

Geographical Exclusion to Educational Innovation

A Study on BRAC Shikkhatari

Nawra Mehrin
Nowreen Yasmin
Samir Ranjan Nath

Geographical Exclusion to Educational Innovation: A Study on BRAC *Shikkhatari*

**Nawra Mehrin
Nowreen Yasmin
Samir Ranjan Nath**

December 2014

Research and Evaluation Division
BRAC Centre, 75 Mohakhali, Dhaka 1212, Bangladesh
E-mail: research@brac.net, www.brac.net
Telephone: 9881265, 8824180-87

For more details about the report please contact: nawra.mehrin@brac.net

TABLE OF CONTENTS

List of Tables and Figures	iii
Acknowledgements	iv
Abstract	v
Chapter 1 Introduction	
1.1 <i>Haor</i> areas in Sylhet division	1
1.2 Education in <i>haor</i> region	2
1.3 Factors necessitating the initiation of <i>Shikkhataris</i>	3
1.4 Literature review	4
1.5 Rationale of study	7
1.6 Research objectives	7
Chapter 2 Methodology	
2.1 Research methods	8
2.2 Instruments	8
2.3 Sampling	9
2.4 Data collection, analysis and reporting	10
2.5 Strengths and limitations	11
Chapter 3 Background of <i>Shikkhatari</i> students	
3.1 Household demography	13
3.2 Socioeconomic information	14
3.3 Education and literacy of population	15
3.4 School enrolment of children	16
3.5 The <i>Shikkhatari</i> students	18
3.6 Migrated students in <i>Shikkhataris</i>	19
Chapter 4 Operational mechanism and related challenges	
4.1 <i>Shikkhatari</i> profile	22
4.2 Selection of <i>hatis</i> and students	23
4.3 Location and external environment	24
4.4 Classroom environment	25
4.5 Students pick up and drop off	26
4.6 School hours and contact hours	27
4.7 Security issues	28
4.8 Operational difficulties	29
Chapter 5 Teachers and quality of education	
5.1 The teachers	31
5.2 Classroom teaching-learning provision	32
Chapter 6 Geographical targeting of <i>Shikkhataris</i>	
6.1 Distance from home to school	37
6.2 Community perception	39

6.3	Factors influencing admission to <i>Shikkhataris</i>	41
6.4	Enhancement of education in households	42
Chapter 7	Discussion, Conclusion and Recommendations	
7.1	Discussion and conclusion	43
7.2	Recommendations	46
References		48

List of Tables and Figures

Tables

Table 2.1	Data collection methods, instruments, sampling techniques and sample size	9
Table 3.1	Percentage distribution of population by age and gender	13
Table 3.2	Percentage distribution of households by main source of income	14
Table 3.3	Percentage distribution of households by food security status	14
Table 3.4	Percentage distribution of population by years of schooling and gender	15
Table 3.5	Percentage of population by various educational indicators and gender	15
Table 3.6	Percentage distribution of children by age-group and level/type of education	17
Table 3.7	Percentage distribution of primary students by grade and gender	17
Table 3.8	Percentage distribution of primary students by school type and gender	18
Table 3.9	Percentage distribution of students by grade and gender and percentage of girls by grade	18
Table 3.10	Percentage distribution of <i>Shikkhatari</i> students by level of parental education	19
Table 3.11	Percentage distribution of <i>Shikkhatari</i> students by grades in previous schools and in <i>Shikkhataris</i>	20
Table 4.1	Attendance, drop-out and replacement rates by grade	23
Table 6.1	Distribution of <i>Shikkhatari</i> students in terms of distance from their household to <i>Shikkhatari</i> and nearest formal school	38
Table 6.2	Percentage of students by mode of transportation to <i>Shikkhataris</i> and season	39
Table 6.3	Percentage distribution of students by reasons of admitting in <i>Shikkhataris</i>	41

Figures

Figure 3.1	Comparison of <i>Shikkhatari</i> students households with eight- <i>upazila haor</i> households regarding some educational indicators	16
Figure 3.2	Percentage of children currently enrolled in school by age-group and gender	17
Figure 3.3	Proportion of students studied in other schools before admitting in <i>Shikkhataris</i> by grade	19
Figure 3.4	Mean age (in years) of students by grade and migration status	21
Figure 6.1	Mean distance (in Km) between students' homes to <i>Shikkhataris</i> and nearest government primary schools	38
Figure 6.2	Percentage distribution of <i>Shikkhatari</i> students by location of school	38

ACKNOWLEDGEMENTS

The research team is grateful to Dr. Safiqul Islam and Mr. Profulla C Barman, respectively the Director and Programme Head of BRAC Education Programme (BEP), for their support in this study. Support of field staff members of BEP was also very important to the team. Special thanks goes to our summer intern, Ms. Raiya Kishwar Ashraf from the Department of Politics, Philosophy and Economics (PPE), Asian University for Women for her involvement during the initial stage of the study. We would like to express our sincere thanks to Mr. Iftekhar A Chaudhury, Coordinator, Editing and Publications for editing the manuscript. Sincere thanks to Mr. Altamas Pasha for final proofing and copy editing of the manuscript. Thanks to Mr. M. Akram Hossain for formatting the report for publication. We also acknowledge support from the enumerators for timely data collection and Mr. Anwar Hossain of Educational Research Unit for processing of primary data.

RED is supported by BRAC's core fund and funds from donor agencies, organizations and governments worldwide. Current donors of BRAC and RED include Aga Khan Foundation Canada, AIDA-Spain, Asian Disaster Preparedness Center, AusAid, Australian High Commission, AVRDC (The World Vegetable Centre), Bencom S.r.L, BRAC-UK, BRAC-USA, British Council, Campaign for Popular Education, Canadian International Development Agency, CARE-Bangladesh, Center for Development Research, Commonwealth Foundation, Department For International Development (DFID), Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), EACI-Qatar, Embassy of the Kingdom of the Netherlands, Euro consult Mott Mac Donald, European Commission, Family Health International, FHI Solutions, LLC, Foundation Open Society Institute, The Global Alliance for Improved Nutrition, Global Development Network, The Global Fund, Govt. of Bangladesh (GoB), The Hospital for Sick Children, Canada, ICDDR,B, International Food Policy Research Institute, International Labour Organization, International Potato centre, International Rice Research Institute, International Union for Conservation of Nature and Natural Resources, Liverpool School of Tropical Medicine, Manusher Jonno Foundation, Oxfam Novib (NOVIB), Oxford University, Rockefeller Foundation, Safer World, Sight Saver-UK, Social Marketing Company, UN Women, UNICEF, Unilever-UK, United Nations Development Program, University of Bonn, University of Leeds, University Research Company LLC, Vision Spring, Women WIN, World Bank, World Fish and World Food Program.

ABSTRACT

This study aimed to understand BRAC Boat School (*Shikkhatari*) initiative in terms of innovation, quality of education and existing challenges. Whether spatial exclusion can be a basis for educational innovation was also addressed in the study. A mixed method approach was used which included survey, interviews and classroom observations. Fifty randomly selected *Shikkhataris* and 500 households of the students were surveyed. Programme Organisers and teachers were interviewed in eight schools and approximately 18 hours of observation were done in each.

Findings reveal that proper geographical targeting was done in setting-up the *Shikkhataris*. These were established nearer to the localities. Parents reported that a vast majority of the students had to cross a waterway to get to school in the monsoon in absence of *Shikkhatari*. About half of the students got schools in their own *hatis*. Evidence suggests that over half of the students of *Shikkhataris* have migrated from government primary schools. Most parents sent students to *Shikkhataris* for good quality and free education and close proximity of schools from *hatis*. There were huge operational challenges related to teachers' recruitment, school supervision and maintenance of desired contact hours. Mechanical problems of boats and extreme weather conditions sometimes delayed students' pick-up, which shortened classroom contact hours. Additionally, teacher retention was a vital issue. However, these challenges, this initiative has been highly successful in geographical targeting of areas that needed extensive intervention. The intervention was indeed an innovation. Intensive teachers' training and their retention, infrastructural modifications to facilitate teaching-learning and innovative management system are some of the issues that need to be reconsidered for the sustainability of the initiative.

INTRODUCTION

Bangladesh has made remarkable progress in both primary and secondary education in recent years. However, existence of various forms of inequity is a reality (Nath and Chowdhury 2009, Nath 2012). Disparity in educational achievement in terms of socioeconomic background, gender, school types, location and ethnicity also exists. Sylhet division, for instance, repeatedly performed unsatisfactorily in terms of various educational indicators (Nath and Chowdhury 2009). Educational attainment of Sylhet division was significantly lower than the national average. *Education Watch* study 2009-10 highlighted poor educational status of Sylhet division and emphasized the need for extensive intervention (Nath *et al.* 2011). Geographical location and diversity have frequently been pointed out as vital factors that hinder the growth of some of the identified areas in this region, that mostly consist of *haors* (UNICEF 2010, Nath *et al.* 2011).

1.1 HAOR AREAS IN SYLHET DIVISION

Sylhet division is located at the north-east corner of Bangladesh. It consists of 6.9% of the country's population with 8.5% of its total land area (BBS 2011). Sylhet has three major landscapes – plain land, *haor* and tea-estates/hilly/forest. The plain land covers 57.5% of total land area, *haor* covers 30.2% and tea-estate/hilly/forest covers 12.5% (Nath *et al.* 2011). The *haor* area has a distinct geographical landscape and it is characterized by low educational attainment, marginalisation and deprivation.

Haors are large floodplain depressions that cover about 1.99 million hectares of land in the country's north-east corner (BHWDB 2012). These flooded wetlands are composed of rivers, streams, canals and seasonally flooded cultivated plains. They are located across the districts of Sunamganj, Habiganj, Netrakona, Kishoreganj, Sylhet, Maulvibazar and Brahmanbaria.

Precipitation and water flows include annual rainfall in the area that ranges from 2200–12000mm along with river water that flows from northern India. This results in flash flooding and water management challenges every year that worsen due to infrastructural inadequacies and landscape vulnerabilities. The inhabitants of this area are frequently exposed to flooding, landslides and deforestation. This is worsened by unplanned drainage and communication loss as roads and access to public facilities are cut off (BHWDB 2012a).

Industries in the region are mostly primary. Fisheries, fishing and water-based agricultural activities are the major sources of income for most of the *haor* population. While water sustains economic life in the region, rapid changes in water levels and floods also increase vulnerabilities significantly. Hence, regional economic, social and infrastructural development has lagged behind the rest of the country. High poverty is widespread and consistent (BHWDB 2012b).

Inhabitants of *haor* areas are more vulnerable to frequent natural disasters, absence of proper infrastructure, landlessness, ecological degradation, inappropriate sanitation facilities, deforestation, lack of educational institutions and communication facilities, inadequate livelihood opportunities as well as overall poor provision of

services. The government is at the preparatory stage of a sustainable integrated development plan for *haor* areas that prioritizes twenty sectors including education (BHWDB 2012a).

Along with BRAC, there are several development organisations e.g., CARE, VARD, CARITAS, FIVDB, World Bank and several local NGOs that are working for the development of the *haor* community of Bangladesh by particularly focusing on the difficulties in different sectors like challenges in education, health and infrastructural improvement.

1.2 EDUCATION IN HAOR REGION

General situation: High rates of extreme poverty as well as poor access to government and private services intensify the geographical and social exclusion of the *haor* population. Heavy economic dependence on labour intensive work means that families are unable to give time and spend money behind children's education. There are 1,011 primary schools in Habiganj and 1,402 in Sunamganj districts. These schools include government, non-government and *madrasas* that are accessible to the communities; however, most are used as weather and aid shelters. These schools can be reached on foot or by boats which depends on level of water. The location of schools dictate whether they are surrounded by water. In such cases, additional costs are incurred by students to reach schools. The added effort of walking or rowing long distances across marshes and water are seen to affect school enrolment in *haor* areas. Net enrolment rate among *haor* area children of age 6–15 years was 75.2% in 2009 (Nath *et al.* 2011). This rate, at that time, was 82.4% at the national level. The difference between the two figures is 7.2 percentage points.

Real enrolment rate by location and age group further show that *haor* children of age 6–10 years, the standard age for primary school attendance, was 82.4%. The rate started to decline from the age of nine years (Nath *et al.* 2011). Distance between home and school significantly affected school enrolment in *haor* areas. In cases, where schools were less than half a kilometre away from home, net enrolment rate was 83.9%. This rate dropped to 79.6% for schools that were up to a kilometre away from home and fell to 69.9% for schools that were 1.1 km to 2.6 kilometres away from households.

Haor families were also seen to send children to *madrasas*. *Ebtedayee* *madrasas* are alternatives to primary schooling which provide religious education. Moreover, there are non-graded *madrasas* too. In 2009, 5.8% of children of age 6–15 years in *haor* areas enrolled in non-graded *madrasas*. Over 8% of primary level students in *haor* areas were admitted to *ebtedayee* *madrasas*. *Madrasa* enrolment at primary level among individual districts showed further variation – 10% in Sunamganj and 5.8% in Habiganj.

As part of development of marginalized *upazilas* of Sylhet division, BRAC initially identified eight *upazilas* for intervention. A household census was carried out in these *upazilas* in 2011 to find out the needs of households. A school survey was also done. A clear picture of the educational scenario emerged from these. The census showed that about half of the villages in these *upazilas* had no schools and 68.5% had no government primary schools (Nath 2013). Primary net enrolment rate was significantly lower than the national average (81.8% vs. 90%). The rate was much lower in *haor* areas (78.6%) with gender difference in favour of girls (80.8% vs. 76.5%). The study also identified 125,298 out-of-school children of age 5–14 years in the *upazilas*. They were 25.8% of total children of this age group. Proportion of out-of-school children was higher in *haor* areas in comparison to plain land and tea-estates/hilly areas.

1.3 FACTORS NECESSITATING THE INITIATION OF *SHIKHTARIS*

Different parts of Bangladesh are inundated by water for more than half the year. The physical location and hydrology of the *haor* region creates a myriad of constraints for the inhabitants. Schools are inundated and as a result are closed for up to 6-7 months a year (Islam, Chowdhury and Haque 2005, BHWDB 2012, HILIP 2011). Additionally, students have to paddle through water to get to school. In some cases, they also have to travel long distances by boats to get to school. The cost, time and difficulties associated with schooling hinder student's willingness to go to schools. Sometimes, even if they are willing to go to schools, their parents are too poor to afford the transportation costs associated with schooling. Moreover, classes are not held regularly in most government schools due to irregularity of teachers. As a result of these difficult circumstances and challenges, a high percentage of students dropout even before the completion of primary schooling. Intervention strategies that have been a success elsewhere proved to be a failure in these difficult circumstances. The geographical challenges demanded an innovation within the current education model in order to adequately address the exclusive difficulties faced by these regions.

BRAC initiative: In order to increase school enrolment and to reduce number of out-of-school children in eight marginalized *upazilas*, BRAC education programme (BEP) established 1,019 primary and 959 pre-primary schools of its own and 166 primary schools under the education support programme (ESP) during 2012–13 (Nath *et al.* 2014). Number of students in these schools was approximately 64,320. These schools were established in 866 villages. This was 47.6% of total villages in the *upazilas*. Due to BRAC's initiative, net enrolment rate at both pre-primary and primary levels significantly increased in the intervention villages within two years. In addition, in order to provide greater access to existing educational provision such as government primary schools, BEP engaged in a campaign programme along with FIVDB. Increase in enrolment and retention were the aims of this campaign.

Among other services, BRAC decided to expand its education programme in the marginalized *haor* areas of Sylhet division. Based on the needs and socio-ecological characteristics of the region, BEP adjusted its existing model of schooling and established *Shikkhataris* or Boat Schools in wetland areas across the country.

With the objective of providing educational services to most deprived and marginalized children in low-lying *haor* regions, ten boat schools were established in Dherai *upazila* of Sunamganj district in 2011. The initiative was expanded during the past three years in different wetland areas across the country and boat schools were set up in 14 districts. At present, 357 boat schools are in operation covering almost all *haor* areas across the country (Admin Data 2013)*. A higher proportion of boat schools is concentrated in the *haor* areas of Sylhet division. A total of 170 boat schools are in operation in three *upazilas* of Habiganj district and nine *upazilas* of Sunamganj district.

BRAC introduced these boat schools in order to provide an innovative solution to the exclusive barriers to education in the *haor* region. According to a country's leading newspaper, these boat schools are an 'innovative solution in the country's marshlands where flood and poverty make normal schooling almost impossible' (The Daily Star 2012).

