Title

IMPROVING EDUCATIONAL ACHIEVEMENT FOR MARGINALIZED CHILDREN IN RURAL BANGLADESH VIA NON-FORMAL EDUCATION

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Authors

Gee, Kevin A
Mahmud, Talat
Ahmed, Kazi Saleh
et al.

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Improving Educational Achievement for Marginalized Children in Rural Bangladesh via Non-formal Education (NFE)

Dr. Kevin A. Gee, Ed.D.
Assistant Professor
School of Education
University of California, Davis

Talat Mahmud
SHIKHON Program Director
Save the Children

Dr. Kazi Saleh Ahmed
Principal Investigator
Former Vice-Chancellor
Jahangirnagar University

Elizabeth Pearce
Education Director
Bangladesh Country Office
Save the Children

Introduction

Over the past two decades, Bangladesh has made considerable strides in expanding access to education, particularly at the primary level. According to the Bangladesh's Department of Primary Education (DPE)[1], in 2011, net enrolment rates in grades 1-5 reached an all-time high of 98.7%, a 38.2 percentage point increase since 1990—the year that witnessed the birth of the global Education for All (EFA) movement. The underlying drivers of this expansion in education access throughout the late 1990s into the early 2000s are multi-faced and deeply rooted in political incentives that educational planners faced as they sought to build a strong nation that unified Bangladesh politically, culturally and socially (Hossain, Subrahmanian, & Kabeer, 2002).

Despite steady growth in enrollment during this period of educational expansionism, Bangladesh's current educational system faces crucial challenges that remain unresolved. In

[1] Sources: http://www.bd.undp.org/content/bangladesh/en/home/mdgoverview/overview/mdg2/; UNICEF report on Bangladesh primary education stipend.

particular, approximately 2 million children still remain out of the formal education system—in particular, children residing in impoverished remote rural areas of the country are especially vulnerable as they are prevented from accessing education due to the lack of schools. Further, systemic discrimination against children based upon their disability status, ethnicity or gender constrains children's ability to participate in the formal education system. Ironically, even for children who can access formal education, 45%[2] of them drop out before completing grade 5 (Bangladesh Bureau of Educational Information Statistics, 2012) while among those who do persist take over nine years, on average, to complete their grade five education.

To overcome these challenges, non-formal education (NFE) has played a critical role in offering a quality education to out-of-school children that the formal schooling system simply cannot and, in many instances, will not reach. NFE is often referred to as a "shadow" system, offering children a "second chance" to obtain an education that is distinct from the education they were unable to access via the formal compulsory education sector (Coombs, 1976; Hoppers, 2006; Romi & Schmida, 2009; United Nations Educational Scientific Cultural Organization, 1997). In doing so, NFE offers a parallel education track that is *compensatory*, making up for limitations inherent in the formal schooling sector (Hamadache, 1991, p. 113). In addition, a critical goal of NFE is *social inclusion* (Hoppers, 2006, p. 51). Many NFE programs explicitly target on reaching children who have been excluded from the formal schooling system due to factors such as their gender, disability status, race/ethnicity and socioeconomic status. Since 1980, non-governmental organizations (NGOs), including the largest NGO provider of NFE, the Bangladesh Rural Advancement Committee (BRAC), have educated most difficult to reach, marginalized children, particularly in remote parts of rural Bangladesh.

Beginning in 2007, Save the Children, a leading international non-governmental organization (NGO) focused on serving the needs of children worldwide, implemented its own NFE program, known as SHIKHON which means *learning* in Bangla. The SHIKHON program is a low-cost and innovative NFE program that has successfully educated over 155,000 children, aged 7-14, throughout 5,180 community schools across three regions in rural Bangladesh. At its inception, the SHIKHON program was jointly funded by between the European Union, Dubai Cares and Chevron and was designed to target primary school aged children in remote and impoverished rural areas of Bangladesh who lack access to schooling. The program recognizes not only the value in enhancing children's access to education, but it seeks to offer children a *comprehensive*, *relevant* and *quality* primary education that they would have not otherwise received. In this sense, the SHIKHON educational delivery model is *complementary* to the existing formal governmental primary education system; importantly, children who enroll in SHIKHON schools would not have otherwise attended any form of schooling. Thus, many these children would likely have not developed significant skills in core academic competencies if not for the existence of the SHIKHON program.

However, just how effective is SHIKHON in providing a quality education for children? Importantly, how do these children perform academically and how do their achievement levels compare to their counterparts in other forms of schooling (i.e., private, government-sponsored schooling, other NFE programs) across Bangladesh? To answer these questions, the first cohort of students who enrolled in the SHIKHON program in 2007 was assessed in October 2011 to

[2] BANBEIS. Table 5. Retrieved from: http://www.banbeis.gov.bd/webnew/index.php?option=com_content&view=article&id=343:dropout-rate-by-grade--2010-&catid=61:primary-education-2010&Itemid=180

determine their academic performance in 27 terminal competencies for grade 5 that are specified by the National Curriculum and Textbook Board (NCTB) Authority of Bangladesh.

