201

RESEARCH REPORT

The Quality Crisis: New Evidence on Learning in Primary Education in Bangladesh

S M Zulfiqar Ali
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Bangladesh Institute of Development Studies (BIDS)

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NEW EVIDENCE ON LEARNING IN PRIMARY EDUCATION IN BANGLADESH

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ACRONYMS

ASER	Annual Status of Education Reports
CSSR	COVID-19 School Sector Response
DPE	Directorate of Primary Education
GPS	Government Primary Schools
HSC	Higher Secondary School Certificate
NCTB	National Curriculum and Textbook Board
NSA	National Student Assessments
SSC	Secondary School Certificate
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund

EXECUTIVE SUMMARY

Aimed at understanding the current competencies of students to inform sector strategies for recovery and future resilience, the study evaluated over 62,000 students across 1,661 government primary schools (GPSs), revealing profound insights into the pandemic's impact on primary education. The methodology, inspired by ASERs and NSAs, involved a multi-faceted analysis, including individual question performance, content domain-based analysis, and composite score assessment, to provide a nuanced understanding of third and fourth-grader student abilities across various cognitive levels, from basic literacy and numeracy to more complex skills like reading comprehension and arithmetic operations. It scrutinises educational achievement, socio-economic and geographical determinants, insights into the systemic challenges and pinpointing opportunities for targeted interventions. Key findings indicate a notable 8.7 per cent enrolment decline from 2019 to 2022, accentuated in char and coastal regions (18 per cent) with contrasted urban areas experience (3.3 per cent). Amidst adversity, over half of the surveyed students (56 per cent) continued their education, leveraging support from family and technology, and a concerning 7 per cent did not engage in any study. The analysis revealed distinct gender disparities in subject mastery, with girls surpassing boys in Bangla and boys leading in Mathematics. Moreover, urban learners consistently outperformed their rural counterparts, underscoring significant geographical disparities. The data underscore widespread basic or below-basic competency levels, highlighting the severe learning deficits exacerbated by pandemic-induced educational disruptions. The analysis emphasises the profound influence of parental education and socio-economic status on academic success, advocating for equity-focused educational strategies. It also stresses the importance of school infrastructure and access to learning resources in enhancing student performance. The enduring effects of the pandemic call for immediate and concerted action among government agencies, educators, and communities to remediate educational gaps and foster equitable, quality education, thus mitigating the long-term adverse effects on Bangladesh's young learners. This study illuminates the resilience of students and families, suggesting the potential of community-based support systems.

CHAPTER 1
INTRODUCTION

This report is prepared based on a study carried out to assess the learning level of primary school students in Bangladesh after the COVID-19 pandemic[1]. The Coronavirus (Covid-19) pandemic disrupted education systems around the world. As a result, most countries decided to partially or fully close schools to control the spread of COVID-19, resulting in an unprecedented number of students not attending school in person. At the peak of school closure in late March 2020, the number of students out of school was around 1.6 billion[2]. The students of Bangladesh also went through similar experiences. More than 36.0 million students (including 17.0 million in the primary) were out of school at that time.

On March 16, 2020, the Government of Bangladesh declared closures to all academic institutions to control the devastating spread of the coronavirus. All educational institutes in the country were physically closed for almost two years till October 2021. During this school closure period, the government carried out a distance learning program through SANGSAD TV from April 30, 2020, to ensure continued learning. Initially, this program was targeted towards primary school students, and later, content for the secondary level was introduced.

During this closure period, some students continued learning through various modalities like television, radio, or online learning platforms, while others stopped learning altogether. As a result, when schools reopened for in-person classes, students apparently came back with varying levels of knowledge and skills. Disadvantaged students were most likely to exhibit the greatest learning losses, and in the worst-case scenario, some may never return to education.

Even before the COVID-19-driven learning loss hit the education sector, the country was facing a learning crisis. Though Bangladesh made remarkable progress in access to primary education in terms of student enrolment (almost 98 per cent), primary cycle completion (81.4 per cent), and gender equity, the quality of education always remained an issue of concern. About 50 per cent of Bangladeshi rural children aged 10-18, who had completed primary education, failed to pass a basic competency test in rudimentary mathematics (Asadullah &

[1] The authors gratefully acknowledge the support of the Directorate of Primary Education (DPE), Ministry of Primary and Mass Education of the Government of Bangladesh, and the World Bank for undertaking the study. The authors also thankful to the anonymous referee for providing useful comments on the earlier version of the report. The errors are, however, entirely of the authors.
[2] The State of the Global Education Crisis: A Path to Recovery (2021)

Chaudhury, 2013). The scenario did not improve even after 4-5 years when the Directorate of Primary Education (DPE) found that 56 per cent of fifth graders could not gain adequate competence in Bangla and only 24 per cent had basic proficiency in Mathematics[3]. The general perception is that the disruption caused by the COVID-19 pandemic may have exacerbated the situation. Given the situation, this study assesses current learning levels and deficiencies caused by the pandemic at the primary level. This timely work aims to inform strategies for recovery and future preparedness.

[3] Government of the People's Republic of Bangladesh, Ministry of Primary and Mass Education (2022). The National Student Assessment 2017, Grades 3 and 5.

CHAPTER 2
OBJECTIVE AND SCOPE OF THE STUDY

This study assessed foundational skills in Bangla and Mathematics among early-grade students (classes 3 and 4). Its main purpose was to evaluate current learning levels post-COVID and determine if additional support is needed to catch up with grade-level learning.

Given the above, the main objectives of the study include:

- Measuring the learning levels of the students of grades 3 and 4 in Bangla and Mathematics related to foundational skills;
- Assessing whether and to what extent learning levels differ by school characteristics[4] and student background[5]; and
- Exploring the correlates of better learning outcomes.

The assignment was implemented in 1,644 schools drawn randomly from 339 project Upazilas across 64 districts[6]. From each of the Upazilas, between 2 to 10 schools were chosen based on the number of schools in each of the Upazilas. Assessment tests have been administered among 31,058 students from grade 3 and 31,961 from grade 4. Hence, a total of 62,703 students have been covered under the study.

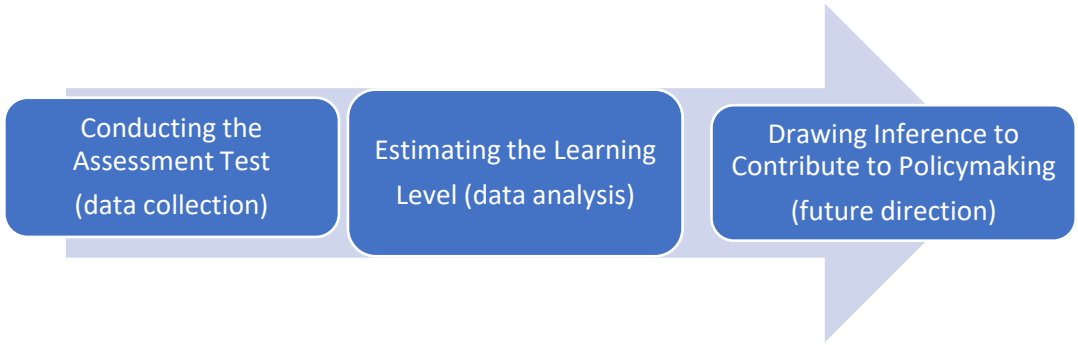
In total, 16 assessment items for Bangla and Mathematics on foundational literacy and numeracy (not more than two pages for each subject) and a few demographic and household-related questions (1 page) have been considered. The medium of asking the questions was Bangla.

[4] School characteristics is defined by teacher-student ratio, distance from urban center, etc.
[5] Student background mainly includes parental socio-economic background of the student.
[6] The COVID-19 School Sector Response (CSSR) Project implemented by the Directorate of Primary Education (DPE), Ministry of Primary and Mass Education, Government of Bangladesh.

CHAPTER 3
ANALYTICAL APPROACH, METHODOLOGY, AND SAMPLING

The study assessed the learning levels of 62,703 early-grade students in grades 3 and 4 for Bangla and Mathematics. The goal was to understand their current competence in foundational skills. The study followed a specific pathway, as depicted in Figure 1.

Figure 3.1: Implementation Pathway



3.1 Development of Assessment Instruments

To ensure the integrity of the assessment test, 10 equivalent sets of question papers were meticulously designed by an education expert. These items align with grade-level learning outcomes and have undergone thorough review by stakeholders, including the DPE, NCTB, and the World Bank. Valuable inputs from experts have been incorporated into the assessment instruments. The instruments contain the following modules:

1) Eight questions (items) for Bangla;
2) Eight questions (items) for Mathematics;
3) Assessment sheets; and
4) Socio-economic questions.

In addition to the test instruments and questionnaires, we collected school-level information (such as location, student count, and facilities) using a one-page questionnaire. The Head-Teacher verified and signed this information for authenticity. After pilot testing, we finalised the assessment items and coded the sets differently to maintain confidentiality during distribution to field teams.

3.2 Recruitment, Training and Organising the Test Administration

Over 150 research and field officers were recruited and trained to conduct assessment tests and collect demographic and household information from the selected students. The research team carefully trained the field teams to ensure quality, professionalism, and care in the management of the relationships with the respondents (students in this case). Field officers participated in a 3-day training session in two batches. The field teams were supervised and coordinated by another pool of field coordinators.

3.3 Field Survey – Administering the Assessment Test

The field officers administered the assessment tests separately for each selected students, following training guidelines. They played the roles of facilitators, observers, and enumerators. Field officers read questions aloud to students and recorded their performance on individual assessment sheets. The core research team analysed the responses from these sheets after data entry was completed.

3.4 Quality Control

The field officers were supervised and monitored by a team of field supervisors led by the Field Management Expert. The Team Leader and other key experts also oversaw the progress made in the implementation of fieldwork.

3.5 Sample Selection Procedure

A total of 1,500 schools were randomly drawn initially from 20,000 GPSs across 339 project Upazilas for the assessment test. CSSR Project has two types of Upazilas under the project coverage. The first group contains Upazilas, where 100 per cent of the schools were under the project coverage, and the second group contains Upazilas, where not all but 20 per cent of the schools were under the project coverage. In the 118 Upazilas with 100 per cent coverage, there are 13,296 GPSs, while the remaining 221 Upazilas have partial coverage (20 per cent of schools). This results in a ratio of 35:65 for 100 per cent vs. 20 per cent coverage. Initially, we aimed to select 3-5 schools per Upazila. However, to maintain proportional distribution, we chose 6 schools per Upazila from the fully covered group (708 schools) and 3-4 schools per Upazila from the partially covered group (792 schools). Hence, the final ratio of selected schools from both groups stands at approximately 50:50.

Table 3.1: Sample Distribution of Schools

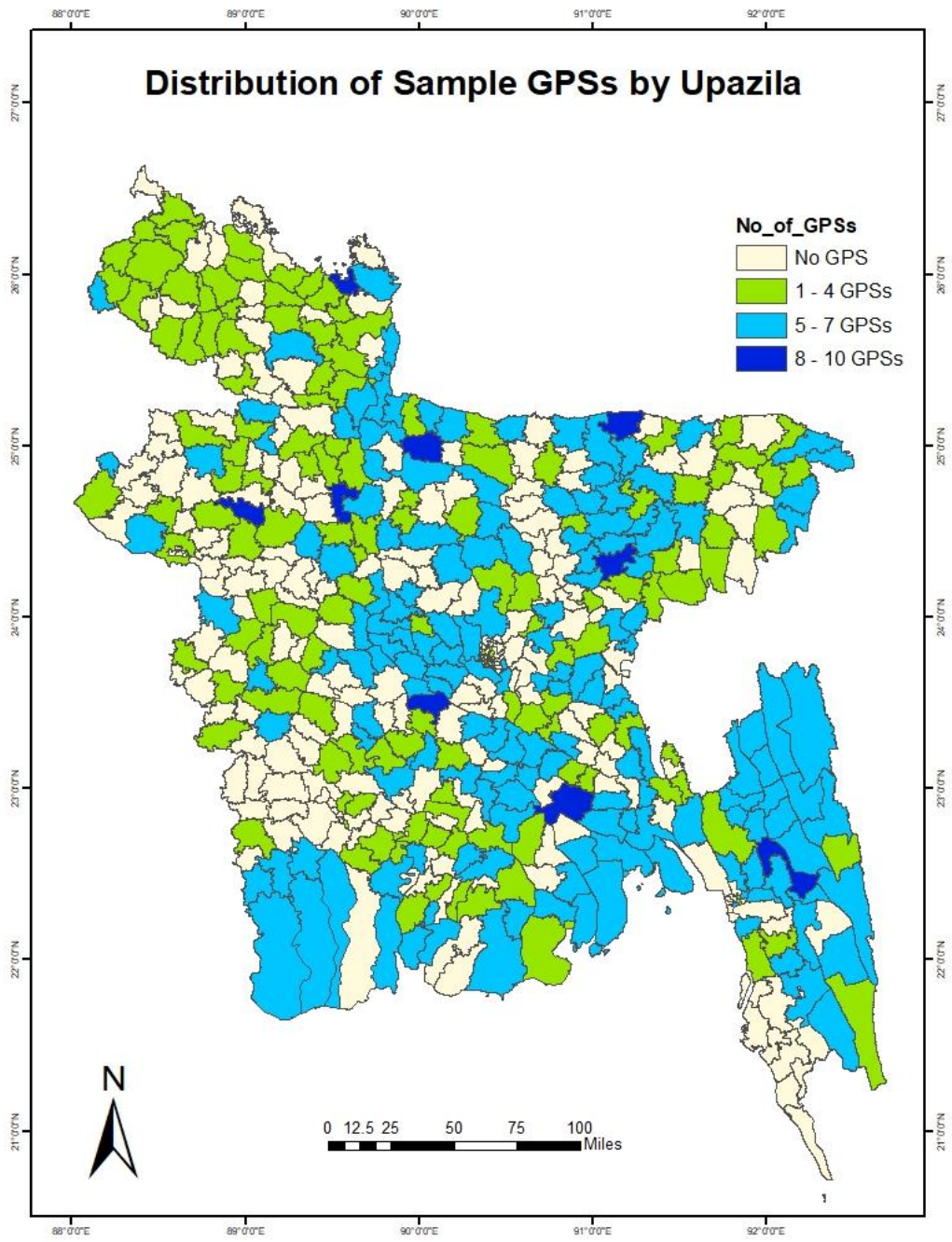
	Under 20% project coverage	Under 100% project coverage	Total
	Distribution of Total Schools		
No. of Upazila	221	118	339
Total No. of Schools	6704	13296	20,000
No. of selected schools per Upazila	3 to 4	6	3 to 6
Total Number of selected schools	221*(3-4) = 792	118*6 = 708	1500

According to the plan of the study, a total of at least 30,000 students from each of the grades of 3 and 4 were expected to appear in the assessment test. Hence, at least 60,000 students were expected to be assessed under the study. The assessment instruments were also expected to be administered through "***face-to-face engagement***" with the selected students on the school premises. The assessment instruments/questionnaires have been designed with the expectation that the administration of the assessment instruments/questionnaires will not take more than ***25 minutes*** for each student. All the questions in the assessment instruments/questionnaires were written and communicated in Bangla.

Student selection: Students in Grades 3 and 4 were considered for the assessment test. Twenty students were randomly selected from each grade to participate. Upon arriving at the selected school, the field officers met with the head teacher and requested access to the school register containing the enroled students in grades 3 and 4. From this list, 20 students from grade 3 and another 20 from grade 4 were randomly chosen. The field officers selected the next student from the pool if any students were absent on the day of administering the test. This process aimed to the select a total of **60,000 students** from **1,500 schools** across **339 Upazilas**. However, the due to relatively high rate of absence of the students in the classes, the actual number of assessed students fell short by nearly 20 per cent. To address this, the research team selected an additional **144 schools**, bringing the total number of schools to **1,644**. Table 3.2 presents the sampling distribution of the students considered for the study, and the Map below presents the location (Upazila) and the number of schools covered under the study.

