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## Achievement of Primary Competencies: A Comparison between Government and BRAC Schools

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## ABSTRACT

Using the competency-based test instrument developed for *Education Watch 2000* this study made a comparison of learning achievement of two types of primary schools viz., government primary schools (GPS) and BRAC primary schools (BPS). Sixty schools from rural Bangladesh equally distributed by type was randomly chosen for the study. Number of students under test was 600 from BPS and 581 from GPS. *Education Watch* data of 2000 and other datasets on BPS on the same issue were used to see the improvement in performance over time. The analyses reveal that the overall performance of BPS was slightly better than that of GPS. The gap between BPS and GPS narrowed down from 2000 to 2006. There is still scope for both the sub-systems to improve in achievement of more competencies by the students including gender equity. Students were well in the test items assessing knowledge but they were found weak in those items requiring 'understanding level' of skills. Scope to improve 'understanding level' of skills of the students cannot be ignored.

## INTRODUCTION

The students are supposed to learn 50 competencies during their tenure in primary schools in Bangladesh. The National Curriculum and Textbook Board (NCTB) called these as terminal competencies which have been broken down in learning continuum by grades. When such a competency based education provision was introduced in 1992, there were 53 competencies in the list, which were modified into 50 competencies later in 2000. However, not much difference was observed in two lists of competencies. The competencies can be classified into three domains based on Bloom's taxonomy; these are cognitive, affective and psychomotor. Of the competencies, 29 are of cognitive type fully or partially, 19 are of affective type and 31 are of psychomotor type (Nath and Chowdhury 2001). Note that some of the competencies contain the character of multiple domains.

A competency-based assessment system was supposed to be introduced along with the introduction of competency-based curriculum, which was not done. Assessment of the primary school graduates using a competency-based test instrument was first done in 2000 under *Education Watch* initiative. It was a paper-pencil-based test instrument taking 27 of the 29 cognitive competencies into account. Three types of schools viz., government, non-government and non-formal were brought under this assessment. It showed that below 2% of the tested students achieved all the 27 competencies with an average of 16 competencies per student. The non-formal schools did best in the test followed respectively by government and non-government schools.

Use of the test instrument continued afterwards. However, not at the national scale, the instrument was used in BRAC primary schools (BPS) each year to see the performance of the graduates. This helped BRAC education programme understand the skills and competencies achieved by the students of its schools. Although the BPSs were the main focus of the assessment other two types of BRAC schools (formal and community) were considered in one study to do a comparative analysis of performances (Nath *et al.* 2005). The last year's study identified factors affecting school to school variation in competencies achievement of BPS (Nath *et al.* 2006). It should be mentioned that the *Education Watch* database of 2000 allowed us to make separate analysis for BPS and do a comparison of this with that of the government primary schools. This study identified a big gap between the two types of schools where the performance of the BRAC school graduates were ahead of their counterparts in government schools. While preparing for the assessment of BRAC school graduates of 2006, idea of a comparative study came in. We thought that it would be worthwhile to compare the performance of BPS with that of the government schools after the tenure of six years. Thus, a comparative study was planned.

Although the BPS and government schools are different in nature but the educational aims of both are the same. Both the types follow the same curriculum. Following paragraphs portraits the core features of these two types of schools.

*BRAC primary school (BPS):* These are single teacher school with one classroom adopted from the non-formal ways of primary education. A cohort of 33 students completes a full cycle of primary education of five academic years within four calendar years. BRAC-prepared textbooks are used in the first three grades and NCTB textbooks for the rest two years. Schools are arranged in rented houses and these are temporarily established. Education is totally free in these schools. BRAC provides free textbooks and stationeries to the students, monthly remuneration to the teachers and rent of schoolhouses. A total of 3,721 groups of

students completed primary education from these schools in December 2006, 3,501 in rural areas.<sup>1</sup>

*Government primary school (GPS):* These are the mainstream primary schools with at least three classrooms and five grades in each. Often run in two shifts – first two grades in the morning and later three grades in the afternoon. Provision of more than one teacher is there; however, number of teachers varies from one school to another. Schools are permanently established. Teacher-student ratio is 1:59 and on average, four teachers are posted in each school. The share of female teachers is about 44% and half of the students are girls. On average, each institution has 252 students. Total number of GPS is 37,672 in 2005.<sup>2</sup> Education is free under compulsory primary education provision. All students get free textbooks from NCTB and 40% of the students are brought under a stipend programme called *upabritti*.

### Study objective

This study aimed to compare the level of competency-based learning outcome of the students of BPS and GPS who completed primary level education in 2006. It also aimed to analyse the students' learning achievement by gender.

## METHODOLOGY

### THE INSTRUMENTS

Competency-based test instrument used for this study was developed in 2000 for the *Education Watch* study. It is a paper-pencil-based test instrument covering 27 of the 29 cognitive competencies in the NCTB list (Annex 1). The number of competencies enclosed under each subject is three for Bangla and English, five for mathematics, six for social studies, nine for general science and one for religious studies. The test instrument included 64 question items - 10 questions in Bangla, 7 in English, 15 in mathematics, 13 in social studies, 18 in general science and one in religious studies. Subject-wise number of competencies and the question items are given in Table 1.

**Table 1. Number of competencies and question items by subjects**

Subject	Number of competencies addressed	Number of question items in the test
Bangla	3	10
English	3	7
Mathematics	5	15
Social studies	6	13
General science	9	18
Religious studies	1	1
All	27	64

### SAMPLING

Keeping the objectives in mind, sampling strategy was adopted in such a way that analyses of students' performance of above mentioned two types of schools are possible. Both types of

<sup>1</sup> Source: MIS of BRAC education programme.

<sup>2</sup> Data collected from BANBASE website.

schools are spread almost all over the country. A total of 3,721 groups of BPS students completed primary education from these schools in December 2006. Only rural schools were considered for the assessment; total number of which was 3,501. Thirty BPSs were selected randomly from 30 areas. In each area, one GPS nearest to the selected BPS was also selected. Thus, total number of selected schools was 60 – 30 BPS and 30 GPS. Twenty students of grade V, among those attended on the test date, were intended to select randomly from each of the selected school; totalling 1200 equally distributed by school type. However, especially due to lower attendance rate or lower number of students in the classes, intention could not be fulfilled. Total number of students brought under the test was 1,181; 600 from BPS and 581 from GPS. Number of girls and boys were 489 and 692 respectively. Table 2 provides the number of students tested by school type and gender.

