

# Infrastructural Development in Elementary Schools: A Block Level Study

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## Abstract

First formal stage of education of an individual starts from the elementary schools. So, infrastructural development in the elementary schools is always found to be very important. Infrastructures are considered as core element to quality teaching-learning as well as enrolment and retention process. Now we are living within the era of movement for Education for All and Millennium Development Goals, which also demand for proper infrastructure in schools. Right to Education Act (2009) also mentioned some basic facilities that every school should have. Sarva Shiksha Abhiyan (SSA) also stressed on the provision of basic physical infrastructure to all schools in a time bound manner. This study tries to exhibit the situation of infrastructural development in the elementary schools of Pathar Pratima block of South 24 Parganas District of West Bengal. The study area is a part of Sundarban which is vulnerable under the threat of climate change at present. Therefore the main aim is to show the pace of development of infrastructure within the rural schools of Sundarban.

**Keywords:** *Infrastructural development, elementary schools, teaching-learning, enrolment, retention.*

## Introduction

Our first formal stage of education starts from the Elementary schools. So, infrastructural development in the elementary schools is always found to be very important. Infrastructures are considered as core element to quality teaching-learning as well as enrolment and retention process. Now we are living within the era of movement for Education for All and Millennium Development Goals, which also demand for proper infrastructure in schools. Right to Education Act (2009) also mentioned some basic facilities that every school should have. Sarva Shiksha Abhiyan (SSA) also stressed on the

provision of basic physical infrastructure to all schools in a time bound manner.

Sattar (1984) pointed out that providing sufficient basic facilities would become a major factor in preventing drop-out. Famade (1999) stressed that the availability of adequate school building, classrooms, chairs and other facilities are necessary for the attainment of educational objectives (cited in Adeyemi and Adu, 2010). Study has also found out a positive correlation between the availability of adequate school infrastructure, and infrastructure surrounding the school and enrolment in school, especially in respect of the girl child (Drèze and Kingdon, 2001). In the view of Grover and Singh (2002), Physical infrastructure includes adequate buildings with classrooms that allow instruction to take place without disruption and have enough space for the learners to participate in activities, clean and well-swept floors, well-ventilated spaces, latrines for girls and boys, drinking water, and enough physical space for learners to engage in physical activity on campus grounds. A better teaching-learning atmosphere in the school and an increase in the quality of education would definitely attract more students to schools and also increase the retention rates (Das, 2007). The quality of physical infrastructure was found to have strong correlation with teacher absence in the World Bank Survey (Kremer *et al*, 2004). "Provision and accessibility to school level infrastructure is important in educational development. If school infrastructure is not widespread and well distributed across regions, students have to lose time in commuting and may have to incur additional monetary costs for commuting. This often discourages them to join or continue schooling. Apart from the number of

schools, the structure of the schools, availability of basic amenities such as drinking water and sanitation in school premises are also parts of educational infrastructure” (HDR, South 24 Parganas, 2009: P.115).

### **Study Area and Objectives**

The study area is a part of Sundarban which is vulnerable under the threat of climate change at present. Therefore the main aim is to show the pace of development of infrastructure within the rural schools of Sundarban. This study tries to exhibit the situation of infrastructural facilities in the elementary schools and the levels of infrastructural development at the Gram Panchayat level regarding the available facilities in elementary schools of Pathar Pratima block of South 24 Parganas District of West Bengal on the basis of DISE data 2007 and 2010 and field survey.

### **Methodology**

Some variables have been selected from Educational development index, which has been developed by National University of Educational Planning and Administration (NUEPA). Selected variables are as follows: Number of School, classroom, teacher; condition of classroom; school with drinking water facilities, schools with common toilet as well as girls’ toilet, boys’ toilet, schools with facilities like blackboard, electricity, kitchen shed, book bank, play ground, boundary wall and ramp. School student ratio, average student-classroom ratio, pupil-teacher ratio, school teacher ratio have also been studied. At first the variables have been categorized into two divisions viz., positive and negative. Two parameters (Pupil Teacher Ratio and Pupil Classroom Ratio) have been identified as negative variables and rest of the parameters (like student school ratio, school with drinking water facilities, schools with common toilet as well as girls’ toilet, schools with facilities like electricity, kitchen shed, book bank, play ground and boundary wall, ramp etc..) have been identified as positive variables. After calculating the Z- Scores of each of these variables Gram Panchayat-wise, Composite Z- Scores have been calculated for positive as well as negative variables.

