



## Assessing literacy and numeracy among primary school students: A pilot survey in rural Bangladesh



John Richards<sup>a,\*</sup>, Mohammad Shahidul Islam<sup>b</sup>

<sup>a</sup> School of Public Policy, Simon Fraser University, 515 West Hasting Street, Vancouver, BC, V6 B 5K3, Canada, Canada

<sup>b</sup> United States Agency for International Development (USAID), US Embassy, Dhaka, Bangladesh, Bangladesh

### ARTICLE INFO

#### Keywords:

Bangladesh  
Reading & mathematics assessment  
Primary education  
Government vs. NGO schools

### ABSTRACT

Bangladesh dramatically increased its primary school completion rate over the last decade. However, there exist serious concerns about the level of learning among students who do complete. This article analyzes a pilot survey, conducted in a northern rural district, using procedures pioneered by ASER Centre in rural India. The survey measures ability to read and solve mathematical problems at the Grade 2 Bangladesh curriculum level among students in grades 1 to 5. The sample includes students from 18 schools: government-run, NGO-run, and fee-paying privately run. Using the ASER proxy, the percentage of Grade 3 students found to be “working at grade” for reading is 30% and for mathematics, 18%. NGO schools attract lower socio-economic status students than do government schools. Academic performance is similar in both school types. The article discusses methodological problems in assessing reading and mathematics ability.

### 1. Introduction

Second only to reducing hunger and malnutrition, realization of universal primary school completion by 2015 ranked highest among the UN’s Millennium Development Goals. The thesis of the 2018 edition of the *World Development Report* (WDR) (World Bank, 2017) is that many countries satisfied the “letter” of the MDG2 obligation, inasmuch as official primary school completion rates rose dramatically between 2000 and 2015, but not the “spirit” of the obligation, which is primary education of reasonable quality. Schooling without learning is of little value. In its opening paragraph, the WDR (2017, p.3) cites a result from a large-scale national survey conducted in 2016 of primary school children across India (ASER Centre, 2017): “In rural India, just under three-quarters of students in grade 3 could not solve a two-digit subtraction, such as 46–17, and by grade 5 half could still not do so.”

Like India, Bangladesh is a country whose leaders satisfied the “letter” of MDG2 but, unfortunately, not the “spirit”. Using ASER methodology in a pilot study in rural Bangladesh, our comparable mathematics result is that 82% of children in grade 3 could not solve an equivalent two-digit subtraction and by grade 5, 60% still could not do so. Our pilot results, from a relatively poor district, may be below national averages. Nonetheless, they are broadly consistent with other assessments (not based on ASER methodology) undertaken over the last decade.

Since the beginning of the MDG exercise in 2000, the Bangladesh primary completion rate has nearly doubled; it is now 80%. As is implied in the previous paragraph, there are good reasons to doubt that the increase in certification corresponds to an increase in learning outcomes. A prerequisite for a successful national campaign to improve education is to benchmark present learning outcomes and track changes. While other instruments exist, in this article we suggest adoption of ASER methodology as a useful means to measure, at reasonable cost, national student outcomes in the core subjects of reading and mathematics. Relative to other instruments, it has the obvious advantage of enabling comparison with Indian states (and other countries that have used ASER methodology). Based on student ability to master items drawn from the Grade 2 curriculum in the relevant jurisdiction, ASER survey instruments are relatively simple and comprehensible by the general public.

The organization of the article is as follows. We first describe key trends in Bangladesh education policy over the last decade and reasons for scepticism over primary completion rates. We discuss and report results from assessment of a pilot sample of children in Nilphamari, a northern district of Bangladesh. We stress that ours is a pilot survey with a small sample (555 students ages 6–16 who are in Grades 1–5 or did attend primary school but did not proceed further). To our knowledge, this is only the second application of the ASER strategy in Bangladesh.<sup>1</sup> In the concluding section we discuss two matters, the

\* Corresponding author.