**Table 2. Sample size by school type and gender**

School type	Number of schools	Gender		Total
		Boys	Girls	
BPS	30	205	395	600
GPS	30	284	297	581
Total	60	489	692	1,181

## **ADMINISTERING THE TEST**

In each selected school, 20 students were tested at a time in their own classroom. The unselected students and their teachers were not allowed to stay in the classroom. A team of two trained test administrators administered the test in each school. Total number of test administering team was 10. Each team was responsible to work in three BPSs and three GPSs. At the beginning of the test, the test administrators took the opportunity to make the students understand the rules and regulations of the test. To clarify the procedure to the students, flipcharts and blackboards were used along with verbal instruction. If the students had any query about the test, the administrators cleared it to them. The researchers supervised the fieldwork.

The test was divided into three phases. In the first phase, one hour was allotted for taking Bangla and English language test. In the second phase, another hour was fixed for mathematics, social studies, general science and religious studies. In the third phase, listening test for Bangla and English took 10 minutes. Ten minutes break was given between every two phases. The test was administered in the last week of November 2006, just before the end of the five years academic course.

## **STRENGTH AND LIMITATIONS**

Like any other sample-based survey research, this study also has some strengths and limitations.

### **Strengths**

1. The main strength of the study is its competency-based test instrument which was developed for a national sample survey and the national terminal competencies are reflected in this instrument.
2. The study presents a comparative scenario of the level of learning achievement between BPS and GPS. This also creates an opportunity to compare the learning achievement of BPS graduates of recent year with their fellows in the previous seven years.

3. This is the second time where level of achievement of the students of GPS is measured. The first attempt was taken in the *Education Watch 2000* study. This makes an opportunity to compare the change in students' achievement of GPS.

### Limitations

1. Most of the BPS as well as GPS are in the rural areas. So, only rural schools were considered for the study. Thus, the result of the study presents the situation of the schools from rural areas only.
2. Only the cognitive competencies were assessed. But objective of any education programme is to develop both cognitive and non-cognitive aspects of the students' ability.
3. Only those students who were present in school on the day of the test were considered in sampling frame. Thus, a section of the students might be uncovered due to absenteeism.

## FINDINGS

### ACHIEVEMENT IN INDIVIDUAL COMPETENCIES

#### Bangla language

Of the four competencies in Bangla, three were considered for assessment. These are reading, writing and listening. No vocabulary test was taken. Ten questions were placed in this section of the test. Annex 2 provides a summary of the competencies, test items and minimum level for qualifying each of the competencies in Bangla.

Of the three competencies in Bangla, the students of both the schools did much better in listening skills than reading and writing (Table 3). Over 80% of the students achieved this skill. Nearly three quarters of the students of both types of schools achieved reading skills in Bangla. Writing was the hardest task to the students of both types of schools. Statistically significant difference between the two types of schools was observed in two skills viz., writing and listening, where BPS students were ahead of their counterparts in GPS. No significant difference was found in reading skills. About half of the BPS students (50.2%) and 38.4% of GPS students achieved all the three Bangla competencies ( $p < 0.001$ ). The gap between BPS and GPS was over 12 percentage points.

**Table 3. Percentage of students achieving Bangla competencies by school type**

Competencies	School type		Level of significance
	BPS	GPS	
Reading	72.8	73.7	ns
Writing	68.5	54.7	$p < 0.001$
Listening	87.8	80.9	$p < 0.001$
All three	50.2	38.4	$p < 0.001$

Gender-wise analysis shows that, except reading skills, no significant difference was found in any other competencies (Annex 3). Boys of both types of schools were significantly ahead of their girl classmates in this area of assessment. No significant gender difference was noticed when data were analysed for those achieving all the three Bangla competencies.



However, the boys of both type of school were ahead of their girl classmates in some percentage points.

### English language

Three competencies similar to Bangla were considered for English. There were seven questions in the test instrument – four for reading, one for writing and two for listening. Annex 4 provides a summary of the competencies, test items and minimum level of qualifying each of the competencies in English.

Around 80% of the students of both the types of school achieved the minimum requirements for listening and reading competencies in English (Table 4). Performance of the students in writing skills in English was far behind than the above two areas. A quarter of the BPS students and 13.4% of the GPS students satisfied the minimum criterion for writing in English. Although there was no statistically significant difference in reading and listening skills; the students of BPS were significantly ahead of their BPS counterparts in writing skills ( $p<0.001$ ). Nearly a fifth of the BPS students and 11% of the GPS students achieved all the three competencies in English ( $p<0.001$ ).

**Table 4. Percentage of students achieving English competencies by school type**

Competencies	School type		Level of significance
	BPS	GPS	
Reading	79.5	79.5	ns
Writing	25.3	13.4	$p<0.001$
Listening	84.2	80.0	ns
All three	19.0	11.0	$p<0.001$

Gender-wise analysis of the competencies in English shows no variation between the performances of the boys and the girls in BRAC schools (Annex 5). On the other hand, in government schools, the boys were ahead of the girls only in listening skills, no difference was noticed in other competencies. In achieving all the three competencies in English, the girls of BPS were ahead of their boys' counterparts with three percentage points but no significant difference was observed between them. In GPS, the girls were one percentage point behind of their boy classmates.

### Language as a whole

On average, the students of BPS did better than those of GPS in language competencies. Of the students in BPS, 14.3% achieved all the six competencies in Bangla and English languages; this was 8.1% among the students of GPS ( $p<0.001$ ). Gender-wise analysis shows that the girls of BPS were ahead of their boy classmates' with some percentage points, but no significant difference was found among and between the students of two types of schools.

### Mathematics

Both arithmetic and geometry was covered in mathematics test. Number of competencies is five. These include basic number skills, four rules of arithmetic, problem solving, measurement units, and geometric figures. The test contains 15 questions. Annex 6 presents the competencies, test items, and minimum level for qualifying the competencies.

