

Academic Performance of Students in Primary Schools: A Study in Paschim Medinipur District of West Bengal

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ABSTRACT- Education is vital component of human capital formation. Its development put forward the socio-economic developments of the country also enhance the political awareness among the society. Therefore, quality education is very much necessary for the development of the entire country. This paper examines the students' quality in primary education in Paschim Medinipur district of West Bengal. The study is based on primary survey on 305 students from 7 schools scattered over different regions in the district. The study tries to identify the influencing factors of students' academic performance. The results find moderate performance of students in reading ability and simple numeracy. Parental occupation and mother's education are found significant influencing determinants of students' academic performance.

KEYWORDS- Primary Education, Academic Performance, Parental Occupation, Mother's Education, Private Tuition.

I. INTRODUCTION

Development of education system is vital for ensuring aggregate development of a country. For underdeveloped countries it is more or less imperative to focus on development of all education sectors. This is the main cause that in India priority in education field has been given to primary education right from time of independence. One of the most vital goals in the sector of education in India is to universalize the elementary education. As per the Article 45 it was the mandate of the Constitution of India to the existing government to provide free of cost education to each and every child of the country till, they obtain the age 14 years. Therefore, the government had to make all arrangement for elementary level of schooling in over the country as to enable all the children to participate in school avoiding all barriers. The education policy followed by the government of West Bengal are also designed to fulfilling the nation's promise. The school education department has been established with the educational challenges of equity, excellence expansion at all level of education. Reducing dropout rates, retention rate increase, presence of optimal human and physical infrastructure and quality enhancement come within the concerns of their operation. Initiatives have been taken through Utkarsha Abhijan where the primary school students will be assessed to get an overview in their level of learning. With the help of this program, they desire to

build awareness regarding the education quality among the teachers, government officials involving education system guardians and with the community at large. Over time all needy infrastructural facilities have improved, many primary teachers have been appointed and many school incentives have led for betterment of primary level schooling. As per the Annual Status of Education Report (ASER) Report, students never enrolled was only 1.5 % and dropout rate was 2.9 % in the age group of 6- 14 years in West Bengal at 2005. In 2018 report students never enrolled in school rose to 2 % and dropout rate remained same as previous rate. According to ASER 2018, 44.1 % of students reading in standard III to V could read Standard II level text and only 43.4 % students could do simple subtraction. In this paper an attempt has been made to examine the overall scenario of quality of primary education in Paschim Medinipur district of West Bengal.

II. LITERATURE REVIEW

Walter (2018) study on the home environment of a secondary school student who could either support or retard their academic performance. He investigated home environment as an influencing factor on students' academic performance. Home environment influencing factors like parental occupation parents' education level etc. And the study revealed that on student' academic performances the parental occupation working as a significant role but parental education level had no significant on students' score improvement. McIntosh, (2008) in Canada he found that parental education level was an indication of children intellectual ability for a large number of reasons like serving as a better role model, ambitious, promote honest behaviour, and methodical, all of which were likely to contribute to making the child more successful at all school and other fields. Farooq, (2011) in a study carried in Pakistan and found that parental education level had a significant impact on students' overall academic performance as well as achievement in different subjects like Mathematics and English. Mehra et al (2012) discussed on interregional disparities in quality of primary level education in rural India. From the Annual Status of Education Report, 2010 the Quality of Education Index (QEI) had been constructed using three indices: (i) Quality of Teaching Index, (ii) Learning Achievement Index and (iii) School Infrastructure Index. From the analysis it is found that Kerala was the only state which scores the highest in all the three indices whereas states like

Assam, Bihar, Uttar Pradesh, Odisha, Jharkhand and majority of North Eastern state are at the bottom. Maji and Sarkar (2017) studied to examine the intra-district discrimination in primary level education in the district of Bankura of West Bengal and they found all the indicators economic, social, cultural and institutional of education showed the regional disparities at different block. Rana et al (2003) discussed on certain difficulties prevailing in the primary level of education in west Bengal like insufficient attendance, perceived class differences, gender and poverty discrimination prevent socially underprivileged society from accessing education opportunities. Vanitha (2016) studied on students' reading skill and the quality education in government in primary schools in India. Goyal (2007) studied on learning outcomes of the students in class IV and V in government, private aided and private unaided schools in Orissa and tried to find out the impact factors on students learning outcome. Dutt and Kundu (2018) found more involvement of the female teachers played a significant role in improving the Gender Parity Index in primary stage education in the rural districts of West Bengal. Mukherjee (2018) investigated the impact of good learning outcomes in social sector development. Jung (2013) examined how private tutoring exerted a direct influence on changes in academic achievement. Mangal Sing Kro. (2017) explored why teaching aids and modern technological equipment's are needed in the context of poor children in Assam. Dang (2007) found the private tutoring in Vietnam and found No evidence found gender discrimination in expenditure on private tutoring. Subedi (2018) explored the process, reasons and consequences of private tutoring as perceived by the secondary level teachers and students of community schools.