* BEP MIS Data 2013

1.4 LITERATURE REVIEW

Studies show that individuals or groups living in geographically remote and isolated areas have more limited access to livelihood opportunities and basic services than people in the mainland. This is considered to be the root cause behind the backwardness of these regions (Kabeer 2006). Consequently, this results in inadequate participation of individuals in key aspects of social life (Babajanian and Zanker 2012). They gradually become victims of social exclusion - a phenomenon that refers to multiple forms of economic and social disadvantages that are caused by various factors. These include inadequate income levels, poor health services, geographical location and cultural identification (Burchardt *et al.* 2000 cited in Kabeer 2002).

Various forms and causes of social exclusion have been identified in different literature to generate a framework of social exclusion (Hann 1999, Burchardt *et al.* 2000, Kabeer 2002). Three major dimensions of social exclusion have been identified: income, service and participation. These dimensions often mutually reinforce each other and they are interconnected (Paugam 1996 cited in Babajanian and Zanker 2012). The framework provides a holistic picture of deprivation and it explains the forms of exclusion that the *haor* communities are exposed to. Geographical features and land structure of the *haor* basin area as well as increased marginalization due to factors such as poverty, poor infrastructure and communication lead to further exclusion. These factors collectively make the *haor* communities more vulnerable to exclusion. As a result, the communities are deprived of basic services and access to employment opportunities (Sarma 2010).

Spatial exclusion is one dimension of social exclusion that is not easily captured by the interaction between social discrimination and economic deprivation. Spatial disadvantage can be understood as '...the remoteness and isolation of a location which makes it physically difficult for its inhabitants to participate in broader socioeconomic processes...' (Beall 2002). Social deprivation, inequalities and poor economic condition resulting from geographical isolation keep families in *haor* region from sending their children to schools. Both teachers and students in these areas face extreme difficulties in commuting to schools because they are annually waterlogged for an average of six to seven months.

Access to education is therefore a huge problem in these areas. Students face the challenge of travelling huge distances to get to school. In the dry season, they usually have to walk long distances and in monsoon, they have to take a boat. As a result, some students just lose interest in education and dropout; some dropout because their parents cannot bear the transportation cost. Social and infrastructural issues increase the opportunity cost of children's attendance in schools. They are needed at home for household chores, for taking care of younger siblings or for fishing or farming.

The United States of America is struggling to meet the requirements and the spirit of No Child Left Behind (NCLB) programme. Certain characteristics of rural schools and districts make NCLB implementation difficult. Inadequate funding for rural districts and lower salaries offered to teachers in comparison to urban or suburban teachers are common factors.

Physical distance of remote rural schools from urban areas is also another issue. Evidence shows that qualified teachers do not compete for teaching positions in remote areas. Nor do they stay in these schools because these jobs are not attractive to them (Jimerson 2005). Research shows that low salaries, remote locations, challenging

students and difficult school conditions make rural locations less attractive to new teachers (Jimerson 2005). Similar evidence holds significance for *haor* areas in Sylhet division. Some teachers do not attend classes. They often hire local youths from the communities to serve as proxy teachers (Nath *et al.* 2011).

Spatial exclusion remains under explored in popular literature and in studies done on social exclusion. Importance of location in evaluating effectiveness or performance of intervention and programmes may be questioned instead of just solely considering economic challenges (Khattri *et al.* 1997). Research comparing test results and student motivation in urban and rural high-poverty settings show a marked difference in community response, dropout rates and other factors.

Khattri *et al.* (1997) provided evidence that rural students perform better than their urban counterparts when they attend poor schools, even if overall community education and development levels remain low. They claim that geographical and cultural isolation, that is, the location of the community and the students, is an important factor in explaining such phenomenon. Little research has been done to test whether both location and poverty cause differences in school performance of urban and rural students. In Bangladesh, researchers identified poverty as a significant factor of low enrolment and high dropout rates in the *haor* regions; however, this study aims to fill in the gaps where geographical isolation could also be the central variable that contributes to low level of education on a community.

Rural poverty heavily affects education in poor communities. However, Khattri *et al.* (1997) claim that this is amplified by geographical exclusion. Distribution of various economic activities and access to development aid differed with location and children from depressed or diminishing economic communities. These children face additional burden regarding education. Even though students' pursuit of post secondary education or return to the community for the purpose of contribution are positive changes, these students may be faced with unfamiliar structural challenges and increased risk of student failure. Khattri *et al.* (1997) further rationalized development gap in geographically isolated communities – they face similar constraints and socio-structural challenges. Dependence on income generation solely through extraction, from land and nature, in the case of the *haor*, the wetlands and water bodies, further enunciates the differences between low- and high-exposure economies, that is, the difference between isolated and connected communities.

School location is considered to be a problem in determining students' choices between school attendance and dropping out (Khattri *et al.* 1997). The cost of transportation and long commutes pose difficult pressures on the daily lives of students. It causes families to evaluate priority of education against employment. Researchers identify the need for further work in determining the significance of student transportation in attaining education in rural communities (Khattri *et al.* 1997).

Despite being a source of knowledge and a centre for socialization, schools remain a secondary source of influence for students. In studying socialization of education, Bourdieu (1974) suggests that schools in most settings reflect the existing structures of the community that they operate in (Nash 1990). Children from communities that do not provide out-of-school assistance, perform poorly in comparison to students who come from middle income families. These communities are often defined beyond their income levels and are more appropriately contained by lifestyle choices as well as geographical location. According to Bourdieu (1974), success in the education system is mapped by the possession of cultural capital and of higher class habitus. Therefore, universal

pedagogy intrinsically (Nash 1990) fails to benefit diverse students with uniform materials and social knowledge.

Isolated communities add psychosocial challenges to the alternative education programme initiation. Social capital theories suggest strengths and weaknesses of communities that reinforce cultural or rural identity. These may significantly affect the success of community initiatives (Hobbs 1995, Khattri *et al.* 1997). The lifestyle and earning structure of communities may lead to different perception regarding prioritization of education. Upon introduction of educational programmes, these communities may react to and receive programme workers, teachers, community actors differently – by often expressing resistance and non-cooperation (Aikman and Pridmore 2001).

For geographically excluded *haor* communities, water-logging and isolation become a part of life and access to education is less prioritized. Children are taught skills that allow them to gather food from nature and trade usually through fishing or farming. Hence, despite being trained to counter these conditions, teachers face the additional burden of reprioritizing each child's focus and motivation. Families similarly play an important role in determining the significance of formal education in isolated regions. It is often considered ineffective and unsuitable for their lifestyles, if not redundant.

Geographical exclusion from national services, especially education, is not unique in *haor* areas. Several countries across the world face similar issues where large parts of the population remain isolated from development funds and technology. In Philippines, the islands of Mindanao, located on the typhoon prone waterlogged areas with deep rooted ethnic and social conflicts, face similar challenges as the *haors* (Symaco 2013). Flash floods and natural disasters cause massive displacement and the few schools that remain in service are legally used as hurricane shelters. Scarce transportation facilities and rigid time schedules make the broken routes to school difficult for going to school. Development assistance is low in this region and 41% of families do not send children to school due to financial constraints. Hence, dropout rates among students and teachers are high; this makes good quality education a difficult service to provide and sustain. WFP/WB surveys show that 55% of people in these communities believe that the access to education in these areas is very bad and that reforms as well as improvement are immediately required.

Multi-grade schooling systems in northern Vietnam were developed to compensate for similar cases of geographical isolation. State and non-governmental schools in high mountainous areas of Lai Chauhost have especially trained teachers who conduct simultaneous classes multiple grades due to spatial and resource constraints (Aikman and Pridmore 2001). The single room or the few rooms available as classrooms were divided into distinguished sitting areas for separate classes. The teacher switched between high intensity and low intensity activities to ensure that all grades received attention. Thirteen percent of the Vietnamese population consist of ethnic minorities who mostly live in the areas bordering China and Laos (Aikman and Pridmore 2001). Systems like this programme developed in response to resource constraints and difficulties living in the given social and cultural conditions.

Theories suggest that the complexities of the real world and people's differential needs due to socio-cultural, geographical and economic factors make changes inevitable. These changes can often be described as the adoption of an innovation, where the main objective is to improve the outcomes through an alteration of practices (Carlopio 1998, Credaro 2006). This is where BRAC's innovation regarding the

establishment of boat schools becomes specially significance. The initiative found solutions that theoretically promised to mitigate existing barriers to children's education.

1.5 RATIONALE OF STUDY

An innovative educational model, designed exclusively for geographically excluded areas, was implemented for the first time in Bangladesh on such a massive scale. However, no study has yet been conducted to understand the operational aspects, management, supervision and community's perception of boat schools. For four years, BRAC has continued this intervention. Nonetheless, it is crucial for BRAC to document the overall functioning of these schools and to understand its supply as well as demand side constraints. It is expected that this study will lead to greater understanding about such factors and that it will provide information which will aid in policy making and further improvement.

The boat school initiative seeks to solve many existing problems that hinder development of education in the *haor* regions. A detailed study that explores this model through a multidimensional approach to better understand the gap between theory and practice, is vital. It is better to mention here that there were few studies that focused on this region's general development situation on its health or educational situation. However, we could not find any study that focused on the educational situation of the *haor* community. Therefore, this study can be seen as a means to understand existing gaps between theory and practice as well as to create new knowledge regarding this region.

Therefore, this study is being conducted for three major reasons: scientific documentation of programme activities, provision of baseline information for future studies and provision of information for further fine-tuning of the model.

1.6 RESEARCH OBJECTIVES

The main objective of this study is to understand the present status of *Shikkhataris* (BRAC boat schools) in terms of innovation, quality of education and existing challenges. A second objective is to see whether spatial exclusion can be a basis for an educational innovation. The specific research questions are as follows:

- To what extent are the *Shikkhataris* overcoming geographical challenges of the region and providing education to hard-to-reach groups
- To what extent have children's access to educational services increased as a result of this intervention
- What is the present situation of *Shikkhataris* (in terms of school infrastructure, teachers and student profile) and quality of education in terms of input and process
- What are the exclusive operational difficulties faced by BRAC programme staff in running boat schools in this region
- What is the community's perception of this innovation that has been designed exclusively to meet their needs

METHODOLOGY

This chapter includes information of the research methods and techniques adopted, the instruments utilized, sampling strategies, process of data collection and analyses techniques. The strengths, limitations and ethical implications of the study have also been included.

2.1 RESEARCH METHODS

Research design and methods should be driven by research objectives and questions (Creswell 2002, Borrego *et al.* 2009). No particular method, quantitative, qualitative or mixed, should be privileged over one-another. Both quantitative and qualitative methods were thought to be relevant and appropriate for adequately addressing the specific research questions mentioned in the previous chapter. Quantitative method was suitable for answering some of the research questions and qualitative method was suitable for others. Thus, a mixed method approach was used while analysing data gathered from both the sources. The benefits of such an approach have been highlighted in many studies including the study done by Miles and Huberman (1994). However, Buber *et al.* (2003) made the researchers cautious because they stated that the success of such studies depends on the researchers' skills of mixing.

Data for this study came from the following independent but related sources.

- A school survey was carried out in a number of *Shikkhataris* (boat schools) in mid June 2014.
- A household survey was carried out in the households of *Shikkhatari* students in mid June 2014.
- Information was also collected through classroom observations, interviews with teachers and Programme Organisers (POs) and focus-group discussions (FGD) with community members.

Data gathered through the eight *upazila* household census conducted in 2011 were used as baseline. *Haor* centric household data were appropriate for this study which is available in Nath (2013).

2.2 INSTRUMENTS

New data were collected using four types of instruments. These included a school survey questionnaire, a household survey questionnaire, and checklists for observations, interviews and focus group discussions (FGDs). Short description of the instruments are provided below:

School survey questionnaire: It contained information on infrastructural details of *Shikkhataris*, physical facilities, students' and teachers' background information, school activities and basic information on classroom teaching-learning process.

Household survey questionnaire: It contained education and school related information on all members of households. It also contained background information on school aged

children as well as household level socioeconomic characteristics. Schooling information of all persons aged 4-20 years included enrolment status, grade of enrolment, school type, reasons for dropout or never enrolment, and parental education. Socioeconomic characteristics included religion, ethnicity, food security status, labour sell status and availability of electricity at home. In addition, modes of commuting to school and costs behind education were included.

GPS receivers: These were used to find the distances between *Shikkhatari* students' homes to *Shikkhatari* as well as the distance between students' homes and the nearest primary schools.

Observation, interview and FGD: Separate checklists were used for each of the techniques depending on purpose and the subjects.

2.3 SAMPLING

BEP MIS provided a list of *Shikkhataris* that were established during 2011–13 segregated by region and year of establishment. *Shikkhataris* located in the *haor* areas of eight *upazilas* were separated and a new list was produced. Fifty *Shikkhataris* were selected from this new list following a simple random sampling technique. Thus, *Shikkhataris* located in eight-*upazila haor* areas were chosen for the study irrespective of year of establishment, grade or district. School survey was carried out in these 50 *Shikkhataris* (Table 2.1).

Table 2.1 Data collection methods, instruments, sampling techniques and sample size

Data collection method	Instruments	Sampling technique	Sample size
School Survey	Questionnaire	Random	50 <i>Shikkhataris</i>
Household Survey	Questionnaire	Random	500 students (50x10)
GIS Mapping	GPS receiver	Random	500 student's households
Classroom observation	Checklist	Purposive	8 <i>Shikkhataris</i>
In-depth interview	Checklist	Purposive	8 teachers and 8 BEP staff
Focus group discussion	Checklist	Purposive	4 (parents and community members)

Ten students, irrespective of gender, were randomly selected from each of the selected *Shikkhataris*. Thus, number of students was 500 (50 x 10). Household survey was carried out in the households of these 500 students. All of them were brought under GIS mapping.

For qualitative investigation, eight *Shikkhataris* were selected from the above 50 schools. Classroom observations were carried out in each of them and the teachers were interviewed. Eight BEP staff members of various levels were also interviewed. Moreover, four focus group discussions (FGDs) were conducted with four groups of parents and community members (Table 2.1).

One of the study objectives was to understand whether *Shikkhatari* intervention was able to address geographical challenges and increase *haor* children's access to education. To do so, it was necessary to know if commuting to schools became easier after introduction of *Shikkhataris*. Coordinates of the sampled household and their corresponding *Shikkhataris* were recorded using GIS receivers. Coordinates of the

nearest government primary schools from the households were also recorded. Final calculation was done by subtracting one from the other (Table 2.1).

Use of qualitative methods began typically as a cultural anthropological approach. Researchers and research assistants began their investigation by visiting the field and talking in-depth with individuals and groups of individuals associated directly or indirectly with *Shikkhataris*. Each of the eight classrooms was observed over three consecutive days, from the beginning till the end. Observations were made on how students arrived at schools, on overall infrastructure and architecture of the boats as well as on the school and external environment. Special focus was given on the teaching-learning process, classroom contact hours, student-teacher interaction and student-student interaction. This helped to understand the quality of education inside classrooms. Informal conversations with programme organisers (POs), teachers, students and boatmen were held from time to time to better understand the context and to gather knowledge on the overall operations of these schools.

The checklists were primarily developed on the basis of the study team's field experiences, conversations and from past experiences of similar RED studies. These were then taken for field trials. Conversations with informant groups, teachers and POs were helpful in this regard. Checklist for POs was developed to collect information on the establishment, management and operation of these schools. Information on teacher and students' retention as well as operational challenges were also collected. The interview guideline for teachers was developed to collect information about teacher's background information, qualification and training history and specifically about the classroom teaching-learning processes. In-depth interviews were conducted with POs and teachers; this was chosen as the main research instrument because it helped the study team capture the related stakeholder's experiences and recommendations better than other alternative methods.

Classroom observations were done for three consecutive days in each of the eight *Shikkhataris*. Four focus-group discussions (FGDs) consisted of six to ten members and they were conducted with parents as well as community members to capture their perception of these schools.

2.4 DATA COLLECTION, ANALYSIS AND REPORTING

Twelve trained research assistants (7 for quantitative and 5 for qualitative work) collected all information by visiting the sampled *Shikkhataris* and households. A trained field management team including the researchers, provided five-day training separately to both the quantitative and qualitative research assistants before actual field work. Classroom discussions, writing-based tasks and observation-based tasks were assigned to enumerators as part of training. A field test was also done to further clarify the process.

Information collected during surveys, interviews and FGDs were all conducted in the respondents' natural settings. The researchers and field management staff were present in the study villages for supervising field activities. Post-enumeration checks were done. Data were then coded, entered into the computers, cleaned and analysed using SPSS software. Appropriate part of the census data was matched with new data. Statistical tools were employed to analyse data.