Table 3.2: Selection of Sample Units

Description	Number	Selection Method
Upazilas covered	339	Randomly
Total number of schools selected	1644	Randomly from 20,000 project schools
Grades chosen from each of the schools	2 (Grades 3 and 4)	Pre-decided by the project
Students expected to be selected from each of the grades	20	Random
Total number of students selected	62,703	Random


Distribution of Sample GPSs by Upazila
No_of_GPSs
No GPS
1 - 4 GPSs
5 - 7 GPSs
8 - 10 GPSs
N
0 12.5 25 50 75 100
Miles
88°0'0"E
89°0'0"E
90°0'0"E
91°0'0"E
92°0'0"E
27°0'0"N
26°0'0"N
25°0'0"N
24°0'0"N
23°0'0"N
22°0'0"N
21°0'0"N

3.6 Methods of Data Analysis

Setting a "performance standard" is a process for defining a framework that allows better interpretation of test scores. Various countries have used these performance level measurements to interpret test results, as seen in the **Annual Status of Education Reports (ASERs).** Bangladesh has also used similar measurements in the **National Student Assessments (NSAs)**. This performance level measurement not only distinguishes between different levels of performance but also reveals the extent of students' knowledge and understanding.

Following the methods used in ASERs and NSAs, we have analysed the test results in the following three (3) ways:

(1) Individual question-based performance analysis;

(2) Content domain-based performance analysis; and

(3) Performance analysis based on composite scores.

3.6.1 Individual Question-based Performance Analysis

The assessment is conducted among grade 3 and 4 students to know about their current basic literacy and arithmetic aptitudes. As already mentioned, the assessment included eight questions for each subject: Bangla and Mathematics. These questions varied in difficulty. Basic literacy was assessed through tasks like letter recognition, reading high-frequency words, and fluency in short passages. Similarly, basic arithmetic skills were evaluated based on number recognition and performing operations like addition, subtraction, multiplication, etc.

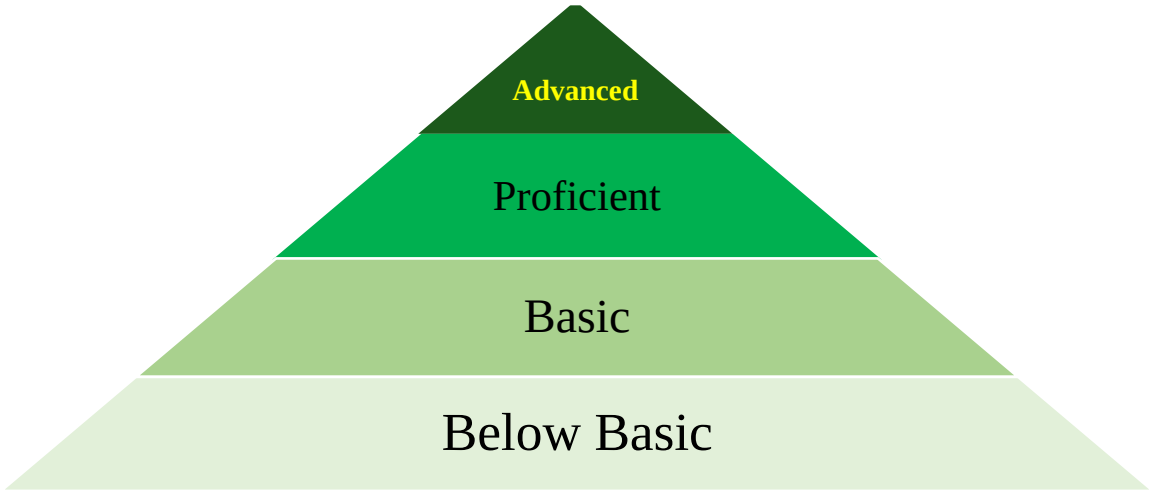
The assessment framework, aligned with the national curriculum, guided the structure of the questions. It specified the content to be assessed and the appropriate difficulty level for each grade and subject.

We developed four general frameworks, each guiding the creation of 10 different sets of assessment instruments for each subject. The items within these instruments were logically ordered to align with the curriculum and presented a cognitive flow to the students. The items were sequenced from the easiest to most challenging, with the peak difficulty occurring either at the end of the item line (for Mathematics) or in the middle (for Bangla).

Our analysis focuses on student performance by examining their responses to specific items. For instance, in the Bangla test for third graders, the first item required identifying three Bangla letters, including one complex letter. We report the frequency distribution and gender-wise competency for this question, shedding light on students' familiarity with letters and their reading abilities.

3.6.2 Content Domain-based Performance Analysis

In the study, we assessed student performance using a scale that maps test scores onto four distinct levels: Advanced, Proficient, Basic, and Below Basic as follows.



These levels are defined in relation to content standards measured by the test. The assessment items are thoughtfully arranged in a logical order, following the curriculum's cognitive flow. For instance, in Bangla, the progression starts from 'letter recognition' and advances through 'words and sentences,' 'writing,' and finally 'reading comprehension.' Similarly, in Mathematics, the cognitive flow begins with 'identifying numbers' and progresses to 'conceptualisation of numbers,' 'number operations,' and ultimately 'geometry.' This approach allows us to understand student achievement across different levels of proficiency.

At the Below-Basic level, students are in the early stages of development within the curriculum. They have not yet attained the necessary knowledge and skills to meet minimal curriculum standards. Moving to the Basic level, students demonstrate foundational skills related to curriculum learning outcomes. While they can follow simple instructions and apply basic rules, they still require additional guidance. At the Proficient level, students work independently with minimal supervision. They employ systematic problem-solving methods and effectively communicate their ideas. Finally, students at the Advanced level exhibit mastery of the curriculum content, surpassing prescribed standards. They operate independently and engage in analytical thinking.

Based on these definitions, four frameworks have been established to provide standardised guidelines for item writers in developing test instruments. These frameworks are crucial for

ensuring uniformity and consistency in tests across various samples, contexts, and years. Specifically, they align with the literacy and numeracy skills expected at grade 3 and grade 4 levels according to the national curriculum of Bangladesh. While these frameworks do not comprehensively assess all competencies outlined in the syllabus and recommended textbooks, they focus on evaluating foundational competencies specific to these grades. The frameworks are as follows-

- Framework and Minimum Proficiency in Bangla - Grade 3
- Framework and Minimum Proficiency in Mathematics - Grade 3
- Framework and Minimum Proficiency in Bangla - Grade 4
- Framework and Minimum Proficiency in Mathematics - Grade 4

The framework determines what items of the test fall under which level. For example, we present the framework for grade 3 Bangla instruments as follows:

Table 3.3*:* Example of Instrument Setting using the Item-based Framework

	Question items
BELOW BASIC	Identification of letters
BASIC	Reading words, making a sentence
PROFICIENT	Write a one-word answer
ADVANCED	Reading a text using proper punctuation, answer questions based on the text

In the content domain-based analysis, we establish section cut-off scores at **80 per cent** of the total score, following the ASER (Annual Status of Education Report) framework. For instance, in Grade 3 Bangla, the initial category involves identifying **'letters"**. This category comprises 3 items, with a total score of 6. If a student correctly reads all 3 letters, they achieve the full score. For 2 correct letters, the student receives 4 points, and for 1 correct letter, they get 2 points. Failing to read any letter correctly results in a score of 0. At this level, 80 per cent of the total score (6) corresponds to 4.8, achievable only when the student correctly identifies all 3 letters.

Moving to the next category, **'words and sentences'**, this category includes 4 items. Three items relate to **'words'**, each carrying 12 points, while the 4th item involves a **'sentence'**, also worth 12 points. The total score for this category is 24. Achieving 80 per cent of 24 (19.2) requires the student to correctly identify at least 2 words and the sentence.

Similarly, for Grade 3 Mathematics, the initial category focuses on identifying **'numbers'**. With 3 items and a total score of 6, achieving the full score requires correctly identifying all 3 numbers. The 80 per cent cut-off (4.8) can only be attained when a student identifies all numbers correctly.

3.6.3 Performance Analysis Based on Composite Scores

For this part, the actual test score of each subject is compared to the determined cut-off score percentages or range of numbers which is used to classify students' achievement in the performance levels. Following this, we have conducted an analysis of composite score-based student performance for each student in each subject.

We have scored students' performance levels using the new scale scores created for NSA 2017. This scale scores system represents a suitable psychometric model for establishing comparability across different test forms, and these are anchored to performance levels as a common framework, which enables comparability between different subjects and grades. This keeps the scale scores the same regardless of the difficulty of each item. The total range of this score scale is 1 – 100, with selected points anchored to the cut scores of performance levels, yielding the following ranges for each performance level.

The percentages of students falling in such defined scale score categories are equivalent to the percentages of students in performance levels presented in Table 3.4. This helps to do a comparative analysis between Grade 3 and Grade 4 Bangla and Mathematics as all the student scores are compared to the same scaled scores.

Table 3.4: Cut-off Marks Defining Performance Level

Test	Max. Point	Cut Scores		
		Basic	Proficient	Advanced
Bangla Grade 3	100	45-59	60-79	80 & above
Math Grade 3	100	40-54	55-74	75 & above
Bangla Grade 4	100	45-59	60-79	80 & above
Math Grade 4	100	40-54	55-74	75 & above

For example**,** while comparing two grade levels, we can observe what percentage of Grade 3 students reach the targeted levels of proficiency and above, and conversely what percentage of Grade 4 students have reached targeted levels. If the percentage reach of grade 4 is lower than the percentage reach of grade 3, it suggests that reaching learning objectives in Grade 4

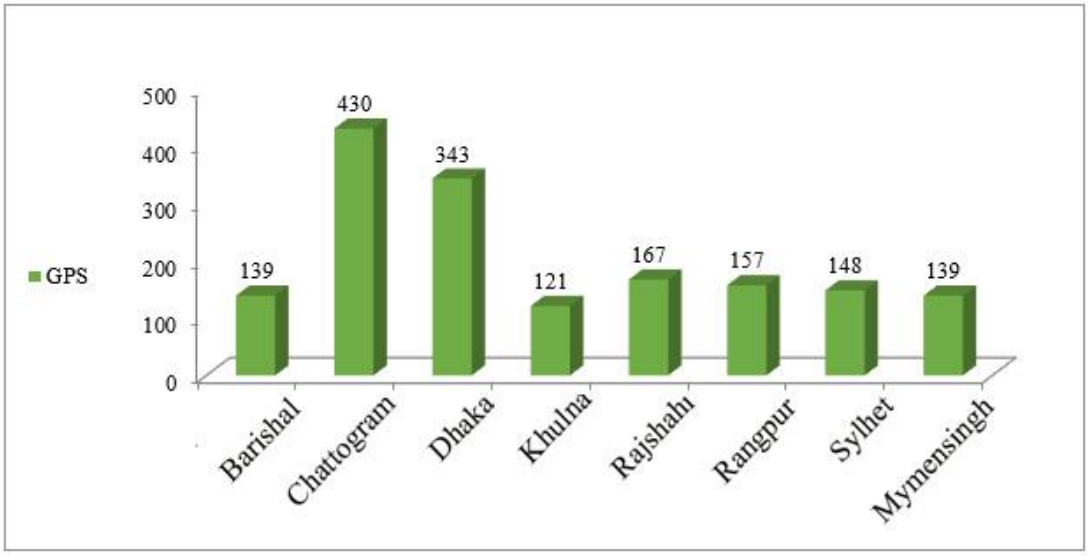
is slightly more challenging than in Grade 3. Nevertheless, if the difference is relatively small, it can be concluded that most students are successfully progressing in their learning from being proficient in Grade 3 to being proficient in Grade 4.

Having established the methodological framework for our assessment, we now turn our attention to the intricate fabric of the educational landscape. In the following sections, we explore the characteristics of the schools and students surveyed under the study. These insights provide a nuanced understanding of the diverse contexts in which learning unfolds, shedding light on factors that influence student performance. From school infrastructure to student demographics, this exploration enriches our analysis and informs targeted interventions.

CHAPTER 4
CHARACTERISTICS OF THE SCHOOLS SURVEYED UNDER THE STUDY

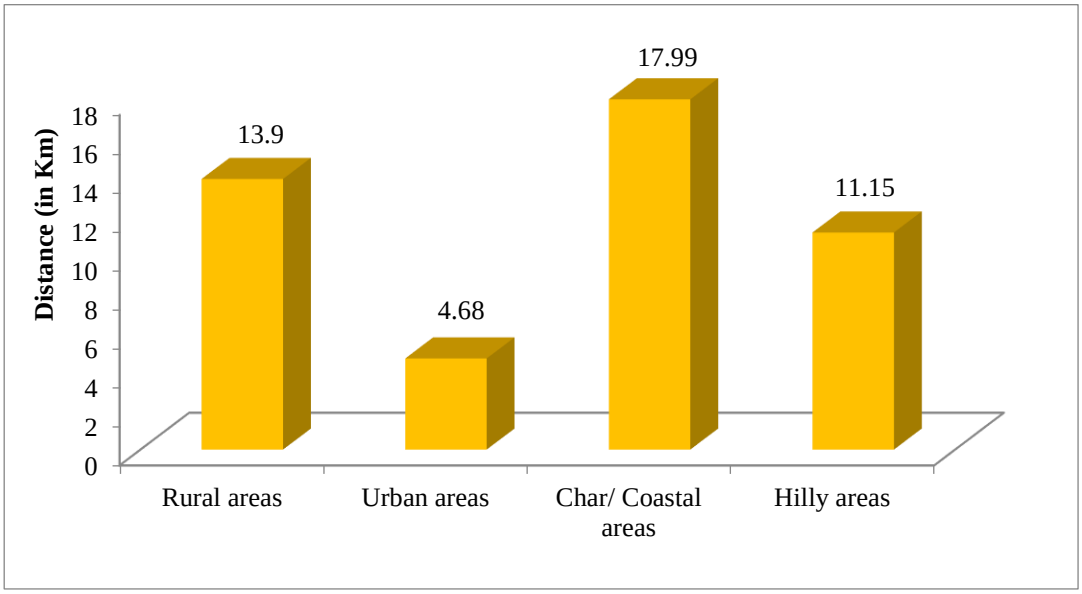
In our study sample, the selected Government Primary Schools (GPS) were distributed across the eight divisions of Bangladesh. Dhaka and Chattogram exhibited the highest coverage, with 343 GPSs in Dhaka and 430 GPSs in Chattogram. In contrast, Khulna division had a presence of 121 GPSs across 27 upazilas. Barishal and Mymensingh divisions each accounted for 139 GPSs, respectively. The remaining three divisions—Rajshahi, Rangpur, and Sylhet—exhibited an average GPS coverage, with 167, 157, and 148 schools, respectively.

Figure 4.1: Geographic Coverage of Selected Schools



In this study, we administered the test in 1644 schools. Most of these schools (about 73 per cent,) were situated in rural areas, representing the highest concentration. The second largest group consisted of schools in char/coastal areas, accounting for 11 per cent of the total sample. Another 9 per cent of the schools were located in hilly areas, and the remaining 7 per cent were from urban areas.

Figure 4.2: Distance from the Nearest Upazila Sadar (in km)



All the schools included in this study are located on average 13.4 km distant from the nearest upazila Sadar. Schools located in char/coastal areas are the furthest from the upazila sadar, which is almost 18 km apart. The schools located in rural and hilly areas are, on average, approximately 14 km and 11 km away from Upazila Sadar (headquarter). The urban schools are nearest to the Upazila headquarter. These reflect the fact that schools located in char/coastal or hilly areas are hard to reach and most distant from the Upazila headquarter.

Table 4.1: Distribution of Schools by Number of Students (from grades 1 to 5)

Number of Students	No. of Schools	
	N	%
<100	359	21.84
101-200	699	42.52
201-400	458	27.86
>400	128	7.78
All	1644	100.00

Table 4.1 represents the distribution of schools by number of students at the primary level (grades 1 to 5). Among all the schools, more than 42 per cent have, on average, 100 to 200 students, representing the majority of the schools. On the other hand, approximately 8 per cent of the schools had a large number of students, more than 400 students. From the table, we can also see that approximately 28 per cent of the schools have, on average, 201 to 400 students and almost 22 per cent of the schools have less than 100 students.