This chapter presents descriptive results from those competency assessments of children who started the SHIKHON program in 2007 as grade one students to determine their overall academic performance four years later within and across four subject areas: (1) language (Bangla and English) (2) mathematics, (3) social studies, and (4) science. Finally, this chapter reports how SHIKHON students achieve overall relative to students in other educational systems in Bangladesh. The findings reported in this chapter draw directly from a comprehensive evaluation study conducted and written by the authors of this chapter. In addition, the background material in this chapter also draws from a related study conducted by the lead author of this chapter (Gee, 2015).

The rest of this chapter is structured as follows. We first provide basic background and context of the SHIKHON program. Then, we present results of how the first entering cohort of SHIKHON students performed academically followed by a comparison of their performance to the widely reported performance results of children in other schooling settings. We close with a discussion of the implications of the SHIKHON program, and more broadly NFE in general, for the educational achievement of marginalized children in Bangladesh. For interested readers, we describe the research design underlying the results reported in this chapter in the Appendix to this chapter

Non-formal Education (NFE) in Bangladesh and the SHIKHON Program

According to the Bangladeshi government's 2004 National Policy on Non-Formal Education, NFE is defined as:

"…a purposeful and systematically organized form of learning that generally occurs outside the formal educational institutions. It is designed to meet the learning needs of educationally disadvantaged persons of different ages and backgrounds, flexible in terms of organization, time and place and may cover basic and continuing educational programs to impart basic literacy, including life skills, work skills, general culture, and facilitates lifelong learning and enhancement of earning capabilities for poverty reduction." (Ministry of Primary Mass Education, 2006)

To achieve its vision of NFE, the Bangladeshi government has established an expansive network of non-government organizations and local community-based organizations. This network of organizations oversees and sustains the delivery of NFE in a locally responsive manner that supports the unique learning needs and challenges of young children who are marginalized due to their geographical location, ethnicity, gender and physical and/or mental disabilities. Over the past quarter century, one of the largest and most well established providers of NFE in Bangladesh has been the Bangladesh Rural Advancement Committee (BRAC) which has educated 670,815 students children through more than 22,000 schools throughout the country (Bangladesh Rural Advancement Committee (BRAC), 2012).

Similar to BRAC's model of NFE, the SHIKHON NFE program's objective is to ensure progress in achieving the Millennium Development Goal (MDG) of universal primary education by 2015[3] through the qualitative improvement and quantitative expansion of non-formal primary

[3] http://www.un.org/millenniumgoals/education.shtml

education services provided by NGOs and to strengthen linkages between the formal and non-formal education sectors.

The SHIKHON program has established three underlying goals focused on the principles of increased access, quality and partnerships:

1. Increased access to cost effective non-formal primary education for out of school children
2. Increased quality of non-formal education for out of school children
3. Increased community and government partnerships to address educational needs of vulnerable children

Since SHIKHON started in 2007, the program has successfully reached over 155,000 children, aged 7-14, through 5,180 one room community schools across three regions in Bangladesh—the Northeast, Southwest and Northwest (Figure 1). Not only does each region have children living in remote rural villages who are out of school due to gender, disability and/or socio-economic status, but each region also has unique geographic characteristics that often physically prevent children from accessing schools. These regions are home to river islands (known as *chars*) and low-lying areas (known as *haors*) which are both prone to seasonal flooding which prevents children from physically accessing schools.

Figure 1. SHIKHON Implementation Areas in Bangladesh

Within each region, one of three implementing NGO partners operates SHIKHON schools: (1) Friends in Village Development Bangladesh (FIVDB) (Sylhet/Northeast); (2) Jagorani Chakra Foundation (JCF) (Southwest); and (3) Rangpur Dinajpur Rural Service Bangladesh (RDRS) (Northwest). Each organization has a well-established track record of supporting local development projects targeting the under-served in rural Bangladesh. Each of the SHIKHON schools in these regions is overseen by an 11 member School Assistance Group (SAG), half of whose members include women from the community. The SAG, in conjunction with SHIKHON program staff identify potential teachers from the community, a site or location for the school house and identifies 30-35 vulnerable children in the community who may have left school due to a disability, their ethnicity or the need for them to work. Once the school is formally opened, the SAG oversees its operation and maintains links with the local Government Primary School (GPS).

Each SHIKHON school is staffed by a trained teacher, often a female, who is a trusted community member with a minimum education of a Secondary School Certificate (SSC)[4]. Teachers are supported with a series of comprehensive pre-service trainings, regular in-service trainings, subject-specific lesson modules and guidebooks. In order for children to have a consistent educational experience throughout the SHIKHON program, SHIKHON teachers remain with their students for the duration of the program which typically lasts four years.