More than 80% of the students of both types of schools achieved 'basic number skills' and over 70% achieved the competency related to 'geometric figures' (Table 5). No statistical difference was observed between BPS and GPS in these two cases. Although three quarters of

the BPS students had skills in four basic rules of arithmetic it was significantly lower among the students of GPS, below 60% of them had this skill ( $p < 0.001$ ). Relatively poor performance was observed in other two competencies. Not more than three quarters of the students of both types of schools achieved the competency on word problem solving in mathematics and 44-48% achieved the competency on measurement units. In statistical sense, both BPS and GPS performed equally in these two competencies. On average, 17.7% of the students of BPS and 14.4% of those of GPS achieved all five competencies in mathematics. Difference between them was found statistically insignificant.

**Table 5. Percentage of students achieving mathematics competencies by school type**

Competencies	School type		Level of significance
	BPS	GPS	
Basic number	83.0	81.2	ns
Four basic rules	74.8	58.9	$p < 0.001$
Problem solving	31.2	33.4	ns
Measurement unit	47.5	44.1	ns
Geometric figures	71.5	74.0	ns
All five	17.7	14.4	ns

The boys of both BPS and GPS showed significantly better performance compared to their girl classmates in word problem solving competency in mathematics (Annex 7). No gender difference was observed in any group of students in basic number skills. Both boys and girls of BPS also showed equal performance in other three competencies. However, the girls of GPS were lagging behind their boy classmates in these three competencies. In achieving all the five competencies the boys of both the school type were significantly ahead of their girl classmates. However, the gender difference was higher in GPS (23.6% vs. 9.4%;  $p < 0.001$ ) compared to BPS (22% vs. 15.4%;  $p < 0.05$ ).

### Social studies

Six social studies competencies were considered for assessment. These are knowledge on duties as family members, duties as member of society, duties as citizen of Bangladesh, knowledge about the country, manners with other people, and knowledge about children of other countries. Number of items placed in the instrument was 13. Annex 8 presents the competencies, test items, and minimum level of qualifying the competencies in social studies.

**Table 6. Percentage of students achieving social studies competencies by school type**

Competencies	School type		Level of significance
	BPS	GPS	
Duties as family members	88.2	82.8	$p < 0.01$
Duties as member of society	90.2	93.3	ns
Duties as citizen of Bangladesh	75.7	79.3	ns
Knowledge about the country	58.0	44.2	$p < 0.001$
Manners with other people	85.8	83.1	ns
Children of other countries	40.3	46.5	$p < 0.05$
All six	21.8	16.4	$p < 0.05$

Over 90% of the students of both the schools had knowledge on duties as a member of the society, over 80% had knowledge on duties as family members and knowledge on manners with other people, nearly 80% knew their duties as citizens of Bangladesh (Table 6). These mean that the students under test did well in these four competencies of social studies. No statistically significant difference between BPS and GPS was found in three of these competencies, however, in knowing duties as family members the students of BPS did

significantly well than their counterparts of GPS ( $p < 0.01$ ). Of the rest two competencies, the students of BPS had significantly better knowledge about the country than those of GPS ( $p < 0.001$ ). On the other hand, an opposite situation was observed in the competency ‘knowledge about the children of other countries’; here the students of GPS did well than those of BPS ( $p < 0.05$ ). Whereas, 21.8% of the students of BPS achieved all the six competencies of social science, it was 16.4% among those of GPS ( $p < 0.05$ ).

Separate analysis for the boys and the girls shows no significant gender difference in any of the school type in five of the six competencies (Annex 9). Students’ knowledge regarding their duties as citizens of Bangladesh was higher among the boys than the girls in both the school type. The students of both sexes in both the school types showed equal performance in achieving all the six competencies in social studies.

### General science

The general science section of the instrument has two parts – physical and environmental health, and science and technology. A total of nine competencies were assessed – five on physical and environmental health and four on science and technology. The competencies are: understanding the importance of good health, knowing physical and environmental health systems, understanding importance of balanced diet, knowing the preventive measure of common diseases, having information collection ability, observation skills on natural objects, ability in scientific investigation, identification of cause and effect relationship, and knowledge on science and technology in everyday life. Two multiple-choice questions were put for assessing each of the competencies, totalling 18 for the whole. Annex 10 provides the competencies, test items and minimum level for qualifying the competencies of general science.

**Table 7. Percentage of students achieving general science competencies by school type**

Competencies	School type		Level of significance
	BPS	GPS	
Importance of good health	91.2	93.6	ns
Physical and environmental health systems	90.8	98.8	ns
Importance of balanced diet	83.3	80.0	ns
Prevention of common diseases	71.0	70.1	ns
Information collection ability	88.8	90.9	ns
Observation skills on natural objects	80.5	79.2	ns
Scientific investigation skills	72.7	75.6	ns
Cause and effect relationship	82.3	69.7	$p < 0.001$
Science and technology in everyday life	67.7	85.2	$p < 0.001$
All nine	34.0	31.2	ns

Compared to the other sections of the instrument, in general, the students of both BPS and GPS did well in general science competencies. Most of the competencies were achieved by over 70% of the students (Table 7). No statistically significant difference between BPS and GPS was found in seven of the nine competencies. Of the rest two, the students of BPS had better knowledge in ‘cause and effect relationship’ than their counterparts in GPS (82.3% vs. 69.7%;  $p < 0.001$ ). On the other hand, the students of GPS did well than those of BPS in science and technology in everyday life’ (85.2% vs. 67.7%;  $p < 0.001$ ). Thirty-four percent of the students of BPS and 31.2% of those of GPS achieved all the nine competencies in general science.

No gender difference was found in any of the competencies when separately analysed for BPS and GPS (Annex 11). On average, 31.2% of the boys and 35.4% of the girls of BPS

achieved all the competencies in general science. These figures were respectively 32.4% and 30% in the case of BPS. None of these differences were statistically significant.

### Religious studies

Of the six competencies in religious studies only one was considered for assessment. This is knowledge on life history of prophet Mohammed (SM) or the preachers of own religion. It was asked to the students to write five sentences on the life of any one of the following: Mohammed (SM), Jesus Christ, Goutam Buddha, and Shree Ramakrishna. Correctly writing of four sentences about any of them was considered as minimum for achieving the competency.

Table 8 shows that the students of GPS showed better performance than those of BPS on religious studies. More than a quarter of the students of GPS (25.5%) and less than one-fifth (19.8%) of the students of BPS satisfied the minimum requirement for this competency ( $p < 0.05$ ). Although the boys and the girls of GPS equally performed in this competency, the boys of BPS surpassed their girl classmates with nine percentage points (25.9% vs. 16.7%;  $p < 0.001$ ) (Annex 12).