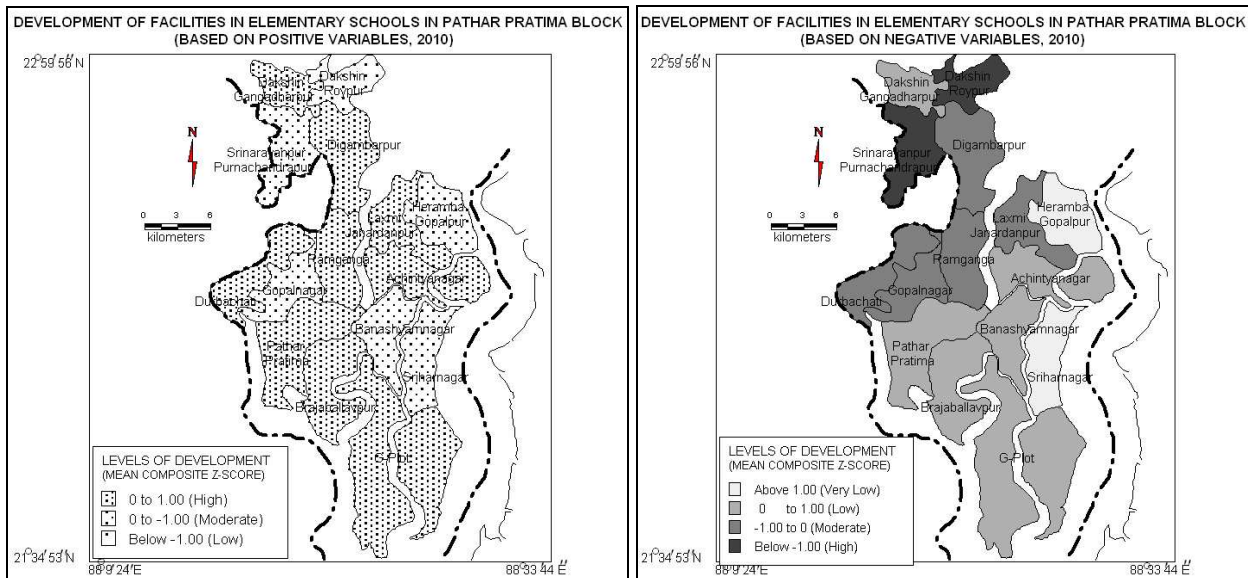
### **Findings**

#### **• Situation of infrastructural facilities in the elementary schools:**

Table 1 is representing the situation of infrastructural facilities in the primary, upper primary and total elementary schools in Pathar Pratima block. In Pathar Pratima block out of 245 elementary schools 83% schools were primary and only 17% schools were upper primary (2007). In 2010 Pathar Pratima has 81% primary schools and 19% upper primary schools out of 252 elementary schools. The pupil teacher ratio in primary was only 1:39 but in case of upper primary it was 1:68 (2007). In 2010 the ratio becomes 1:36 and 1:65 for primary and upper primary respectively. The class room is overcrowded for upper primary than primary for both of the year. The average number of room per school was 5 for both 2007 and 2010. Though most of the classrooms are pucca but still partially pucca and kuchha classrooms exist within the schools. The maximum pucca class room needed major as well as minor repair for both primary and upper primary level. About 41% of the Kuchcha classrooms in Pathar Pratima needed major repair. Repeated attack of environmental calamities aggravates the miserable condition of the classrooms. Accident can also occur at any time causing serious injury and even loss of life. Therefore, initiatives should be taken as soon as possible to convert all partially pucca and kuchcha classroom into pucca and well repaired classroom. Sometimes snake take shelter in the kuchcha classrooms. Having seen the movement of snakes the teachers avoid that room and take class in verandah or open space. Especially teachers coming from cities to these rural schools become very much panicky which also raises their absenteeism especially during summer and rainy season. Primary section is running even with one and two class room (22 schools) and upper primary section is running even with only three class rooms (7 schools). It exhibits that still there is crisis of room in primary school as students of class I, II, III and IV are being accommodated within one, two and three classroom. Due to this crisis of space per student, providing proper teaching instructions, tackling all types of students and maintaining classroom discipline is being hampered. The number of total teacher reaches to 1125 (2010) from 1109 in 2007. 64% teachers were engaged in primary school in 2007 and now in 2010, it has become 62%

whereas 36% teachers were engaged in upper primary school in 2007 and now in 2010 it has become 38%. In 2010 every school have book bank facility. 96% of total elementary schools had drinking water facility (tube well) in 2007 and in 2010 the percentage becomes 83%. Only two schools have tap water facility. Common toilet facility is available in 32% of elementary schools but only 90% of schools have girls' toilet in 2010. 76% schools had kitchen shed in 2007 but within this three years the percentage goes down to 64%. The percentages for schools having electric facility are 2% and 7% for 2007 and 2010 respectively. The percentage of schools having playground is only

33% in 2010. The percentage was lowest among the variables for boundary wall for the year 2007 (15%) and in 2010 it becomes 19%. 57% schools have ramp facility in 2010. Dakshin Gangadharpur, Dhaspara Sumatinagar-I, Dakshin Roypur, Heramba Gopalpur, have 1 blackboard even in upper primary level. So, without sufficient number (just one blackboard in each class) of blackboard teaching learning process is going on in so many schools making the class uninteresting and boring and lowering the active participation process of student.