SHIKHON teachers provide children, grouped in schools ranging from 30-35 students, with exposure to the same educational curriculum that they would have received in grades 1-5 of a formal government primary school in an accelerated format. The SHIKHON program follows the National Primary Education Curriculum set by the National Curriculum and Textbook Board (NCTB) Authority of Bangladesh and uses NCTB textbooks in all its schools from grade 1 to grade 5. SHIKHON concentrates on achieving the competencies for each subject at each grade level and has developed learning support materials to enable teachers to meet this goal. In addition, children are provided with lessons in school health and nutrition as well as vitamin supplements and de-worming tablets to promote better health and attendance. Each classroom is equipped with essential teaching aids, a readiness kit of learning materials to promote self-initiated learning and story books. Children receive stationery and the teacher is provided with in-depth subject-wise Teacher Guide Books at each grade level. At each grade level, comprehensive records are kept on attendance, achievement, school operations and community participation. At the end of each grade, students' competency levels are assessed and at grade 5, SHIKHON students work towards taking the National Grade 5 Completion Exam

The SHIKHON program recognizes the vital role that parents play in supporting their child's education and holds regular sessions that educate parents about how to best support their child's learning needs. These sessions also provide parents with practical strategies for promoting the health and well-being of their children so that they may thrive beyond the classroom. Further, to promote literacy at home, the SHIKHON program encourages parents to borrow story books from the SHIKHON "Reading for Children" library to read together with their child at home.

[4] The SSC is administered after reaching grade 10.

Finally, the SHIKHON program has shown to be extremely cost effective despite the difficulties often encountered in educating out of school children. The program can deliver four years of a high quality education for approximately $96 USD per child—roughly a third of the cost of a government funded primary education which can take five or more years for children to complete.

Academic Achievement of SHIKHON Children

This section reports children's competency levels across four main subject areas: language (Bangla and English), mathematics, social studies and science. It provides the percentage of students who have attained minimum competency, based upon criteria set forth established by the official Competency Guidelines of the Grade 5 Competency Assessment for SHIKON 2011 (included in the Appendix), overall and within each competency area (i.e., reading). Finally, we describe how the number of competencies, on average, SHIKHON children have achieved compare to the number of competencies children have achieved across other schooling sectors in Bangladesh.

Competency by Subject Area

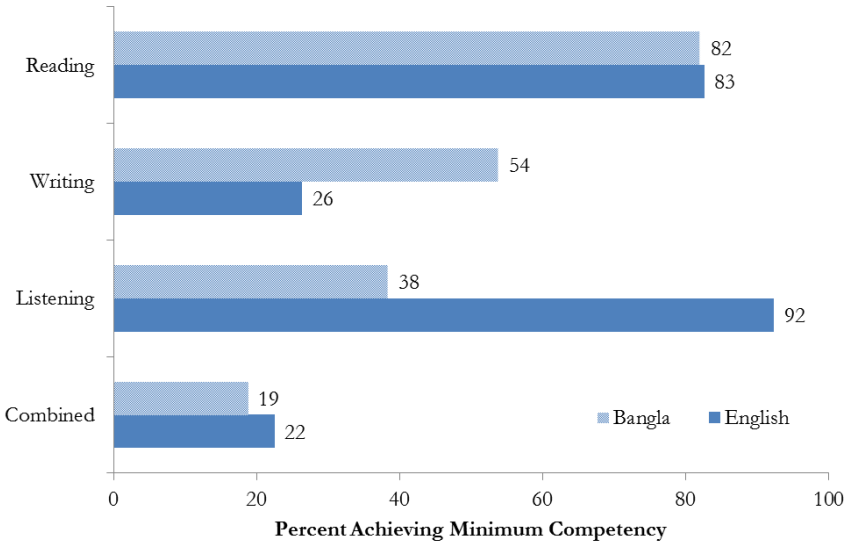
Bangla and English Language Skills

Figure 2 provides a breakdown of the percentage of students who achieved minimum competency[5] in Bangla and English across three language skills: reading, writing and listening. The figure also indicates the percentage of children who are competent in all three skills. As shown, approximately 82% of SHIKHON students have achieved minimum competency in Bangla reading. This represents the highest level of competency, followed by writing (54%) and then listening (38%). For listening skills, less than half of students overall (38%) have achieved competence. Finally, approximately 19% of students are competent in all three skills.

With respect to English skills, SHIKHON students have the highest levels of competence in English listening (92%), which is 54 percentage points higher versus listening in Bangla. English competency in reading in 83% while roughly one quarter of SHIKHON students (26%) are competent in English writing. Overall, 22% are competent in all three English language skills.