Data validation

Field monitoring was done to ensure that enumerators sample households and schools correctly and collect data according to the guidelines provided during training. Each team was assigned a team leader who checked the questionnaire. Members of the research team randomly visited the sampled villages and conducted five per cent re-interviews to check quality of data. For the qualitative part, the researchers themselves visited and collected data from half of the sampled schools to ensure consistency and accuracy. Triangulation was done at every stage to avoid redundancy. Data was collected till a point of saturation was reached.

Data triangulation was done during data collection, separate data analysis, and the integration of databases at the finding and interpretation stage of the report. No single type of data (quantitative or qualitative) was given greater priority in the report. Instead, the qualitative and quantitative data complement each other and further strengthen the evidence that support the analysis presented in the report. This type of mixed method, also known as concurrent triangulation method design, further strengthened the conclusion of the report (Creswell *et al.* 2003).

2.5 STRENGTHS AND LIMITATIONS

Like other cases, this study also contains certain strengths and limitations. However, it is worth mentioning that the study team took all necessary measures to reduce weaknesses and to increase strengths.

The following are some of the strengths of the study:

- This is the first study on the *Shikkhatari* intervention. Developing study design was difficult as there was no previous reference. The strength of this document is that it provides scientific information for this particular intervention to help fine-tune its operation. The data and evidence will also serve as baseline for future studies.
- The study employed a mixed method approach; thus quantitative and qualitative information complemented each other and strengthened the study. Qualitative approach helped understand various phenomena in-depth while quantitative findings were used to explain them in a systematic and scientific manner. This helped to understand the intervention strategy from multiple dimensions.
- Distance calculations are usually a source of major error in survey-based studies and it is a very time consuming task. Instead of vaguely measuring distances, the study team employed high accuracy GIS receivers to electronically record coordinates. Therefore, the distances presented in this report are accurate and reliable.
- Very little research has previously been done to understand if geographical isolation is a central variable that contributes to low educational attainment in certain communities. This study aimed to fill this gap and to generate new knowledge.
- The study also focused on the lives and livelihood of *haor* communities, their socioeconomic characteristics and their educational attainment. This information will help in knowledge generation and it can be used as a reference for further exclusive studies on *haor* communities of Bangladesh.

The following are some of the limitations of the study:

- Data for this study were only collected from some of the most marginalised areas of Hobiganj and Sunamganj districts. So, the findings cannot be generalised for all boat schools across Bangladesh.
- Even though the study included qualitative information, such as observation of classroom teaching and learning processes, data collection was done towards the end of the academic year. So, definite conclusions could not be drawn about the quality of teaching-learning processes in these schools.
- Of the eight schools observed, three had new teachers. This might have overshadowed the assessment of quality of teaching-learning process of *Shikkhataris*. Interviews were conducted with current *Shikkhatari* teachers. No dropped out teacher was interviewed. Information from dropped out teachers would further strengthen the study and help in triangulating data.
- In an attempt to measure the quality of education, this study did not measure learning achievements which is a key indicator of quality.
- Accuracy of some of the estimation based on the household survey depended on correct reporting of age of household members. It was the most challenging and time consuming task. Even though all possible measures were taken to have the 'best' estimated age (as developed by demographers), some errors could not be ruled out.
- The sample size was large enough to draw conclusions about total students. However, it was difficult to draw any conclusions for different strata like gender or ethnicity.

BACKGROUND OF SHIKKHATARI STUDENTS

Households of 500 students of 50 *Shikkhataris* were surveyed. This included demographic and educational information of household members as well as some basic socioeconomic information. This chapter presents these information along with those of *haor* areas based on similar indicators found in the eight-*upazila* census of 2011. This helps in understanding overall status of *Shikkhatari* students in *haor* context.

3.1 HOUSEHOLD DEMOGRAPHY

Age and gender distribution of population: The 500 households under survey had a total of 3,357 population with an average of 6.7 members per household. This figure was much higher than the average household size in *haor* areas (5.4 vs. 6.7). On an average, the *Shikkhatari* students' households had 1.3 members more than the *haor* area households in general. No student enrolled in *Shikkhataris* from a single member household. Household size varied from two to 17 with six as both mode and median. About a quarter of households had six members. Nineteen per cent of households constituted with five members, 19.2% of households had seven members and 13% of households had eight members.

Females constituted 50.7% of the population. The sex-ratio was found to be 102.7 against 100.7 in the *haor* area. Of the population, 54.3% were below 15 years, 16.3% were youths (15–29 years), 25.8% were between 30–59 years and 3.6% were elders (60+). This age distribution significantly varied with that of the eight-*upazila haor* population. In *haor* areas, 41.4% of the population were below 15 years; it was 54.3% in the households of *Shikkhatari* students. Percentage of youths and elders were also lower in the households of *Shikkhatari* students in comparison to those in eight-*upazila haor* households (Table 3.1).

Table 3.1 Percentage distribution of population by age and gender

Age (in years)	HHs of <i>Shikkhatari</i> students			<i>Haor</i> households ¹
	Male	Female	All	
0–14	52.0	56.5	54.3	41.4
15–29	17.3	15.4	16.3	24.7
30–59	26.4	25.1	25.8	26.0
60+	4.3	3.0	3.6	7.8
Total	100.0	100.0	100.0	100.0

¹Nath (2013)

Dependency and child-women ratios: Dependency ratio is a summary measure of age composition of population. It is a ratio of population aged 0–14 years and 60 years and above to the population aged 15–59 years expressed in percentage. It has two parts: child dependency ratio and elderly dependency ratio. The overall dependency ratio was 138 in the students' households against 95 in the *haor* population. This was because of high child dependency ratio in the students' households. Child dependency ratio was found to be 129 in students' households in comparison to 82 in *haor* areas. On the other hand, elderly dependency ratio was lower in students' households than that of *haor* areas (9 vs. 13).

Child-women ratio is a ratio of children 0–4 years to the female population of age 15–49 years expressed in thousand. It was 610 in students' households in comparison to 618 in eight-*upazila haor* areas.

Further exploration of age distribution of population in students' households shows that a quarter of total population was primary school aged children (6–10 years). This may be because these were primary school students' households; thus, at least one member of these households was in this age group which is not the case among the population in a community or in eight-*upazila haor* areas. This is why, child dependency ratio was higher and child-women ratio was lower in the students' households than those of the *haor* population.

A lower proportion of students' households was headed by females than that of the *haor* areas. Compared to 9.8% in the *haor* areas, 7.2% of boat school students' households were headed by females.

3.2 SOCIOECONOMIC INFORMATION

Information about the main source of income in households of *Shikkkhatari* students was collected. Over 31% of households' major source of income was selling manual labour on daily basis followed by agriculture (28.6%), fishing (15.8%) and trading (13.8%). The other main sources of income included services (3.2%), rickshaw/van pulling or boat riding (2.8%), remittances (1.8%) and others (2%) (Table 3.2).

Some differences were found in this case between students' households and the overall *haor* community. While the main source of income of 40.3% of *haor* households was agriculture it was 28.6% in study households. These households were more likely trade and were less likely to engage in services in comparison to *haor* households in general. Fishing was also more prominent among these households in comparison to others in *haor* areas.

Table 3.2 Percentage distribution of households by main source of income

Sources of income	Percentage of households
Day labour	31.2
Agriculture	28.6
Fishing	15.8
Trading	13.8
Service	3.2
Rickshaw/van pulling, boat riding	2.8
Remittance	1.8
Others	2.0
Total	100.0

Information on food security status of households, in terms of yearly income and expenditure, was collected. The households provided information on their status on a four point scale. The points included *always in deficit*, *sometimes in deficit*, *breakeven* and *surplus*. Of the households, 5.2% categorized themselves as *always being in deficit* while 42.6% of households were *sometimes in deficit*. Over a third of households (34%) rated them as *breakeven* and 18.2% of households recorded *surplus*. (Table 3.3)

Table 3.3 Percentage distribution of households by food security status

Food security status	Percentage of boat school households	Percentage of haor area's households ¹
Always in deficit	5.2	17.2
Sometimes in deficit	42.6	34.6
Breakeven	34.0	36.2
Surplus	18.2	12.0
Total	100.0	100.0

¹Nath (2013)

Households of *Shikkhatari* students were better off than the *haor* households in general in terms of food security status. For instance, 17.2% of *haor* households were *always in deficit* status, whereas, it was only 5.2% for the study households. A similar conclusion can be derived by combining the two categories of *deficit* households (51.8% vs. 47.8%). Over 18% of boat school students' households rated themselves as *surplus* against about 12% in *haor* areas (Table 3.3).

The non-Muslims comprised a fifth of boat school students' households against approximately 27% in *haor* areas. No *adibashi* household was found in the study sample because of their low presence in the area (0.2%). Sixty-one per cent of boat school students households availed electricity at home; however, only 36.5% of *haor* area households had such facilities.

3.3 EDUCATION AND LITERACY OF POPULATION

Distribution of population aged six years and above by years of schooling completed was calculated. It shows that 42.5% of them had never been to school; 42.8% enrolled in school and had varied years of schooling but they left school before completing primary education. Nearly 14% of them completed primary education but left school without completing secondary education. Only 0.8% of population completed secondary education or more (Table 3.4).

Table 3.4 Percentage distribution of population by years of schooling and gender

Years of schooling	Gender		All
	Males	Females	
Nil	45.0	40.1	42.5
1 – 4 years	39.4	46.1	42.8
5 – 9 years	14.5	13.4	13.9
10 years +	1.2	0.4	0.8
Total	100.0	100.0	100.0

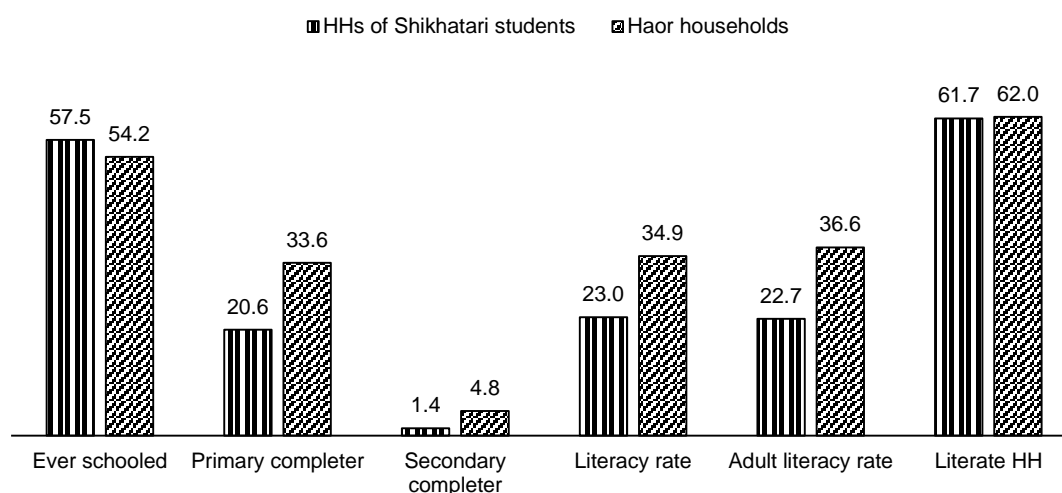
Proportion of population ever enrolled in school, completed primary education and completed secondary education were calculated for age groups six years and above, 11 years and above and 17 years and above respectively. The results are presented in Table 3.5. Literacy rates for all (7y+) and adult (15y+) population were also provided. Overall, 57.5% of the population ever enrolled in school, 20.6% completed primary education and 1.4% completed secondary education. Females were significantly ahead of males in ever enrolment (59.9% vs. 55%; $p < 0.01$) while males surpassed their females counterparts in terms of completion of secondary education (2.1% vs. 0.7%; $p < 0.05$). Not much variation was observed in the literacy rate of the entire population and the adult literacy rate – they were 23% or closer. No gender difference was observed in literacy rates. Households with at least one literate person were called literate households. Sixty-two per cent of households of boat school students were found to be literate households (Table 3.5).

Table 3.5 Percentage of population by various educational indicators and gender

Indicators	Gender		Both	Level of significance
	Males	Females		
Ever enrolled in school (6y+)	55.0	59.9	57.5	$p < 0.01$
Primary school completion (11y+)	21.2	20.1	20.6	ns
Secondary school completion (17y+)	2.1	0.7	1.4	$p < 0.05$
Literacy rate (7y+)	21.7	24.2	23.0	ns
Adult literacy rate (15y+)	23.4	21.9	22.7	ns

Households of students of *Shikhhataris* were behind eight-*upazila haor* households in terms of the majority of educational indicators (Figure 3.1). The gaps were much higher in terms of the proportion of those who completed primary and secondary schools as well as for the literacy rates of all and adult population. On the other hand, households of *Shikhhataris* students were ahead of eight-*upazila haor* households in terms of the proportion of individuals who attended school at some point in their lives. There was almost no difference between these two types of households in terms of proportion of literate households.

Figure 3.1 Comparison of *Shikhhataris* students households with eight-*upazila haor* households regarding some educational indicators



Source of *haor* HH information is Nath (2013)

3.4 SCHOOL ENROLMENT OF CHILDREN

Net school enrolment rates of children aged 4–15 years were calculated dividing them into three groups, viz., 4–5 years, 6–10 years and 11–15 years. The age-groups correspond to enrolment in pre-primary, primary and secondary education. Number of children in a specific age-group who were currently enrolled in any class, divided by total number of children of that particular age-group expressed in percentage was considered as net enrolment rate (NER). Thus, children of a particular age-group may enrol in a class correspond to any other age groups. On an average, a fifth of the children of age 4–5 years were found to be currently enrolled in school. This was 88.1% for children of age 6–10 years and 64.8% for children of age 11–15 years. No gender difference was observed in the first age-group. However, in the other two groups, girls were significantly ahead of boys in their respective age-groups. Gender difference among children of age 11–15 years is noticeable; girls surpassed the boys by 19.3 percentage points.

Figure 3.2 Percentage of children currently enrolled in school by age-group and gender



Table 3.6 demonstrates the enrolment scenario more clearly. Nearly 5% of pre-primary aged children (4–5y) enrolled in primary classes, 3.4% of the primary aged children (6–10y) enrolled in pre-primary and 0.5% enrolled in secondary classes and 45% of the secondary aged children (11–15y) enrolled in primary classes. This was not surprising because this generally happens in any community in Bangladesh. Furthermore, households having at least one primary school student (BRAC *Shikkhatari*) were considered here. A section of children in each age-group was found to be enrolled in non-graded *madrasas* like *kawmis* or *kharizis*. Interestingly, the proportion of children enrolled in such educational institutions increased with the increase in age of children (Table 3.6).

Table 3.6 Percentage distribution of children by age-group and level/type of education

Age-group	Level/type of education					Total
	Pre-primary	Primary	Secondary	<i>Madrasa</i> ¹	Out-of-school	
4 – 5y	14.8	4.8	0.0	1.1	79.4	100.0
6 – 10y	3.4	81.6	0.5	2.6	11.9	100.0
11 – 15y	0.0	45.0	16.8	2.9	35.3	100.0

¹Non-graded *madrasa* such as *kawmi* and *kharizi*

Distribution of primary school students by grade of enrolment shows an unusual scenario. A general scenario is that the proportion of students in the first grade is the highest; this continues to fall all the way up to the fifth grade. The range may be 32–15%. On the other hand, here we see sudden boom in grade II with 42% of the primary students. This figure was more than double of that in grades I and III. Proportion of students was 12.2% in grade IV and 6.4% in grade V. Very high proportion of students was found in grade II because majority of the surveyed boat schools were of grade II (Table 3.7).

Table 3.7 Percentage distribution of primary students by grade and gender

Grades	Gender		
	Boys	Girls	Both
I	23.5	18.1	20.3
II	40.9	42.8	42.0
III	17.9	19.7	19.0
IV	10.6	13.4	12.2
V	7.1	6.0	6.4
Total	100.0	100.0	100.0

Of the primary students, 68.3% enrolled in BRAC *Shikkhataris*, 18.5% in government primary schools, 8.2% in newly nationalized primary schools, 4.1% in other NGO primary schools and 0.8% in *madrasas*. Proportion of girls was higher than that of boys in BRAC boat schools but an opposite scenario was found in the government and newly nationalised primary schools.