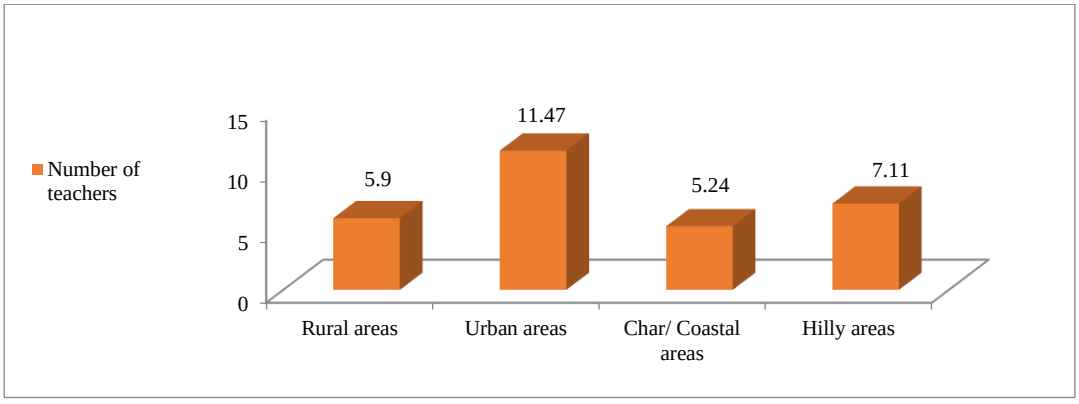
Table 4.2 summarises the distribution of students by gender in each grade, where it shows that overall 44 per cent of the students in these two grades are male, almost 56 per cent of the students are female, and only 0.01 per cent of the students belong to third-gender category. Here, on average, their mean age is around 9.5 years.

Table 4.2: Distribution of Students by Gender

	Male (%)	Mean Age of Male Students (in years)	Female (%)	Mean Age of Female Students (in years)	Third Gender (%)	Mean Age of Third-Gender Students (in years)
Grade 3	44.8	9.40	55.2	9.17	0.02	8.83
Grade 4	43.7	10.35	56.3	10.16	0.01	9.33
All	44.2	9.87	55.8	9.67	0.01	9.00

Figure 4.3 depicts the average number of teachers in these schools by location. The schools located at urban areas have the highest number of teachers on average, which is 11 teachers per school, whereas both rural and char/coastal areas have the lowest number of teachers on average. They have only 5 to 6 teachers on average. Hilly areas are in a relatively better position in terms of the average number of teachers compared to rural and char/coastal areas, which is 7 teachers per school.

Figure 4.3: Average Number of Teachers



Overall, in the selected government primary schools, enrolment in grades 1 to 5 decreased at the beginning of 2022 compared to the pre-COVID-19 outbreak in 2019. Overall, the student enrolment has fallen by 8.7 per cent, as shown in Table 4.3. The table also shows that the highest fall in enrolment occurred in char/coastal areas, which is almost 18 per cent. On the other hand, the fall in enrolment in urban areas is the lowest compared to any other areas, which is only 3.3 per cent. Here, rural and hilly areas have a similar fall in enrolment, which is around 8 per cent. Changes in enrolment before and after COVID-19 for grades 3 and 4 are also presented in tables 8 and 9, where similar declines in enrolments are also observed.

Table 4.3: Difference in Enrolment of Students Before and After COVID

	Average number of Students (Grades 1 to 5) Before Covid-19 (February 2019)	Average number of Students (Grades 1 to 5) After Covid-19 (February 2022)	Difference (%)
GPS in Rural areas	195.64	180.13	-7.9
GPS in Urban areas	477.39	461.60	-3.3
GPS in Char/Coastal areas	235.29	193.33	-17.8
GPS in Hilly areas	204.85	188.85	-7.8
All	221.48	202.22	-8.7

Table 4.4: Difference in Enrolment of Students Before and After COVID (Grade 3)

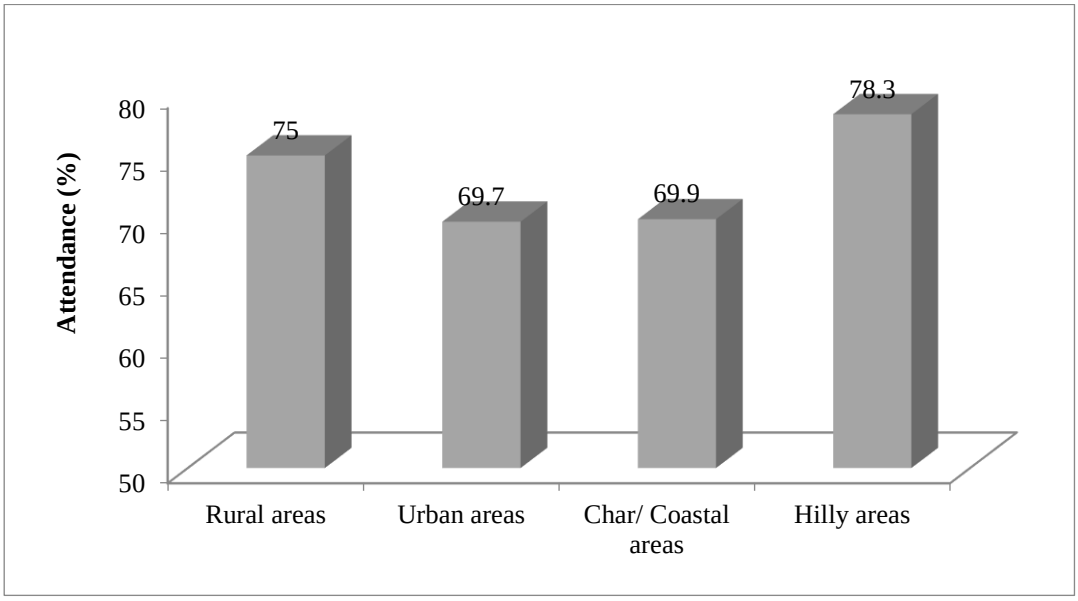
	Average number of Students in grade 3 Before Covid-19 (February 2019)	Average number of Students in grade 3 After Covid-19 (February 2022)	Difference (%)
GPS in Rural areas	41.98	37.01	-11.8
GPS in Urban areas	103.04	98.43	-4.5
GPS in Char areas	48.76	40.05	-17.9
GPS in Hilly areas	45.11	40.8	-9.6
All	47.48	42.18	-11.2

Table 4.5: Difference in Enrolment of Students Before and After COVID (Grade 4)

	Average number of Students in grade 4 Before Covid-19 (February 2019)	Average number of Students in grade 4 After Covid-19 (February 2022)	Difference (%)
GPS in Rural areas	39.70	37.55	-5.4
GPS in Urban areas	96.95	88.68	-8.5
GPS in Char areas	46.39	40.47	-12.8
GPS in Hilly areas	41.99	39.04	-7.0
All	44.83	41.74	-6.9

The average attendance rate in all the schools is 73.4 per cent. Figure 4.4 shows the average number of attendance rate by rural, urban, char, and hilly areas. The hilly and rural areas have the highest attendance rates at 78.3 and 75 per cent. On the other hand, urban and char areas have almost the same attendance rates at 69 per cent.

Figure 4.4: Rates of Attendance



The grade-wise attendance rates are represented in Table 4.6. attendance rates for grade 1, grade 2, and grade 5 are approximately 75 per cent, while grade 3 and grade 4 exhibit lower attendance rates at 69 per cent and 71 per cent, respectively.

Table 4.6: Grade-wise Rates of Attendance

	Average number of enroled students in all classes	Average number of students present on the day of the assessment test	Rates of attendance (%)
Class 1	37	28	75.7
Class 2	41	31	75.6
Class 3	42	29	69.0
Class 4	42	30	71.4
Class 5	41	31	75.6

CHAPTER 5
CHARACTERISTICS OF THE STUDENTS COVERED UNDER THE STUDY

In this section, we delve into the socio-economic context and individual characteristics of students enroled in grade 3 and grade 4 in the sample GPSs of the study. By examining their socio-economic profiles, family backgrounds, and other relevant factors, we aim to gain deeper insights into the correlates for improved learning outcomes.

Table 5.1: Gender Distribution of the Students by Grade

Gender N (%)	Grade 3	Grade 4	Total
Boys	13,897 (44.8)	13,836 (43.7)	27,733 (44.2)
Girls	17,155 (55.2)	17,806 (56.3)	34,961 (55.8)
Third Gender	6 (0.0)	3 (0.0)	9 (0.0)
All	31,058 (100.0)	31,645 (100.0)	62,703 (100.0)

In both grade 3 and grade 4, a higher proportion of students are girls (55.2 per cent and 56.3 per cent, respectively) out of a total of 62,703 students. However, it is important to note that this difference may not be statistically significant, as it could be influenced by a higher rate of absenteeism among boys compared to girls.

On average, most of the grade 3 students are approximately 9 years old, and grade 4 students are approximately 10 years old. The religious distribution of surveyed students shows that the majority (85.8 per cent) identify as Muslim, followed by 10 per cent of Hindu students. The majority of students across both grades are Bengali (95 per cent), followed by minor representations from Chakma and Marma (1.82 per cent each), with Garo and Santal ethnicities constituting less than 0.2 per cent combined.

Parental education significantly influences student academic performance, yet approximately 31 per cent of students are unaware of their fathers' educational levels. This lack of awareness is more pronounced in grade 3 (34.1 per cent) than in grade 4 (27.82 per cent), likely due to the younger students' limited understanding. Among those aware, 27.4 per

cent report fathers with primary education, 12 per cent with secondary or higher secondary certificates, and a mere 5.26 per cent with bachelor's or advanced degrees. Notably, 10.47 per cent of fathers did not complete primary education, and 10.89 per cent are illiterate, with an additional 2.98 per cent being literate but without formal education.

Similarly, 27.25 per cent of students are uninformed about their mothers' education, with grade 3 students less informed (30.84 per cent) compared to grade 4 (23.73 per cent). Of those informed, 35.61 per cent of mothers completed primary education; 12 per cent attained secondary or higher secondary education; 10.74 per cent did not finish primary school; 8.63 per cent are illiterate; and 2.33 per cent are literate without formal education.

Table 5.2: Education of the Parents of the Students by Grade

Level of Education	Father of the Student			Mother of the Student		
	Grade 3	Grade 4	Total	Grade 3	Grade 4	Total
Don't know how to read or write	3,238 10.58	3,480 11.19	6,718 10.89	2,568 8.30	2,827 8.96	5,395 8.63
Know how to read or write but hasn't been to school	1,001 3.27	840 2.7	1,841 2.98	807 2.61	649 2.06	1,456 2.33
Primary incomplete	3,268 10.68	3,194 10.27	6,462 10.47	3,462 11.18	3,252 10.31	6,714 10.74
Primary complete	7,670 25.06	9,235 29.7	16,905 27.4	10,085 32.58	12,174 38.59	22,259 35.61
SSC/HSC (or equivalent)	3,417 11.16	3,875 12.46	7,292 11.82	3,503 11.32	4,095 12.98	7,598 12.16
Bachelors/Masters (or equivalent/higher)	1,498 4.89	1,747 5.62	3,245 5.26	934 3.02	1,016 3.22	1,950 3.12
Others	80 0.26	70 0.23	150 0.24	50 0.16	47 0.15	97 0.16
Don't Know	10,439 34.1	8,649 27.82	19,088 30.94	9,546 30.84	7,487 23.73	17,033 27.25

Tables 5.3 and 5.4 reveal that students are more informed about their parents' occupations than their educational backgrounds. The predominant occupation among fathers is agriculture (21.63 per cent), followed by self-employment (18.61 per cent) and business (17.63 per cent). Additionally, 14.14 per cent of fathers are day labourers; 14.67 per cent hold salaried positions; 8.74 per cent work abroad, and 3.97 per cent are in various professions. Conversely, a significant 89.2 per cent of mothers are homemakers, with 4.59 per cent in salaried roles and a mere 1.37 per cent engaged in agriculture, while other occupations are minimally represented.

Table 5.3: Occupation of the Father of the Students by Grade

Father's Occupation N (%)	Grade - 3	Grade - 4	Total
Agriculture	5,758	7,458	13,216
	19.01	24.20	21.63
Day labour	4,723	3,915	8,638
	15.59	12.70	14.14
Business	5,295	5,479	10,774
	17.48	17.78	17.63
Self-employment - other than business (rickshaw puller, van driver, fisherman, etc.)	5,944	5,430	11,374
	19.63	17.62	18.61
Salaried job	4,578	4,383	8,961
	15.12	14.22	14.67
Other professions (lawyer, doctor, etc.)	279	295	574
	0.92	0.96	0.94
Working abroad	2,600	2,742	5,342
	8.58	8.90	8.74
Others	930	923	1,853
	3.07	3.00	3.03
Don't know	179	193	372
	0.59	0.63	0.61

Table 5.4: Occupation of the Mother of the Students by Grade

Mother's Occupation	Grade 3	Grade 4	Total
Housewife	27,395	28,269	55,664
	88.74	89.64	89.20
Housemaid	265	247	512
	0.86	0.78	0.82
Agriculture	424	434	858
	1.37	1.38	1.37
Day labour	318	260	578
	1.03	0.82	0.93
Salaried job	1,512	1,354	2,866
	4.90	4.29	4.59
Business	146	135	281
	0.47	0.43	0.45
Self-employment - other than business (rickshaw puller, van driver, fisherman, etc.)	340	271	611
	1.10	0.86	0.98
Other professions (lawyer, doctor, etc.)	67	92	159
	0.22	0.29	0.25
Working abroad	83	101	184
	0.27	0.32	0.29
Others	275	243	518
	0.89	0.77	0.83
Don't know	46	130	176
	0.15	0.41	0.28

Household economic background also has a vital role in students' lives in terms of being able to continue their studies. Tables 5.5 and 5.6 summarise the households' land ownership and monthly income. A large proportion of students were unable to mention the land ownership status of their households, which is 31.09 per cent in total. Of the rest, 34.16 per cent of the student households own less than 50 decimals of land. This is similar for the students of both grades. Data shows that 15.42 per cent of the students' households are landless. On the other hand, 11.63 per cent and 7.70 per cent of the students' households have between 51 and 100 decimals and more than 100 decimals of land, respectively.

Table 5.5: Household Land Ownership of the Students by Grade

Household Land Ownership Indicators	Grade 3 N (%)	Grade 4 N (%)	Total N (%)
Land less	4,869	4,770	9,639
	15.78	15.07	15.42
1 - 50 decimals	10,510	10,844	21,354
	34.06	34.27	34.16
51 - 100 decimals	3,532	3,735	7,267
	11.45	11.8	11.63
More than 100 decimals	2,136	2,675	4,811
	6.92	8.45	7.70
Don't know	9,811	9,621	19,432
	31.79	30.40	31.09

Like land ownership, a large percentage of students don't know about their household income, almost 33.79 per cent. Of the rest, 15.67 per cent of the student's households have a monthly income of Taka less than 10,000; 33.92 per cent have a monthly income between Taka 10,000 and 20,000; 13.03 per cent have a monthly income between Taka 20,000 and 40,000; and about 4 per cent of the households have an income of Taka more than 40,000. This household income distribution pattern is similar for the students in both grades.

Table 5.6: Average Monthly Household Income of the Students by Grade

Average Monthly Household Income	Grade 3	Grade 4	Total
Less than 10,000	5,140	4,616	9,756
	16.78	14.59	15.67
10,000 - 20,000	10,444	10,682	21,126
	34.10	33.76	33.92
20,001 - 40,000	3,886	4,228	8,114
	12.69	13.36	13.03
More than 40,000	1,018	1,218	2,236
	3.32	3.85	3.59
Don't know	10,142	10,901	21,043
	33.11	34.45	33.79

Our study examined the food security status of students' households using a straightforward indicator: whether students had eaten anything before coming to school on the day of assessment. Notably, 97.3 per cent of students reported having eaten, indicating a high level of food security. This trend was consistent across both grade levels. Interestingly, grade 4 students exhibited a slightly higher percentage (97.38 per cent) compared to grade 3 (97.23 per cent). However, 2.7 per cent of students did not have any food intake before school, potentially reflecting household food insecurity.