Figure 2

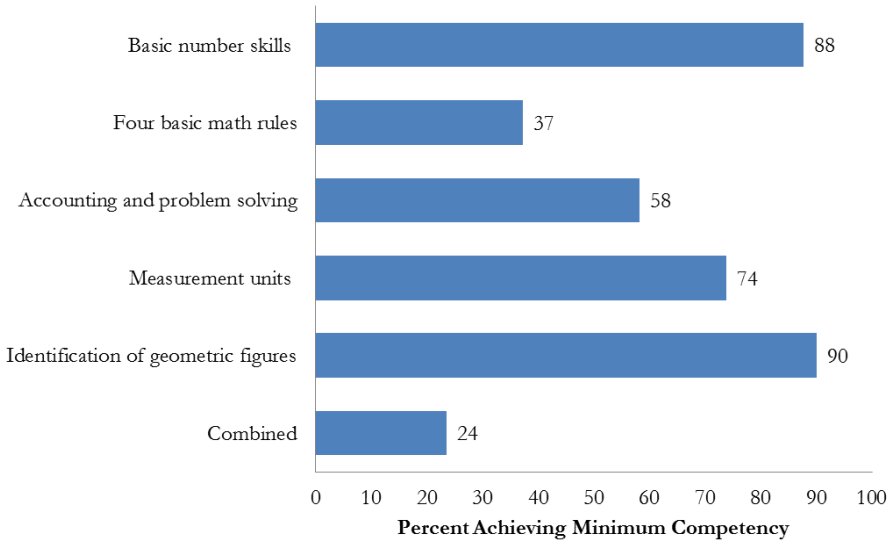
[5] Students' competency is determined by the official Competency Guidelines of the Grade 5 Competency Assessment for SHIKON 2011 found in the Appendix.



Mathematics

As shown in Figure 3, a majority of students are competent in the identification of geometric figures (90%) as well as basic number skills (88%), followed by knowledge of measurement units (74%). Most students do appear to underperform in their applied knowledge of mathematics—only 58% of students achieved competence on items involving daily accounting and problem solving. Also, just 37% have mastery of the four basic rules of arithmetic. Finally, approximately a quarter of SHIKHON students have competency in all five mathematics competencies.

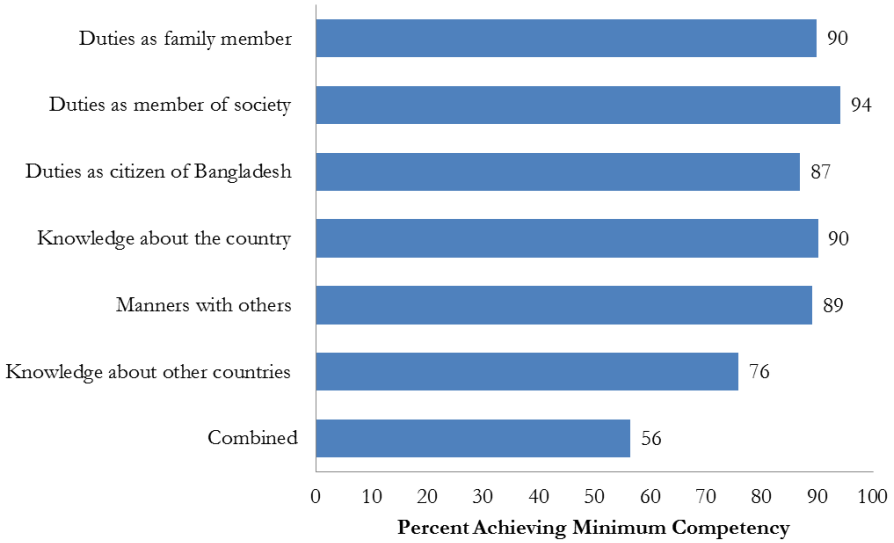
Figure 3



Social Studies

Overall, a majority of students have achieved competency in the six core subjects in Social Science, with the highest percentage of students (94%) competent in understanding their duties as a member of society. Approximately 90% of all students are competent in each of the three subject areas: (1) duties as a family member; (2) knowledge about the county and (3) manners with others. The lowest percentage of students are competent in their knowledge of other countries (76%). Finally, slightly more than half of all SHIKHON students (56%) are competent across all social science competencies.