Table 3.8 Percentage distribution of primary students by school type and gender

School type	Gender		Both
	Boys	Girls	
BRAC <i>Shikkhatari</i>	64.4	71.0	68.3
Government primary school	21.4	16.5	18.5
Newly nationalised primary school	9.0	7.7	8.2
Other NGO school	4.2	4.0	4.1
<i>Madrasa</i>	1.1	0.7	0.8
Total	100.0	100.0	100.0

3.5 THE SHIKKHATARI STUDENTS

Among the 500 households under survey, 647 children were found who had enrolled in BRAC *Shikkhataris*. This means that a good portion of households had sent more than one child to boat schools. Of the surveyed households, 73.4% had one child each admitted in boat schools, 23.8% had two and 2.8% had three. Like BRAC schools in any other places, the number of girls surpassed the number of boys in *Shikkhataris* too. Overall, 62.3% of BRAC *Shikkhatari* students were girls.

The students were enrolled in the first four grades of primary education. Of them, 18.4% of students enrolled in grade I, 55.8% in grade II, 19.3% in grade III and 6.5% in grade IV (Table 3.9). A small difference was observed between boys and girls in grade-wise distribution. Grade-wise variation was also observed in proportion of girls. For instance, 58.8% of students of grade I, 61.5% of grade II, 67.2% of grade III and 64.3% of grade IV were girls.

Table 3.9 Percentage distribution of students by grade and gender and percentage of girls by grade

Grades	Gender		Both	Percentage of girls
	Boys	Girls		
Grade I	20.1	17.4	18.4	58.8
Grade II	57.0	55.1	55.8	61.5
Grade III	16.8	20.8	19.3	67.2
Grade IV	6.1	6.7	6.5	64.3
Total	100.0	100.0	100.0	62.3

Age of the students varied from 5–15 years. On an average, 81.3% of students belonged to the age group of 6–10 years, which is the official age-range for primary education. This was 84.8% among boys and 79.1% among girls. Mean age of first graders was 8.6 years; it was 8.9 years among second graders, 9.2 years among third graders and 10.3 years among fourth grades. Overall, majority of students belonged to the age-group of 7–10 years; they were 77% of all students. Grade-wise analysis shows, this was true for students of the first three grades – 78.6% of students of grade I, 78.9% of grade II and 79.4% of grade III were within this age range. However, students of grade IV were between 9–13 years of age. Four-fifth of students of grade IV belonged to this age group.

Parental education: Sixty-eight per cent of mothers and 68.9% of fathers of *Shikkhatari* students had never been to school. Collectively, both parents of 52.5% of students fell in this category. This means that more than half of the students of *Shikkhataris* were first generation learners. This figure is much higher than that at the national level. This rate was 46.3% among boys and 56.2% among girls. Thus, BRAC admitted more first generation learner girls than boys in its *Shikkhataris* from the first generation learners.

None of the parents of 76.6% of students had completed primary education. This included both never schooled and those dropped out before completing primary education. This was the case for 74.2% of boys and 78.1% of girls. Both parents of only 5.7% of students completed primary education. This figure was 4.9% against the boys and 6.2% against the girls. Table 3.10 provides the distribution of students by level of parental education.

Table 3.10 Percentage distribution of *Shikkhatari* students by level of parental education

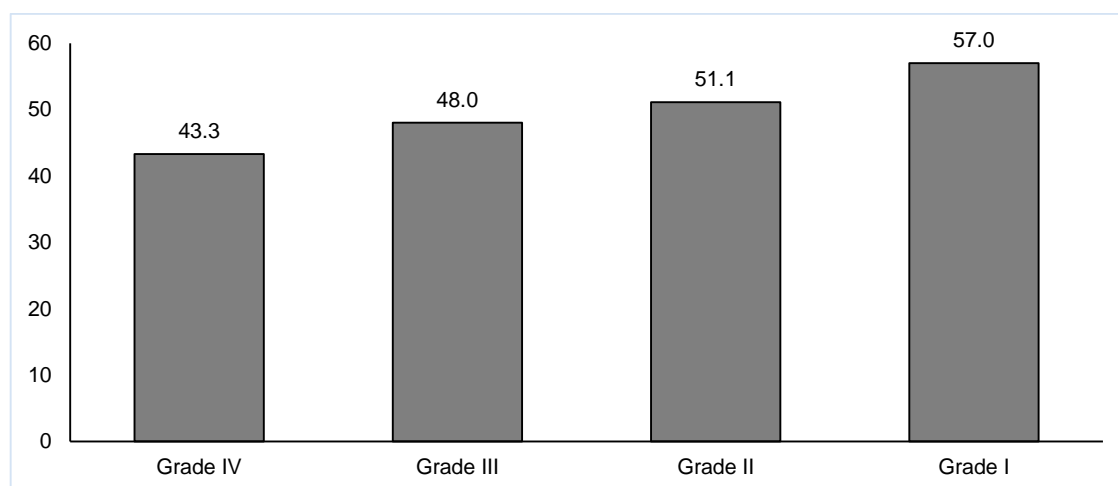
Level of education	Mothers education			Fathers education		
	Boys	Girls	Both	Boys	Girls	Both
No schooling	61.5	72.0	68.0	65.6	70.9	68.9
Incomplete primary	25.4	16.1	19.6	16.8	13.4	14.7
Incomplete secondary	13.1	11.9	12.4	17.2	14.4	15.5
Secondary and above	0.0	0.0	0.0	0.4	1.2	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

A very small difference was observed in terms of parental education among those enrolled in *Shikkhataris* and those in other primary schools. For instance, other primary schools admitted 51% of students who were first generation learners; it was 52.5% in the case of *Shikkhataris*. Again, 76.6% of parents of *Shikkhatari* students and 74.7% of those of other schools did not complete primary education. These figures were respectively 54.6% and 37.6% for eight-upazila haor areas.

3.6 MIGRATED STUDENTS IN SHIKKHATARIS

Of the 500 sampled students of *Shikkhataris*, 51.2% enrolled in other schools before admission into BRAC boat schools. They were 52.7% among boys and 50.3% among girls. It is interesting to note that the proportion gradually decreased with the increase in grades in *Shikkhataris*. For instance, 57% of grade I students, 51.1% of grade II, 48% of grade III and 43.3% of grade IV students had previous study experience in other schools (Figure 3.3). This means that the number of children who have studied in other educational institutions before attending in *Shikkhataris* have gradually increased.

Figure 3.3 Proportion of students studied in other schools before admitting in *Shikkhataris* by grade



Even though no smooth trend was observed in terms of food security status of households, proportionately more students from *always is deficit* households studied in other primary schools (65.4%). Among others, 49.8% of students from *sometimes in deficit* households, 54.1% of those from *breakeven* households and 45.1% of those from *surplus* households fell in this category. Similarly, no trend was observed in terms of parental education. However, it was more prominent among those who had ever schooled parents. Analysis reveals that 44.3% of first generation learners of *Shikkhatari*s and 58.9% of others (ever schooled parents) studied in other primary schools prior to admission in *Shikkhatari*s.

Majority of these students studied in government or non-government primary schools. They were respectively 57.8% and 30.5% of the total number of such students. Others included various different types of schools including non-formal primary schools of NGOs. A small portion, however, studied in NGO run pre-primary schools. Before getting admission in *Shikkhatari*s, 45.7% of students completed grade I in other schools, a third completed grade II, 10.5% completed grade III, 3.5% completed grade IV, 6.3% completed pre-primary, and 1.2% studied in non-graded *madradas* like *hafizia* or *kawmi*.

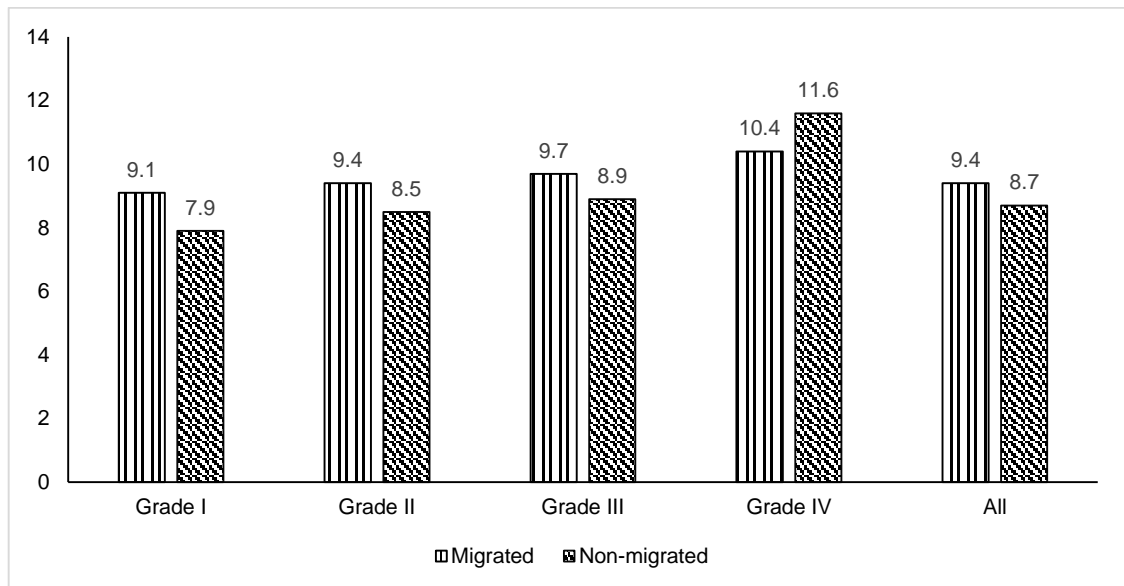
The above scenario changed when all students of *Shikkhatari*s were considered in analysis. It shows that 23.4% of the students of *Shikkhatari*s completed grade I in other primary schools before getting admission to *Shikkhatari*s. Of the students, 16.8% completed grade II, 5.4% completed grade III, 1.8% completed grade IV, 6.3% completed pre-primary, 1.2% studied in non-graded *madradas* and 48.8% had no experience of schooling (Table 3.11). Grade-wise analysis shows that a quarter of first graders of *Shikkhatari*s already received grade I lessons and 28% received lessons of grades II to IV in other schools. Twenty-three per cent of second graders of *Shikkhatari*s received grade I lessons in other schools, 18.1% received grade II lessons and 5.9% received lessons of grades II or IV in other schools. More information on this is available in Table 3.11.

Table 3.11 Percentage distribution of *Shikkhatari* students by grades in previous schools and in *Shikkhatari*s

Grades in previous schools	Grades in <i>Shikkhatari</i> s				Total
	I	II	III	IV	
Pre-primary	4.0	3.3	1.0	6.7	3.2
Grade I	25.0	23.0	28.0	6.7	23.4
Grade II	22.0	18.1	9.0	13.3	16.8
Grade III	4.0	5.2	5.0	13.3	5.4
Grade IV	2.0	0.7	4.0	3.3	1.8
Non-graded <i>madrada</i>	0.0	0.7	1.0	0.0	0.6
Non-schooled	43.0	48.9	52.0	56.7	48.8
Total	100.0	100.0	100.0	100.0	100.0

An attempt was made to see whether the students who migrated from other primary schools to *Shikkhatari*s and those who did not, differed in terms of age (Figure 3.4). Overall, the migrant students were over aged than those who did not migrate (9.4 years vs. 8.7 years). Grade-wise analysis shows the same for students of the first three grades; however, an opposite scenario was observed for those in grade IV.

Figure 3.4 Mean age (in years) of students by grade and migration status



OPERATIONAL MECHANISM AND RELATED CHALLENGES

Operational mechanism of *Shikkhataris* in *haor* areas is mostly similar to BRAC Primary Schools (BPSs) in plain land. The only difference is that the *Shikkhatari* students do not go to schools; rather the schools come to them. This chapter brings together the qualitative and quantitative findings to capture a holistic picture of the infrastructural and operational aspects of this special type of primary schools.

4.1 SHIKKHATARI PROFILE

Each *Shikkhatari* is a 40-foot long steel boat with a classroom and a teacher. The idea behind these schools was very simple; yet it was simultaneously very innovative and appropriate in the context of *haor* areas. In monsoon, when the low-lying *haor* areas were inundated, boats went around and picked up students from their *hatis* and then classes commenced. The classrooms were decorated with paintings, writings, handmade flowers, alphabets, word lists and multiplication-tables. Most of these were made together by students and teachers. These floating schools were filled with the happy chatter of little children, laughter and giggles, songs and rhymes, white lies and funny pranks – the ambiance inside was no different from mainstream schools and yet it was unique in the *haor* context.

Shikkhataris were established instead of BPSs because these areas remain waterlogged for almost 6-7 months every year and have poor communication systems with neighbouring areas. *Shikkhataris* seemed to be the only practical choice for the existing problems because even with school on land, commuting to school would be an ordeal. Children would either need to commute by boat in the monsoon or walk to school through muddy paths in the dry season. It was therefore, crucial to properly target areas geographically prior to the initiation of these *Shikkhataris*. This needed to be done, so that such schools could be opened in areas where they were most needed. Moreover, the opportunity to make a difference was also greater.

The 50 randomly selected *Shikkhataris* which were sampled for this study were established between 2011 and 2013. Three schools were established in 2011, 10 in 2012 and 37 in 2013. At the time of fieldwork, 10 of them were grade I schools, 27 were grade II schools, another 10 were grade III schools and three were grade IV schools.

A total of 1,456 students were found in these *Shikkhataris*; 60.6% of them were girls. Girls made up around 60% of all students in grades I, II and IV. However, they made up 65.8% of students in grade III. Proportion of girls substantially varied from one *Shikkhatari* to another. The range was 35–83%. Twenty-one *Shikkhataris* had more girls than average. Only 2.5% of the students were reported to have any kind of disability. It was observed from qualitative investigation that the ones who were categorized as disabled children had minor physical anomalies and showed conditions that probably cannot be categorized as ‘disabilities’ in medical science (Table 4.1).

Table 4.1 Attendance, drop-out and replacement rates by grade

Grades	Number of school	Percentage of girls	Attendance rate	Dropout rate	Percentage replaced
I	10	59.6	82.5	4.3	97.9
II	27	59.2	85.5	10.1	98.5
III	10	65.8	86.6	6.3	81.0
IV	3	60.5	86.8	5.0	6.7
All	50	60.6	85.1	7.9	92.2
Boys	50	-	84.1	3.6	100.0
Girls	50	-	85.7	4.3	85.6

4.2 SELECTION OF *HATIS* AND STUDENTS

Selection of hatis: One of the most important tasks of Programme Organisers (PO) prior to the opening of *Shikkhataris* in any particular area was the selection of *hatis*. Picking the right location was vital for this intervention to have any positive impact. POs reported that a survey was conducted before establishment of *Shikkhataris* in individual *hatis*. In that survey, information was collected on the suitability of opening a school in particular *hatis*. They reported that prior to establishing boat schools in *hatis*, a few characteristics were given preference. This included *hatis* that were disconnected or separated from main establishments of *upazilas*, *hatis* with no schools but many school aged children, *hatis* that were situated one to one-and-a-half kilometre from the nearest government primary school (GPS), *hatis* with a large number of out-of-school children, *hatis* with inadequate space for BPSs and community acceptance of boat schools. These criteria were found to be strictly maintained in all the schools under study.

Selection of students: POs mentioned that they had a strict criterion for student selection. Children between 8–14 years, dropped out before completing primary education, unable to count from 1-10 and having knowledge of how to swim were said to be the preferred criteria. During FGDs with parents and in-depth interviews with teachers, it was found that although the programme aimed to admit out-of school children in *Shikkhataris*, more than fifty percent of current *Shikkhatari* students had migrated from formal schools. Reasons of such migration included location of *Shikkhataris*; these were located nearer than formal schools. Many migrated because the POs promised quality education through *Shikkhataris*. On the contrary, *Shikkhataris* also brought out-of-school children back to schools. The situation can be explained better with the case studies presented below:

Swadhinata, a girl of age 10 years was a student of grade V in a government school. She was admitted to *Shikkhatari* as replacement for another student. Her younger sister was a student of grade III in the same *Shikkhatari*. Even though Swadhinata attended two more years of school than her sibling, she knew less than her younger sister. This was the reason why her parents made her drop two grades and had her admitted to *Shikkhatari*.

Even though a large number of students in *Shikkhataris* migrated from other schools, there were also out-of-school children who were brought back to school because of the establishment of *Shikkhataris*. The following paragraph presents the case of such a child.

Mukti, a boy of age 8 years and 9 months was first admitted to a government school. The school was far away from his house. In dry season, it took him 40-45 minutes to walk to school. In monsoon, he had to travel by boat; this was difficult for his family

to arrange. Due to inconvenience of commuting to school, he lost interest in school very soon. Then he dropped out. One-and-a-half year after dropping out of school, Mukti was admitted to a *Shikkhatari*. He is doing well in school and is the team leader of a reading group. His parents are also happy about the fact that the school is nearer to their home.