Impact of COVID-19 on Student Studies and Support Mechanisms

During the pandemic, when schools were closed and students remained at home, their studies were inevitably affected. However, an analysis of the data reveals the following key points:

Study Habits: Approximately 56 per cent of grade 3 and 4 students continued studying regularly during this period. 37.19 per cent of students reported studying occasionally. A small percentage (around 7 per cent) did not study at all.

Support Mechanisms: Among students who continued studying, 94 per cent received support from either family members or teachers. 40 per cent of students relied on parental support. Siblings (23.46 per cent) and private tutors (25.59 per cent) also played significant roles. A few school teachers made occasional home visits to provide support (3.91 per cent). Other family members supported 7.55 per cent of students. Interestingly, media/ devices were used by some students for study support: mobile phones (common across socio-economic backgrounds) aided 12 per cent of students, while television was used by 5.5 per cent. Radio and computer/laptop/tablet were less commonly utilised. In summary, 82 per cent of students did not rely on any media/device for study support during this challenging period.

Table 5.7: Students Continued Studies during COVID-19 by Grade

Indicators		Grade 3	Grade 4	Total
Did you study at home when schools were closed during COVID-19?	Regularly	17,298	17,712	35,010
		55.83	56.12	55.98
	Sometimes	11,625	11,636	23,261
		37.52	36.87	37.19
	Not at all	2,058	2,215	4,273
		6.64	7.02	6.83
If studied, did anyone help/ support you in your studies?	Yes	27,488	27,202	54,690
		93.63	94.37	94.00
Who helped/supported you in your studies?	Father/Mother	14031	12975	27006
		41.13	37.86	39.49
	Brother/Sister	7734	8308	16042
		22.67	24.24	23.46
	Private Tutor	8573	8927	17500
		25.13	26.05	25.59
	School Teachers	1184	1487	2671
		3.47	4.34	3.91
	Others	2593	2572	5165
		7.6	7.51	7.55
Did you take support of any media/device for studies?	Television	1552	1869	3421
		5.05	6.05	5.55
	Radio	116	107	223
		0.38	0.35	0.36
	Mobile	3170	4209	7379
		10.32	13.62	11.97
	Computer/Laptop/Tab	61	69	130
		0.20	0.22	0.21
	Didn’t take support from any media/device	25827	24650	50477
		84.06	79.76	81.90

Engagement in extracurricular activities plays a pivotal role in shaping a student’s holistic development. Beyond the classroom, participation in sports, cultural events, and other enriching pursuits fosters self-motivation, enhances social skills, and cultivates a sense of discipline. In this context, we explore the impact of such activities on academic performance, shedding light on the interplay between motivation, achievement, and the availability of reading resources.

Participation in Extracurricular Activities: Among all students, slightly over half (56.14 per cent) engaged in sports or cultural competitions over the past three years. Notably, grade 4 students exhibited a higher participation rate (almost 59 per cent) compared to grade 3 (53.28 per cent).

Table 5.8: Extra Curricular Activities of the Students by Grade

Indicators	Grade 3	Grade 4	Total
Participated in sports/cultural (dancing, singing, painting, poem reciting, karate, etc.) competition in the last 3 years	16,499 53.28	18,575 58.94	35,074 56.14
Read any books other than books included in the school curriculum	3,568 20.47	4,228 23.54	7,796 22.03
Newspapers/story books available at your home	3,683 21.14	4,154 23.14	7,837 22.16
Availability of library in the village/ near home	1,436 8.25	1,408 7.85	2,844 8.04

Prizes and Recognition: Even among participating students, only 51.8 per cent received some form of prizes or recognition. Specifically, 54.1 per cent of grade 4 students received prizes, while the figure was 49.17 per cent for grade 3.

Reading Resources: Unfortunately, a majority of students in these grades lack access to reading materials at home. Only approximately 22 per cent had newspapers or story books available. Alarmingly, nearly 92 per cent of students do not have access to a library in their village or area to borrow books. A very small percentage (8.04 per cent) mentioned having a local library.

CHAPTER 6
PERFORMANCE OF THE STUDENTS IN BANGLA

The basic reading ability consists of letter knowledge, the ability to decode common everyday high-frequency words, fluently read short, simple passages, etc. Similarly, basic arithmetic ability implies recognising numbers and performing basic operations such as subtraction and division. Assessment tasks are designed based on grade-level learning outcomes set as per the national curriculum and textbooks of Bangladesh. The assessment items are structured following ASER questionnaires administered in different countries worldwide to assess fundamental learning skills, which differs from the NSAs.

While it is essential to assess a broad range of domains and competencies (as in NSAs to assess grade-level competencies) to get a comprehensive picture of what children know and can do, there remains an equal, if not greater, need to establish whether children possess foundational skills such as literacy and numeracy, which are a prerequisite for mastery of grade level competencies such as reading comprehension and higher mathematical operations.

For this specific study, we developed two separate (one for grade 3 and another for grade 4) assessment instruments comprising 16 items (8 for Bangla and 8 for Mathematics) related to fundamental learning skills reviewed by the DPE and NCTB to administer the test. The assessment test was administered in 1,644 schools randomly drawn from the CSSR project Upazilas (339 Upazilas) across 63 districts. A total of 62,703 students from grades 3 and 4 participated in the test.

The assessment instruments were administered through "***face-to-face engagement***" with the selected students on the school premises. This section will look into the student's performance in Bangla.

An assessment framework defines the content to be assessed and guides the development of the instrument. The framework prescribes curriculum balance and the range and type of test items to be used.

Table 6.1: Justification for the Development of Assessment Instruments (Grade 3 Bangla)

Component	Skill	Task
1. Identification of letters	Alphabet knowledge	Provide the name and/or sound of letters in a random order
2. Identification of words	Connecting letters	Read words ordered sequentially by the level of difficulty
3. Make a sentence with words	Verbally connecting words in a meaningful way	Able to create a meaningful sentence by own

(Contd. Table 6.1)

Component	Skill	Task
4. Comprehension reading	Oral reading fluency with proper punctuation	Read a text with accuracy and proper use of punctuation
5. Comprehension reading (Direct question)	Reading with understanding	Respond correctly to literal questions about the text
6. Reading with understanding (Indirect question)	Reading with understanding (Increased level of difficulty)	Respond correctly to infernal questions about the text
7. Filling in the blanks by writing a word	Writing by observation	Write the answer from the text properly
8. Identifying common objects	Writing by observation	Write the name of the object seeing an image

Table 6.2: Justification for the Development of Assessment Instruments (Grade 4 Bangla)

Component	Skill	Task
1. Identification of words (Simple words)	Connecting letters	Read simple words
2. Identification of words (Increased level of difficulty)	Connecting letters and syllables of higher order	Read words ordered sequentially by the level of difficulty.
3. Comprehension reading	Oral reading fluency with proper punctuation	Read a text with accuracy and proper use of punctuation.
4. Comprehension reading (Direct question)	Reading with understanding	Respond correctly to literal questions about the text
5. Reading with understanding (Indirect question)	Reading with understanding (Increased level of difficulty)	Respond correctly to infernal questions about the text
6. Make sentence using a word from the given text	Application of words	Applying the words read in the text in a different context
7. Writing a simple sentence	Sentence construction and writing	Construction a simple sentence and express it in written form.
8. Identifying common objects	Writing by observation	describing an image

The items of the assessment test are sequenced within the test from easiest to most difficult, with the peak of difficulty at the end of the item line. More specifically, the test starts with assessing if the test taker (student) is familiar with the Bangla alphabet and then gradually navigates toward writing a word in correct spelling by seeing an image, which requires a higher level of cognitive ability.

Identifying letters

We asked the third graders to identify 3 letters of the Bangla alphabet by reading and pronouncing them. Among these three letters, one was a complex (joint) letter. The frequency distribution and gender-wise distributional competency of this question are reported in Table 6.3. The table shows that only half (50.1 per cent) of the students could read all three letters. Girl students performed slightly better (52 per cent vs 48 per cent) than boys. About 3.4 per cent of students could not correctly identify even a single letter. When we compared this result with the ASER of West Bengal (2021), we saw that 8.3 per cent of the grade 3 students of West Bengal could not read any letter.

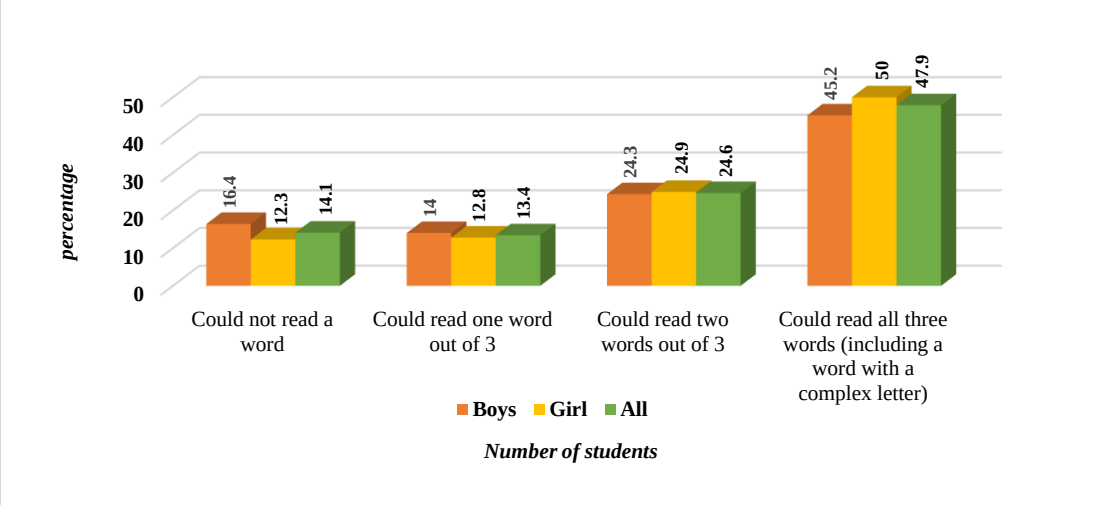
Table 6.3: Basic Reading Skills (Identifying Letters)

Description	Number (%) of Students		
	Boys	Girls	All
Could not read a letter	586	479	1065
	(4.2)	(2.8)	(3.4)
Could read one letter out of 3	1375	1371	2746
	(9.9)	(8.0)	(8.8)
Could read two letters out of 3	5284	6414	11700
	(38.0)	(37.4)	(37.7)
Could read all three letters (including a complex letter)	6652	8891	15547
	(47.9)	(51.8)	(50.1)

Reading words

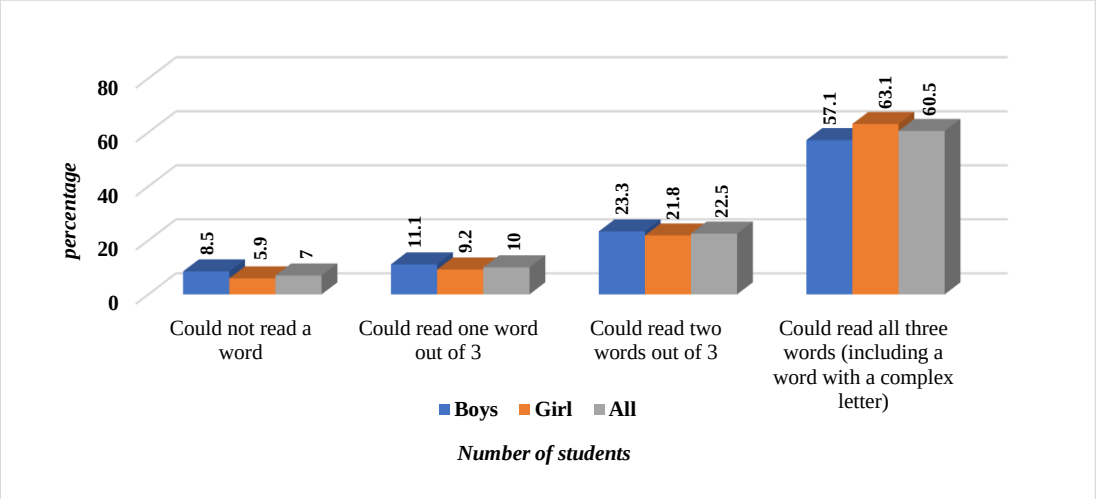
The second item on the Bangla assessment test involved reading three simple words, one of which contained a complex (joint) letter. The results of the assessment test reveal that nearly 14 per cent of the students were unable to read a single word, while approximately 48 per cent of students successfully read all three words. Considering that this question is more challenging than the initial task of reading individual letters, the outcome is not surprising. It indicates that as the difficulty level of the assessment items increases, the percentage of students able to successfully tackle those items may gradually decrease. Interestingly, in the ASER of West Bengal (2021), 16.7 per cent of third graders demonstrated the ability to read simple words.

Figure 6.1: Basic Reading Skills of The Students of Grade 3 (Reading Words)



For further comparison purposes, the same question was asked to the 4th graders. For them, this was the first item of the test, and their performance is depicted in Figure 6.2.

Figure 6.2: Basic Reading Skills of The Students of Grade 4 (Identifying Simple Words)



Compared to grade 3, a greater percentage (60.5 per cent) of students in grade 4 could read all three words, and a lower number (7 per cent) of students could not read a single word. In the case of West Bengal, this statistic was 16.1 per cent (ASER, 2021). Between boys and girls, we observe that girls performed better than boys in this item.

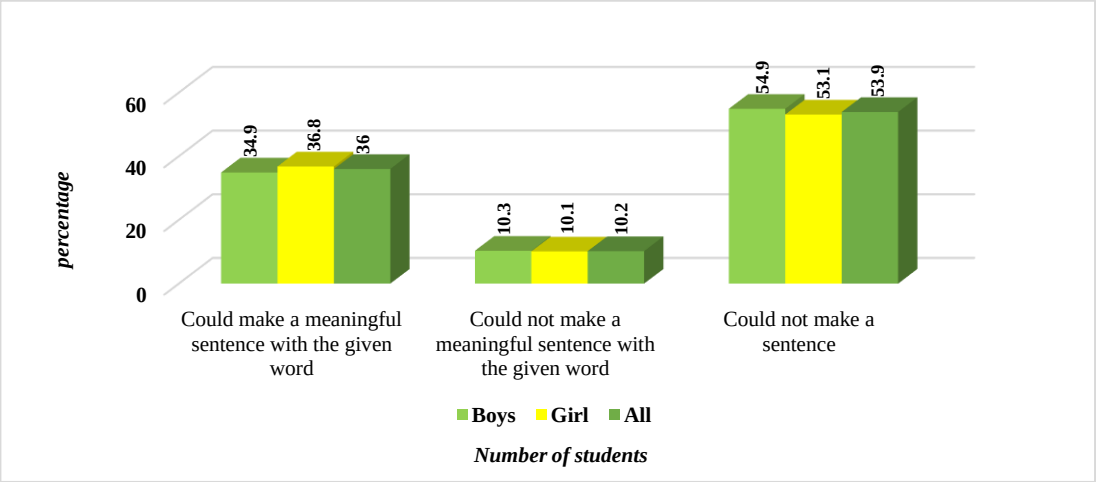
Reading difficult words (involving complicated spelling)

The second item for the 4th graders was a list comprising 3 words with difficult spelling. Almost 20 per cent of students in grade 4 could not read a single word of this list. A higher percentage of boys could not read these complicated words than girls. About 17 per cent could read one word out of three; 26 per cent could read two words, and approximately 38 per cent of the students could read all three words. Here, we also find that the girls performed better than the boys.