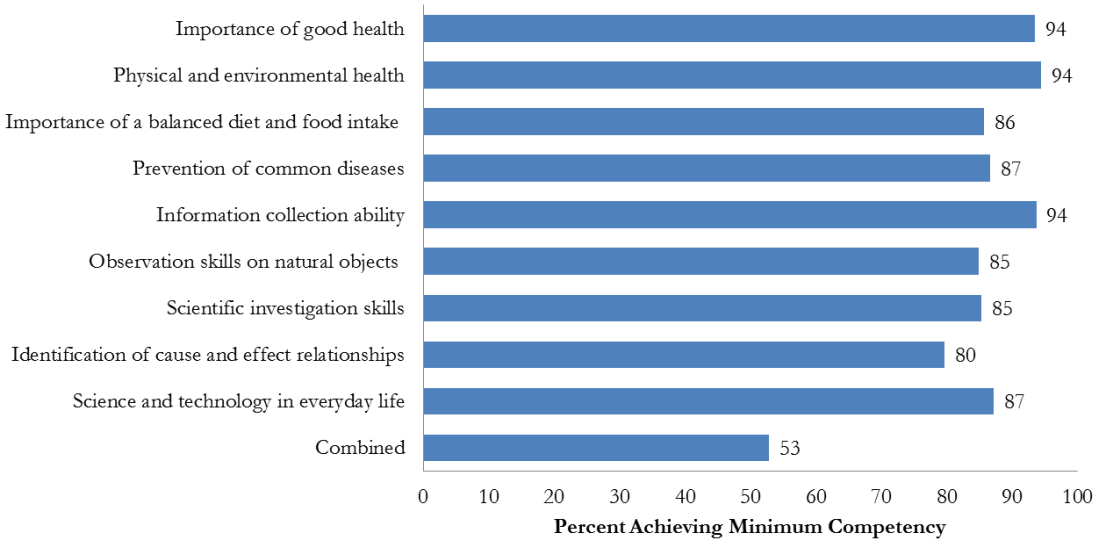
Figure 4



Science

The percentage of students, overall, who are competent in science competencies ranges from a low of 80% (identification of cause and effect relationship) to a high of 94% (knowledge of physical and environmental health systems). Overall, more than half of all students (53%) have mastered all nine science competencies.

Figure 5



Comparative Analysis of Competency Levels

Table 1 summarizes the average number of grade 5 competencies achieved by other students receiving non-formal education in Bangladesh as reported in three sources. The achievement data reported from these sources was selected to further contextualize and gauge the relative achievement of SHIKHON students. Each of these three sources report the average number of competencies that students achieved based on an assessment that was similar, in both difficultly and scope, to the one used to assess SHIKHON students and developed by Education Watch. Education Watch is a nationally recognized organization that assesses and monitors Bangladesh's progress in achieving the Education for All (EFA) goals. These three sources include:

1. *Achievement of Primary Competencies: A Comparison between Government and BRAC Schools* (S. R. Nath, Roy, G., Dutta, N.C., Hossain, A. , 2007)
2. *Education Watch 2008: State of Primary Education in Bangladesh Progress Made, Challenges Remained* (Nath & Chowdhury, 2009)
3. *BRAC 2009 and 2010 Achievement Data* (K. Ahmed, personal communication, 2012)

As shown in Table 1, the average number of competencies achieved by SHIKHON students overall and by gender (21 competencies) compares favorably to the results reported in other studies. In particular, SHIKHON students achieve about one additional competency, on average, above the average number of competencies achieved by students in Non-Formal schools (20 competencies) (S. R. Nath & Chowdhury, 2009) and the equivalent number of competencies versus children attending BRAC Primary Schools (BPS) in 2010 (21 competencies) (Ahmed, 2012).

There are three important caveats to note when interpreting these comparisons: (1) there are minor differences in the assessment tools used to assess SHIKHON students versus other students, particularly the content of certain test items[6]; (2) we are unable to directly determine whether

[6] For example, questions assessing children's understanding of other children's culture used slightly different items. In the SHIKHON assessment tool, students were asked to identify a country in Europe and game that Bhutanese

SHIKHON students, on average, have actually achieved a statistically higher or an equivalent number of competencies. This is because individual student level data from other studies was unavailable to analyze in order to statistically compare average competency levels between SHIKHON students and students in the other studies; (3) the underlying differences in performance may be due to differences in the compositions of the sample of students across each of the studies. For example, students differ according to their cohort years and may possess different background characteristics.

Table 1. Average Competencies Achieved by SHIKHON Students Versus Others

	Average Competencies Achieved				
	All	Boys	Girls	Difference (Boys-Girls)	
SHIKHON	**20.90**	**21.16**	**20.63**	**0.53**	*
EdWatch 2008					
Government	19.00	18.40	19.70	-1.30	***
Non-Government	18.00	17.70	18.40	-0.70	**
Ebtedayee Madrasa	15.20	14.90	15.40	-0.50	
Non-Formal	20.00	19.90	20.10	-0.20	
High School	20.80	20.70	21.00	-0.30	
High Madrasa	17.00	16.00	18.10	-2.10	***
BRAC 2010					
BPS	20.70	20.90	20.60	0.30	a
BRAC 2009					
BPS	20.10	20.50	19.80	0.70	a
BRAC 2006					
BPS	19.10	19.60	18.90	0.70	a

Key: ~p<.10; *p<.05; **p<.01; ***p<.001

Source of Non-Shikhon Results:

Education Watch 2008 *State of Primary Education in Bangladesh* (Table 7.1; p. 94; Figure 7.2, p. 93)

BRAC Research Report 2007 *Achievement of Primary Competencies: A Comparison between Government and BRAC Schools* (Table 11, p. 12)

BRAC 2009 and 2010 Achievement (personal communication, Dr. Kazi Saleh Ahmed)

children play. In the assessment used by BRAC and reported by Education Watch, children were asked to identify the main food of the children of Maldives and popular games in Nepal.

