students passed	% of students failed
Govt. Higher secondary school	93	78	15	83.87	16.13
Nilmoni higher secondary school	32	10	22	31.25	68.75
Public higher secondary school	142	44	98	30.98	69.02
Mahadev higher secondary school	73	15	58	20.55	79.45
Modern high school	93	36	57	38.70	61.3
Ghuramara high school	79	23	56	29.11	70.89

Major Findings

1. Performance of the students of the urban schools is better as compared to rural schools.
2. The pass percentage of students of urban schools is higher than rural schools.
3. The maximum marks obtained by the students of rural area

are not so high. Most of them are mediocre student.

4. The achievement level of students of some urban schools is also very poor, but there is some instance of good performance in some schools in urban areas. In case of rural school, the performance of students is low in each school.

Suggestion

On the basis of collection of data and major finding, it may be concluded that there should be more consciousness on the part of mathematics teacher regarding the performance of their students in mathematics. The various fact which may be held responsible for the poor performance are lack of proper understanding of the subject matter, extra help from teachers and parents side, school environment, family back ground, lack of qualified teachers etc. If a student gets better opportunity of above factors, he/ she will do well in mathematics irrespective of rural or urban areas. While discussing with the mathematics teacher of rural area the researcher came to know that parents of most of the students are illiterate and the environment in their home not appropriate. Although constraints are there, teachers, parents, and society must be conscious about the low performance of students in mathematics; otherwise in future condition may be more degradable than the present situation. As this is the time of tough competition in each and every area, so substantial effect must be taken to improve the performance level of students in mathematics.

The main goal of mathematics education in schools is the mathematisation of the child's thinking. Clarity of thought and pursuing assumptions to logical conclusions is central to the mathematical enterprise. There are many ways of thinking, and the kind of thinking one learns in mathematics is an ability to handle abstractions, and an approach to problem solving. Universalisation of schooling has important implications for mathematics curriculum.

Mathematics being a compulsory subject of study, access to quality mathematics education is every child's right. We want mathematics education that is affordable to every child, and at the same time, enjoyable. With many children exiting the system after Class VIII, mathematics education at the elementary stage should help children prepare for the challenges they face further in life. In our vision, school mathematics takes place in a situation where: (1) Children learn to enjoy mathematics, (2) Children learn important mathematics, (3) Mathematics is a part of children's life experience which they talk about, (4) Children pose and solve meaningful problems, (5) Children use abstractions to perceive relationships and structure, (6) Children understand the basic structure of mathematics and (7) Teachers expect to engage every child in class. On the other hand, mathematics education in our schools is beset with problems. We identify the following core areas of concern: (a) A sense of fear and failure regarding mathematics among a majority of children, (b) A curriculum that disappoints both a talented minority as well as the non-participating majority at the same time, (c) Crude methods of assessment that encourage perception of mathematics as mechanical computation, and (d) Lack of teacher preparation and support in the teaching of mathematics. Systemic problems further aggravate the situation, in the sense that structures of social discrimination get reflected in mathematics education as well. Especially worth mentioning in this regard is the gender dimension, leading to a stereotype that boys are better at mathematics than girls. The analysis of these problems lead us to recommend: (a) Shifting the focus of mathematics education from achieving 'narrow' goals to 'higher' goals, (b) Engaging

every student with a sense of success, while at the same time offering conceptual challenges to the emerging mathematician, (c) Changing modes of assessment to examine students' mathematical abilities rather than procedural knowledge, and (d) Enriching teachers with a variety of mathematical resources.

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