Table 6.4: Reading Difficult Words

Description	Number (%) of Students in Grade 4		
	Boys	Girls	All
Could not read a word with difficult spelling	3,006	3,118	6,125
	(21.7)	(17.5)	(19.4)
Could read one word with difficult spelling out of 3	2,433	2,958	5,393
	(17.6)	(16.6)	(17.0)
Could read two words with difficult spelling out of 3	3,502	4,644	8,146
	(25.3)	(26.1)	(25.7)
Could read all three words with difficult spelling	4,895	7,086	11,981
	(35.4)	(39.8)	(37.9)

Figure 6.3: Making a Sentence (Grade 3)

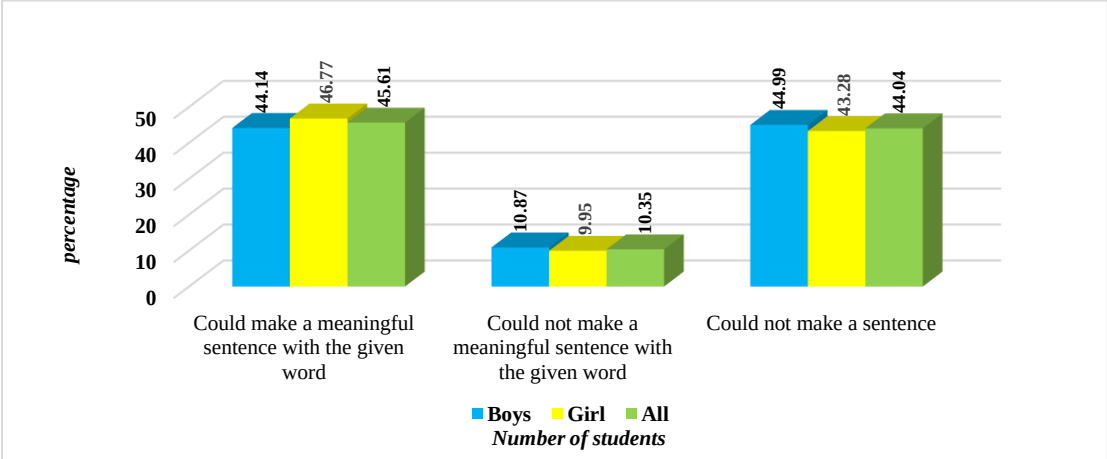


Make a Sentence with a Given Word

Both 3rd and 4th graders were asked to form a meaningful sentence with a given word (but the word choices were different by grade). The test result shows that 36 per cent of the students in grade 3 successfully made a sentence using the word given in the question. However, a larger portion (64 per cent) of students could not perform the task.

When a similar task was given to the 4th graders, the following result was found. Almost 46 per cent of students in grade 4 could make a meaningful sentence given the word, but 54 per cent of students in grade 4 could not make a sentence given the word. Compared to the performance of students in grade 3, this is a lower percentage. The girls again performed better than the boys in both categories.

Figure 6.4: Making a Sentence (Grade 4)



Reading a Text

During the assessment test, students from both third and fourth grades were tasked with reading a simple text aloud while maintaining acceptable pronunciation. Unlike passages from textbooks, the test text was specifically designed to align with grade-level standards. Each text comprised a maximum of six sentences, with 7-8 words in each sentence. Importantly, the chosen text intentionally included various punctuation marks such as full stops, commas, inverted commas, and question marks. This allowed us to assess whether students could read the text while correctly utilising these punctuation marks.

The results reveal interesting patterns: approximately 24 per cent of third-grade students demonstrated fluency in reading the text with proper punctuation. In contrast, the statistic rises to 30 per cent for fourth-grade students. However, on the other side of the coin, around 37 per cent of third-grade students struggled with this section of the assessment test. Interestingly, in other test items, the proportion of students who failed to read the text properly is lower among fourth-grade students, with 30 per cent falling into the third category of response.

Table 6.5: Reading a Text

Description	N (%) of Students in grade 3			N (%) of Students in grade 4		
	Boys	Girls	All	Boys	Girls	All
Could fluently read a text making proper use of punctuation	2,920 (21.0)	4,492 (26.2)	7,414 (23.9)	3,728 (26.9)	5,834 (32.8)	9,562 (30.2)
Could read a text but fumbled and read without making proper use of punctuation	5,335 (38.4)	6,909 (40.3)	12,247 (39.4)	5,407 (39.1)	7,116 (40.0)	12,523 (39.6)
Could not read the text	5,642 (40.6)	5,754 (33.5)	11,397 (36.7)	4,701 (34.0)	4,856 (27.3)	9,560 (30.2)

Answering Questions Based on Reading the Text

During the assessment, students were tasked with answering two questions verbally. These questions were based on a given text. The first question had a straightforward answer that was directly mentioned in the story. However, the second question required students to infer an answer from the text, demanding a deeper level of understanding.

Interestingly, a greater percentage of fourth-grade students demonstrated the ability to correctly answer both types of questions. Specifically, approximately 51 per cent of third-grade students and 58 per cent of fourth-grade students successfully answered the direct question based on the text.

Table 6.6: Answering Questions Based on Reading a Text

Description	N (%) of Students in grade 3			N (%) of Students in grade 4		
	Boys	Girls	All	Boys	Girls	All
Correctly answered a direct question based on the text	6,617 (47.6)	9,275 (54.1)	15,896 (51.2)	7,608 (55.0)	10,801 (60.7)	18,409 (58.2)
Correctly answered an indirect question based on the text	5,646 (40.6)	7,890 (46.0)	13,540 (43.6)	6,125 (44.3)	8,913 (50.1)	15,038 (47.5)

A lower proportion of students from both grades could answer the indirect question, which required a higher level of cognitive development. In grade 3, approximately 44 per cent of students could answer the indirect question correctly, and in grade 4, the percentage of students who could answer correctly was 48.

Write a One-word Answer Based on Reading the Text (Grade 3)

For the grade 3 test takers, the 7th item of the assessment test was to write a one-word answer to a question based on reading comprehension. As writing is an advanced level skill, we found that more than one-third of the students are yet to master that level of skill, as 40 per cent of the students were not able to write an answer, and another 18 per cent wrote the wrong answer. About 5 per cent of the students attempted to write but could write the answer partially. About 37 per cent of the third graders wrote the correct answer.

Table 6.7: Writing Answers Based on the Text (Grade 3)

Description	N (%) of Students in grade 3		
	Boys	Girls	All
Could write the answer correctly	4,700 (33.8)	6,643 (38.7)	11,347 (36.5)
Could write the answer partially	698 (5.0)	839 (4.9)	1,537 (5.0)
Could write the wrong answer	2,457 (17.7)	3,268 (19.1)	5,725 (18.4)
Could not write the answer	6,042 (43.5)	6,405 (37.3)	12,449 (40.1)

Write an Answer (more than a word) Based on Reading the Text (Grade 4)

For the grade 4 test takers, the 7th item of the assessment test was to write an answer to a question based on reading comprehension. However, for grade 4, the correct answer to this item required writing more than one word. The result shows that more than 42 per cent of the

students in grade 4 could write the answer correctly; answers written by 5.7 per cent of students were partially correct. Almost 52 per cent of students could not write the answer at all.

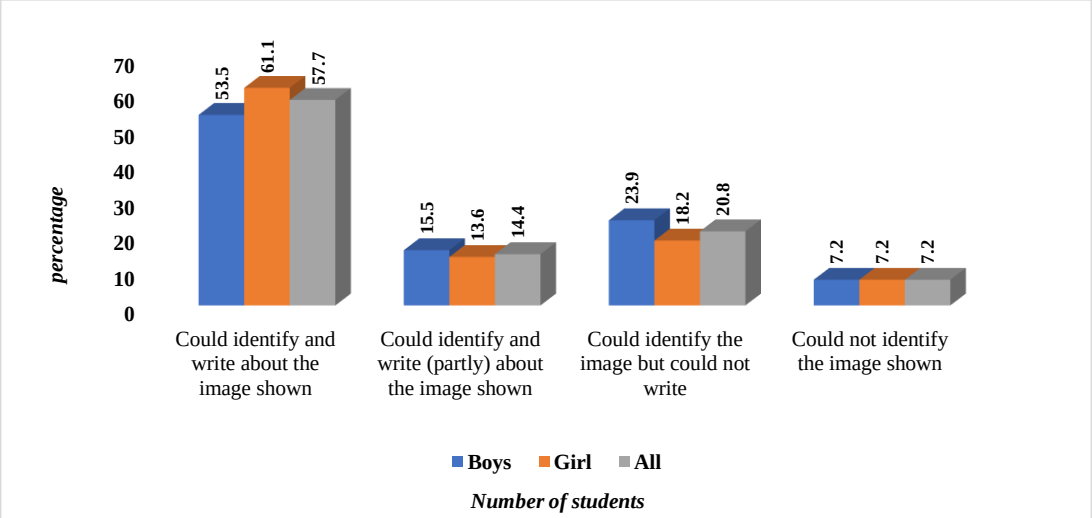
Table 6.8: Writing Answers Based on the Text (Grade 4)

Description	N (%) of Students		
	Boys	Girls	All
Could write the answer correctly	5,494	7,927	13,421
	(39.7)	(44.5)	(42.4)
Could write the answer partially	794	1,024	1,818
	(5.7)	(5.8)	(5.7)
Could not write the answer	7,548	8,855	16,406
	(54.6)	(49.7)	(51.8)

Identifying an image

The last item of the Bangla assessment test asked the students to identify an image and write about it. The task required grade 3 students to write the name of the object shown in the image and for the 4th graders to describe the image by writing a sentence. Almost 58 per cent of students could identify and write the name of the object shown in the image. Like before, the girls outperformed the boys (62 per cent against 54 per cent). Nearly 14 per cent of the students could partly write the name of the object, and 21 per cent could not write the name even though they recognised the object. Approximately 7 per cent of the grade 3 students could neither identify the image nor write the name.

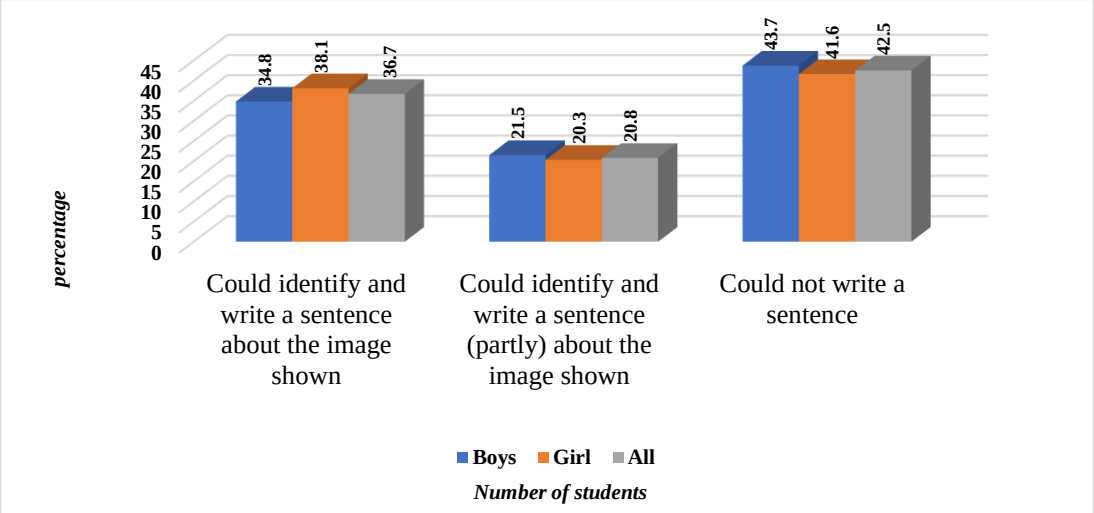
Figure 6.5: Identifying and Writing about an Image (Grade 3)



The test takers of grade 4 performed a similar task. But instead of writing the name of the object in the picture, the 4th graders were asked to write a full sentence describing the picture.

Here, we found that 43 per cent of the students could not write a sentence describing the picture, 21 per cent wrote it partially and 37 per cent were able to perform the task successfully.

Figure 6.6: Identifying and Writing about an Image (Grade 4)



Comparison of Fundamental Learning Skills (literacy) of Grade 3 and Grade 4 Students

Table 6.9 below presents a comparison of fundamental learning skills in literacy between students of grade 3 and grade 4. As we observe from the table, overall learning skills are rather poor among the students of both grades, which could be the likely impact of the COVID-19-induced closure of schools for about 2 years.

Table 6.9: Comparison of Fundamental Learning Skills Between Grades 3 and 4 Students

Items	Students in grade 3 (%)	Students in grade 4 (%)
Read all three **letters** (including a complex letter)	50.1	
Read all three **words** (including a word with a complex letter)	47.9	60.5
Read all three **words (comprising difficult spelling)**		37.9
Make a meaningful **sentence** with the given word	36.0	45.61
Fluently read a **text** making proper use of punctuation	23.9	30.2
Correctly answered a **direct question** based on the text	51.2	58.2
Correctly answered an **indirect question** based on the text	43.6	47.5
Write the answer to a question based on the text correctly	36.5	42.4
Identify the object shown in the image and **write the name** of the object	57.7	
Describing an image by **writing a sentence**		36.7

CHAPTER 7
PERFORMANCE OF THE STUDENTS IN MATHEMATICS

The assessment tasks in this study are meticulously designed based on the grade-level learning outcomes outlined in the Bangladeshi national curriculum and textbooks. However, it is important to note that this assessment is competency-based rather than relying solely on content alignment. Consequently, the assessment items adhere to grade standards but may not always mirror textbook content precisely. This approach ensures a comprehensive evaluation of students' abilities.

Unlike the traditional school assessment system, which predominantly focuses on individual student performance, this type of assessment shifts its lens to the entire cohort's performance. Rather than assessing individual students in isolation, we aim to understand how the entire group fares collectively. Given the context of school closures and concerns about potential underperformance, this targeted learning assessment seeks to gauge students' fundamental mathematical knowledge and skills. By identifying areas of deficiency, we can tailor appropriate support and interventions.

To facilitate this assessment, we developed two separate instruments—one for third grade and another for fourth grade. Each instrument comprises 16 items (eight for Bangla and eight for Mathematics). In the subsequent section, we delve into the students' performance in Mathematics.

An assessment framework defining the organising structure of the test instrument was developed to design the questionnaires. Frameworks capture grade-specific content and cognitive skills following the national curriculum of Bangladesh and recent ASERs of neighbouring countries. Justifications for the development of the Assessment Instruments for Mathematics for grade 3 and grade 4 are as follows-

Table 7.1: Development of Assessment Instruments (Grade 3 Mathematics)

Component	Skill	Task
1. Identification of numbers	Knowledge of numbers	Say two-digit numbers aloud
2. Converting words into numbers	Accustomed with the position of numbers	Write the expression in numbers (up to 4 digits)
3. Comparing numbers	Discriminate between numbers	State the higher of each set of two numbers.
4. Addition	Arithmetic number operation	Perform the addition of numbers
5. Subtraction	Arithmetic number operation	Perform subtraction of numbers
6. Multiplication (Word problem)	Application of number operation and concept of unit measurements	Solve the word problem by performing multiplication
7. Division	Arithmetic number operation	Perform division of numbers
8. Identification of shapes	Knowledge of shapes	Identify shapes by observing images

Table 7.2: Development of Assessment Instruments (Grade 4 Mathematics)

Component	Skill	Task
1. Identification of numbers	Knowledge of numbers	Students are asked to say 3 to 5-digit numbers aloud.
2. Putting place value	Position of numbers	Students are asked to put the value of the digits according to their position (up to 5 digits)
3. Comparing numbers	Discriminate between numbers	Students are asked to state the higher of each set of two numbers.
4. Addition (word problem)	Application of number operation	Solve the word problem by performing addition
5. Subtraction (word problem)	Application of number operation	Solve the word problem by performing subtraction
6. Multiplication	Arithmetic number operation	Perform multiplication
7. Division	Arithmetic number operation	Perform division
8. Identification of shapes	Knowledge of shapes	Identify shapes by observing images

Identifying Numbers

The first item of the mathematics assessment test for the third graders was to identify 3 two-digit numbers. Test results show that overall, 56 per cent of students in grade 3 could identify all 3 numbers. Boys' performance was better than girls, with 59 per cent of the boys recognising all the 3 numbers, while the percentage of girls in this category was 53.5 per cent. As reported in ASER (2021), 32.7 per cent of the 3rd graders of West Bengal were able to recognise 2-digit numbers.