**Table 8. Percentage of students achieving a competency in religious studies by school type**

Competency	School type		Level of significance
	BPS	GPS	
Knowledge on life history of prophet Mohammed (SM) or the preachers of own religion	19.8	25.5	$p < 0.05$

## OVERALL LEARNING ACHIEVEMENT

Performances of the students of two types of schools in each of the competencies assessed are presented in previous section. This section provides students performance considering all the competencies together. Overall learning achievement of the students was assessed in three ways. Firstly, classifying the competencies on the basis of the performance of the students, secondly, finding out the proportion of students achieving all the 27 competencies, and finally, by computing average number of competencies attained.

### Classification of the competencies

The competencies were classified into four categories according to the performance of the students. The categories are *Very difficult*, *difficult*, *Easy*, and *Very easy*. Following are the definitions of this classification.

*Very difficult*: If less than 40% of the students attain a particular competency (the level of achievement is 'poor');

*Difficult*: If 40–59.9% of the students attain a particular competency (the level of achievement is 'mediocre');

*Easy*: If 60–79.9% of the students attain a particular competency (the level of achievement is 'satisfactory');

*Very easy*: If 80% or more students attain a particular competency (the level of achievement is 'excellent').

**Table 9. Distribution of competencies by performance level and school type**

Level of performance	Difficulty level of competencies	School type	
		BPS	GPS
Poor	Very difficult	3	3
Mediocre	Difficult	3	5
Satisfactory	Easy	9	8
Excellent	Very easy	12	11
Total		27	27

Table 9 presents distribution of competencies according to the classification mentioned above. Three competencies were ‘very difficult’ to the students of both BPS and GPS. Another three competencies were ‘difficult’ to the students of BPS and five to the students of GPS. On the other hand, majority of competencies were found as ‘easy’ or ‘very easy’ to the students from both types of schools. Respectively nine and eight competencies were ‘easy’ to the students of BPS and GPS. They got respectively 12 and 11 competencies as ‘very easy’.

A competency from Bangla, another from English, one from mathematics, three from social studies and four from general science, totalling 10 competencies, were detected as ‘very easy’ to the students of both types of schools. These are:

- Listening skills in Bangla;
- Listening skills in English;
- Basic number skills;
- Duties as family member;
- Duties as member of society;
- Manners with persons of various relationship;
- Importance of good health;
- Physical and environmental health systems;
- Importance of balanced diet and
- Information collection ability.

The common six competencies viz., reading skills in Bangla, reading skills in English, identification of geometric figures, duties as citizen of Bangladesh, prevention of common diseases and scientific investigation skills, were found to be ‘easy’ to the students of both types of schools.

Measurement units in mathematics, knowledge about own country and about the children of other countries under social studies competencies were difficult to the students of both types of schools. Moreover, students of GPS got difficulty in two other competencies; these are writing skills in Bangla and four basic rules of arithmetic. Students of both BPS and GPS showed poor performance on three competencies; these are writing skills in English, word problem solving in mathematics and life sketch of prophet Mohammed (SM) or the preachers of own religion of religious studies. This indicates that these three competencies were very difficult for them. For more details on these see Annex 13.

**Table 10. Percentage of students achieving all the competencies by subject, school type and gender**

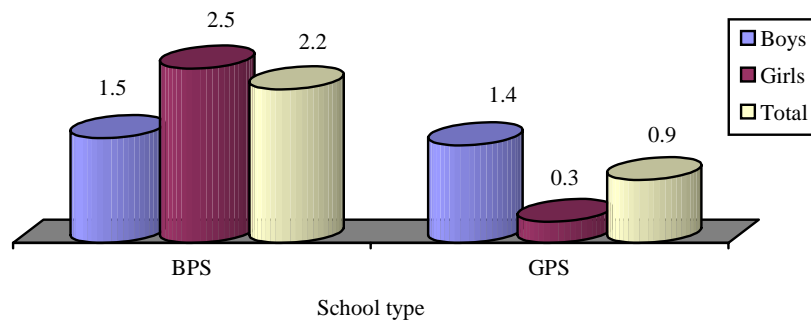
Subject	BPS			GPS		
	Boys	Girls	Both	Boys	Girls	Both
Bangla	56.1	47.1	50.2	41.2	35.7	38.4
English	17.1	20.0	19.0	11.6	10.4	11.0
Mathematics	22.0	15.4	17.7	23.6	9.4	14.4
Social Studies	22.4	21.5	21.8	18.0	14.8	16.4
General Science	31.2	35.4	34.0	32.4	30.0	31.2
Religious Studies	25.9	16.7	19.8	26.8	24.2	25.5

### Achievement of all competencies

Percentages of students achieving all the competencies by subject, school type, and gender are provided in Table 10. Proportion of students achieving all the competencies was highest in Bangla for both types of schools. General science scored the second position. Mathematics for BPS and English for GPS were ranked as last place.

Percentage of students achieving all the 27 competencies was also calculated. It shows that 2.2% of the BPS and 0.9% of GPS school students achieved all the 27 terminal competencies (Figure 1). No significant difference was found on achieving the competencies among boys and girls.

**Figure 1. Percentage of students achieving all 27 competencies by school type and gender**



### Mean number of competencies achieved

Table 11 shows some statistics on the number of competencies achievement of the students. These are mean, median, standard deviation and coefficient of variation. Very little difference existed in the average performance of the students of two types of schools. On average, the students of BPS achieved 19.1 competencies and the students of GPS 18.6, with a difference of 0.5 competencies. The boys of both types of schools were ahead of their girl counterparts. The gap was 0.7 percentage points for BPS and 1.3 for GPS. These differences were statistically significant ( $p < 0.05$  for BPS and  $p < 0.001$  for GPS).

**Table 11. Basic statistics on number of competencies achieved by the students**

School type and gender	Mean	Median	Standard deviation	Coefficient of variation
Boys				
BPS	19.6	20	4.81	24.55
GPS	19.3	20	4.60	23.82
Girls				
BPS	18.9	19	4.72	25.00
GPS	18.0	19	4.89	27.23
All				
BPS	19.1	20	4.76	24.88
GPS	18.6	19	4.79	25.21

A half of the students of BPS got more than 20 competencies, which was 19 for the students of GPS. The boys of both types of schools were ahead of their girl peers. The coefficient of variation of the number of competencies achieved by the students was 24.88 for BPS and 25.21 for GPS. This indicates that achievement of the students of BPS was comparatively homogeneous than that of the students of GPS. Moreover, coefficient of variation of girls was higher than the boys'. This means that the performance of the boys was homogeneous than that of the girls.