III. OBJECTIVES OF THE STUDY

The following the major objectives of the study

- To analyze the students' academic performance in primary education in Paschim Medinipur District.
- To assess the variation of students' academic performances in primary level in Paschim Medinipur District.
- To determine the factors influencing academic performance of the students.

IV. METHODOLOGY AND DATA COLLECTION

The district of Paschim Medinipur one of the largest districts of West Bengal. A major percentage of population in the district is living in rural areas and the peoples are economically backward but in education people are very progressive that is they are not lack behind the other developed district of West Bengal. In this study we have chosen seven primary schools from this district that are located in rural as well as semi-urban areas.

Mainly primary data has been used for this particular study. To analyse the data collected from primary survey, here used some statistical tools and techniques ANOVA and Logit Model.

V. RESPONDENTS' PROFILE

Table 1 shows number of students available in different schools who responded on the day of surveys, also give their gender and class wise distribution in selected school. We have covered only students who are studying in class III and Class IV and it is seen the enrolment of the students is maximum in Maligram 1 No Primary School and Sritikana Shahid Khudiram Primary School. From the table it is observed that out of 305 student's overall maximum is female students that 168 and the male students is 137

Table 1: Profile of the Surveyed School of Paschim Medinipur District

Name of School	Block	No. of Students	Male	Female	Class III	Class IV
Garmal Primary school	Salboni	33	14	19	18	15
Maligram 1 No Primary School	Pingla	82	35	47	38	44
Maligram 3 No (Maktab) Primary School	Pingla	39	17	22	25	14
Paharipur Primary School	Midnapore	43	8	35	18	25
Pirakata Primary School	Salboni	22	12	10	11	11
Rangamati 1 No Primary School	Midnapore	32	19	13	13	19
Sritikana Shahid Khudiram Primary School	Midnapore	54	32	22	32	22
Total	3 Block	305	137	168	155	150

Table 2 reveals the students' distribution by their classes, gender, caste and religion wise distribution and it covered

51 percent students who are studying in class III and 49 students from class IV.

Table 2: Distributions of the Students as per Category in Paschim Medinipur District

Category	No of Students	Percentage of Students
Class		
Class III	155	51
Class IV	150	49
Gender		
Male	137	45
Female	168	55
Caste		
General	164	54

SC	48	16
ST	27	9
OBC	66	22
Religion		
Hindu	177	58
Muslim	126	41
Others	2	01

Study covered 45 percent male and 55 percent female students, half of the students from general category, 16 percent from SC, 9 percent from ST and 22 percent students from OBC category. 58 percent students covered from Hindu religion, 41 percent students from Muslim and only 2 students that is 1 percent from other community.

VI. RESULTS AND DISCUSSION

A. Students' Academic Performance

In this section we have presented the students' academic performance as the outcome of primary education in different school. Students' academic acquirement may be defined as nobility in all academic disciplines, in classes as well as other co-curricular activities. Usually, academic performance in all schools is done after teaching and learning has taken place then the teacher evaluates whether learners have acquired what they learnt. By means of examinations, we can also be sure about the quality of teaching done in the classroom by teachers. During primary survey we try to understand the students' performance through test score by developing questionnaire on the basis of their familiar subject like English, Bengali, Mathematics and General Knowledge and find average test score of the students'. Table 3 shows that school wise average test score percentage of the students who are participated in test examination, we have seen that Paharipur Primary School and Maligram 1 No Primary School scored high that is their average score percentage is 95.2 and 82.8 respectively. Maligram 3 No (Maktab) Primary School, Pirakata Primary School and Sritikana Shahid Khudiram Primary School are scored low which are 51.9, 53.6 and 56.2 respectively even though our test exam subject matter was very easy.