It was known from school survey that about 30 students enrolled in each *Shikkhatari* and on an average, eight students dropped out from each. However, a good portion of the drop-outs were replaced. On an average, 4.3 students dropped out from grade I schools, 10.1 from grade II schools, 6.3 from grade III schools and five from grade IV schools. Student dropout increased over time; since grade I had just started, it was too low there. Over 92% of drop-outs were replaced - this was about 98% among those of grades I and II, 81% among those of grade III and only 6.7% among those of grade IV. Replacement rate for boys was cent percent and it was 85.6% for girls (Table 4.2).

4.3 LOCATION AND EXTERNAL ENVIRONMENT

The *Shikkhataris* were usually kept at a fixed point. They were mostly stationed beside a *hati* in a locality. Each *Shikkhatari* provided coverage for one *hati* to a maximum of four *hatis* in study areas. So, the boat was usually kept at a point that was within a convenient distance from both the students' and teacher's homes. The location of the boat also depended on various factors such as community acceptance, depth and current of water, wind motion at that particular location and various other factors that were directly and indirectly related to the maintenance of an atmosphere conducive to the learning needs of young children.

In most cases, a *Shikkhatari* had a *hati* at one side and a *haor* at the other. The positioning of these schools posed some unique challenges that were sometimes difficult to resolve. During observation, it was noticed that the external environment sometimes disrupted classroom activities. People used *haor* water to wash, clean and bathe. It was the main mode of communication too. Big engine driven fishing boats paddled through the water and crossed *Shikkhataris* various times during school hours. Children were seen swimming, fishing or playing in *haor*. It was noticed several times during observation and also reported by teachers that students were more interested in seeing the activities going on around them instead of paying attention to classroom activities.

'Why are you looking outside? Concentrate on lessons.' 'Stop looking at fishing boats!' During classroom observation, teachers were very often called out names of students and asked them to concentrate on lessons instead of looking outside. Since this educational model was different, new and unique, it was seen that teachers had to deal with some additional challenges to attract and hold student's concentration throughout school hours. Some students were still seen to be distracted as they stared into the river and watched activities surrounding the *Shikkhatari*. However, this was only true for a small number of students and slightly affected teaching-learning inside classrooms.

External environment sometimes posed more serious challenges. It was observed in a *Shikkhatari* that the current of *haor* water and strong winds swung the boat so much that it made some students dizzy and nauseous. Some also vomited because the boat rocked so much. This severely affected classroom teaching-learning in that particular school. Even though only two such cases were found, it needs to be considered.

During fieldwork of this study, one *Shikkhatari* had to be closed down because people of two nearby *hatis* continuously demanded stationing of the *Shikkhatari* nearby their *hatis*. It was also known from further investigation that the classes would only resume as and when the communities resolved their differences and had come to a consensus about the *Shikkhatari's* location. Programme Organisers reported that such problems were not uncommon. When such instances occurred, decisions were taken based on mostly the majority rule and the practicality of the solutions proposed by community members.

It was observed in another *Shikkhatari* that the boat was not anchored in the right place because inhabitants of neighbouring *hatis* did not give their consent. For this reason the boat was stationed at a place where students needed to cross watery area. This was inconvenient for the students. The location of the *Shikkhatari* plays a significant role in the overall operation of the school. Even though this was found in two out of the eight schools observed, these challenges need to be considered.

External environment was seen to affect classroom activities in half of the eight *Shikkhataris* observed. The nature and the type of disruption varied from external noise caused by boat engines, weather conditions, fishing to children being called home for lunch or for running small errands. However, it must be mentioned here that in general, communities made effort to provide an environment that was conducive to learning. Inhabitants did not crowd around the schools unnecessarily; they were cooperative when students went to them for drinking water or for using their toilets.

Drinking water and toilet facilities: None of the observed *Shikkhataris* had their own water point or source. However, arrangement has been made to bring water from nearby households. Drinking water was brought from tube-well or deep tube-wells in 64% of *Shikkhataris*. In cases where the water point was nearby, slightly older students went to bring water in a pot. In cases, where the water point was farther, it was mostly boatmen who were seen to assist the students. This happened each day. The community members generally cooperated with the *Shikkhataris* and let students use their water-points. The problem, however, remained with hygiene-related practices. It was noticed in most cases that the pot used to store water was unclean and mostly left uncovered. All students usually drank water from the same mug, which was almost always unclean. Only few students brought their own water bottles from home.

Seventy-four per cent of schools had toilets rated 'usable' by the users and 26% had toilets that were termed as 'unusable' by users. In most cases, lack of water and bad odour caused by open defecation made the toilets unclean and unhygienic. When students were asked about toilet usage, 84% responded that they used school toilets and the rest did not. In cases where students did not use school toilets, it was noticed that they used the toilets of nearby houses. It was noticed that this negatively affected classroom learning. Students often had to be excused for toilet breaks and this took too much time.

4.4 CLASSROOM ENVIRONMENT

Temperature inside classrooms was observed to be cool and pleasant in the morning. Adequate natural light and air was found in the majority of classrooms. However, seasonal effects were also there. Some classrooms had inadequate natural light on rainy days. Windows and doors had to be closed sometimes to avoid rain water. Humidity was also too high in some classrooms on rainy days.

As the day approached noon, the classrooms got very hot as the steel body of the boats heated up. The classroom temperature was noticed to affect classroom teaching-learning significantly. Students and teachers were noticed to grow impatient as the classrooms got hotter. Students were noticed to fan themselves with books, copies and loose papers. Many took breaks to use the washroom and drink water. Some, especially the boys, were seen to take off their shirts to keep themselves cool. As midday approached, students were observed to rush through lessons, became inattentive and gradually lost interest in classroom activities.

Environment inside the classroom was categorised into three types in the school survey: tranquil, somewhat noisy and noisy. When the classroom activities were not hampered by any external factors, it was rated as 'tranquil'. 'Somewhat noisy' meant that there was occasional distraction or interruption. 'Very noisy' meant that external environment affected classroom activities significantly and did so repeatedly. Classroom environment was rated as tranquil in 72% of *Shikkhataris*; it was somewhat noisy in 24% and very noisy in 4%. Schools near densely populated localities or marketplaces for example were rated very noisy. A strong relationship was also observed between classroom environment and teacher's experience. More experienced teachers' demonstrated greater ability to control their classes whereas ones with less experience struggled to control their students and to maintain decorum inside the classroom at all times.

4.5 PICKING UP AND DROPPING OFF STUDENTS

This educational model sought to address a couple of challenges, mostly those that were exclusive to the marginalised *haor* regions. Mode of transportation was very underdeveloped and options were limited in this region. *Education Watch* study showed that over one fifth of students faced transportation problems during dry season which doubled in wet season (Nath *et al.* 2011). Vast majority of children either had to paddle through water or take a boat ride to commute to schools, which was not only time-consuming but was sometimes an economic burden as well. The opportunity cost of children's time needed for household chores or income-generating activities was often too high for families to bear.

A particularly interesting mechanism was adopted to pick up and drop off students and the teachers of *Shikkhataris*. A boatman and an assistant boatman from the same community were appointed for most *Shikkhataris*, depending on need and availability of such people. They went and picked up the teacher and the students from nearby *hatis* before classes commenced. Smaller boats were used in monsoon to pick up the students and take them to *Shikkhataris*. At the end of each school day, students and teacher were again dropped off in their *hatis*. This process was repeated on a daily basis. It was known from interviews that during dry season when water recedes, the boats cannot be used to do so. In those situations, students usually walked to school. Commuting to school when water starts receding is difficult as the paths become muddy. Students faced difficulty to walk to school.

Role of boatman: It was observed that in most cases, students were picked up and dropped off under the supervision of a boatman and his assistant. Note that none of them were females. Their role in bringing students to school was noteworthy. The boatmen were observed to maintain good and friendly relationship with students and teachers; they were seen to be well aware of students' whereabouts at all times. Their role in bringing students to school was observed to be most important in terms of reducing students' absence. They diligently brought students to school and dropped

them off; they checked-up on absentees by doing door-to-door visits. Besides, they were also seen to help the teachers discipline students during school hours.

4.6 SCHOOL HOURS AND CONTACT HOURS

School hours were counted from the time the boatmen came to *Shikkhatari* till the time when they finally left the boat. This includes time for cleaning the boat, picking up and dropping off students and class-room teaching-learning hours. Contact hours, on the other hand, were counted from the time when students reached schools to the time they left school for home. This includes curricular and co-curricular activities, prayers, oaths, recitations and flag hoisting.

All the *Shikshataris* did not follow the same time schedule. School hours differed from one school to another. The schedule usually reflected convenience and availability of teacher and students. The starting time of observed schools was fixed at 7.30 a.m., 8.30 a.m., 10.30 a.m. or 1.00 p.m. However, it was not always possible to start classes as per the scheduled time because the schools wanted presence of the optimum number of students in the classrooms. Thus, the start of classroom activities depended on the time needed to take students from *hatis* to school. The school timing generally reflected the need of the households involved. Hence, by selecting a time that ensured that most families would be able to spare their children for studies, the schools provided opportunities to children who may have been engaged otherwise. However, the flexible timing was also seen to negatively affect classroom teaching-learning processes in most of the schools observed. It affected classroom contact hours negatively.

Causes of change in teacher-student contact hour in classrooms: In general, school hours ran for one to two hours longer than that decided earlier by BEP. Sometimes, contact hours were frequently shortened as time was spent on external activities such as picking up students and dropping them off. Such activities were often disrupted by extreme weather conditions and mechanical problems related to the boat. The process of collecting and transporting teachers and students presented a time lag as they often delayed in arriving at the pickup locations. Students held back for household chores due to bad weather and sometimes due to lack of motivation or lack of parental awareness about the importance of education and regular attendance in school.

Class start time was delayed further when other students or the boatman were sent back to bring or check on absentees. Rainy weather markedly affected school attendance and time management as students were less interested to walk to pick up points. They crossed muddy paths and arrived at schools soaking wet or dirty. This further decreased class time as they had to be cleaned up first. This kind of situation is increasing the overall school hour but there is a substantial decrease in contact hours.

Class time was further delayed due to structural and mechanical difficulties related to boats. One day, a *Shikkhatari* could not be started to pick up the students on time due to engine failure. It took some time to be repaired due to the lack of mechanical knowledge of the boatman and the lack of access to repair shops. This caused significant delay in student collection and start of class time, which resulted in shorter contact hour and much longer hours for the boatman. It was reported that mechanical failure was not very uncommon.

Average number of school hours calculated during classroom observations was approximately of 4 hours and 12 minutes. Average contact hours were approximately 3 hours and 32 minutes in the eight observed *Shikkhataris*. However, in some schools, classes were held for only 2 hours and 15 minutes on certain days due to the time lag

caused by mechanical problems of the boat or heavy rainfall. This delayed the student collection process. These situations directly influenced teacher's time management as it interrupted the process.

Teachers also reported the same problem stating that they had difficulties in time management due to such delays. Sometimes it was difficult to organise classes according to the lesson plan. It was also observed in many *Shikkhataris* that students came to school in small groups and most of them did not arrive at the same time. The teacher usually waited for the majority of students to arrive before officially starting lessons for the day. Following is an example of a *Shikkhatari* which shows the reality of both students' absence and delayed classes:

Official class start time was 8:30 a.m. On the first day of observation, students arrived in small groups of one or two. Only a half of the students were found to be present at 9 a.m. The teacher started class sometime after 9 a.m. with only fifteen students. As classes proceeded, a few more students joined.

On the second day, the teacher arrived at 8:50 a.m., twenty minutes after scheduled time. She brought three students with her and found any other present. She then sent one of those three to call the other students to school. Only 10 students appeared by 9:30 a.m. The teacher waited till 9:45 a.m. before officially commencing classes for the day. Afterwards, 3 students joined and the total number of students present on that day was thirteen.

The following day, the situation was similar. Due to continuous rainfall, the majority of the students were absent. At 9.00 a.m., only 7 students were present. However, by 9:55 a.m., the number of students reached 17.

Student attendance was very poor when there was continuous downpour. Whoever came to school was usually soaked and was inattentive in classroom activities due to their uneasiness with wet clothing. They could not concentrate on classroom lessons when they saw similar aged children were swimming or catching fish in the rain. Teachers reported that the frequency of time lags was very common during heavy rainfall. Such problem was found to be dominant among schools that were located comparatively in more remote regions. From qualitative investigation, it seems that geographical location of the schools, weather conditions and the frequency of monitoring as well as supervision by programme organisers have significant impact on the overall functioning of these schools and on student attendance.

Programme organisers raised issues related to increased operational difficulties in *haor* areas. They have outlined several challenges that they face in routine monitoring of schools. All of them mentioned that it was excessively difficult for them to commute from one place to another and that it was not always possible for them to meet targets. In certain locations, the monitoring of only one school might take up a full day. The process of commuting was time-consuming, tedious and very costly.

4.7 SECURITY ISSUES

Security of Shikkhataris: Primarily, boatmen were responsible for security of *Shikkhataris*. Gradually, parents and other community members started to think that these were the schools of their children and that it was their responsibility to ensure security of the boats. At the initial phases of intervention, BRAC received cooperation from elite and influential people of communities to find out a reliable boatman. Usually, an individual who was recognized by community members as responsible and reliable was appointed as the boatman. Nearby household members also took care of boats from time to time.

Security facilities on boat: None of the *Shikkhataris* had first aid boxes and only 34% had ring buoys for security purposes. Those *Shikkhataris* with swimming rings lacked proper maintenance. Moreover, they were locked in the store rooms to which students did not have access to in the absence of teacher or boatman. In some *Shikkhataris*, it was found that the teachers left the keys of the store rooms at their homes. In the majority of cases, the teachers and boatmen did not properly understand the usage of these rings. Some boatmen reported that they were instructed to take out the rings, to pump them and to hang them on deck of the boat only when visitors come. In the majority of cases, neither the teachers nor the boatmen had any clear idea about the utilisation of ring buoys.

The *Shikkhataris* were few feet above the ground, so students had to climb on deck with the help of makeshift stairs. In only 34% of *Shikkhataris*, the stairs used by students to climb up to the boat were rated as secure by teachers. In the remaining *Shikkhataris*, it was observed that these makeshift stairs were inconvenient for children to use. During school observation, it was noticed that a few younger students found it difficult to climb the stairs; some were also slipped and fell during climbing. The physical structure of the boat has serious implications for children with special needs (CSNs). None of the observed *Shikkhataris* had facilities for CSNs. So, overall the school structure was unsuitable for CSNs, especially for physically challenged students.

Parental concerns about security: As the *Shikkhataris* were a completely new form of school, questions about safety and security arose during its initiation. Through interviews and focus group discussions the concerns of parents, community members and teachers were collected.

According to BRAC staff members, parents and community members were concerned about safety in these schools at the very beginning. However, when they saw the strong infrastructure of the boats and the active role of teachers as well as boatmen in ensuring the safety of children at all times, their tension disappeared. The children were never left unattended. Moreover, to date, there were no severe accidents of students falling into the water in the studied areas. It is also worth mentioning that in the studied schools, 74% of students of all grades knew how to swim; the highest number was in grade IV and lowest was in grade I. Such variation may be due to the age of students.

4.8 OPERATIONAL DIFFICULTIES

Existing literature shows that operational challenges in hard-to-reach areas are very high. Attracting students to schools and retaining them are difficult because of the high opportunity cost of education, low social capital and lack of parental awareness about the importance of education. Secondly, attracting qualified educators in these remote locations with low salaries and challenging students is not easy (Jimerson 2005). Thirdly, poor infrastructure makes supervision, monitoring and overall management very complex.

The case of *Shikkhatari* initiative was no different. POs and teachers interviewed have all mentioned the extreme difficulties that they faced in day-to-day operation of schools. Attracting children to schools and retaining them were big challenges. The difficulties faced can be summed up by a quotation from a PO. He said, ‘...it is hard to convince parents to send their children to school because they want their children to be involved in income generating tasks like fishing and farming’. Since the opportunity cost

of education was considered to be too high and very few parents the returns to education, families did not feel encouraged to send their children to school.

Existing literature suggests that the lifestyle and earning structure of communities may contribute to different perception of the prioritization of education (Hobbs 1995, Khattri *et al.* 1997). Upon introduction of educational programmes, these communities may react to and receive programme workers, teachers, community actors differently – by often expressing resistance and non-cooperation (Aikman and Pridmore 2001). For geographically excluded *haor* communities, water-logging and isolation become a part of life and access to education was less prioritized. Children were taught skills that allowed them to gather food from nature and trade, usually by fishing or farming. Hence, teachers and programmes had to face the additional burden of reprioritizing each child's focus and motivation. Families similarly determined the significance of formal education differently in isolated regions. It is often considered ineffective and unsuitable to their lifestyle, if not redundant. Relevance of existing literature was found in this study.