**Fig.1 & Fig.2 (Data Source: DISE 2010)**

**• Levels of Development regarding facilities:**

Three classes have been prepared to reveal the levels of development at the Gram Panchayat level regarding the available facilities in elementary schools (Fig.1), like High development (0 to 1.00), Moderate development (0 to -1.00) and Low development (-1.00 to -2.00) in case of positive variables. In Pathar Pratima block Pathar Pratima and Dakshin Roypur have been identified as most

and least developed gram panchayat respectively regarding school facilities in 2010. For negative variables four zones have been identified (Fig.2), like High development (Below -1.00), moderate development (0 to -1.00), low development (0 to 1.00) and very low development (Above 1.00). Dakshin Roypur and Sridharnagar represent highest and lowest developed gram panchayat respectively regarding school facilities. Field study reveals the fact that the location of the study area is influencing the infrastructural

development of elementary school. The study area is bounded by two main rivers Saptamukhi and Baratala on the eastern and western part respectively. Apart from that the area is an agglomeration of different isolated island separated from each other by small tidal creeks. Physical distance to school and the poor transportation facility to cover that distance in some parts of the area is hazardous especially in the rainy season. One has to wait for a long time to avail the ferry services which is also dependent on tidal flow. Teachers coming from long distance are not interested to stay near the schools due to the poor infrastructure, and in several occasions quit the job in spite of lucrative salary and job security. The schools suffer from shortage of teachers and proper pupil-teacher ratio cannot be maintained. In absence of kitchen shed mid-day meal is often cooked either in one of the classroom or in the open place under the sky which is not hygienic. As a result it hampers the good quality of education on one way and causes wastage of potential human resource in other way.

### **Conclusion**

It has become obvious that there is inadequacy in the development of infrastructural facilities within the schools in the study area. Proper planning, allocation of fund and supervision towards proper utilization of fund are needed to provide adequate facilities in elementary schools to keep pace with the increasing demand of students. School authority should be more efficient and active to grab the opportunities in time regarding fund issue. Participation of grass root level people is also needed to realize the local need and for successful implementation of elementary education. Community has to be empowered on one hand for the effectiveness of the system and identification of the local need is required on the other hand. Decentralized management structures like village education committee (VEC) and mother teacher association (MTA) can act as platform where the social audit of all expenditure related to civil works; teaching learning materials (TLM), maintenance, school grant etc. will be conducted and they will decide how to use school

grants for the development of schools. Co-operation from non-governmental organization is desirable too for making universalization a success.

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**Table 1: Educational Indicators of Pathar Pratima Block**

INDICATORS	YEAR	PRIMARY	UPPER PRIMARY	ELEMENTARY
No. of Student	2007	28060(50.83%)	27142(49.17%)	55202(100%)
	2010	24680(46.83%)	28022(53.17%)	52702(100%)
No. Of School	2007	204(83.27%)	41(16.73%)	245(100%)
	2010	204(80.95%)	48(19.05%)	252(100%)
No. of Teacher	2007	712(64.20%)	397(35.80%)	1109(100%)
	2010	694(61.69%)	431(38.31%)	1125(100%)
No. of class room	2007	709(57.98%)	477(42.02%)	1186 (100%)
	2010	725(59.04%)	484(40.96%)	1209(100%)
Drinking Water Facility	2007	161(65.71%)	40(16.33%)	201(82.04%)
	2010	164 (65.08%)	43(17.06%)	207(82.14%)
Common Toilet Facility	2007	199(81.22%)	40(16.33%)	239(97.55%)
	2010	68(26.98%)	13(5.16%)	81(32.14%)
Girls' Toilet	2007	40(7.04%)	41(30.83%)	81(33.06%)
	2010	187(74.21%)	40(15.87%)	227(90.08%)
Electricity	2007	2(0.82%)	6(2.45%)	8(3.27%)
	2010	4(1.59%)	11(4.37%)	15(5.95%)
Book Bank	2007	200(81.63%)	41(16.73%)	241(98.37%)
	2010	204(80.95%)	48(19.05%)	252(100%)
Kitchen Shed	2007	192(78.37%)	23(9.39%)	215(87.76%)
	2010	147(58.33%)	15(5.95%)	162(64.29%)
Play Ground	2007	52(21.49%)	33(13.64%)	85(35.12%)
	2010	50(19.84%)	32(12.70%)	82(32.54%)
Boundary Wall	2007	25(10.20%)	12(4.90%)	37(15.10%)
	2010	27(10.71%)	20(7.94%)	47(18.65%)
Ramp	2007	144(58.78%)	68(27.76%)	212(86.53%)
	2010	20(7.94%)	36(14.29%)	56(22.22%)

**Data Source: DISE 2007 and 2010**