### Mean number of correctly answering items

Table 12 shows the mean number of correctly answering items and their percentages with respect to number of items under test by subjects and school types. Students of both types of schools did best in Bangla language followed by respectively English, general science, social science, and mathematics. On average, the students of BRAC schools correctly answered 37 items, which was 35 in case of government schools. These figures were respectively 57.8% and 54.7% of the total number of items under test.

**Table 12. Mean number of correctly answering items by subject and school type**

Subjects	Number of question items	BPS		GPS	
		Mean	%	Mean	%
Bangla	10	7.3	72.9	6.7	67.0
English	7	4.5	64.3	4.3	61.0
Mathematics	15	6.9	45.9	6.4	42.6
Social Studies	13	7.4	56.9	7.0	46.7
General Science	18	10.7	59.4	10.5	58.3
All	64*	37.0	57.8	35.0	54.7

\*Includes one competency on religious studies

### School level analysis

Considering school as unit of analysis, Table 13 shows that the range for the highest and lowest performing BRAC schools was 13.4 competencies with a minimum of 12 and a maximum of 25.4. On the other hand, the range for the government schools was 11.7 with a minimum of 11 and a maximum of 22.7 competencies. Although the gap between the highest and the lowest performing schools was higher in BRAC than in government system the coefficient of variation was higher in case of government schools than in BRAC schools.

**Table 13. School level analysis: some basic statistics of mean number of competencies achieved**

School type	Numbers of schools	Minimum	Maximum	Range	Mean	Median	Standard deviation	Coefficient of variation
BPS	30	12.0	25.4	13.4	19.1	20	4.8	25.1
GPS	30	11.0	22.7	11.7	18.6	19	4.8	25.8

**Performance according to taxonomic class level of items**

The question items put in the test were classified according to Bloom's taxonomic class level. Of the 64 items in the test, 45 are of knowledge level and 19 are of understanding level. An analysis of the performance of the students into these two broad categories of items is presented in Table 14. Students of both types of schools did, in general, better in the items testing their knowledge on various issues compared to those items needing understanding level skills. Gender-wise analysis also shows the same.

**Table 14. Performance of the students according to the taxonomic class level of items**

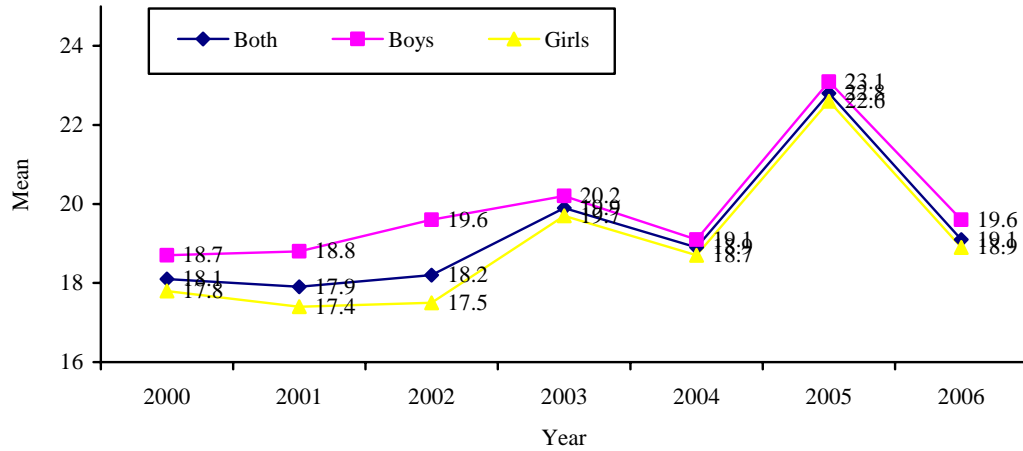
Taxonomic class	Number of items	BPS		GPS	
		Mean	%	Mean	%
Boys					
Knowledge	45	29.1	64.7	28.1	62.5
Understanding	19	8.9	47.1	8.3	43.8
Girls					
Knowledge	45	28.4	63.1	26.5	58.9
Understanding	19	8.1	42.5	7.1	37.4
All					
Knowledge	45	28.6	63.6	27.3	60.7
Understanding	19	8.4	44.0	7.7	40.6

**Trends in performance**

We have been assessing the students of BPS with the same instrument since 2000. This allowed us to see the trends of the performance of BPS over the period. The average performance of BPS was mostly equal during first three years of assessment (around 18 competencies per student). The average then improved about two competencies in 2003. It decreased one competency from 2003 to 2004 and increased to a pick of 22.8 competencies per student in 2005. The performance decreased again in 2005 with a difference of 3.7 competencies per student. Similar trend was observed for boys and the girls when data were analyzed separately for them. The girls were lagging behind the boys in all the assessment. The gap gradually increased during first three years; then decreased in 2003 and an equitable distance maintained till 2006 (Figure 2).



**Figure 2. Mean number of competencies achieved by the students of BPS in various years by sex**



In case of government primary schools, we have only two years data. In 2000, the students of the government primary schools achieved on average 15.3 competencies, which was 18.6 competencies in 2006 – an increase of 3.3 competencies (table 15). Gender-wise, the boys of 2006 achieved 3.2 competencies more than those of 2000 and the girls 3.5 competencies for the same period. Although the girls were lagging behind the boys in both the years but the gap reduced between them. Improvement of BPS during the same period was one competency. However, it was 4.7 competencies one year back. Similar to GPS, the girls of BPS lagged behind the boys and the gap reduced over time.