Conclusion

This chapter has provided the first ever results demonstrating the academic competency levels of children participating in SHIKHON—a large-scale NFE program targeting children in three rural areas in Bangladesh. Overall, the results show that the SHIKHON model of NFE education holds considerable promise for educating Bangladesh's most vulnerable and marginalized populations, providing many of them with the minimum competencies that help them achieve the equivalent of a grade 5 education typically offered by the formal schooling sector.

The main descriptive results reported in this chapter indicate that there is considerable variation in the minimum competencies levels that SHIKHON children have attained across and within four main subject areas. For example, in mathematics, a majority of SHIKHON children have the ability to identify basic numbers and geometric figures, yet they struggle with the four basic rule of arithmetic. Similarly, SHIKHON students have difficulty with writing in Bangla and English, while a majority have achieve minimum competency in their reading skills in both languages. Most importantly, these results demonstrate that SHIKHON children, on average, have attained competency levels that do place them on par with more formally educated peers, including children similarly educated through other NFE programs as well as children in other school system settings.

When interpreting these results, readers should keep the following limitations in mind. First, it is important to note that these are merely descriptions of how students perform and do not imply that SHIKHON actually caused children to achieve in this way. However, given that children would not have had a chance to obtain any schooling outside of SHIKHON it is plausible to suggest that SHIKHON may have at least partially contributed to their ability to achieve these competency levels. More rigorous analyses, such as those based on randomized trials of SHIKHON can provide more definite results of the causal impact of SHIKHON on student learning outcomes. Second, though the competencies tested are nationally recognized as benchmarks for children in grades 1-5 to attain, they are, arguably still at only the basic skill level. Finally, we are unable to determine the levels of other important non-cognitive skills, such has higher order critical thinking skills, given the limited scope of the instrument used to assess students' learning outcomes.

The importance of offering marginalized children a second—and in many cases, the only—chance at completing grade 5 and providing them with competency levels that places them on par with their more formally educated peers has broader implications for their longer term educational trajectories. In fact, there is compelling anecdotal evidence that SHIKHON can lead children further through the educational pipeline, helping them successfully transition from SHIKHON into secondary school. For example, of the ninety children who completed their primary school education through the SHIKHON program in Vedorganj Upazilla in Shariatpur, half (forty-five students) took the formal Primary School Completion (PSC) exam. Among those, roughly 90%, or around forty students, passed the PSC exam and attended local secondary schools (Uddin, n.d., p. 4). Undoubtedly, the importance of these children obtaining higher levels of education should not be underestimated; evidence strongly suggests that additional years of education are associated with both private and social benefits, from increased wages and health to enhanced civic participation and economic growth (Cutler & Lleras-Muney, 2006; Dee, 2004; Hanushek & Wößmann, 2007; Psacharopoulos & Patrinos, 2004).

In closing, the SHIKHON model of NFE gives children, many of whom are unable to access schooling, a unique opportunity to obtain an education that they would have not otherwise received. Undoubtedly, NFE programs like SHIKHON are an important strategy to boost access to education particularly as countries across the developing world make progress towards meeting the Education for All (EFA) goals and corresponding Millennium Development Goal (MDG) of universalized education. Yet, critical questions remain about the underlying potential for NFE which provide further avenues for research on NFE programs. These questions include: How can NFE models of education be replicated and/or scaled up while also maintaining quality? Given that most NFE programs rely on investments from the private sector and NGOs, how do we ensure the long term financial sustainability of NFE programs? Finally, given the relative performance of the NFE sector versus the formal government sector, how can both sectors mutually collaborate in order to provide the best education to all children? Further work in answering such questions will be critical in enhancing the promise and potential of NFE programs so that marginalized children across the developing world can fully realize their own education potential.

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Mozammel Huq Neogi
Md. Mizanur Rahman

They were responsible for preparing the study design, sampling design, questionnaires, field data collection, data editing and data entry.

Also, the field data enumerators and data entry operators are recognized for their invaluable efforts. Finally, this entire analysis would not be possible without the cooperation of the children, parents and teachers in the SHIKHON schools as well as the generous support of the program funders and implementors.

Appendix
Site, Sample & Data Collection Procedures[7]

Site and Sample. The analysis is based upon data collected on a sample of 1,203 students and 201 teachers across 201 SHIKHON schools in three regions of Bangladesh: Sylhet/Northeast, Southwest and Northwest. A two stage stratified sampling method was utilized to select sample participants from a total population of 1,497 SHIKHON Schools containing 41,014 students. In the first stage, schools were stratified by each of the three participating regions and 67 schools were selectively sampled from the population of approximately 500 SHIKHON schools in each region. Then, in the second stage, three boys and three girls were randomly sampled within each of the 67 schools for a total of 201 children in each region.[8] The resulting sample size was therefore 1,206.[9]

Recruitment of Field Data Collectors. In October 2011, SHIKHON program management recruited, interviewed and selected 32 experienced and skilled data collectors. The data collectors were trained through a one-day hands-on training on data collection procedures. They were briefed about the different features of SHIKHON schools, such as their location in remote areas and the distances they would have to travel to each school in order to acquire data from SHIKHON teachers, students and parents.