Finding teachers in these areas was another operational challenge in the region. Since the literacy rate in the region was low, finding educated female teachers was hard. Mostly all the interviewed POs reported that they had tremendous difficulties in finding qualified teachers. There were also few cases where despite meeting all other criteria, schools could not be established in some *hatis* due to the unavailability of qualified teachers.

The *Shikkhataris* faced challenges in recruiting and retaining teachers over full duration of primary education because the teachers also faced similar difficulties as the students. Low education attainment in the area among females in each locality limited the group of eligible candidates. Thus, the schools were highly dependent on teachers that were appointed once. High poverty, low salaries, commuting difficulties in terms of time and physical distance made *haor* region a challenging work place. This geographical and infrastructural isolation have been recurrent in programmes that have focussed on excluded communities (Jimerson 2005).

The POs are scheduled to visit a *Shikkhatari* twice every week. Majority of them mentioned that this was not possible because of the poor communication system. In monsoon, when the mode of communication was only boat, they had to wait for hours for it. Travelling by boats on a regular basis was however expensive. Communication did not get better in summer too because then they had to walk for hours through muddy and broken paths.

As seen during school observations, POs also mentioned delays in student collection from *hatis* to be a factor that negatively affected classroom contact hours. Delays in students collection was usually caused by extreme weather conditions such as heavy rainfall and mechanical problems related to the boat. These situations were sometimes unavoidable. Moreover, high dependence on boatmen for bringing students to school has also been pointed out as a problematic area by a few POs. They mentioned that if the boatman was absent due to illness or other personal problems for a day, there was no school on that day.

It is worth mentioning that all these extreme operational difficulties were exclusive to *haor* regions. In addition, there was regular supervision, management and operational concerns. Despite all these factors, the POs observed to make sincere efforts to mitigate risks and to tackle the diverse problems they faced on a daily basis.

TEACHERS AND QUALITY OF EDUCATION

Teachers are the key to any educational provision. Their activities play a significant role in determining the quality of education. Starting with the profile of *Shikkhatari* teachers, this chapter presents teaching-learning provisions in *Shikkhatari* classrooms. This chapter will give a sense of quality of education in the *Shikkhataris*.

5.1 THE TEACHERS

All 50 teachers were females. They were, on an average, 21 years old with a range of 16 to 33 years. Fifteen of them were married and 35 were unmarried. This might be a potential challenge for the programme in future since teachers' dropouts may occur when these teachers will get married.

Twenty-three teachers had Secondary School Certificates (SSC) and 18 had Higher Secondary Certificates (HSC). Four teachers completed nine years of schooling and five completed eight years of schooling. Nath (2013) observed that educational attainment of *haor* population was much lower. Only below 5% of them has completed secondary education. This indicates a high possibility of scarcity of educated people eligible as teachers. Difficulty in getting suitable teachers was also mentioned by Programme Organisers (POs) in the area. A PO, for instance, mentioned that it was particularly difficult for him to recruit a teacher for his *Shikkhatari* following the given criteria. Of the 50 families occupying the coverage area of this particular *Shikkhatari*, only two girls have earned SSC. This is not an isolated case and such problems have been repeatedly referred to by the POs in the study region.

Length of service of teachers with *Shikkhataris* varied substantially. This was not unusual because, they were the teachers of schools of various grades. Thirty-five teachers were with their present schools from the start and 15 joined later. They joined later due to teachers dropping out in those schools. In schools where there were teachers' dropouts, it was found that the teachers joined between 2-23 months from start of school. On an average, the length of teaching experience of teachers was 15 months with a range of 1–34 months.

Very young teachers with only 1–2 months of experience were found in some schools. For instance, a 16-year-old teacher with only a month of experience was observed in one school. It was noticed from classroom observation that teachers' age, experience and training mattered greatly in quality teaching and learning. Younger and less experienced teachers struggled more to deliver lessons effectively and to meet other needs of the students. They also had problems with time management.

All the teachers were not trained. Seventy-eight per cent of teachers had received basic training from BRAC during the time of the study. The non-trained teachers were those who were replaced due to dropout of older teachers. Upon qualitative investigation, however, it was found that the ones who received no basic training received a monthly refresher's training. They also observed the classes of an experienced teacher for 4 days prior to teaching in their designated *Shikkhatari*. In addition, the Programme Organisers often took classes to demonstrate the process

better to the newly recruited teachers. They also helped them with the lesson plan on a one-to-one basis.

It was evident that POs made effort to develop teachers by training, counselling and follow-ups. However, POs have mentioned that the refresher's training alone was not sufficient and that most teachers could not grasp all the contents because too much material was covered in too short a period of time. They stressed on the need to give basic training to all *Shikkhatari* teachers to maintain similar standard of education across all schools.

The teachers and programme staff members have pointed out transportation problem as a reason why some teachers did not go to the refresher's training. During monsoon, there was no option other than boats to commute from one place to another. Sometimes, they needed to wait very long for boats. This hampered the schedule of refresher's training.

5.2 CLASSROOM TEACHING-LEARNING PROVISION

Although different in physical structure, the *Shikkhataris* followed the same way of teaching as was followed in BPSs. The curriculum was same as that of BPS and thus teacher preparation, teaching methods and materials used and co-curricular activities done in classrooms were also similar. In other words, a similar quality of education was planned to provide to students of *Shikkhataris*. Efforts to maintain the same quality of education in *Shikkhataris* were evident from classroom observation.

Classroom decoration and learning materials: All classrooms were decorated with age-appropriate drawings, charts as well as colourful images in order to aid students' learning capabilities and to increase their interest in classroom activities. Students and the teachers drew most of them. Some were collected from the communities. Like any BPS, all students received textbooks, exercise books, black slates and stationery from BEP. Each student had their own chalk, a pen, a small bottle of water and a rag to clean the slate after use. The teachers kept colour pencils and additional materials such as alphabet charts and small sticks for easy math calculations to themselves; these were distributed among students or hung on classroom walls when needed.

Only a few teachers were seen to use such additional learning materials effectively. Some teachers used relevant examples outside class to explain concepts more effectively. For example, some teachers were noticed to use picture charts in the classroom to teach words like 'apples' or 'boy' to children. When charts were used, it was noticed that children learnt better.

Another teacher in a boat school made use of sticks to teach addition and subtraction to students. The following scenario demonstrates this point well. *Teacher:* "Take 8 sticks in right hand. Then take four sticks in left hand. How many sticks are there in both of your hands now?" The use of sticks to teach counting was highly effective in this classroom. The teacher counted with the students and ensured participation. Students were seen to busily count the number of sticks and most could give the correct answer.

The use of additional teaching materials or relevant examples were however very limited. Most teachers did not use these techniques. During observation, it was noticed that most teachers who had used these techniques effectively had received training and had prior teaching experience. On the contrary, most untrained and new teachers were not seen to use supplementary learning materials effectively.

Review work: At the start of each school day, teachers were seen to start with the review of lessons of the previous day and by assessing homework. This included identifying areas where most students faced difficulties in or made mistakes. Some teachers also made effort to identify underlying conceptual problems, especially in mathematics and reviewed them again in class for all students. Besides assisting the students to solve the problems, a few teachers were also called students to the blackboard to solve problems and to explain them to their peers.

The practice of review work was seen in all schools under observation but quality of feedback given to students differed greatly from one teacher to another. Some teachers did not spend enough time on problematic areas and thus conceptual deficiency among students remained. Hence, there was scope for further improvement of effective teaching. Followings are two examples:

In one school, the teacher assigned work to students- to draw rice and to write a few lines about rice. All the students completed the drawing and wrote a few lines like, "I like to eat rice. Today before coming to school I ate rice. I eat rice every day." Every student wrote something different. It was noticed that around 18-20 students made some sort of spelling or grammatical mistakes in their writing. However, the teacher did not notice mistakes, did not correct them and did not review the problems.

In another school, the teacher was checking mathematics homework and called 5-7 students who made mistakes in front of the class. She pointed out that they had made mistakes but she did not teach them on a one-to-one basis to solve these problems. Hence, conceptual deficiency remained.

Few teachers also went through review work by an approach that did not really solve student's problems, especially of the weaker students. These teachers either did not spend enough time understanding the areas of students' difficulties or failed to deliver proper explanation. This problem was especially identified in the case of new, untrained teachers and secondly, in schools where teachers conducted private tuition at home. For example, in two schools, the teachers were unable to complete homework assessment within given time. The teacher in one of these schools was involved in private tuition. She also left a lot of materials unexplained, these materials would be covered in her private tuition classes.

Private tuition was noticed to have a significantly negative impact on classroom teaching and on the learning process as well as on the attitude of both students and teachers. Teachers who provided private tuition showed greater tendency of insincerity and left a lot of materials uncovered in class. Students who attended private tuition were also inattentive in the classroom. They were either inattentive because they already knew that the same material would be covered privately in a better way or because they already knew the content from private classes. This created reluctance on the teacher's part and most students who did not attend private classes were thus affected. Their learning was hampered.

Lesson plan: Most teachers were observed to follow lesson plans that were prepared ahead to ensure that the syllabi were covered. This also focused on time management and served as lecture notes for the teachers. Only a half of observed schools were distinguishably and effectively using lesson plans; however, this did not translate to ideal time management for all the cases. From classroom observation of the teaching-learning processes, it was noticed that less experienced teachers struggled with time

management; some of them rushed through lessons or proceeded so slow that they could not cover all the lessons planned for that day.

It must also be mentioned here that classroom observations were conducted in mid June 2014, which was almost the end of the academic year. Perhaps if data collection was conducted earlier during the school year, more authentic data could be collected on the effective use of lesson plans in classrooms.

Group work: Group work was central to each lesson as peer review and group reading exercises were conducted daily in every classroom. These activities were incorporated in all subjects. In all the schools observed, reading in groups was highly encouraged. Students were seen to really enjoy studying in groups and sessions were usually very interactive as well as lively. Students sat in small groups of five or six, led by a female group leader. Usually, children read poems, stories or passages in such group exercises. The team leaders were noticed to help peers in their individual groups. The teacher was seen to go around the classroom and to oversee the activities. In about more than half of the schools, these group reading exercises were seen to be conducted in a way so that the majority of students could benefit.

However, in classes with new and untrained teachers, the situation was different. Classroom environment became chaotic when reading exercises or group work began. Students talked to each other when the teacher was unable to control the class. While reading in groups, some teachers were unable to identify students who could not follow the lessons. So, their deficiencies remained.

Slow learners: Only a few teachers with longer teaching experience were observed to give special attention to slow and less responsive students. They were seen to give these students a chance to participate and they sometimes encouraged them to respond. A few teachers were noticed to change sitting arrangements in classrooms so that slow learners could be monitored at all times. Some teachers also responded that they paired one slow learners with a fast learner so that the slower ones could learn from their peers. It was often observed that teachers called the slower ones personally and told them to pay attention in classroom lessons. However, in schools with new and untrained teachers, this was not true. It was noticed that weaker students were not given extra attention and so possibilities of their conceptual deficiencies remained. In classrooms such as these, the weaker ones did not participate much.

Student-student interaction: Students were encouraged to participate in classroom activities through group work in all the schools observed. They read in groups, shared books, stationary and sometimes fruits, nuts or candies. Students interacted well with their peers and demonstrated friendly behaviour. The dynamics between the slightly older and younger children was especially interesting. The older ones were seen to act like the older sibling and they were taking care of the younger ones. They assisted the younger ones during the walks to and back from school, went and fetched water for the younger ones and were also noticed to help them with studies as well as other classroom activities.

Student-teacher interaction: In most of the schools, there was satisfactory interaction between the students and the teachers. In most cases, students were observed to ask the teacher questions related to lessons. They were sometimes also seen to request the teacher to end classes when she crossed the time limit. They also felt comfortable enough to let the teacher know when they were either too tired or feeling too hot and

exhausted. Overall, in all schools, the relationship between the teacher and the students was generally friendly. Only a few cases were different.

Class coordination and student participation: Classroom teaching-learning process was interactive in more than three-fourth of observed schools. Teachers encouraged students to ask questions. Few were seen to pay closer attention to weaker students and to those who did not participate actively. A few teachers were seen to call out students by name when they were becoming inattentive. By doing this, they ensured that all students paid attention in classroom activities. For example, some teachers were seen make the more responsive students sit and to let the quieter and weaker ones answer. They also encouraged them to participate by saying, 'I believe you know the answer. Tell me, what is the answer?'

The level of interaction varied from school to school and from student to student. Few students were always seen to interact and to ask questions confidently. Weaker students participated less in most cases. Few teachers however tried to ensure that the weaker ones could participate but most could not ensure this. In some cases, weaker students were reprimanded and the teacher was unable to effectively provide feedback for improvement.

Students were also seen to participate without fear or hesitation in most cases. When the teacher asked questions, there was usually a lot of hands out in the air with students showing willingness to participate. A few teachers were also seen to separate the class into groups of boys and girls. This made the classroom environment more competitive and it attracted the attention of most young learners.

Some teachers were seen to call students to the blackboard and to encourage them to teach their peers to solve problems. In general, in all the schools observed, students were not scared to ask their teachers questions. Lessons were mostly interactive. Students freely asked for clarification or shared problems with teachers from time to time in most schools. However, in classrooms where teachers verbally or physically abused students, the environment was quite different and less lively. Where teachers used corporal punishment, few students admitted that they could not understand concepts. In such classrooms, only a few students maintained constant participation and interaction with teachers.

Rewards and punishment: Rewards through claps for good performance and giving thanks were in place in most classrooms of *Shikkhataris*. The teacher encouraged students to clearly answer questions and to participate on the class board. Classmates were reminded to reward their friends' efforts. If attention and control diverted, some teachers were active in asking students to pay attention. A few were, however, not as persistent and they continued the lesson with disregard. Punishment was usually a verbal reprimand. In more than half of the observed schools, teachers practised corporal punishment and verbal abuse. Teachers were observed to make insulting remarks, especially towards weaker or naughtier children. Some were also seen to hit children with sticks and scales as well.

Ensuring attendance: A check-and-balance mechanism was in place to ensure students' attendance. Attendance of students was ensured at several levels. While picking students up from *hatis* to the boat, the boatman checked whether all students had appeared. If any student was absent, the boatman sent one of the present students to the absentee's home to bring her/him. Or, he himself went to check-up on the absent student.

The students too were observed to check this through head counting. They also ran to the absentees' home with on their own initiative. The teacher followed a similar process and was found to be aware of students' absence at all times. Teachers, students and the boatmen all played their individual roles in bringing students to schools. POs also performed follow-ups on absent students regularly.

However, students still remained absent and teachers as well as POs identified lack of parental motivation as the main reason behind such irregularity. According to them, parental role in sending children to school was insignificant.

In most cases, students were seen to be self-motivated and were noticed to take an active interest in coming to school. Students' interest to come to school may have been influenced by several school factors such as teacher's approach and their ability to make teaching-learning fun as well as understandable. Students were usually vocal in asking teachers questions. Effectiveness of teaching could be confirmed by seeing faces of students. Students were seen to be happy when they understood concepts clearly.

Home-school relationship: Teachers of 42 *Shikkhataris* (84%) reported that during the first five months of 2014 (January to May), they had visited student's homes to meet their parents and to discuss the progress in terms of education and/or attendance related issues. Parents from 37 of these *Shikkhataris* went on return visits to schools to see classroom activities but parents of the other five *Shikkhataris* did not go on such visits. However, parents of the additional five *Shikkhataris* visited classrooms. Neither the teachers nor the parents visited each other in the three sampled schools. Parents of 39 schools paid visits to schools with the intention of discussing their children's education with the teachers. A section of them also provided some suggestions for improvement of school facilities or teaching provision. Most of the schools had parents-teacher meeting in January–May 2014. Such meetings were supposed to be held once a month. All five meetings were held in 32 schools, four meetings in eight schools, three meetings in five schools and others less.

Co-curricular activities: Co-curricular activities were a part of *Shikkhataris*. It was found that students danced and sang songs in 94% of schools, drew various objects in 90% of schools, recited rhymes or poems in 36% of schools, participated in drama in 32% of schools, storytelling in 18% and debate in 6%. Students did physical exercise in 82% of schools. However, during classroom observations, irregularities were found in practice in some of these schools. Sometimes, the national anthem was not sang or the schools did not start the morning with oaths or prayers of any sorts. When asked why, the teachers responded that these activities were not held sometimes due to study presure.