**Table 15. Mean number of competencies achieved by the students of two types of schools and its increase in two different years, 2000 and 2006**

Sex	GPS			BPS		
	2000	2006	Increase	2000	2006	Increase
Boys	16.1	19.3	3.2	18.7	19.6	1.1
Girls	14.5	18.0	3.5	17.8	18.9	1.1
Both	15.3	18.6	3.3	18.1	19.1	1.0
Gender-gap	1.6	1.3		1.1	0.7	

Table 15 clearly shows that the gap between GPS and BPS has reduced over the period of last six years. It is mostly due to government schools improvement during this period. Although the achievement of the students of BPS has improved during this period but the improvement was much in GPS than BPS. For instance, whereas in 2000, the students of GPS did poor in five competencies, mediocre in eight and satisfactory in 14; they did poor in three, mediocre in five, satisfactory in eight and excellent in 11 competencies in 2006. On the other hand, in 2000, the students of BPS did poor in three competencies, mediocre in five, satisfactory in 11 and excellent in eight competencies. These figures were respectively 3, 3, 9, and 12 in 2006. It is interesting to note that the students of GPS did not show excellent performance in any of the competencies in 2000 but they showed such performance in 11 competencies in 2006. In case of BPS, the boys did well than those of the girls in three competencies in 2000 and four in 2006. On the other hand, in case of GPS, the gender difference in favour of the boys was in 11 competencies which reduced to seven in 2006. About 10% of the students of BPS under test achieved all the 27 competencies, which reduced to 2.2% in 2006. On the other hand, this statistic was below 1% for the students of GPS in both the years.

## DISCUSSION AND CONCLUSION

Testing students learning achievement through reliable and valid instruments as part of assessing quality of education is a popular activity in any education provision. Although school enrolment of primary aged children has increased in Bangladesh the quality of education has not been improved that much. The process of assessing the quality, which is done at the *upazila* level, is also not that much improved. Thus it is unknown to all of us, on a regular basis, actually what the children are learning in the primary schools. The primary education department of the government does not do any assessment of the pupils ending primary education. The only exception is the *Education Watch*, which for the first time in 2000 assessed learning achievement of those who completed primary education; however, on a sample basis and only on three types of schools (government, private and non-formal).

We have been using the *Education Watch* instrument every year on the graduates of BRAC primary schools since 2000. It provides valuable information for BRAC education programme on the average learning achievement of the students of its schools. This year, for the first time after *Education Watch*, we initiated a comparative study of government and BRAC primary schools. This provides two things. Firstly, recent data as well as a comparative scenario of competency based learning achievement of the students of two types of schools. Secondly, trends in learning achievement over time in both the school types. The concerned persons in primary education were claiming that the findings of *Education Watch* were too old to cite today. They demanded for recent data. It is to be mentioned that as majority of the BRAC schools were established in the rural areas, studies on BPS were done only on rural schools. Thus, the comparable group of GPS was also chosen from the rural areas. In this sense this study reflects only the majority rural schools.

The overall performance in terms of mean number of competencies achievement was not that much different between the students of two types of study schools. The students of BRAC primary schools, on average, achieved only a half competency more than their peers in government primary schools. Looking back to 2000, such gap was 2.8 competencies in favour of BRAC school students. This indicates that the gap between BPS and GPS has reduced during the last six years. Similar findings could be seen in all the subject areas when analysed them separately. The only exception was the religious studies, where the students of GPS surpassed their counterparts in BPS in both the surveys. In terms of achieving all the 27 competencies, although it is not a good indicator to compare, the students of BPS were ahead of the students of GPS in both the years. The government school students could not go beyond one percent in any of the surveys but it reduced from 10% to 2.2% for the students of BRAC schools. The gender-gap also reduced in GPS. There is still scope for both the sub-systems to work for gender equity in educational performance of the students.

We do not know how much the performance of the students of GPS varies from one year to the next year because of lack of data for all the last six years. However, we have such information for BPS. It shows no smooth trend in the performance of the BPS students. The average performance was around 18 competencies during the first three surveys (2000 to 2002), around 19 competencies in 2004 and 2006. It jumped to 20 competencies in 2003 and nearly 23 competencies in 2005. Thus, the above comparison would have been different if it was done for instance with the performance of last year. Why the performance of BPS fluctuates needs to be investigated. Is it because of its non-formal nature and relevant structure of field operation and management of overall programme or there is any other reason?

It is a good sign that the performance of the rural government primary schools has increased. If the sampled schools represent all the rural government primary schools in the country, it can be said that the quality of education improves for two-thirds of the primary pupils in rural areas. Such improvement in the majority of the schools has direct influence on the overall quality of primary education in rural Bangladesh.

The other issue that needs to be improved in both the types of schools is students' skills and competencies in those areas where understanding level of skills is necessary. As was seen in the tests taken during the last six years, the students of BPS in all the six tests and the students of GPS in the two tests taken on them did well in the items those tested their knowledge and did poorly in those items needing understanding level of skills. Studies based on classroom observations successively reminded us that rote learning was the main way of teaching learning in the majority of the classrooms. This actually hampered students' development at the understanding level. Without a meaningful change in classroom practice one cannot expect any improvement in this regard. We should make the teachers understand the situation and help them to take effective measures to improve higher level skills of the students.

Finally, although BPS was ahead of GPS in the tests there is still scope for both the sub-systems to improve in many ways – starting from achievement of more competencies among the students to gender equity to improving understanding level of skills. It is expected that the respective authorities would look at these issues and would work for betterment of the situation.