E-mail addresses: [jrichard@sfu.ca](mailto:jrichard@sfu.ca) (J. Richards), [msislam@usaid.gov](mailto:msislam@usaid.gov) (M.S. Islam).

<sup>1</sup> In 2015, the Institute for Informatics and Development (IID, 2015) published online a brief report summarizing a survey, using ASER methodology, in Sylhet division.

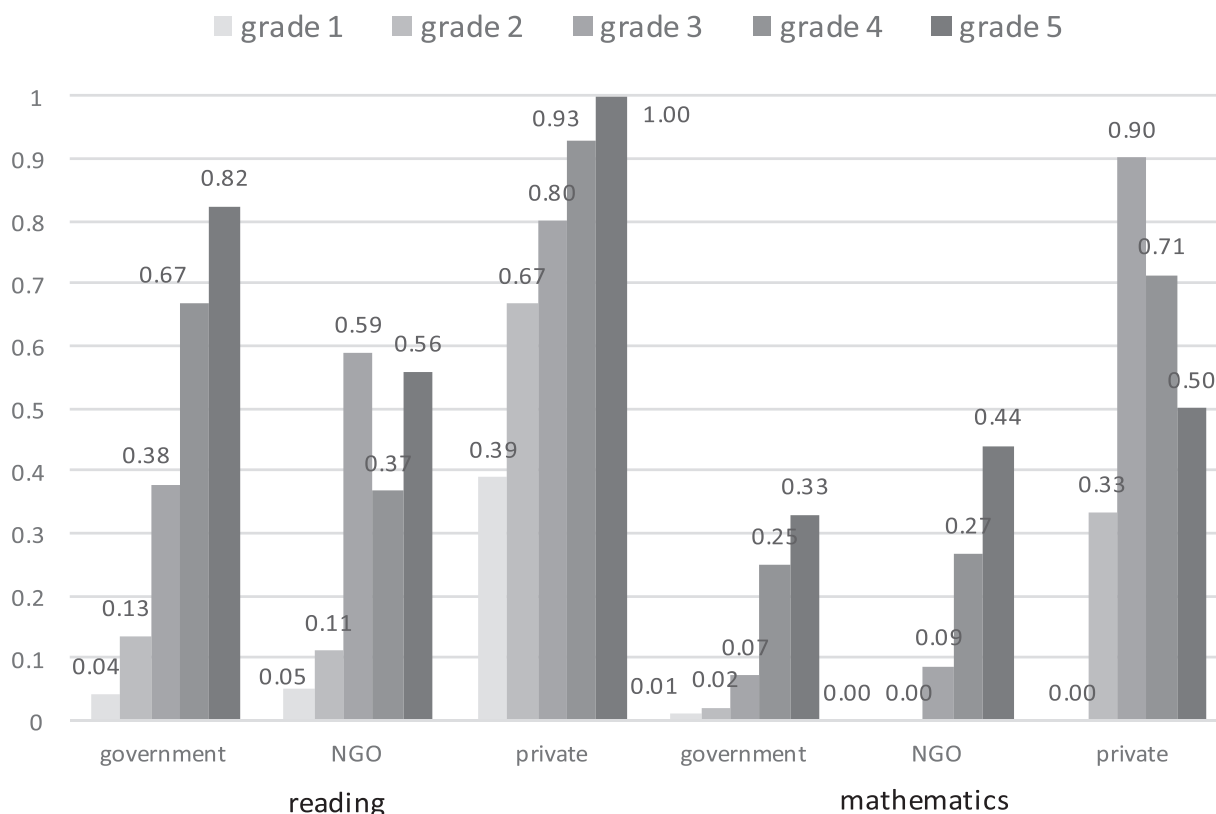


Fig. 1. Average Reading and Mathematics Scores, by School Type and Grade Level.