GEOGRAPHICAL TARGETING OF *SHIKKHATARIS*

One of BRAC Education Programme's (BEP) primary objectives behind *Shikkhatari* intervention was to bring the school nearer to children. Targeting the extreme geographical challenges exclusive to these *haor* communities and providing education to hard-to-reach people was one of the major aims of this programme. This chapter seeks to see how much of this could be addressed by the intervention.

6.1 DISTANCE FROM HOME TO SCHOOL

Education Watch study on Sylhet division showed that the distance between home and school significantly affects school enrolment in *haor* areas. In cases where the schools were less than half a kilometre away from home, net enrolment rate was 83.9%. This rate dropped to 79.6% for schools up to 1 kilometre away from home. It fell further to 69.9% for schools that were 1.1–2.6 kilometres away from households (Nath *et al.* 2013).

One of the major aims of *Shikkhatari* intervention was to establish schools in areas that had no school or from where the nearest government primary school was 1 to 1.5 kilometres away. The programme intended to set up *Shikkhataris* in the most geographically excluded regions with poor communication systems and where it was difficult for children to commute to schools.

A major difficulty for children in accessing education services in *haors* is the distance they often have to commute to get to the nearest schools. This often means that they have to spend money; the process is tedious, inconvenient and time-consuming. Additionally, heavy economic dependence on labour intensive work means that families are unable to afford time and expenses behind education of their children. Moreover, for younger children and female students, the long distance between home and school have security implications as well. It was observed from qualitative investigation that many parents were reluctant to send their adolescent girls and younger children to school due to fear of harassment or drowning.

Therefore, in order for the intervention to be of any help to communities, *Shikkhatari* intervention had to do proper geographical targeting. It needed to address the existing barriers to education that threatened *haor* children's access to educational services. In an attempt to address the existing challenges, the *Shikkhatari* intervention therefore, aimed to take the school to the children.

Distance mapping was carried out to scientifically determine whether proper geographical targeting was done during programme implementation. Calculations based on readings of GPS receivers were used to find out two things: the mean distance of the nearest formal primary schools from the households of *Shikkhatari* students and the mean distance from the *Shikkhataris* to the students' households. This has helped to determine whether the schools were brought closer to the children.

Mean distance from students' households to the *Shikkhataris* was found to be 0.38 kilometres. The distance between homes and the nearest formal primary schools was

0.71 kilometres. It can be seen that the distance from household to school was nearly halved with the initiation of *Shikkhatari* in the study areas. It must be mentioned here that the distance from some households to the nearest government primary school was found to be as high as 2.6 kilometres. This was true for approximately 30 out of 496 recorded cases (about 6%).

Table 6.1 shows the distribution of *Shikkhatari* students in terms of distance from their home to *Shikkhatari* and the nearest GPS. It was observed that 60.5% of homes were situated within less than a quarter of a kilometre away from *Shikkhatari* and 22.6% were within half a kilometre. However, the distance from homes to the nearest government primary schools showed that almost 53% of homes were situated at least half a kilometre away from the nearest primary schools. With evidence from these calculations, it can be concluded that the *Shikkhatari* were established nearer to the homes of the students than the nearest primary schools. The programme was hence successful in reducing the distance that students needed to commute to school. It reduced this distance by almost half between a household and a school.

Figure 6.1 Mean distance (in km) between students' homes to *Shikkhatari* and nearest government primary schools

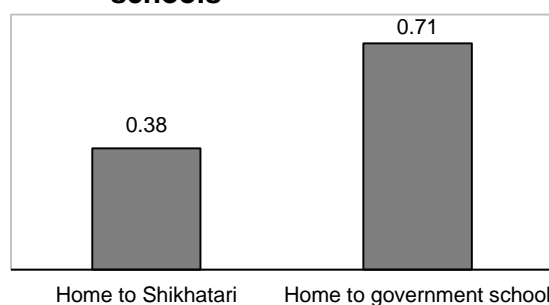


Table 6.1 Distribution of *Shikkhatari* students in terms of distance from their household to *Shikkhatari* and nearest formal school

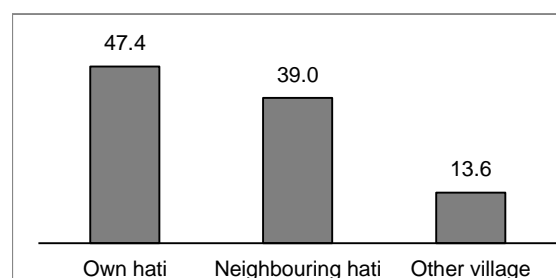
Distance (in metre)	School type	
	<i>Shikkhatari</i>	Formal school
< 250 m	60.48 (300)	22.98 (114)
250 - 500 m	22.58 (112)	23.59 (117)
500 - 750 m	8.06 (40)	20.36 (101)
> 750 m	8.87 (44)	33.06 (164)

Note: Calculations were done for 496 households; data anomaly for 4 cases

Location of boat school: One of the main objectives of this intervention was to bring the school as close to the students as possible. Household survey shows that *Shikkhatari* were located closer to the *hatis* of 47.4% of students. It was nearer to neighbouring *hatis* for 39% of students (of the same village). In different villages of the same union, they were closer to 13.6% of students (Figure 6.2).

Commuting to school: As mentioned earlier, crossing rivers to get to school was a major barrier in accessing education services in *haors*. The parents reported that if *Shikkhatari* were not established and if *Shikkhatari* students had to commute to nearest government primary schools, 79.2% had to cross a river in the monsoon. In the dry season, 42.2% had to cross a river. The specific changes that have occurred after the establishment of *Shikkhatari* may also be a relevant question. Parental report in this regard

Figure 6.2 Percentage distribution of *Shikkhatari* students by location of school



was that 83.6% of boat school students did not have to cross a river in dry season after establishment of boat schools and that 39.8% had to cross a river in monsoon.

Parents were asked about the mode of transportation to reach *Shikkhataris*. Multiple responses came. Parents also reported this separately for dry season and monsoon. In the dry season, 96% of students went to school by walking through dry walkways, 8.6% had to walk through muddy paths and 12.4% used the small boat provided by schools. On the other hand, in monsoon, majority (65%) used the small boat provided by school, 61% walked through dry walkways and 34% walked through muddy paths. Other responses in this regard included, crossing a bridge (4.8%) and using other boats or trawlers (2.8%) (Table 6.2).

Table 6.2 Percentage of students by mode of transportation to *Shikkhataris* and seasons

Mode of commuting	Seasons	
	Dry season	Monsoon
Walked through dry path	96.0	61.0
Walked through muddy path	8.6	34.0
Using school's small boat	12.4	65.0
Crossing a bridge	-	4.8
Other boat/trawler	-	2.8

Multiple responses counted

6.2 COMMUNITY PERCEPTION

Focus-group discussions and informal conversations were carried out during field work to capture the community's perception about *Shikkhataris*. Majority of the FGD participants and interviewees responded that at the beginning, they were sceptical because the idea of schools on boats seemed ridiculous! Additionally, they were concerned about their children's security on board. Some feared that the boats would take their children away.

Due to the inability to comprehend the rate of returns to education, the community did not value education. So, the *Shikkhatari* intervention did not excite them during initial stages. Penetrating in individual communities and convincing families to send their children to *Shikkhataris* was difficult for staff members at the very beginning. Programme Organisers and teachers responded that parents would rather have their children at home or have them go fishing, farming or boating.

The community's perception of these schools have however, long transformed due to the active engagement of BRAC staff members. When asked about why these schools were started in their region, almost everyone responded that *Shikkhataris* were the only viable solution to the problems posed by water-logging in the areas. They responded that the schools were brought to the children to ensure regular attendance and to eliminate any dropouts due to inconvenience of commuting. Some parents also said that if there were no boat schools, their children would remain uneducated.

However, BRAC staff members were able to convince parents and get their children admitted to the *Shikkhataris*. Most of the parents mentioned that prior to admitting their children in *Shikkhataris*, there were several sessions with POs and teachers. In such sessions, POs convinced parents to send their children to school. Quality education was promised free of cost.

The parents mentioned that once they admitted their children to these schools, they saw that their children were well taken care of by programme staff and teachers; some mentioned that teachers even inquired when students were absent. Parents were

also called in for regular monthly meetings to discuss their children's progress, etc. Through active engagement and coordination, with time, a system of dependence, trust and reliance have developed between the school and community members. Gradually, the community's perception of these schools has started to change. This idea of schools in boats that once seemed ridiculous and unsafe was now regarded by community members as a safe and quality learning centre for children.

Most parents and community member's responses about the *Shikkhataris* were extremely positive. One parent for example expressed his satisfaction with the quality of education in *Shikkhatari* by saying that his child can now write his own name and also his father's. Another parent with one child in *Shikkhatari* and another in a government school mentioned that, his younger son who was in Class II could read and write better than his sibling who went to a higher class in a government school.

Many parents also mentioned that prior to getting admission to *Shikkhataris*, children played the whole day, went fishing or roamed around aimlessly. Those who were admitted to other nearby schools were irregular and dropped out due to the inconvenience of commuting every day. Moreover, children were hardly seen to come home and study. However, after getting admitted to *Shikkhatari*, children became regular in school and had a fixed daily routine. Most parents mentioned that even though they were uneducated and did not understand what the children are studying, they liked seeing their children study during the evenings. Many mentioned that they had seen positive changes in their children's attitude after being admitted to *Shikkhataris* - they greeted their elders and respected them, washed their hands before eating, etc.

In the implementation phase, community members were scared about safety of their children in *Shikkhataris*. Many could not understand why these *Shikkhataris* were built and were convinced that the boats would take their children away! However, when asked during the FGDs, parents revealed that they had no concerns about the safety and security of their children anymore.

Parents admitted that they felt safe letting their children go to boat schools. They also identified the boatmen and teachers as responsible guardians. Boatmen were commonly considered important within the community. As teachers were selected from within the community and most of the times from the same *hatis* as students, households were more comfortable about leaving their children with people they knew. Some mentioned that they felt comfortable because the teacher and the boatmen look after their and would never leave them unattended.

Parents identified *Shikkhataris* as centres for quality education. Their responses suggested that this was a significant reason for sending children to these schools. For example, many parents mentioned that their children would not go to school if the boat schools were not established. Moreover the curriculum ensured that children would receive adequate academic support in classrooms. This helped them at home where sufficient assistance was not available. Parents reported that their children studied alone at home. When they were stuck, they took help from their friends or the teacher.

Parents now see their children taking an active interest in studies and in going to school. The children come back home and study in the evenings under the flickering flames of candles. The community views the *Shikkhatari* intervention as positive and some demand more *Shikkhataris* to be established in their areas.

Programme Organisers additionally informed that parental awareness regarding children’s education and the importance of regular attendance in school was minimal. Children themselves showed eagerness to come to school without any motivation from family members. In conversation with parents, they too mentioned that children showed eagerness to go to school and that they reached pick-up points every morning well ahead of time.

Changes in community perception towards quality education were noticed through investigation. *Shikkhataris* required greater community involvement at the operational level because of their nature as a non-formal school model. Qualitative findings from the study revealed that the presence of a local teacher and a boatman as integral members gave parents, students and other community actors more insight.

Poor communities that provided little social capital to their children in the pursuit of education now encourage students towards work that economically benefits the family. However, with greater access to better quality education, and with involvement of community as well as households, BRAC has helped change the perception regarding education in the community. This will help improve student retention rates in the future. Our study has not explored the extent to which this shift has occurred but this provides opportunities for further research.

A research gap exists on the impact of both location and poverty contributing to school performance (Khattari *et al.* 1997). As the *Shikkhatari* programme progressed, it further clarified some of the correlation between location and school attendance. An increase in enrolment among all students and significantly among female students, was recorded upon introduction of *Shikkhataris* to this poverty-stricken *haor* region. Region with a high dropout rate benefited from greater proximity to schools. More students, especially girls, enrolled in *Shikkhataris* due to greater proximity and lower costs associated with education.

While the study did not focus on the issue of security, households placed it high on their list of why *Shikkhataris* were a better option for their children. Hence, geographical isolation for services such as education, information, transportation and security are addressed by the inherent structure of the programme.

6.3 FACTORS INFLUENCING ADMISSION TO SHIKKHATARIS

Parents provided multiple responses when they were asked to mention the reasons behind admitting their children to BRAC *Shikkhataris*. A total of seven reasons came out. Eighty-five per cent of parents reported that they sent their children to *Shikkhataris* because of the quality of education. Parents observed that in comparison to other schools, boat schools were more careful about children’s learning needs. Over 62% of parents sent their children to *Shikkhataris* because of ‘free education’ and because there was no additional cost for education. The third most important reason was the shorter distance between

Table 6.3 Percentage distribution of students by reasons of admitting in *Shikkhataris*

Reasons	Per cent of students
Boat school provides better quality education	85.0
Education is free	62.6
School nearer home	41.6
Boat facility to reach school	13.4
Unavailability of any other school nearby	8.6
PO/Teacher advised	4.8
Do not need to cross water	2.6

Multiple responses counted

homes and boat schools; 41.6% of the parents sent their children to boat schools for this reason. The other reasons included 'boat facility for schooling' (13.4%), 'absence of nearby schools' (8.6%), 'advice of teacher/PO' (4.8%) and 'the absence of any risk involved in crossing water bodies' (2.6%) (Table 6.3).

FGDs with community members also provided findings similar to the above. It was evident that the community members regarded *Shikkhataris* as educational institutions that were providing quality education, free of cost. A number of cases were found where parents admitted one child to a *Shikkhatari* and were satisfied with the quality of education. Later, they also got their second child admitted to *Shikkhatari*. In this way, students of higher classes of government primary schools were also admitted to a lower grade in *Shikkhataris*. A father mentioned that his elder son was in class V in a government school while the younger one was in class III in a *Shikkhatari* of BRAC. He observed that the younger could read and write better than his older child. This parent was thinking about putting both his sons in the same class in a boat school for the pursuit of better quality education.

6.4 ENHANCEMENT OF EDUCATION IN HOUSEHOLDS

Educational status of children aged between 13–18 years, except those who did not enrol in *Shikkhataris*, was explored. The reason behind choosing this age group was that most of the students of *Shikkhataris* were below this age range. This is an immediate past age cohort of *Shikkhatari* students. The analysis reveals that a third of the children of this age cohort was currently enrolled in schools (8.7% in grade IV or below and 24.1% in grade V or above), 38% had dropped out before completing primary education, 13% had dropped out after completing primary education and 16.2% never enrolled in any school. On the contrary, when the *Shikkhatari* students will reach this age group, many of them would have completed primary education. This will be a huge contribution of the *Shikkhatari* initiative as it will massively improve the status of primary education in the *haor* areas.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter discusses the findings of this study as presented in the preceding chapters. Relevant findings from previous studies and reports were used for this. Key challenges in the operation of the *Shikkhataris* were identified. Some policy recommendations have been proposed to fine-tune the model that will hopefully help this innovative initiative become sustainable.

7.1 DISCUSSION AND CONCLUSION

To ensure progress towards attaining MDGs with equity, proper geographical targeting of basic social services in the most deprived areas of Bangladesh has been discussed in a number of studies (UNICEF 2010, Nath 2013). Many areas of Sylhet division were lagging behind in various development indicators due to difficult geographical positioning. High rates of extreme poverty and poor access to public as well as private services intensify geographical and social exclusion of *haor* population. Furthermore, the necessity of extensively intervening in geographically excluded regions of Sylhet division was given importance in previous *Education Watch* studies (Nath and Chowdhury 2009, Nath *et al.* 2011).

Prompted by the above mentioned studies and many others, BRAC decided to expand its existing programmes or initiate new programmes in the marginalised areas of Sylhet division. The aim was to uplift the socioeconomic status of communities of these areas at the national level so that they are able to achieve the Millennium Development Goals (MDGs). Along with other departments, BRAC Education Programme (BEP) expanded its pre-primary and primary education programmes in a number of marginalised *upazilas* of Sylhet division. BEP initiatives included operating different types of schools by its own workforce and also with help from local NGOs (through Education Support Programme or ESP) (Nath *et al.* 2014). A new initiative of BEP is the introduction of boat schools (*Shikkhataris* in Bangla) in *haor* areas. These are not only concentrate around the country in the Sylhet division; rather they have spread to *haor* areas of other districts.

Studies on education that focused on the problems of *haor* region of the country identified that long distance between communities and schools and poor transportation systems were primary constraints to schooling. Such problems arose due to ecological characteristics of the region. The children of poor households were major sufferers of such different circumstances. In order to reduce (if not totally solve) the constraints and to enhance learning among the children of poor households, *Shikkhataris* were introduced by BEP. Thus, the question that becomes relevant is how far this initiative could overcome the challenges and successfully proper geographical targeting.