Table 7.3: Identifying Two-digit Numbers (Grade 3)

Description	N (%) of Students in grade 3		
	Boys	Girls	All
Could not identify any of the numbers	1,655	2,429	4,084
	(11.9)	(14.2)	(13.2)
Could identify one number out of 3	1,452	2,151	3,603
	(10.5)	(12.5)	(11.6)
Could identify two numbers out of 3	2,577	3,391	5,970
	(18.5)	(19.8)	(19.2)
Could identify all 3 numbers	8,213	9,184	17,401
	(59.1)	(53.5)	(56.0)

While more than half of the students were familiar with two-digit numbers, 13.2 per cent could not identify any of them. In this case too, a lesser percentage (12 per cent) of boys could not identify any of the numbers compared to their fellow female classmates.

Table 7.4: Identifying Three-to-five-digit Numbers (Grade 4)

Description	N (%) of Students in grade 4		
	Boys	Girls	All
Could not identify any of the numbers	1,883	3,210	5,096
	(13.6)	(18.0)	(16.1)
Could identify one number out of 3	2,694	4,085	6,779
	(19.5)	(22.9)	(21.4)
Could identify two numbers out of 3	2,969	3,865	6,834
	(21.5)	(21.7)	(21.6)
Could identify all numbers	6,290	6,646	12,936
	(45.5)	(37.3)	(40.9)

For the 4th graders, the first item of the assessment test was a similar task of identifying numbers. But for them, it was identifying 3 to 5-digit numbers. We found that almost 41 per cent of the students could identify all numbers, with boys performing better than girls. Overall, 16 per cent of students could not identify any of the numbers, accounting for a higher percentage of girls (18 per cent) who could not identify any of the numbers compared to boys (13.6 per cent).

Expressing words in numbers

The second item in the assessment test for grade 3 was to convert numbers written in words to digits. There were two items in this category.

Table 7.5: Expressing Words in Numbers (Grade 3)

Description		N (%) of Students in grade 3		
		Boys	Girls	All
A	Answer correctly	5,700 (41.0)	6,849 (39.9)	12,553 (40.4)
	Could not answer correctly	2,022 (14.6)	2,226 (13.0)	4,248 (13.7)
	Did not attempt to answer	6,175 (44.4)	8,080 (47.1)	14,257 (45.9)
B	Answer correctly	5,580 (40.2)	6,623 (38.6)	12,207 (39.3)
	Could not answer correctly	1,612 (11.6)	1,828 (10.7)	3,440 (11.1)
	Did not attempt to answer	6,705 (48.3)	8,704 (50.7)	15,411(49.6)

The result reveals that nearly 40 per cent of students could answer both questions correctly. For the first one, 13.7 per cent wrote a wrong answer, and almost 46 per cent did not answer. For the second question, 11 per cent of students could not write the correct answer, while almost 50 per cent did not attempt to answer the question. In all categories of responses, we find boys performing better than girls.

Putting place value on numbers

This was the second task for the students of grade 4. For this question, students were asked to write the place value of a 5-digit number. We found that 37 per cent of students could correctly place value for all the 3 numbers, while 45 per cent could not put the correct place value for any of the numbers. No statistically significant difference was found between the performance of boys and girls.

Table 7.6: Putting Place Value on Numbers (Grade 4)

Description	N (%) of Students in grade 4		
	Boys	Girl	All
Could not put the correct place value for any of the numbers	6,222 (45.0)	8,112 (45.6)	14,336 (45.3)
Could correctly place value for 1 of the numbers	1,570 (11.4)	2,116 (11.9)	3,687 (11.7)
Could correctly place value for 2 of the numbers	834 (6.0)	1,079 (6.1)	1,913 (6.1)
Could correctly place value for all the 3numbers	5,210 (37.7)	6,499 (36.5)	11,709 (37.0)

Comparing numbers

The third item of the assessment test for both 3rd and 4th grades was to compare two sets of numbers and identify the greater ones. The first item asked to find the greater number from two 3-digit numbers, and the second one was a set of two 4-digit numbers.

Here, we see that 75 per cent of the 3rd and 82 per cent of the 4th graders could correctly distinguish between 3-digit numbers. On the other hand, 18 per cent and 14 per cent of 3rd and 4th-grade students, respectively, answered the question incorrectly. About 4 to 6 per cent of the students refrained from answering the question.

Table 7.7: Comparing Numbers (Grades 3 and 4)

Description		N (%) of Students in grade 3			N (%) of Students in grade 4		
		Boys	Girls	All	Boys	Girls	All
A	Answer correctly	10,786	12,572	23,364	11,578	14,285	25,863
		77.6	73.3	75.2	83.7	80.2	81.7
	Could not answer correctly	2,311	3,393	5,704	1,695	2,702	4,399
		16.6	19.8	18.4	12.3	15.2	13.9
	Did not attempt to answer	800	1,190	1,990	563	819	1,383
		5.8	6.9	6.4	4.1	4.6	4.4
B	Answer correctly	8,271	9,263	17,538	9,767	11,456	21,223
		59.5	54.0	56.5	70.6	64.3	67.1
	Could not answer correctly	4,584	6,422	11,008	3,284	5,172	8,457
		33.0	37.4	35.4	23.7	29.1	26.7
	Did not attempt to answer	1,042	1,470	2,512	785	1,178	1,965
		7.5	8.6	8.1	5.7	6.6	6.2

For the next question, 57 per cent of grade 3 students and 67 per cent of grade 4 students successfully found the greater number between two 4-digit numbers. On the counter side, 35 per cent of students of grade 3 and 27 per cent of students of grade 4 could not identify the greater number of the set.

Addition

The first of the four number operations is addition. For grade 3, there were two additional items: one was without carrying forward, and the second was with carrying forward. We see that almost 82 per cent of students could perform the addition without carrying forward, while 60 per cent could correctly perform the addition that required carrying forward. For the first item of this question, the answers of 9 per cent of students were not correct, and another 9 per cent did not answer. For the second item, nearly 27 per cent of students provided wrong answers, and 13.3 per cent did not attempt to answer the question.

Table 7.8: Performing Addition (Grade 3)

Description		N (%) of Students in grade 3		
		Boys	Girls	All
A (without carrying forward)	Answer correctly	11,402 (82.1)	13,915 (81.1)	25,323 (81.5)
	Could not answer correctly	1,273 (9.2)	1,671 (9.7)	2,944 (9.5)
	Did not attempt to answer	1,222 (8.8)	1,569 (9.2)	2,791 (9.0)
B (carrying forward carrying forward)	Answer correctly	8,626 (62.1)	10,059 (58.6)	18,690 (60.2)
	Could not answer correctly	3,512 (25.3)	4,730 (27.6)	8,243 (26.5)
	Did not attempt to answer	1,759 (12.7)	2,366 (13.8)	4,125 (13.3)

In grade 4, students faced an addition word problem involving two 3-digit numbers without carrying forward. Approximately 68 per cent recognised that the problem required addition. However, during the actual addition, 61 per cent answered correctly, while an additional 8 per cent attempted but made errors. Notably, 27 per cent and 31 per cent of students did not attempt to answer either part of the question.

Table 7.9: Performing Addition (Grade 4)

Description		N (%) of Students in grade 4		
		Boys	Girls	All
A. Identifying the process of solving the problem	Answer correctly (how to solve the problem)	9,604 (69.4)	11,781 (66.2)	21,386 (67.6)
	Could not answer correctly	717 (5.2)	970 (5.5)	1,687 (5.3)
	Did not attempt to answer	3,515 (25.4)	5,055 (28.4)	8,572 (27.1)
B. Performing the solution	Answer correctly	8,756 (63.3)	10,657 (59.9)	19,414 (61.4)
	Could not answer correctly	1,093 (7.9)	1,400 (7.9)	2,493 (7.9)
	Did not attempt to answer	3,987 (28.8)	5,749 (32.3)	9,738 (30.8)

Subtraction

For the subtraction item, the grade 3 students were asked to answer two questions. The first question asked them to subtract between two 2-digit numbers, and the second asked them to do a similar task, but this time with two 3-digit numbers. Both the solutions did not require performing the task by borrowing.

Here, we see 65 per cent of students were able to perform the two-digit level subtraction, and 60 per cent were also able to do 3-digit level subtraction. 16 per cent and 19 per cent, respectively, could not answer correctly and did not answer the first question. For the second question, 18 per cent gave a wrong answer, and 22 per cent did not answer. For this item, boys again performed better than girls.

Table 7.10: Performing Subtraction (Grade 3)

Description		N (%) of Students		
		Boys	Girl	All
A	Answer correctly	9,406	10,882	20,293
		67.7	63.4	65.3
	Could not answer correctly	2,084	2,899	4,983
		15.0	16.9	16.0
	Did not attempt to answer	2,407	3,374	5,782
		17.3	19.7	18.6
B	Answer correctly	8,648	9,904	18,556
		62.2	57.7	59.8
	Could not answer correctly	2,359	3,203	5,563
		17.0	18.7	17.9
	Did not attempt to answer	2,890	4,048	6,939
		(20.8)	(23.6)	(22.3)

The subtraction problem for the 4th graders was a measurement problem involving time calculation- a two-part question where students first answer how they can solve the problem and then do the needful. We found that almost 28 per cent could correctly find out the way to solve the problem, 21 per cent provided wrong answers, and more than half of the students (51.1 per cent) did not even attempt to answer. For the second part, 30 per cent were correct to answer, 19.5 per cent were wrong, and again, half of the students did not answer.

Table 7.11: Performing Subtraction (Grade 4)

Description		N (%) of Students in grade 4		
		Boys	Girls	All
A	Answer correctly (how to solve the problem)	4,033 (29.2)	4,761 (26.7)	8,795 (27.8)
	Could not answer correctly	3,099 (22.4)	3,575 (20.1)	6,674 (21.1)
	Did not attempt to answer	6,704 (48.5)	9,470 (53.2)	16,176 (51.1)
B	Answer correctly	4,446 (32.1)	5,068 (28.5)	9,514 (30.1)
	Could not answer correctly	2,801 (20.2)	3,377 (19.0)	6,179 (19.5)
	Did not attempt to answer	6,589 (47.6)	9,361 (52.6)	15,952 (50.4)

Multiplication

The multiplication operation for the 3rd graders asked them to solve a word problem involving very simple measurement issues requiring a multiplication by 10 or its multiples. Again, it was a two-part question where first, students had to figure out how to solve the problem, and then, they had to perform the solution. Results show that though only 21 per cent could rightly figure out what they had to do to solve the problem, a higher percentage (25 per cent) could provide the correct answer. 13 per cent and 8 per cent provided wrong answers, respectively, for the first and second question. However, a larger percentage of students (66 per cent and 67 per cent) did not attempt to answer.

Table 7.12: Performing Multiplication (Grade 3)

Description		N (%) of Students in grade 3		
		Boys	Girls	All
A	Answer correctly	3,227 (23.2)	3,395 (19.8)	6,625 (21.3)
	Could not answer correctly	1,918 (13.8)	2,094 (12.2)	4,013 (12.9)
	Did not attempt to answer	8,752 (63.0)	11,666 (68.0)	20,420 (65.8)
B	Answer correctly	3,912 (28.2)	3,806 (22.2)	7,721(24.9)
	Could not answer correctly	1,102 (7.9)	1,349 (7.9)	2,452(7.9)
	Did not attempt to answer	8,883 (63.9)	12,000 (70.0)	20,885 (67.3)

There were two multiplication problems for the 4th-grade students. The first one required performing multiplication without carrying forward, and the second one required multiplication by 10. Almost 69 per cent of students nailed the first problem, and 47 per cent successfully performed the second task. 19 per cent and 27 per cent of students, respectively, did not attempt to answer the questions.

Table 7.13: Performing Multiplication (Grade 4)

Description		N (%) of Students in grade 4		
		Boys	Girl	All
A	Answer correctly	9,769	11,954	21,724
		70.6	67.1	68.7
	Could not answer correctly	1,709	2,372	4,081
		12.4	13.3	12.9
	Did not attempt to answer	2,358	3,480	5,840
		17.0	19.5	18.5
B	Answer correctly	6,865	7,944	14,809
		49.6	44.6	46.8
	Could not answer correctly	3,494	4,667	8,162
		25.3	26.2	25.8
	Did not attempt to answer	3,477	5,195	8,674
		25.1	29.2	27.4

Division

Grade 3 students were asked to divide a 2-digit number by a single-digit number, leaving no reminder. Near one-fifth of the students (22 per cent) performed the task perfectly, another 18 per cent tried but could not answer correctly, and the rest (60 per cent) did not attempt to answer.

Table 7.14: Performing Division (Grade 3)

Description	N (%) of Students in grade 3		
	Boys	Girls	All
Answer correctly	3,288	3,627	6,917
	23.7	21.1	22.3
Could not answer correctly	2,582	3,055	5,637
	18.6	17.8	18.2
Did not attempt to answer	8,027	10,473	18,504
	57.8	61.1	59.6

The 4th graders were asked to solve two division problems- dividing a 3-digit number by a single-digit without leaving a reminder and a division by a multiple of 10. The result shows that 21 per cent could correctly answer the first problem, and 16 per cent could answer the second problem correctly. 22 per cent and 17 per cent provided a wrong answer for the 1st and 2nd problem, respectively. A higher percentage of students refrained from answering the second question (67 per cent) than the first (58 per cent).

Table 7.15: Performing Division (Grade 4)

Description		N (%) of Students		
		Boys	Girls	All
A	Answer correctly	3,165	3,437	6,602
		(22.9)	(19.3)	(20.9)
	Could not answer correctly	3,083	3,764	6,847
		(22.3)	(21.1)	(21.6)
	Did not attempt to answer	7,588	10,605	18,196
		(54.8)	(59.6)	(57.5)
B	Answer correctly	2,468	2,679	5,147
		(17.8)	(15.1)	(16.3)
	Could not answer correctly	2,442	2,964	5,406
		(17.7)	(16.7)	(17.1)
	Did not attempt to answer	8,926	12,163	21,092
		(64.5)	(68.3)	(66.7)

Identifying Shapes

The last item for both test takers' grades was identifying geometrical shapes. The 3rd graders had to say the names of the shapes correctly or identify the correct shapes by their names, whereas the 4th graders had to write down the names of the shapes. We see a lesser percentage of 4th graders (9.4 per cent) could write the names or draw the shapes correctly compared to the 3rd graders, where almost 13 per cent of the 3rd graders correctly identified all the three shapes in question. However, most of the 3rd (71 per cent) and 4th (80 per cent) graders could not recognise any of the shapes shown to them.

Table 7.16: Identifying Shape (Grades 3 and 4)

Description	N (%) of Students in grade 3			N (%) of Students in grade 4		
	Boys	Girls	All	Boys	Girls	All
Could not identify any Shapes	9,785	12,118	21,907	11,085	14,296	25,384
	70.4	70.6	70.5	80.1	80.3	80.2
Could identify one shape out of 3	1,739	2,032	3,772	1,074	1,310	2,384
	12.5	11.8	12.2	7.8	7.4	7.5
Could identify two shapes out of 3	636	795	1,431	387	502	889
	4.6	4.6	4.6	2.8	2.8	2.8
Could identify all 3 shapes	1,737	2,210	3,948	1,290	1,698	2,988
	12.5	12.9	12.7	9.3	9.5	9.4

Comparison of fundamental learning skills (numeracy) of grade 3 and grade 4 students

When we compare fundamental learning skills in numeracy between grade 3 and grade 4, results are mixed. However, as indicated earlier, questions were not the same for the students of both grades.