Table 3: School wise average performance of the students

Name of School	Average Score Percentage
Garmal Primary school	64.5
Maligram 1 No Primary School	82.8
Maligram 3 No (Maktab) Primary School	51.9
Paharipur Primary School	95.2
Pirakata Primary School	53.6
Rangamati 1 No Primary School	72.8
Sritikana Shahid Khudiram Primary School	56.2
Overall	70.8

Figure 1 exhibits the students' reading skill of the students who are participated in our assessment process, it is observed that 8.2 percent students cannot read the line from their Bangla text book and 55.1 percent can read very well, other students' reading ability is average, goods and some are bad in 1st language

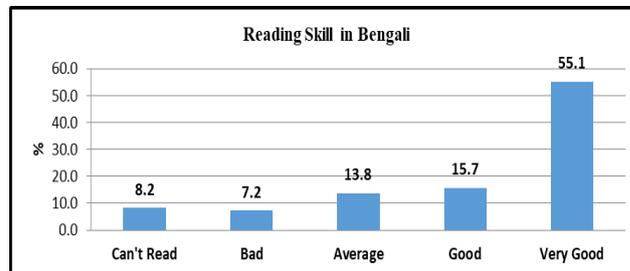


Figure 1: Reading Skill of the Students (%) in 1st language

Second language reading ability of the students revealed in figure 2 here we observed that 31.5 percent students are able to read their English text book very well but 17 percent students cannot read the simple or single line from the second language text book even they are fully not familiar with the English alphabet chart.

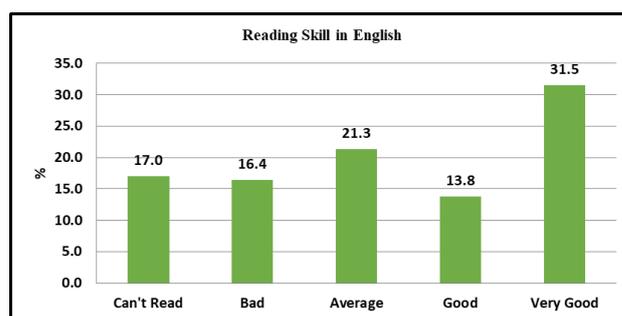


Figure 2: Reading Skill of the Students (%) in 2nd Language

Figure 3 shows the variation in students' reading ability between Std. III and IV students who are participated in evaluation process. In Std. III 12.3 percent students cannot even read the Bangla sentences and 49 percent can read very well but the students who studying in class IV, only 4 percent are unable to read their 1st language and 60.7 percent can very well.

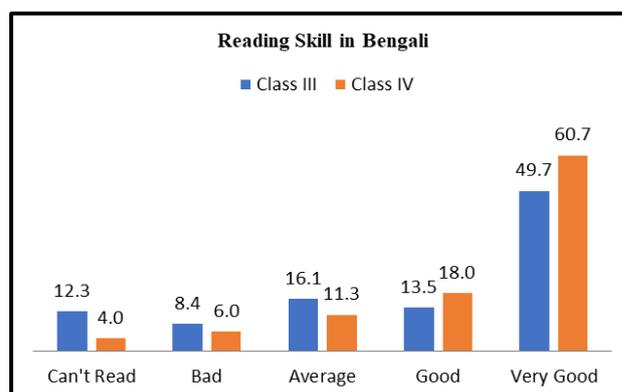


Figure 3: Class wise Reading Skill of the Students (%) in 1st language

In second language the students' ability to reading are not satisfactory in both std. III and IV even though we have test on simple and popular line from their text. In figure 4 shows the reading ability between Std. III and IV students and seen that approximately 17 percent students from both standards are unable to read the simple line of their English text book. Only 26.5 and 36.7 percent students can read their English text book very well in whom studying in standard III and IV respectively.

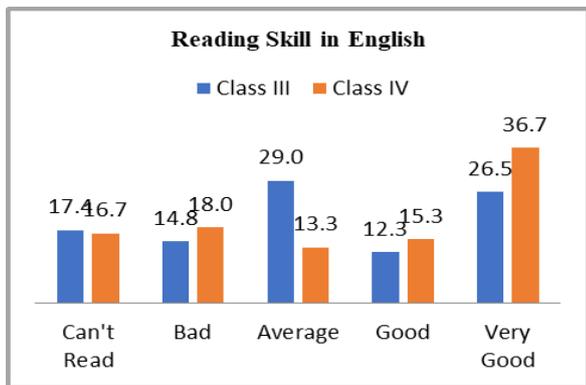


Figure 4: Class wise Reading Skill of the Students (%) in 2nd language

Figure 5 exhibits the proportion of students who can do simple numeracy tasks (1-digit and 2-digit) like simple addition, simple subtraction, simple multiplication and simple division. It has been seen that maximum of the students i.e., 83.6 percent can do simple addition, only 16.4 percent students unable to done the simple addition task. Simple subtraction task is done by the 69.5 percent students and 30.5 percent students unable to done, we observed the percentage of students who unable done simple multiplication task are little bit more than other numeracy task.