Findings of the study reveal that positions of *Shikkhataris* were set in such a way that it lessened the distance between homes and schools. Upon measurement by GPS receivers, it was observed that the average distance between the home of *Shikkhatari* students and the nearest government primary schools was almost double than the distance between the students' homes and *Shikkhataris*. Moreover, a vast majority of *Shikkhatari* students (86.4%) had schools that were adjacent to their own *hatis* or a

neighbouring *hati*. Parents reported that there was a reduction in crossing waterlogged or muddy areas due to introduction of *Shikkhataris*. BEP not only established *Shikkhataris* but also introduced small country boats to help teachers and students to commute from home to school and vice versa. Parents in focus group discussions reported that children used to play near homes or engage in household chores instead of going to school before establishment of *Shikkhataris*. Due to the creation of above mentioned facilities, the situation has improved. Regularity of students in school has also increased. All these initiatives have reduced the challenges to the access to education to a great extent.

Knowing students' background characteristics was pertinent to understanding the *Shikkhatari* initiative. The study did not do any survey on all households in where *Shikkhataris* were established. Thus, it was not possible to have a direct measure of whether the poorer households in the *hatis* sent their children to *Shikkhataris*. However, an alternative measure was taken. A comparison was made between the characteristics of *Shikkhatari* students and those of *haor* areas in general as found in Nath (2013). The comparison revealed that the households of *Shikkhatari* students were worse off than the *haor* area households in general in terms of household food security status. Moreover, parents of *Shikkhatari* students were less educated than others; thus, *Shikkhataris* had more first generation learners. Comparison of primary and secondary level completion as well as literacy rates of the population of the two types of households also showed the same results.

Educational status of the population prior to the age cohort of *Shikkhatari* student was also assessed. This showed that the majority of them did not enrol in school or dropped out before completing primary education. On the contrary, when the *Shikkhatari* students would reach this age group all of them would have completed primary education. This would be a huge contribution of the *Shikkhatari* initiative in terms of improvement of the primary education situation in *haor* region. All the above collectively indicate that the *Shikkhatari* initiative carefully handled problems regarding access to education in *haors*. It was able to overcome geographical challenges to a great extent by reaching the hard-to-reach groups.

This study did not collect any information on the costs related to commuting to government primary schools or to *Shikkhataris*. No official facility was available for commuting to government schools. Thus, some students commuted in groups using one of the families' country boats and others used available public facilities. Both incurred some amount of financial burden on households. On the other hand, *Shikkhataris* had the provision of small country boats for students and teachers. Moreover, this had no cost implication for the users. Thus, it was obvious that the *Shikkhatari* initiative had contributed in reducing the private cost of education with regard to the costs that had to be incurred to commute to school.

Over half of the *Shikkhatari* students previously studied in other schools before getting admitted to *Shikkhataris*. The majority of them studied in government or non-government primary schools before. However, it was not known whether these students were brought to *Shikkhataris* from their previous schools directly or were brought to *Shikkhataris* by BEP after they dropped out of their previous schools. If the latter were true, the situation would have been simple. However, if the students were brought to the *Shikkhataris* by BEP, then this poses new challenges. Such migration is likely to be viewed negatively by external actors, especially the government, making the programme susceptible to public criticisms in the future. Grade-specific analysis of students' age showed that the average age of the migrant students of the first three

grades was higher than that of those who were admitted to *Shikkhataris* directly. However, an opposite scenario was observed for those in grade IV. The higher age of migrant students may be due to two reasons. Firstly, they dropped out of formal schools and were out-of-school at the time of admission to *Shikkhataris*. Secondly, these students had moved from one school to another and were admitted to a lower grade in a new school.

When parents were asked about the reason for admitting their children to *Shikkhataris*, the majority confirmed that it was for 'the quality of education'. Issues like 'lack of additional cost' or 'proximity of schools' were also highlighted by those in favour of admission to *Shikkhataris*. Here, the question of parental choice becomes of relevance. Parents, be it rich or poor must have the right to choose the type of education they want for their children. One should not overlook BRAC's value addition through the provision of quality education. Proportionate increase of migrant students in *Shikkhataris* may be a reflection of increased practice of parental choice in the study region.

Previous studies have shown that communication was a major obstacle for primary schooling in *haor* areas (Nath *et al.* 2011). The provision of small country boats for students and teachers to commute from *hatis* to *Shikkhataris* and vice versa was without a doubt of great assistance to them. With a few exceptions, it has also helped in ensuring students' attendance in schools. Teaching-learning provision in *Shikkhataris* including parental involvement was mostly similar to those of BPSs in plain land. Teachers tried their best to teach the students following the instructions received in basic and monthly refreshers' training. However, a number of challenges were identified, some of which need to be addressed immediately. For instance, the issue of toilet facilities need to be addressed as soon as possible. BEP may work with BRAC's WASH programme in order to find out a solution. Some of these challenges however, are probably unavoidable. For instance, various activities in *haors* such as fishing, noise made by other boats, noise from cleaning, washing and bathing, swing of boat due to strong wind, etc. sometimes disrupted classroom activities. Such external stimuli probably cannot be stopped completely. However, these can be minimized through increased awareness in the community. Along with meeting communities and discussing the issue with them, signs can be setup on water nearby the *Shikkhataris* stating 'Silence please, school is here' or 'Be quiet, school is in front', etc.

Finding eligible females for recruitment as teachers is also a challenge for *Shikkhataris*. Firstly, people completing secondary or college education is rare in the operational areas. Secondly, potential candidates have other opportunities; rather than teaching in BRAC schools. Teachers' drop out is also a challenge. Alternative teachers often did not perform like those who had been teaching from the beginning of their designated schools. In order to solve the problem, teachers' salaries may be revisited. An increased salary (compared to plain land BRAC schools) along with *haor* allowance (which is already in place for BRAC staff) for teachers may be an option for facing this challenge. Longer duration of training for teachers with 9–10 years of schooling may be another option.

Parental observation regarding the quality of education provided in *Shikkhataris* and the increased transfer of students from distant government schools to nearby *Shikkhataris* show an acceptance and popularity of these schools in the communities. This is because many challenges of primary education in *haor* areas originated from difficulties related to transportation. Since the *Shikkhatari* initiative was undertaken to meet these challenges, the intensity of many other problems have reduced. All these

may be collectively responsible for creating demand for *Shikkhataris* among parents. Similar to plain land BRAC schools, *Shikkhataris* require a waiting time of four years to admit the following batch of students. This might sometimes be all right if the schools were not located in remote areas. The challenge is different in a *haor* situation. Establishment of two boat schools in one place and introduction of 2/3 shifts in each may be considered to run all five grades of primary education in one location.

Students and teachers from 3/4 *hatis* are brought to *Shikkhataris* using small country boats. Questions may raise about the reason for having schools on water instead of *hatis*. In most cases, there was no room to establish schools in *hatis* due to numerous inhabitants and unavailability of adequate and appropriate space. If there is an option to establish school in any of the *hatis* it should be well accepted by the programme. This would help in reducing the cost of the school establishment.

7.2 RECOMMENDATIONS

Benefits of *Shikkhataris* have been discussed in above section. However, *Shikkhataris* face some internal and some external challenges. Some of these are easily manageable while some require longer time and some are unavoidable. Following are some policy recommendations for the improvement of this initiative:

1. There are not enough females with adequate educational background who are eligible as teachers in *haor* areas. Those who have adequate qualifications also have demand in other jobs. Thus, teachers' dropout is a serious problem in *Shikkhataris*. So, incentives for teachers may be increased in monetary or non-monetary form. Teachers' salaries should be reviewed so that they can get higher remuneration than those of plain land. Moreover, a *haor* allowance should also be introduced to retain them. Alternatively, current standard could be relaxed and females with 9–10 years of schooling could be appointed. However, intensity of teachers' training would have to be increased. One should not forget that teachers are the key to any education programme.
2. Programme should be concerned about students' migration from other schools to *Shikkhataris*. Proportion of such students in *Shikkhataris* should be as minimum as possible so that BRAC does not face criticisms from the government or other actors. It is necessary to check whether the students migrate due to parental choice or due to programme organisers' special initiatives. If it is the latter, efforts should be made to minimize such cases. Conversely, it is undeniable that parent's right to choose a better quality of education for their children must also be respected. However, in entirety, BEP's mandate to bring out-of-school children to schools must be given special attention.
3. The infrastructure of *Shikkhataris* needs some modification in order to be environmentally friendly. Open defecation pollutes *haor* water and therefore, washroom facilities in *Shikkhataris* need to be redesigned as per WASH standards. Collaboration between BEP and WASH is needed. Moreover, access to safe drinking water in all schools needs to be ensured. Classrooms sometimes get too dark, hot and humid; this negatively affects classroom teaching and learning. Provision for lights and fans inside classrooms with the aid of solar panels may be considered.
4. Transportation problems make monitoring and supervision highly difficult. The targets of POs (especially those in the most remote areas) should be realistic and achievable. Location of certain *Shikkhataris* is not appropriate since it negatively affects classroom activities. The location of these schools need to be revisited and

changed; in some cases bridges (*shanko*) might be helpful so that students do not have to paddle through water and mud.

5. Some external factors were identified that hinder proper implementation of classroom teaching-learning activities. All of them cannot be eliminated completely; however, they can be minimized through increased community awareness. Meetings with communities can be arranged. In addition, signs like 'Silence please, school is here' or 'Be quiet, school is in front', etc. can be set on water nearby *Shikkhataris*.
6. As students from 3/4 *hatis* are admitted to a *Shikkhatari* and they commute to school through small country boats, BEP can explore whether there is room to establish schools in *hatis*. This will help reduce the cost of school establishment. To create opportunities for all children to study in *Shikkhataris*, two boats can be placed in one location. Two-three shifts can be introduced in each school, so that all five grades of primary education can be operated in that location.
7. The implementation of this model is indeed a large scale innovation that has given rise to adoptive measures and many other smaller kinds of innovation. However, for sustainability of this model, these smaller innovation models and adoptive measures must be given importance. They also need to be fine-tuned. Therefore, focus needs to be given to innovation management.

REFERENCES

- Aikman S and Pridmore P (2001). Multigrade schooling in 'remote' areas of Vietnam. *International Journal of Educational Development*, 21(6): 521-536. Doi: 10.1016/S0738-0593(01)00012-8.
- Babajanian B and Zanker JH (2012). Social protection and social exclusion: an analytical framework to assess the links. London: Oversize Development Institute, AusAID.
- BANBEIS (2014). *Bangladesh: at a glance*. Dhaka: Bangladesh Bureau of Educational Information and Statistics.
- Bangladesh Haor and Wetland Development Board (2012a). Brief outline for development of haor master plan. Dhaka: BHWDB Bangladesh. Retrieved from: <http://fpd-bd.com/wp-content/uploads/2013/04/Haor-Master-Plan-Brief-Outline.pdf>.
- Bangladesh Haor and Wetland Development Board (2012b). Master plan of haor area (Main report vol.2). Dhaka: BHWDB Bangladesh.
- BBS (2011). Population and housing census 2011, preliminary results. Dhaka: Bangladesh Bureau of Statistics.
- Beall J (2002). Globalization and social exclusion in cities: framing the debate with lessons from Africa and Asia. *Environment and Urbanization*, 14(1): 41–51.
- Bhalla A and Lapeyre F (1997). Social exclusion towards an analytical and operational framework. *Development and Change*, 28: 413–433.
- Borrego M, Douglas EP and Catherine TA (2009). Quantitative, qualitative and mixed research methods in engineering education. *Journal of Engineering Education* 98 (2): 53–66.
- Bourdieu P (1977). Cultural reproduction and social reproduction, *In*: Karabel J and AH
- Bourdieu P (1986). The forms of capital, *In*: Richardson JG (Editors). Handbook of theory and research for the sociology of education. NY: Greenwood press (241-258).
- Bourdieu P (1974). The school as a conservative force, *In*: Eggleston T (Editors). Contemporary research in the sociology of Education. London: Methuen.
- Bourdieu P and Passeron JC (1977). Reproduction in education, society and culture Beverly hills: Sage.
- Bourdieu P and Passeron JC (1984). Reproduction in education, society and culture. London: Sage.
- Brock C and Symaco LP (2013). *Education in South Asia*. doi: ISBN 978-1-873927-56-4.
- Burchardt T, Le Grand J and Piachaud D (2002). 'Introduction', *In*: Hills J, Le Grand J and Piachaud D. Understanding social exclusion. Oxford: Oxford University Press.
- Buber R, Gadner J, and Richards L (eds.) (2004). Applying Qualitative Methods to Marketing Management Research. UK: Palgrave Macmillan.
- Carlopio Jr (1998). Implementation: Making workplace innovation and technical change happen. Roseville, NSW: McGraw-Hill.
- Credaro A (2006). Innovations and changes in Education. <http://www.warriorlibrarian.com/LIBRARY/innovate.html> (Accessed on 3 April, 2014).
- Creswell JW, Clark VL, Gutmann ML and Hanson WE (2003). Advanced mixed methods research designs. *In*: A Tashakkori and C Teddlie (Editors.), Handbook of mixed methods in social and behavioral research. Thousand Oaks, CA: Sage.
- Creswell JW (2002). Educational research: planning, conducting, and evaluating quantitative and qualitative approaches to research. Upper Saddle River, NJ: Merrill/Pearson Education.

- Frankelius P (2009). Questioning two myths in innovation literature, *Journal of High Technology Management Research*, 20(1): 40–51.
- De Haan A (1999). Social exclusion: Towards an holistic understanding of deprivation. London: Department for International Development.
- Halsey (Editors). Power and Ideology in education. New York, NY: Oxford University Press. (487-511).
- HILIP (2011). Enabling poor people to adapt to climate change (Report No. 2263-BD). Dhaka: Haor Infrastructure and Livelihood Improvement Project.
- Hobbs D (1995). Capacity building: reexamining the role of the rural school. *In*: LJ Beaulieu and D Mulkey (Editors), Investing in people: the human capital needs of rural America. Boulder, CO: Westview Press.
- Islam MA, Chowdhury NK and Haque MR (2005). Socio-economic baseline survey of Pagnar and Sanuar-Dakuar haors. Dhaka: IUCN.
- Jimerson L (2005). Special challenges of the “No Child Left Behind” act for rural schools and districts. *The rural educator*, 26(3).
- Kabeer N (2002). Social exclusion: concepts, findings and implications for the MDGs.
- Kabeer N (2006). Poverty, Social Exclusion and the MDGs: The challenge of “Durable Inequalities” in the Asian context. 37(3): 64–77. Dhaka: Institute of Development Studies.
- Khattri N, Riley K and Kane M (1997). Students at risk in poor, rural areas: a review of the research. *Journal of Research in Rural Education*. 13(2):79-100.
- Lorraine Pe Symaco (2013). Geographies of social exclusion: education access in the Philippines, *Comparative education*, 49(3), 361-373, DOI:10.1080/03050068.2013.803784.
- Miles MB and Huberman AM (1994). Qualitative data analysis (2nd ed.). Thousand Oaks, CA; Sage.
- Nash R (1990). Bourdieu on Education and social and cultural reproduction. *British Journal of Sociology of Education*, 11(4): 431–447. http://www.tandfonline.com/doi/abs/10.1080/0142569900110405#.VFEG6R_yS68.
- Nath SR and Chowdhury AMR (2009). State of primary education in Bangladesh – progress made challenges remained. Dhaka: Campaign for Popular Education.
- Nath SR, Kabir MM, Ahmed KS, Roy G, Hossain A, Alam SMN, Chowdhury FK and Mahub A (2011). Exploring low performance in education – the case of Sylhet division. Dhaka: Campaign for Popular Education.
- Nath SR, Yasmin N, Mehrin N and Hossain A (2014). Changes in school enrolment in some selected marginalized *Upazilas* of Sylhet division as a result of BRAC intervention. Dhaka: Research and Evaluation Division, BRAC.
- Nath SR (2013). Exploring the marginalized – a study in some selected *upazilas* of Sylhet division in Bangladesh. Dhaka: BRAC.
- Sarma PK (2010). Scenario of haor vulnerabilities and other obstacles for sustainable livelihood development in Nikli *upazila*. 8(2): 283–290.
- Shen Y (2008). The effect of change and innovation on educational improvement. *International Educational Studies*, 1(3): 73–77.
- UNICEF (2010). A case for geographic targeting of basic social services to mitigate inequalities in Bangladesh. Dhaka: UNICEF Bangladesh.