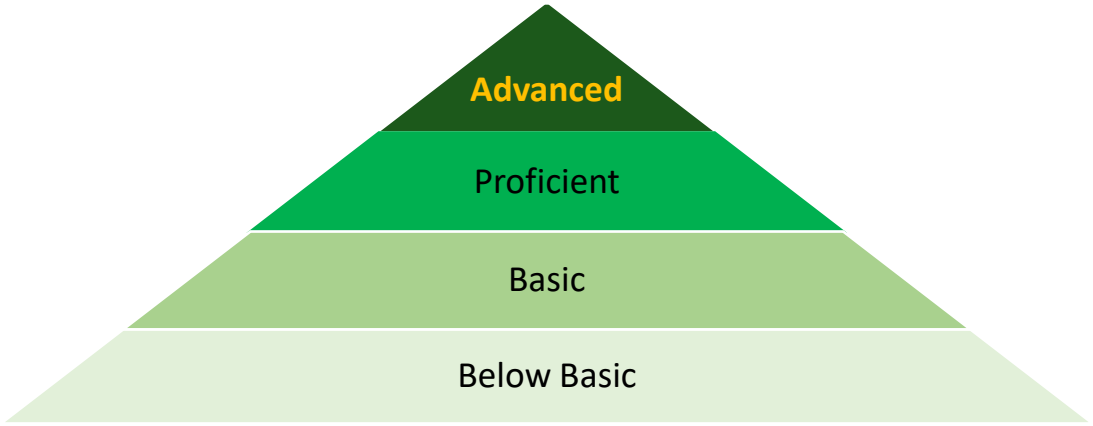
Table 7.17: Comparison of Fundamental Learning Skills in Numeracy: Grades 3 and 4

Items	Student in grade 3 (%)	Students in grade 4 (%)
Could identify all 3 numbers	56.0	40.9
Expressing words in numbers	39.9	
Putting place value on numbers		37.0
Comparing numbers	65.9	74.4
Addition	70.9	64.5
Subtraction	62.6	29.0
Multiplication	23.1	57.8
Division	22.3	18.6
Identifying shapes	12.7	9.4

CHAPTER 8
CONTENT DOMAIN-BASED PERFORMANCE ANALYSIS

Performance standard-based analysis allows better interpretation of test scores. Mapping students' test scores to the performance bands/levels helps interpret their achievements according to content standards. Test items are categorised into four performance bands to analyse students' performance in the assessment test. Each band/level is defined according to its item content. Following the ASER, we have differentiated the content of the test in the following way.

Figure 8.1: The Pyramid of Content Domains for Analysing the Assessment Performances



The items in the assessment test are arranged in a logical order with a cognitive flow related to the curriculum. At the **Below Basic level**, a student is at the early stages of development regarding the curriculum. They are yet to achieve sufficient knowledge and skills to be considered minimally successful regarding curriculum standards. Then, at the **Basic level**, a student demonstrates a minimum level of skills about the curriculum learning outcomes. Furthermore, s/he can follow simple instructions and apply simple rules to achieve expected performance but needs further guidance. In the next level, which is referred to as the **Proficient level**, students can work independently with minimum supervision. At this level, students are able to use systematic methods to solve problems and can communicate ideas. Finally, students at the advanced **level** display mastery of the learning content as prescribed by the curriculum and beyond. They are independent with analytical thinking.

To define these content-wise categorisations of the assessment items, we have used the following frameworks -

- Framework for content-wise categorisation in Bangla for Grade 3
- Framework for content-wise categorisation in Mathematics for Grade 3
- Framework for content-wise categorisation in Bangla for Grade 4
- Framework for content-wise categorisation in Mathematics for Grade 4

Table 8.1: Framework for Content-wise Categorisation in Bangla for Grade 3

Level	Minimum Proficiency	Description
Letter (Reading and Speaking)	To recognise and pronounce the sounds of letters. Students should be able to recognise the alphabet in question. There will be 3 random Bangla alphabets with one complex letter (ক্ত, দ্ম, ঙ্ক, চ্ছ). Letters are arranged randomly. This tests a student's ability to identify and differentiate letters. **Total Number of Items: 3** **Total Score: 6** **Minimum Score Required: 4.8** (i.e., 80% of total score)	Student shows Below Basic proficiency by recognising 3 alphabets with ease. The pronunciation and identification have to be correct. **Below Basic:** Requires least cognitive skills.
Word and Sentence (Reading and Speaking)	To read simple well-known words and prepare a sentence with a given sentence. A student should be able to identify 3 words correctly, with the correct pronunciation. A balanced mix of nouns and verbs familiar in national textbooks and composed of 2 or 3 letters are asked. Students should be able to build a meaningful sentence with a predetermined word. **Total Number of Items: 4** **Total Score: 24** **Minimum Score Required: 19.2** (i.e., 80% of the total score)	Student shows Basic level proficiency by recognising the words and reading them. A student should also be able to understand the meaning of a word and make a meaningful sentence with it. **Basic:** Requires a reasonably moderate level of cognitive skills.
Comprehension (Writing and Object Identification)	To answer a question by writing a word and write the name of an object shown in an image. A student should be able to write an answer based on the understanding of the text. This question will be an inference question that might be found in the last few sentences of the given text. A student should also look at a picture to identify the object and write the answer in one word. **Total Number of Items: 2** **Total Score: 40** **Minimum Score Required: 32** (i.e., 80% of the total score)	Students are at proficiency level by being able to write a one-word answer based on the given text. Also, the student should identify a picture and write what that is. **Proficient:** Requires a higher level of cognitive skill.

(Contd. Table 8.1)

Level	Minimum Proficiency	Description
Comprehension (Reading, Listening, and Speaking)	To read a simple text following the punctuation correctly in an acceptable pronunciation and answer simple questions. A student should be able to read the text fluently and understand punctuation. There will be no more than 6 sentences having a maximum of 7-8 words per sentence, using full stop, comma, inverted comma, question marks etc. as punctuation marks. The student should be able to find answers to two (one direct and another indirect) questions (verbally) by listening to the list of options mentioned as answer choices. **Total Number of Items: 3** **Total Score: 30** **Minimum Score Required: 24** (i.e., 80% of the total score)	Students are at the advanced level by reading the text fluently. Students should also be able to read with proper punctuation so that the text makes sense. Students must identify the correct answer for both questions by listening to the list of options. **Advanced:** Requires an Advanced level of cognitive skills.

Table 8.2: Framework for Item-wise Categorisation in Mathematics for Grade 3

Level	Minimum Proficiency	Description
2-digit Numbers (Reading and Speaking)	To recognise and read the numbers. A student should be able to recognise three numbers. All numbers will be 2-digit numbers. Numbers will be arranged randomly. This tests a student's ability to identify and differentiate numbers. **Total Number of Items: 3** **Total Score: 6** **Minimum Score Required: 4.8** (80% of the total score)	Student shows a Below Basic level of proficiency in Numeracy by being able to recognise 3 two-digit numbers with ease. **Below Basic:** Requires a Basic level of cognitive skills.
Conceptualisation of Numbers (Writing and Identification)	To express words in numbers and compare between two numbers. Students should be able to transform numbers written in words into numbers in digits. Students should be able to compare two numbers and identify the greater number. **Total Number of Items: 4** **Total Score: 20** **Minimum Score Required: 16** (80% of the total score)	Student shows Basic level skills by recognising and writing numbers. S/he must also be able to find the higher-order numbers. **Basic:** Requires a reasonably moderate level of cognitive skills.

(Contd. Table 8.2)

Level	Minimum Proficiency	Description
Number Operation (Addition, Subtraction, Multiplication and Division)	Students should be able to add two numbers without carrying forward and with carrying forward. Students should be able to solve two subtraction problems without borrowing correctly. Students should also be able to solve simple multiplication problems expressed as word problems, where they need first to understand that it is a task of multiplication. Students should be able to solve numerical division problems without a remainder correctly. **Total Number of Items: 7** **Total Score: 47** **Minimum Score Required: 37.6** (i.e., 80% of the total score)	Student shows proficiency by being able to perform number operations with ease. **Proficient:** Requires a higher order of cognitive skills.
Geometry	To identify different shapes of geometry. Students should be able to identify triangles, rectangles, squares, and circles from the 3 shapes in the question. **Total Number of Items: 3** **Total Score: 27** **Minimum Score Required: 21.6** (i.e., 80% of the total score)	Students show an Advanced level of proficiency by being able to identify the shapes. **Advanced:** Requires an Advanced level of cognitive skill.

Table 8.3: Framework for Item-wise Categorisation in Bangla for Grade 4

Level	Minimum Proficiency	Description
Word (Reading)	To read simple and complex words. Students should be able to read 3 simple words and 3 complex words (with ক্ত, দ্ম, ঙ্ক, চ্ছ etc). Words will be arranged randomly. This tests students' ability to identify and read simple and complex words. **Total Number of Items: 6** **Total Score: 22** **Minimum Score Required: 17.6** (i.e., 80% of the total score)	Being able to read simple words and words with slightly difficult spelling is a Below Basic level skill for students of this grade. They are expected to recognise words with ease and utter them with the correct pronunciation. **Below Basic:** Requires least cognitive skills.
Sentence (Reading and Speaking)	To make a sentence using the complex word. Students should be able to build a meaningful sentence with the word in question. **Total Number of Items: 1** **Total Score: 12** **Minimum Score Required: 9.6** (i.e., 80% of the total score)	Students are at the Basic level if they can understand the meaning of a word and make a meaningful sentence with it. **Basic:** Requires a reasonably moderate level of cognitive skills.

(Contd. Table 8.3)

Level	Minimum Proficiency	Description
Writing and Object Identification	To write an answer to a question from the text and write a sentence describing a picture. A student should be able to write an answer based on the understanding of the text. This question will be an inference question, which might be found in the last few sentences. Students should look at a picture and write a one-sentence description of it. **Total Number of Items: 2** **Total Score: 36** **Minimum Score Required: 28.8** (i.e., 80% of the total score)	Student shows a Proficient level of skills by being able to answer inference questions and write correctly. Also, students should be able to describe an image by writing a sentence. **Proficient:** Requires a higher level of cognitive skill.
Comprehension (Reading, Listening, and Speaking)	To read out a simple text with acceptable pronunciation and answer simple questions. Students should be able to read the text fluently with punctuation. There will be at most 6 sentences having a maximum of 7-8 words per sentence. Use full stop, comma, inverted comma, question mark, etc., as punctuation marks. Students should be able to answer 2 (direct and indirect) questions (verbally) by listening to the list of options for answer choices. (i.e., 80% of the total score)	Student shows Advanced level proficiency by being able to read the text fluently. They should be able to read with proper punctuation so that the story makes sense. Students need to identify the correct answer for both questions by listening to the list of options to be categorised at the advanced level. Advanced: Requires a higher order of cognitive skills.

Table 8.4: Framework for Item-wise Categorisation in Mathematics for Grade 4

Level	Minimum Proficiency	Description
Numbers (Reading and Speaking)	To recognise and read the numbers. Students should be able to recognise three numbers. Numbers will be arranged randomly. This tests a student's ability to identify and differentiate numbers. **Total Number of Items: 3** **Total Score: 5** **Minimum Score Required: 4** (i.e., 80% of the total score)	Students show a Below Basic level of proficiency by being able to recognise three 2, 3, 4, and 5-digit numbers with ease. **Below Basic:** Requires a Basic level of cognitive skills.

(Contd. Table 8.4)

Level	Minimum Proficiency	Description
Numbers (Writing and Identification)	To put the place value of a 5-digit number and compare between two numbers. Students should be able to identify the place value of a 5-digit number in words and write those using words or signs. Students should be able to compare two numbers and identify the greater number. The student should be able to identify the greater number from the set of 2 three-digit numbers and the set of 2 four-digit numbers. **Total Number of Items: 3** **Total Score: 20** **Minimum Score Required: 16** (i.e., 80% of the total score)	Student shows Basic proficiency by being able to recognise the place value of the 5-digit numbers. They must also identify the greater numbers among sets of two 3-digit and 4-digit numbers. **Basic:** Requires a reasonably moderate level of cognitive skills.
Addition, Subtraction, Multiplication and Division	To perform addition and subtraction to solve word problems and time-related measurement questions, and to perform multiplication and division. Students should be able to identify if the solution is to be done with addition or subtraction and compute accordingly. Students should also be able to do two multiplication and division problems with and without a remainder correctly. **Total Number of Items: 8** **Total Score: 60** **Minimum Score Required: 48** (i.e. 80% of the total score)	Students have acquired proficiency in numeracy if they are able to perform addition, subtraction, multiplication, and division. **Proficient:** Requires a higher order of cognitive skills.
Geometry	To identify different types of angles. Students should look at the type of the angle, identify and write the name of the angle under the images. **Total Number of Items: 3** **Total Score: 15** **Minimum Score Required: 12** (80% of the total score)	Students show an Advanced level of proficiency by identifying the angles. **Advanced:** Requires an Advanced level of cognitive skill.

In the matrix below, we present content domain-based classification of competency levels and marks distribution for Grade 3 Bangla as an example. Here, item 1 falls under the Below Basic level; items 2 and 3 in the Basic level; items 7 and 8 are of the Proficient level, and items 4, 5, and 6 are categorised as Advanced. Marks distribution is shown alongside.

For the content domain-based analysis, cut-off scores for each level are set at 80 per cent of that level score following the ASER. For example, in Grade 3 Bangla, the Below-basic level asks students to identify three (3) 'letters' and have a total score of six (6) points. If a student can correctly read all three letters, then s/he achieves six (6) points, 2 points for each correct

answer. Similarly, for identifying two (2) correct letters, a student gets four (4) points; for identifying one (1) correct letter, a student gets two (2) points; and finally, if the student cannot read any of the letters correctly, s/he gets zero (0). Eighty (80) per cent of this level score is 4.8 points. This cut-off score can only be achieved when the student correctly gets all 3 letters. Therefore, only when a student has recognised all the letters correctly, s/he will be able to cross the bar of Below Basic level of Literacy.

Table 8.5: Mark Distribution for Grade 3 (Bangla)

	Question item	Number	Number Distribution
BELOW BASIC	1. Identification of letters	06 (2*3)	Identifying 3 letters=6 Identifying 2 letters=4 Identifying 1 letter=2 Could not identify any letter=0
BASIC	2. Reading words	12 (4*3)	Read 3 words=12 Read 3 words=8 Read 3 words=4 Could not read a word=0
	3. Make a sentence with a given word	12	Make meaningful sentence=12 The sentence made was not meaningful=4 Could not make a sentence=0
ADVANCED	4. Reading a text using proper punctuation	15	Read the text following proper punctuation=15 Read the text partially=8 Could not read the text=0
	5. Answering a direct question based on the text	5	Correct answer=5 Wrong answer=0
	6. Answering an indirect question based on the text	10	Correct answer=10 Wrong answer=0
PROFICIENT	7. Write an answer to a question based on the text	20	Write correctly=20 Write a partially correct answer=10 Wrong answer=5 Could not write=0
	8. Identifying an image and writing about it	20	Could identify the image and correctly write about it=20 Could identify the image and partially write about it=10 Could identify the image but could not write about it=5 Could not identify the image=0
	Total number	100	

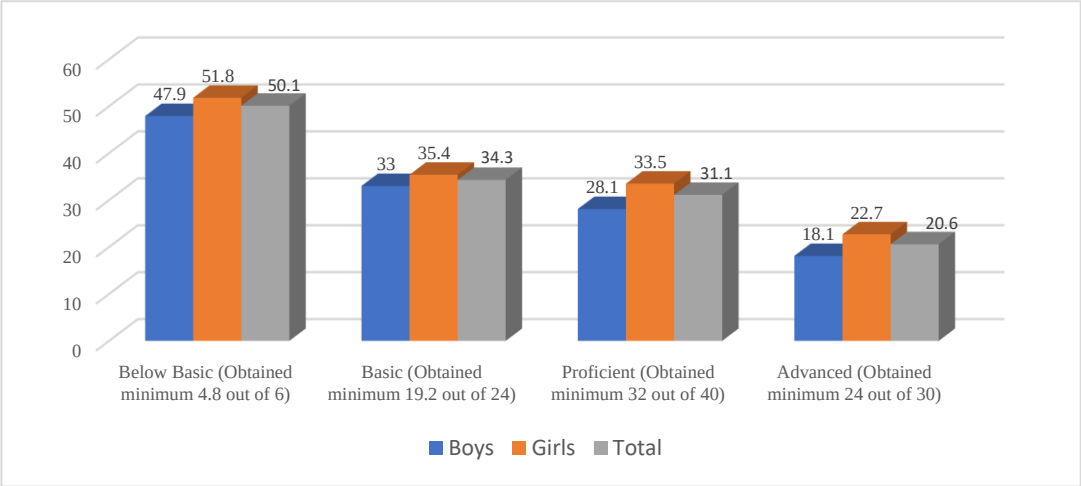
The next content domain to Below Basic consists of "words and sentences;" there are 4 items. 3 items of 'words' carry 12 points, and the 4th item, "sentence" carries another 12-point resulting in a total score of 24 for the Basic level. 80 per cent of 24 is 19.2, which can be achieved when a student gets at least 2 words and the sentence correctly. Similar to each of the items in each category of each subject and grade, we will assess the content domain-based performance of the students.