Note: The number of observations per grade in government schools ranges from 74 to 97. The analogous range of observations per grade in NGO schools is 15–30. The range per grade among private school students is 3–9. Given the very small number of observations per grade, private school results may well not be representative of private school results among the schools surveyed.

value of ASER relative to Early Grade Reading Assessment, and the relative performance of school types in Bangladesh.

## 2. Trends in Bangladesh primary education policy, 2000 – 2015

Total enrolment is nearly 20 million, three quarters in government schools, one quarter in a wide range of NGO schools, madrassas, and fee-charging private schools.<sup>2</sup> In early years of the millennium, the government emphasized increased enrolment. Net enrolment exceeded 90% by 2005. However, relative to the most recent pre-2000 estimate<sup>3</sup> of gross completion rate (45% in 1989), the gross primary school completion rate increased only modestly (to about 50%) until the final year of the past decade (DPE, 2015, p.122). The explanation for the large gap between enrolment and completion rates in the previous decade was high dropout and grade repetition rates (Nath and Chowdhury, 2009; Hossain, 2010). Beginning in 2009, the reported completion rate increased rapidly, and reached 80% by 2015. The only significant policy initiative able to explain the post-2008 increase is introduction in 2009 of the Primary Education Completion Examination (PECE), a centralized test now administered across Bangladesh to all students in Grade 5. There are no major post-2008 discontinuities in

<sup>2</sup> This section summarizes the chronology and analysis of events laid out more fully in Richards and Vining (2017) and Islam (2017). The government-managed school sector includes students of the “newly nationalized” schools (formerly Registered Non-Government Primary Schools) that, until 2013, were private. The Directorate of Primary Education (DPE) estimates the 2015 primary student population at 19,100,000. The principal school types include 14,300,000 in government-managed schools, 1,200,000 in Ebtedayee madrasas, 2,300,000 in for-profit private schools (“kindergarten”) and 600,000 in non-formal schools. The majority of students in the nonformal sector attend BRAC schools (DPE, 2015: 9). BRAC affirms the actual enrolment in its non-formal schools is roughly twice the DPE estimate. See also World Bank (2017, p.178).

<sup>3</sup> UNESCO (2017) reports no completion rate estimates for Bangladesh in the 1990s.

other factors, such as government spending on education or student/teacher ratio.<sup>4</sup>

Prior to introduction of the PECE, the assessment of primary school completion in government schools had been exercised at the *upazila* level.<sup>5</sup> While decentralization resulted in some lack of grading uniformity across the country, in general the test results were considered a reasonable reflection of student learning (Islam, 2017). The government claims that introduction of the PECE is a means to assure uniform certification standards for primary school completion (Islam, 2017), but the uniformity in grading has been achieved via a sacrifice of academic expectations.

The threshold for a basic PECE pass has been set at 33%, and grading has been lax. Historically, leaked questions have been widely accessible via the internet. The government has tried to prevent such leaks and claims that this is no longer a major problem. However, a set pattern of questions is used annually, which encourages memorizing answers through coaching and tutoring. A recent large-scale survey found that 77% of parents with children preparing to sit the PECE engage private tutors (CAMPE, 2015, pp.66-68). Forty percent of these tutors are teachers of the relevant students and 15% are teachers from other schools. According to the survey, the average family paid 4000 Takas (approximately US\$50) per student over 12 months on items

<sup>4</sup> Bangladesh expenditure data compiled by UNESCO are available only for the years 2006–09 (UNESCO, 2017). Government expenditure per students as a percent of per capita GDP averaged 8.4% over the first three years; it declined to 7.8% in 2009, the first year of the PECE. The analogous statistics for share of government spending devoted to primary education were 44.5% for 2006–08 and 44.7% in 2009. The Directorate of Primary Education (2015, p.107) admittedly reported a modest decline in average student/teacher ratio between years preceding introduction of the PECE (47.8 over years 2005–08) and after (45 over years 2009–15).

<sup>5</sup> *Upazila* are administrative units with average population of approximately 300,000.

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