Data Collection. The field data collectors were provided with the necessary tools, materials and a list of schools for data collection. They started data collection in October 2011 and they were advised to complete data collection within one week. SHIKHON program management requested that collectors complete data collection within this relatively short time frame in order to maintain the confidentiality of the competency assessment that was administered to students. To maintain the quality of the data, six SHIKHON management staff members visited field sites in each of the three implementation regions in order to monitor the data collection process firsthand. While in the field, SHIKHON staff verified the data that was collected by field data collectors and ensured that the procedures the data collectors used were consistent with the training they had received. SHIKHON staff also cross checked collectors' data sheets and provided any feedback to them to enhance the quality of the data they collected. Field data collectors then submitted all questionnaires to SHIKHON staff.

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[7] The material in this appendix appears, in part, in the original evaluation report by Gee (2012) as well as in Gee (2015).

[8] The required sample size (n) of SHIKHON students for estimating average competency for any area for boys or girls was determined using the formula:

$$n = \frac{z^2 s^2 (d.eff)}{e^2}$$

Where z=1.96, S (the standard deviation)=5.0 (from Education Watch, 2008), d.eff (the design effect)=1.5, e(precision level)=0.85. Thus n=199. In practice, 201 children were selected from each region for convenience of allocation.

[9] Due to differences in between the sampling plan and actual response rates when data collection was carried out in the field, the actual analysis sample includes 1,203 children.

Data Management. SHIKHON management recruited four expert and experienced staff out of the 32 data collectors to edit and code all of the data collection sheets. They edited and coded data for a total of 6 days in with consultation the Principal Investigator, Dr. Kazi Saleh Ahmed. After the data editing and coding phase was completed, data from assessment sheets were entered into MS Excel. Three data entry operators were hired for data entry and completed data entry within one week. Data were stored in MS Excel and prepared for analysis using SPSS software.

Data and Measures

Student Competency Levels. Data on the student competency levels comes from scores on a 57 item assessment tool that assesses SHIKHON students' performance on 27 of the 50 grade 5 terminal competencies within four subject areas. These competencies are specified by the National Curriculum and Textbook Board (NCTB) Authority of Bangladesh.[10] A list of the 27 competency areas is provided in Table A1 below.

Table A1. Subject and Competency Areas from the SHIKHON 2011 Grade 5 Competency Assessment

Subject Area	**Competency Area**
Language	Bangla and English: reading, writing and listening
Mathematics	Basic number skills Four basic rules of arithmetic Daily accounting and problem solving Measurement units Identification of geometric figures
Social Studies	Duties as family member Duties as member of society Duties as citizen of Bangladesh Knowledge about the country Manners with others Knowledge about other countries
Science	Knowledge about the importance of good health Knowledge of physical and environmental health systems (dental hygiene and safe drinking water) Importance of a balanced diet and food intake Prevention of common diseases (worms and skin disease) Information collection ability (communication and temperature by seasons) Observation skills on natural objects Scientific investigation skills (preventive measures and population growth) Identification of cause and effect relationships (vapor and kinetic energy) Science and technology in everyday life (information communication and agricultural technology)
Religious Studies	Life sketch of prophet Mohammed (SM) or the preachers of own religion

[10] For a list of the 50 terminal primary competencies see http://www.nctb.gov.bd/article.php?cat=2&subcat=76

This detailed assessment tool administered to SHIKHON students is based upon a competency-based test instrument that was developed and designed by *Education Watch*, a nationally recognized organization in Bangladesh that assesses and monitors Bangladesh's progress in achieving the Education for All (EFA) goals as set forth by the United Nations Educational, Scientific and Cultural Organization (UNESCO). This particular assessment tool was selected for its wide use and recognition in Bangladesh particularly as the results have been used to understand competency levels of children in other non-formal education settings. Using this assessment also ensures that the results of this evaluation are credible with stakeholders, both nationally and internationally, who have vested interests in the SHIKHON program.

Students' competency levels are measured in two different ways:

1. *Minimum Competency Achieved.* The first measure captures whether or not a student achieved minimum competency in a competency area within each of the subject areas (i.e., language, math, social studies and science). Students' competency is determined by the Competency Guidelines of the Grade 5 Competency Assessment for SHIKON 2011 found in Table A2 below.[11]
2. *Number of Competencies Achieved.* The second measure is the total number of minimum competencies achieved per student across all subject areas (the total number ranges from a minimum of 0 to a maximum of 27).

[11] According to the guidelines, students have achieved minimum competency if they answer a prescribed number of items correctly for the specific competency (i.e., for students to have minimum competency in reading skills in Bangla, they needed to have correctly answered one of two questions correctly in a printed paragraph and one of two questions correctly in a handwriting paragraph). These details are found in Appendix B.