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## Annexes

### Annex 1. The 53 terminal competencies (English version)

1. To place unflinching trust in the oneness of Allah, the Almighty creator and Custodian of the universe.
2. To feel grateful to Allah for His infinite mercy and to express such gratefulness by remembering Him in all deeds.
3. To know the life history of Hazarat Mohammed (peace be on him), the prophet of Allah and in case of the followers of other religions the life history of the preachers of their respective religions.
4. To love all creations of the Creator.
5. To show respect and tolerance to the followers of all religions.
6. To show respect to all irrespective of their sex, financial status occupation and lifestyle.
7. To be interested in manual work and to be respectful to people living on manual work.
8. To show respect and do duty towards parents, elders, neighbours and relatives.
9. To be aware of one's own duties and responsibilities as a member of the family and to take part in household work.
10. To be aware of one's own duties and responsibilities as a member of the society and to take part in social activities.
11. To be aware of one's own duties and responsibilities as a citizen of Bangladesh and to discharge civic duties.
12. To allow others to express their opinions and to show respect for such opinions.
13. To play active part in combined decision-making about different programmes undertaken by the school.
14. To grow as a competent team leader and team member by performing duties and responsibilities with honesty and devotion.
15. To know and love the country.
16. To take pride in national tradition and culture (language, folksong, arts & crafts and eminent personalities).
17. To show respect to the national flag and national anthem.
18. To avoid wastage of resources.
19. To realise the importance of building up healthy body for living a healthy life.
20. To be willing to build up a healthy body through participation in games and sports and physical exercise.
21. To know and observe the rules for the preservation of physical health and environmental health.
22. To know and realise the importance of balanced food and to develop the habit of eating such food.
23. To know about the common diseases, their causes and preventive measures and to be willing to take preventive measures against them.
24. To understand and correctly read materials printed and hand written in easy Bangla and through reading skill to continue acquiring knowledge by reading material written in Bangla.
25. To express by writing correctly and distinctly in plain Bangla his/her own observation, experience and intention, to be able to write simple letters and applications and to be able to fill in different kinds of forms.
26. To talk in correct colloquial Bangla in order to accurately and effectively express as well as exchange thoughts and feeling with classmates and others.
27. To comprehend the main theme by listening attentively to conversations, speeches, descriptions etc. in Bangla
28. To gain basic ideas of numeracy and to be able to make use of numbers.
29. To know four fundamental operation and to be able to use them.
30. To apply the simple methods of computing/calculating in solving the day to-day problems.
31. To know and to use the units of money, length, weight, square measure, measurement and time.
32. To know and understand the geometrical signs and figures.
33. To develop the ability to collect facts and information.
34. To develop the habit of reading newspapers, periodicals as well as books outside the syllabus.
35. To think independently and to develop the ability to express own opinions.
36. To accept new ideas and to feel interested in discussing them with others.
37. To accept and to feel interested in accepting constructive criticism of others for self-development.

38. To know and understand through observation and enquire the immediate natural and social environment.
39. To attain the skill of “scientific enquiry” in respect of specifying the aim of enquiry, observing and classifying different aspects of environment and drawing simple generalizations.
40. To identify the relationship between cause and effect and to make simple study in respect of the ordinary problems of day-to-day life.
41. To observe and identify the improvement in the standard of day to-day life due to application of science and technology and realise its importance.
42. To express oneself through arts like sketching, drawing, clay-work, paper-work, music, dance drama etc.
43. To observe and appreciate the beauty of natural and social environment.
44. To develop the habit of keeping tidy one’s own belonging and environment.
45. To observe discipline.
46. To take care of individual as well as public property.
47. To develop punctuality.
48. To know how to behave with people of different relationship and to develop manners accordingly.
49. To know about the children of other countries and to get interested in their ways of life.
50. To read simple material hand written or printed in English.
51. To listen to and understand simple conversation, story and rhymes in English and to get pleasure out of them.
52. To speak simple sentences in English in order to make others understand one’s own observation and ideas.
53. To write brief accounts of known things in correct English.

Source: National Curriculum and Textbook Board (Undated): Revision and modification of curriculum of the primary stage against the background of universal primary education- essential learning continua (primary education). Dhaka: National Curriculum and Textbook Board.

### **Annex 2. Competencies, test items, and minimum levels for Bangla**

Competency	Test items	Minimum level
Reading	Answer two questions from a printed paragraph	Answer one correctly
	Answer two questions from a hand written paragraph	Answer one correctly
Writing	Describe a given scenery in five sentences	Answer correctly any three on the left
	Describe own home in five sentences	
	Fill out a form with eight blanks (any six is acceptable)	
	Write an application with date, salutation, and closing (message with any two acceptable)	
Listening	Write Answer two questions based on a pre-recorded paragraph	Answer one correctly

### **Annex 3. Percentage of students achieving Bangla competencies by gender**

Competencies	BPS			GPS		
	Boys	Girls	L.S.	Boys	Girls	L.S.
Reading	78.5	69.9	p<0.05	79.2	68.4	p<0.01
Writing	71.7	66.8	ns	55.6	53.9	ns
Listening	88.8	87.3	ns	82.0	79.8	ns
All three	56.1	47.1	ns	41.2	35.7	ns

#### Annex 4. Competencies, test items, and minimum levels for English

Competency	Test items	Minimum level
Reading	• Answer two questions from a printed paragraph	Answer one correctly
	• Answer two questions from a handwritten paragraph	Answer one correctly
Writing	• Describe a given picture in five sentences	Answer four correctly
Listening	• Answer two questions based on a pre-recorded dialogue between two friends	Answer one correctly

#### Annex 5. Percentage of students achieving English competencies by gender

Competencies	BPS			GPS		
	Boys	Girls	L.S.	Boys	Girls	L.S.
Reading	83.4	77.5	ns	81.0	78.1	ns
Writing	23.4	26.3	ns	14.4	12.5	ns
Listening	82.0	85.3	ns	83.5	76.8	p<0.05
All three	17.1	20.0	ns	11.6	10.4	ns

#### Annex 6. Competencies, test items, and minimum levels for Mathematics

Competency	Test items	Minimum level
Basic numbers	Arrange four given numbers in ascending order Identify the largest from four given digits	Answer correctly any one of the items on the left.
Four basic rules	<ul style="list-style-type: none"> <li>• An addition</li> <li>• A subtraction</li> <li>• A multiplication</li> <li>• A division</li> <li>• A simplification</li> </ul>	Do the simplification correctly or any three of the four others
Problem solving	Four sums needing skills on <ul style="list-style-type: none"> <li>• Basic arithmetic operation</li> <li>• Unitary method</li> <li>• Percentage</li> <li>• Graph</li> </ul>	Answer correctly any two of the items on the left
Measurement units	<ul style="list-style-type: none"> <li>• Convert some hours and some minutes to seconds</li> <li>• Find the length of a pencil</li> </ul>	Answer correctly any one of the items on the left
Geometric figures	<ul style="list-style-type: none"> <li>• Find the number of triangles and rectangles in a figure</li> <li>• Identify four geometric figures</li> </ul>	Answer correctly any one of the items on the left

#### Annex 7. Percentage of students achieving Mathematics competencies by gender

Competencies	BPS			GPS		
	Boys	Girls	L.S.	Boys	Girls	L.S.
Basic number	82.9	83.0	ns	83.1	79.5	ns
Four basic rules	78.5	72.9	ns	66.5	51.5	p<0.001
Problem solving	38.5	27.3	p<0.01	41.9	25.3	p<0.001
Measurement unit	51.2	45.6	ns	51.8	36.7	p<0.001
Geometric figures	74.1	70.1	ns	78.9	69.4	p<0.01
All five	22.0	15.4	p<0.05	23.6	9.4	p<0.001