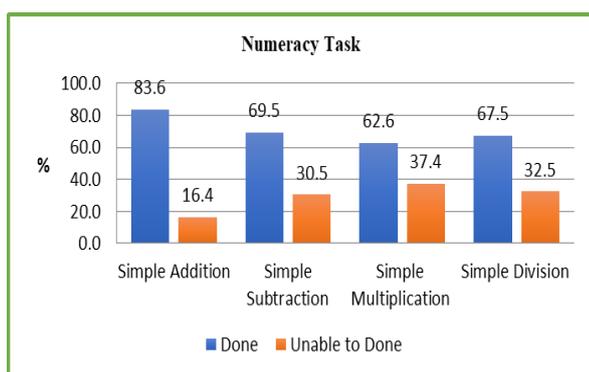


Figure 5: Numeracy Task by the Students (%)

Table 4 reveals the students' distribution by their socio category and their performance like classes, gender, caste and religion wise distribution, it is observed the students who are studying in class IV their average performance score is higher than class III students. Other thing is observed from the analysis that is female students are scoring higher than the male students which is clear that the female students very active in primary level. It also identifies the caste-wise number of students from class III

and IV and see the variation in average performance and it is seen that the general students, OBC and SC students are scoring higher i.e., 73.6, 70.8 and 69.6 percent respectively, only the students who are belonging from ST category they are scoring little less which is 56.6 percentage. During our study we included one Muslim dominated school to see the religion wise variation in academic performance at primary level and observed that there is no huge difference among different religion but Muslim and other religions' students are little leg behind in performances than Hindu community students at primary schools.

Table 4: Category-wise Students and their Average Performance

Categories	Number of Student	Average Score Percentage
Class		
Class III	155	64.6
Class IV	150	77.1
Gender		
Male	137	68.5
Female	168	72.6
Caste		
General	166	73.6
SC	48	69.6
ST	29	56.6
OBC	62	70.8
Religion		
Hindu	177	73.9
Muslim	126	66.4
Others	2	65.0

B. ANOVA Results on Students' Academic Performances

On Students' Academic Performances Analysis of variance (ANOVA) is the collection of statistical tools which used to analyze the statistically significant variation among different group of means and their associated procedures (such as "variation" among and between groups). Analysis of variance: one-way and two-way ANOVA, here we have use one way ANOVA to show the students' academic performance among different groups like caste, parental occupation and mother education level wise.

Table 5: ANOVA Results: Academic Performance

	No of Students	Mean	Std. Deviation	F	Sig.
Caste					
General	166	73.6	24.5	3.814	.010
SC	48	69.6	27.4		
ST	29	56.6	23.2		
OBC	62	70.8	25.8		
Parents Occupation					
Wage Labour	175	69.4	26.3	.743	.563
Cultivation	53	75.3	25.8		
Job	12	76.7	21.1		
Business	54	69.4	24.8		
Shop	11	70.7	15.1		
Mother Education Level					
Illiterate	142	54.5	24.8	92.092	.000
I to VIII	83	79.6	16.5		

IX & Above	80	90.4	12.9		
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From the analysis as given in Table 5, it is observed that there is a statistically significant difference of academic performance among caste groups of students. However, there is no significant difference in academic performances by household occupation. Mother’s education level makes difference in the performance of the students as found in the ANOVA results.

C. Determinants of Academic Performance: Logit Model

Binary logistic regression is used when the outcome of the model is measured with the dichotomous variable (in which there are only two outcomes). The model is given by equation (1) and equation (2).

$$\text{Logit}(p) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k \quad (1)$$

It follows from the equation (1) that students scoring 50 percent and above can be modelled as

$$p = 1/1 + e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k)} \quad (2)$$

Where p is the probability of students scoring 50 percent or above, the β_i 's and the $X_i, i = 1, 2, \dots, k$ are the regression coefficients and the independent variables respectively.

In this model the dependent variable is dichotomous in nature that is the students who scored 50 % & above treated as '1' and students scored below 50 % treated as '0'.

The independent variables used in this model are described in table 6.