Table A2. Grade 5 Competency Assessment 2011, SHIKHON Program Minimum Competency Criteria

Bangla

Competency	Test Items	Number of Questions	Minimum competency
1. Reading: Ability to read and understand both a printed and a hand written paragraph	a) Printed paragraph	Two questions	At least one correct answer
	b) Hand written paragraph	Two questions	At least one correct answer
2. Writing: Ability to express own observations, experiences and understanding; ability to write letters/application; ability to fill out official forms	a) Rural Scenery	a) Describe in 5 sentences	At least three answers are correct
	b) Describe own home	b) Describe own home in 5 sentences	
	c) Fill in 8 blanks about personal information (i.e., name, address, etc.)	c) Fill in all blanks	
	d) An application to the headmaster for leave	d) Write 4-5 sentences requesting a 3 day leave	
3. Listening: Ability to understand the main theme of a description	Somebody will read aloud a paragraph.	Two questions pertaining to the paragraph	Both answers are correct

English

Competency	Test Items	Number of Questions	Minimum competency
1. Reading: Ability to read both a printed and a hand written paragraph	a) Printed paragraph	Two questions	At least one correct answer
	b) Hand written paragraph	Two questions	At least one correct answer
2. Writing: Ability to describe briefly, correctly, and clearly any known object in English	A picture is displayed	Description of the picture in 5 sentences	Write at least three correct sentences to describe
3. Listening: Ability to understand a paragraph read aloud	A paragraph is read out loud	Two questions from the paragraph.	At least one correct answer

Mathematics

Competencies	Test Items	Number of Questions	Minimum Competency
1. Knowledge about basic numbers	a) Ordering numbers from largest to smallest b) Identifying the largest number	Two questions	At least one correct answer
2. Knowledge about 4 basic operations and 4 basic rules	4 problems (addition, subtraction, multiplication and division) and one simplification	Five questions	At least three correct answers
3. Ability to use basic math techniques in daily accounting; problem solving	a) Basic arithmetic b) Unitary rule c) Percentage d) Graph	Four questions	At least two correct answers
4. Measurement Units	a) Conversion of time b) Measurement of length	Two questions	At least one correct answer
5. Knowledge of geometric figures	a) Recognize a triangle & rectangle b) Identify a geometric figure	Two questions	At least one correct answer.

Social Studies

Competency	Test Items	Number of Questions	Minimum Competency
1. Duties as family member	1. How a family becomes a happy family	One question	At least one correct answer
	2. Responsibility as a member of society	One question	
2. Duties as a member of the society	1. Responsibility of family members	One question	At least one correct answer
	2. Why one should not play the TV or radio loudly	One question	
3. Duties as citizen of Bangladesh	1. Responsibility as citizen	One question	At least one correct answer
	2. Voter eligibility	One question	
4. Knowledge about the country	1. Independence day	One question	At least one correct answer
	2. Major transportation system	One question	
	3. Place of highest rainfall	One question	
5. Manners with others	1. Manners with teachers	One question	At least one correct answer
	2. Manners with younger siblings	One question	
6. Knowledge about other countries	1. Identify a European country	One question	At least one correct answer
	2. Popular games among Bhutanese children	One question	

Science

Competency	Test Items	Number of Questions	Minimum Competency
1. Knowledge about the importance of good health	1. How good health is achieved	One question	At least one correct answer
	2. Why we eat carbohydrates	One question	
2. Knowledge of dental hygiene and safe drinking water	1. How to keep teeth healthy	One question	At least one correct answer
	2. Disease spreads through water	One question	
3. Knowledge about a balanced diet and why adolescents need extra food	1. What is a balanced diet	One question	At least one correct answer
	2. Why adolescents should consume extra food	One question	
4. Knowledge about transmission of worms and prevention of skin diseases	1. Transmission of worms	One question	At least one correct answer
	2. What prevents skin disease	One question	
5. Knowledge about mass media and temperature in different seasons	1. Most rapid form of mass media	One question	At least one correct answer
	2. Knowledge about the variation in temperature by seasons	One question	
6. Knowledge about rudimentary botany	1. Plants without branches	One question	At least one correct answer
	2. Plants with flower	One question	
7. First action for a serious patient and knowledge about consequences of population growth	1. What to do when your sister is ill	One question	At least one correct answer
	2. Consequences of population growth	One question	
8. Impact of vapor energy and creation of kinetic energy	1. Water is boiling in a kettle	One question	At least one correct answer
	2. Energy created from winding a clock	One question	
9. Knowledge about information communication and improved agricultural technology	1. Question about information on communication	One question	At least one correct answer
	2. Knowledge about agricultural technology	One question	

Religious Studies

Competency	Test Items	Number of Questions	Minimum competency
1. Life sketch of prophet Mohammed (SM) or the preachers of own religion	Open ended response using five sentences	Five sentences	At least three correct sentences

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