### Annex 8. Competencies, test items, and minimum levels for Social Studies

Competency	Test items	Minimum level
Duties as family member	<ul style="list-style-type: none"> <li>• How a family becomes a happy family</li> <li>• Responsibility of family members</li> </ul>	Answer correctly any one of the items on the left
Duties as a member of the society	<ul style="list-style-type: none"> <li>• Responsibility as a member of the society</li> <li>• Why one should not play radio/TV loudly</li> </ul>	Answer correctly any one of the items on the left
Duties as citizen of Bangladesh	<ul style="list-style-type: none"> <li>• Responsibility as a citizen</li> <li>• Eligibility to vote in national elections</li> </ul>	Answer correctly any one of the items on the left
Knowledge about the country	<ul style="list-style-type: none"> <li>• Independence day</li> <li>• Major transportation system</li> <li>• Place of highest rainfall</li> </ul>	Answer correctly any two of the items on the left
Manners with other people	<ul style="list-style-type: none"> <li>• Right manners with teachers</li> <li>• Right manners with younger siblings</li> </ul>	Answer correctly any one of the items on the left
Knowledge about children of other countries	<ul style="list-style-type: none"> <li>• Main food of the children of Maldives</li> <li>• Popular games in Nepal</li> </ul>	Answer correctly any one of the items on the left

### Annex 9. Percentage of students achieving Social Studies competencies by gender

Competencies	BPS			GPS		
	Boys	Girls	L.S.	Boys	Girls	L.S.
Duties as family members	88.3	88.1	ns	82.7	82.8	ns
Duties as member of society	91.7	89.4	ns	95.1	91.6	ns
Duties as citizen of Bangladesh	81.0	72.9	p<0.05	83.8	75.1	p<0.01
Knowledge about the country	60.0	57.0	ns	47.5	41.1	ns
Manners with other people	86.3	85.6	ns	85.6	80.8	ns
Children of other countries	37.1	42.0	ns	48.2	44.8	ns
All six	22.4	21.5	ns	18.0	14.8	ns

### Annex 10. Competencies, test items, and minimum levels for General Science

Competency	Test items	Minimum level
Knowledge about importance of good health	<ul style="list-style-type: none"> <li>• How good health is achieved</li> <li>• Why one takes carbohydrate</li> </ul>	Answer correctly any of the items on the left
Knowledge about physical and environmental health	<ul style="list-style-type: none"> <li>• Which tube well water is safe</li> <li>• How diarrhoea spreads</li> </ul>	Answer correctly any of the items on the left
Knowledge of balanced diet	<ul style="list-style-type: none"> <li>• What is a balanced diet</li> <li>• Why should adolescents take extra food</li> </ul>	Answer correctly any of the items on the left
Knowledge about prevention of common illnesses	<ul style="list-style-type: none"> <li>• Transmission of worms</li> <li>• Skin diseases</li> </ul>	Answer correctly any of the items on the left
Information collection ability	<ul style="list-style-type: none"> <li>• What is the fastest mass media</li> <li>• Highest and lowest temperatures during summer</li> </ul>	Answer correctly any of the items on the left
Observation skills	<ul style="list-style-type: none"> <li>• Which tree has no branch</li> <li>• Plant without a flower</li> </ul>	Answer correctly any of the items on the left
Scientific investigation	<ul style="list-style-type: none"> <li>• Identification of preventive measures for given illness</li> <li>• Identify effects of over population</li> </ul>	Answer correctly any of the items on the left
Cause and effect relationship	<ul style="list-style-type: none"> <li>• Energy that causes a boiling kettle lid to move up</li> <li>• Energy which drives a bullock cart</li> </ul>	Answer correctly any of the items on the left
Everyday science	<ul style="list-style-type: none"> <li>• What is information communication</li> <li>• What are modern agricultural technologies</li> </ul>	Answer correctly any of the items on the left

### Annex 11. Percentage of students achieving General Science competencies by gender

Competencies	BPS			GPS		
	Boys	Girls	L.S.	Boys	Girls	L.S.
Importance of good health	90.2	91.6	ns	93.3	93.9	ns
Physical and environmental health systems	93.7	89.4	ns	90.5	87.2	ns
Importance of balanced diet	84.4	82.8	ns	81.7	78.5	ns
Prevention of common diseases	69.8	71.6	ns	69.4	70.7	ns
Information collection ability	89.8	88.4	ns	91.2	90.6	ns
Observation skills on natural objects	83.9	78.7	ns	80.3	78.1	ns
Scientific investigation skills	74.6	71.6	ns	77.8	73.4	ns
Cause and effect relationship	82.0	82.5	ns	73.2	66.3	ns
Science and technology in everyday life	67.3	67.8	ns	85.6	84.8	ns
All nine	31.2	35.4	ns	32.4	30.0	ns



**Annex 12. Percentage of students achieving Religious Studies competencies by gender**

Competencies	BPS			GPS		
	Boys	Girls	L.S.	Boys	Girls	L.S.
Knowledge on life history of prophet Mohammed (SM) or the preachers of own religion	25.9	16.7	p<0.01	26.8	24.2	ns

**Annex 13. Classification of competencies according to the performance level of the students**

Subject area	Competencies	BPS	GPS
Bangla	Reading skills in Bangla	C	C
	Writing skills in Bangla	C	B
	Listening skills in Bangla	D	D
English	Reading skills in English	C	C
	Writing skills in English	A	A
	Listening skills in English	D	D
Mathematics	Basic number skills	D	D
	Four basic rules of arithmetic	C	B
	Problem solving	A	A
	Measurement units	B	B
	Identification of geometric figures	C	C
Social Studies	Duties as family member	D	D
	Duties as member of society	D	D
	Duties as citizen of Bangladesh	C	C
	Know about the country	B	B
	Manners with persons of various relationship	D	D
General Science	Know about the children of other countries	B	B
	Importance of good health	D	D
	Physical and environmental health systems	D	D
	Importance of balanced diet	D	D
	Prevention of common diseases	C	C
	Information collection ability	D	D
	Observation skills on natural objects	D	C
	Scientific investigation skills	C	C
	Identification of cause and effect relationship	D	C
	Science and technology in everyday life	C	D
Religious Studies	Life sketch of prophet Mohammed (SM) or the preachers of own religion	A	A

A = Very difficult, B = Difficult, C = Easy, D = Very easy