Table 6: Description of independent variables of the model

Variable	Description	Expected Sign.
Private Tuition (DV)	Students taking private tuition (Yes=1, No=0)	+
Region (DV)	Students from Urban=1, and from Rural=0	+
Gender (DV)	Students' Gender (Male=1, Female=0)	+
Class (DV)	Students Class (IV=1, III=0)	+
Caste (DV)	Students' Caste (Non-Scheduled=1, Scheduled=0)	+
Religion (DV)	Students' Religion (Hindu=1, Others=0)	+
No of Family Members	Students' Total Family Members	-
Parental Occupation	Students' parental occupation (Job=1, Others=0)	+
Mother Education Level	Students' Mother Education Level	+
Admonish by Teachers (DV)	Punished by teacher at school (Yes=1, No=0)	+

The independent variables are the variables which expectedly affect students' scoring. Here all the independent variables include expectedly positive impact on students higher scored (50 % and above) except household size. We categorized students' caste as Non-Scheduled (General and OBC) and Schedule (SC and ST). Mother education level one of the influencing variables

for push up the students' academic performance, here we expect that mother who never go to school or having minimum knowledge of schooling their child is scoring lower than the other students whose mothers are higher educated. Admonish by teacher in school also incorporated here because students who go to school every day and face admonishment from their teacher at school students will try to more concentrate on study which may help to score. The estimated results of the logit model shown in table 8. Table 7 represent the degree of predicted probabilities of the outcomes i.e., students scoring 50 percent or above and here the overall correct prediction is 80.3 percent.

Table 7: The observed and the predicted frequencies for Students Score Percentage (50 & above =1, below 50 % = 0) by logistic regression with the cut-off of 0.50

Variables	B	S.E.	Wald	Sig.	Exp (B)
Private Tuition (Yes=1, No=0)	0.149	0.397	0.141	0.707	1.161
Region (Urban=1, Rural=0)	0.093	0.376	0.061	0.805	1.097
Gender (Male=1, Female=0)	0.075	0.339	0.049	0.826	1.078
Class (IV=1, III=0)	0.796	0.332	5.739	0.017	2.216
Caste (Non-Scheduled=1, Scheduled=0)	1.042	0.483	4.605	0.031	2.834
Religion (Hindu=1, Others=0)	0.901	0.461	3.818	0.051	2.463
No of Family Members	0.043	0.099	0.184	0.668	1.043
Parental Occupation (Job=1, Others=0)	0.285	0.365	0.601	0.435	0.752
Mother Education Level	0.507	0.139	16.754	0.000	1.768
Admonish by Teacher (Yes=1, No=0)	0.412	0.357	1.329	0.249	0.662
Constant	-1.088	1.011	1.156	0.282	0.337
-2 Log likelihood		229.633			
Cox & Snell R Square		.253			
Nagelkerke R Square		.390			
Total No of Observation		305			

Table 8: Results of the Logit Model in Case Students Score Percentage (50 & above =1, below 50 % = 0)

Observed	Predicted		Percentage Correct
	No	Yes	
No	23	43	34.8
Yes	17	222	92.9
Overall Percentage			80.3

The logit model results reveal that some variables have significant impact on students in academic performance. Here we find that the variables which have very significant effect on students' academic performance are level of class, students' caste; religion and mother's education. It is seen from the analysis that students who are studying in upper class i.e., in standard IV are likely to score above 50. It is found that Non-scheduled category (General and

OBC) are likely to score high than the scheduled students. Students belongs from Hindu family are more likely to scored 50 % and above then the others religion as revealed in logit model results table 8. Students whose mother education level is higher are also more likely to fall into 50 % and above category. Others factors have also impact on students' higher academic score like private tuition but not statistically significant because we have seen at the primary level approximately 80 percent students are taking private tuition at their home. Students' parental occupation one of the influencing factors to the students' academic performance but there is no statistically significant impact found in this study

VII. CONCLUSION

It is observed from the analysis that although in West Bengal has made a considerable progress in infrastructural facilities, enrolment and mead-day-meal facilities at the primary level of schooling but our results reveal the students' academic performances is moderate. The study reveals that there is disparity in the academic performance of primary level students in the schools of Paschim Medinipur district. We find that academic performance of Paharipur Primary School and Maligram 1No Primary School are better compared to other schools. We have seen that students who are studying in upper class have higher average score than the students of lower class. It is also found that the students' taking private tuition are performing well than other students. From ANOVA results we find that there is statistically significant difference of academic performance of students by caste, mother's education level. The Logit analysis reveals the importance of mother's education for the performance of the students. Students of scheduled categories need special attention for improving their performance. As the number of students in the government primary school are decreasing, there is urgent need to improve quality of education reflected in academic performance of students.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

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