For another example, in Grade 3 Mathematics, the task for the Below Basic level is to identify 'numbers' that have 3 items and hold a total score of 6 points. If a student can identify all 3 numbers, then s/he can achieve a total score of 6 points, which goes down with fewer correct answers and reaches 0 if no number is correctly identified. Again, 80 per cent of the total level is 4.8, which can only be obtained when a student identifies all numbers correctly. The third category of Grade 3 Mathematics is 'number operations', encompassing 7 items with a total score of 47. A student can nail this level by achieving 37.6, i.e. 80 per cent of the total level score.

Content Domain-based Performance of Grade 3 in Bangla

Language (Bangla) literacy is assessed by measuring listening, speaking, reading, and writing skills. Content domain-based performance analysis shows that 50.1 per cent of the 3rd graders were able to accomplish the tasks of the Below Basic content domain consisting of the identification of letters. A higher percentage (51.8 per cent) of girls could crack this level compared to boys (47.9 per cent). In the next content category, Basic (comprised of reading words and making a sentence), 34.3 per cent of students were successful. Here also, girls performed better than boys.

Figure 8.2: Content Domain-based Performance of Grade 3 Bangla Assessment

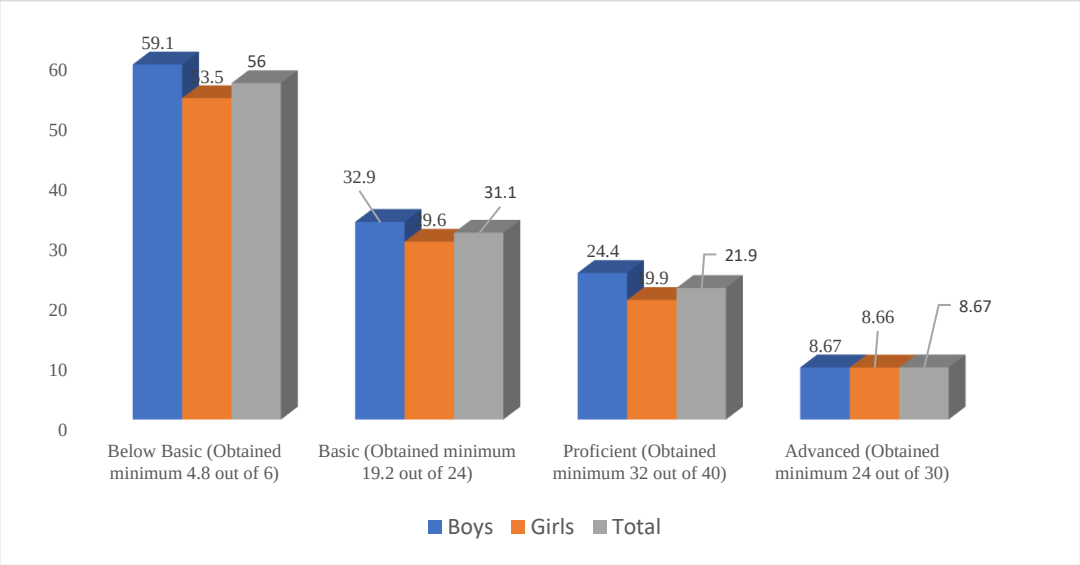


About 31.1 per cent of students in grade 3 were found to be proficient in Bangla, implying they were not only able to read letters and words but also to write a word as an answer to a question as well as write the name of a depicted object. At the proficient level, too, girls outperformed boys (33.5 per cent vs 28.1 per cent). The major domain of interest in the Bangla Language assessment was Reading Comprehension. In this domain, one-fifth (20.6 per cent) of the 3rd graders performed at the advanced level, suggesting that these students possess an exceptional mastery of the learning content as prescribed by the curriculum and beyond. In all four literacy domains, higher percentages of girls crossed the cut-off bar than boys.

Content Domain-based Performance of Grade 3 in Mathematics

The objective of the mathematics assessment was to find out to what extent students are familiar with arithmetical logic, methods, and skills. The test results reveal that 56 per cent of the test takers in grade 3 were able to solve the Below-basic content items. The number of boys (59.1 per cent) cracking this level was greater than that of girls (53.5 per cent). The Basic domain consisted of converting words into numbers and comparing between numbers. We find 31.1 per cent of the 3rd graders in this level, implying that the rest (almost 69 per cent) of the students could not perform the mathematical operations of this level correctly.

Figure 8.3: Content Domain-based Performance of Grade 3 Mathematics Assessment

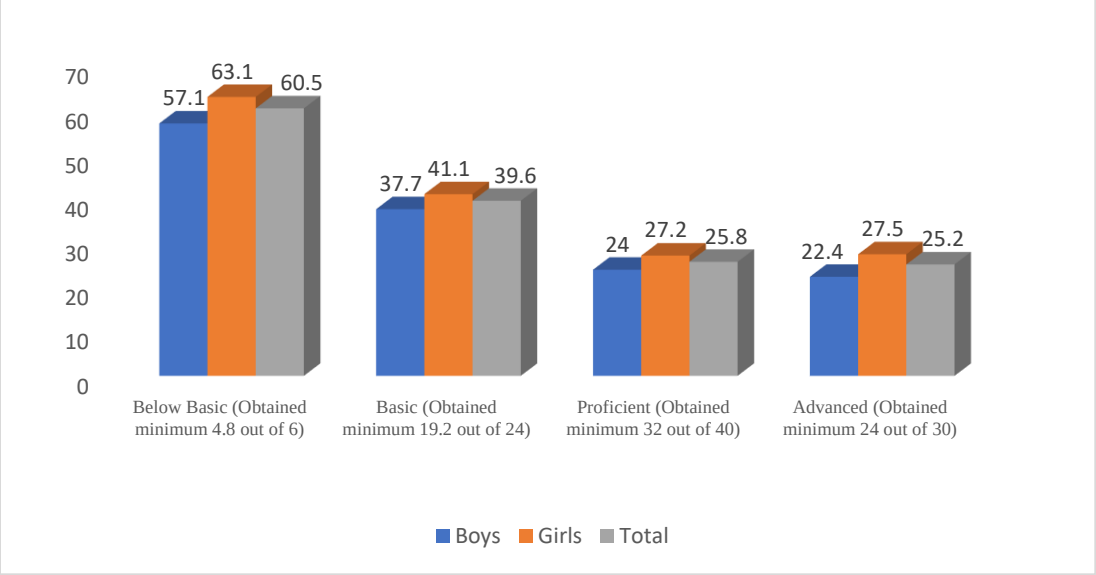


Almost 22 per cent of the grade 3 students were able to solve the items of the proficiency level, which includes all four number operations. Only 8.6 per cent could nail the Advanced content domain. Opposite to the literacy assessment, in mathematics we find boys doing better than girls in all four content domains.

Content Domain-based Performance of Grade 4 in Bangla

Students of Below Basic level are expected at least to read (identify) simple words and a few of the compound consonants of Bangla. 60.5 per cent of the grade 4 students satisfy this level of literacy. Like grade 3 students, we find more girls doing better than boys (63.1 per cent per cent of girl students are at the below-basic level vs. 57.1 per cent of boys). A lesser percentage of students (39.6 per cent) could overcome the Basic level, a higher-order cognitive content domain compared to the Below Basic level. The percentage of students who could cross the bars of the next higher-order cognitive domains gradually declines to 25.8 per cent for the Proficient level and 25.2 per cent for the Advanced level. Likewise, Below Basic and Basic levels, in these two domains also, girls outperformed boys.

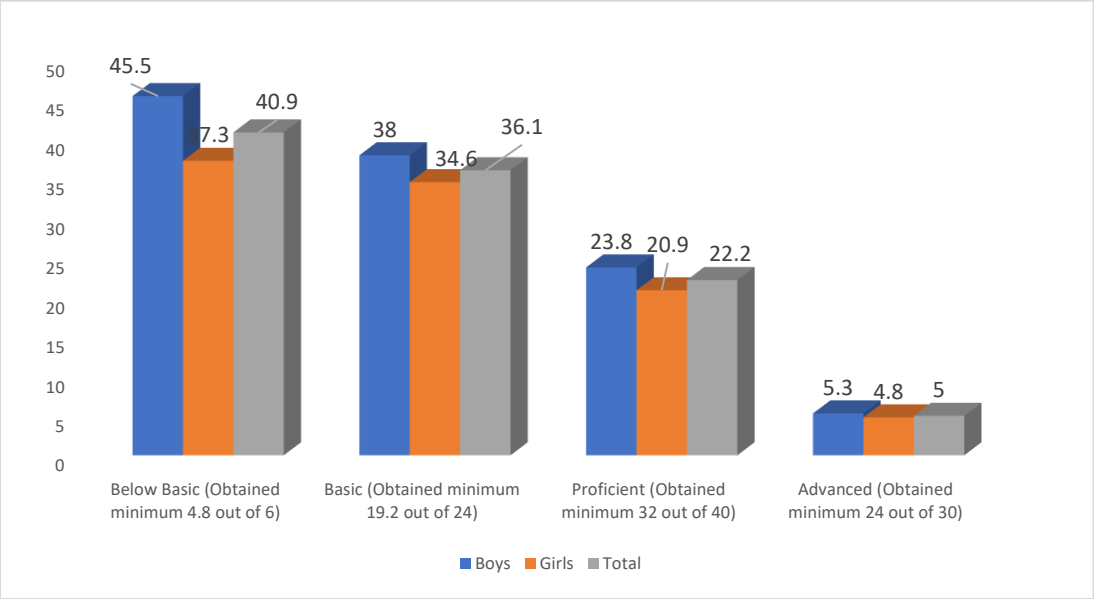
Figure 8.4: Content Domain-based Performance of Grade 4 Bangla



Content Domain-based Performance of Grade 4 in Mathematics

As expected, we find a gradual decline in the percentage of students able to perform higher-order content domain tasks in mathematics. At the bottom of the content ladder, we have 40.9 per cent of students, followed by 36.1 per cent of students solving the Basic level content. The proficiency level problems can be solved by 22.2 per cent of students, and the advanced level was cracked by only 5 per cent of students. Opposite to the performance of the Bangla assessment, boys did better than girls in all four content domains.

Figure 8.5: Content Domain-based Performance of Grade 4 Mathematics



A similar analysis was carried out disaggregated by school locations and teacher-student ratio to see whether students' performance varies by these indicators.

Content Domain-based Performance Analysis by School Location

Location is a proxy for many invisible external factors that can affect the performances of students. We divided the locations of the school into the following categories- Rural, Urban, Char, and Hills. Head-Teachers of the schools self-reported this information using their judgment. Analysis of students' performance by school location revealed that students from schools located in urban areas performed the best across all four content domains.

In the assessment of Bangla in Grade 3, 63 per cent of students from Urban schools satisfied the Below Basic level. In this content domain, the lowest performers were from the Char schools (41.6 per cent), followed by 49.5 per cent of students from rural schools and 51.6 per cent of students from schools in hilly areas. In the Basic, Proficient, and Advanced domains also, the best performers are the Urban schools, with 53 per cent, 47.1 per cent, and 35 per cent of the students belonging to the respective domains.

For Mathematics assessment in grade 3, a similar inclination is detected- students of urban schools outperforming students of schools in other locations. A much higher percentage of urban students are at the Below Basic (74.3 per cent) level, whereas the percentages from rural, char, and hill schools are 54.9 per cent, 43.6 per cent, and 62.8 per cent, respectively. A minimum difference of 10 percentage points is noticed in the Proficient category. The urban

schools have 37.3 per cent of students at the Proficient level, while the second-best performer in this domain is the Hill schools, with 28.7 per cent of students accomplishing the proficiency level of mathematics.

For grade 4 Bangla, an approximate 6 to 12 percentage points gap was visible in all the content domains. In the Below Basic level, the lowest difference (12.6 percentage points) was with the hill schools. For the Basic category, the difference was 10.6 percentage points due to 55.8 per cent of urban students satisfying the level as opposed to 4.6 per cent in hill schools. Similar findings apply to grade 4 Mathematics. The highest percentage of students crossing the domain bars were from schools located in urban areas.

Table 8.6: Content Domain-wise Performance of Students by Location of Schools

Location of School	Below Basic		Basic		Proficient		Advanced	
	N	%	N	%	N	%	N	%
Grade 3 (Bangla)								
Rural	10,761	49.5	7,034	32.4	4,206	19.4	6,398	29.4
Urban	1,698	63.0	1,430	53.0	1,270	47.1	943	35.0
Char	1,419	41.6	805	23.6	689	20.2	407	11.9
Hill	1,517	51.6	1,305	44.4	1,232	41.9	785	26.7
Grade 3 (Mathematics)								
Rural	11,922	54.9	6,422.0	29.6	4,531	20.8	1,682	7.7
Urban	2,004	74.3	1,297.0	48.1	1,007	37.3	451	16.7
Char	1,488	43.6	641.0	18.8	398	11.7	141	4.1
Hill	1,846	62.8	1,233.0	41.9	843	28.7	399	13.6
Grade 4 (Bangla)								
Rural	13,269	59.6	8,609.0	38.7	5,578	25.1	5,441	24.5
Urban	2,118	78.2	1,511.0	55.8	998	36.8	1,083	40.0
Char	1,655	47.8	989.0	28.6	635	18.4	600	17.3
Hill	1,926	65.6	1,339.0	45.6	886	30.2	799	27.2
Grade 4 (Mathematics)								
Rural	8,706	39.1	7,898	35.5	4,838	21.7	974	4.4
Urban	1,628	60.1	1,356	50.0	828	30.6	263	9.7
Char	1,046	30.2	897	25.9	514	14.9	76	2.2
Hill	1,445	49.2	1,188	40.4	784	26.7	261	8.9

CHAPTER 9
PERFORMANCE ANALYSIS BASED ON COMPOSITE SCORES

To assess the fundamental learning skills of the students, we assessed students of grade 3 and grade 4 in two subjects- Bangla and Mathematics. Each subject assessment test contained 8 questions (8 or more items) and a total score of 100 points. The items varied by level of cognitive difficulty, and so did the scores of the items. A composite score is generated by cumulating the item scores. This brings scores to a comparable ground regardless of the difficulty level of a particular item. Selected points of this composite score are anchored to the cut scores of performance levels, yielding the following ranges for each performance level.

Table 9.1: Performance Levels Based on Composite Scores

Subject	Max. Point	Cut Scores		
		Basic	Proficient	Advanced
Bangla	100	Below 45	45-79	80 & above
Mathematics	100	Below 40	40-74	75 & above

Students getting lower than 45 (40) points in Bangla (Mathematics) out of a total score of 100 are categorised at the Basic learning level; obtaining 45-79 (40-74) points gets them under the "Proficient" level, and achievers of 80 (75) points or more rank them as "Advanced" level students. This helps to compare the performances of students across grades and across subjects. For example**,** while comparing two grade levels, we can observe what percentage of Grade 3 students are reaching a specific level on and above, and on the other hand, what percentage of Grade 4 students have reached that targeted level. If the percentage reached by grade 4 is lower than that of grade 3, it suggests that reaching learning objectives in Grade 4 is slightly more challenging than in Grade 3. Nevertheless, if the difference is relatively small, it can be concluded that most students successfully progress in their learning level from Grade 3 to Grade 4.

Composite Scores by Grades

The composite score results of Bangla show that almost 42 per cent of students of both grades are at the Basic level, 29 per cent belong to the Proficient level, and the rest 29 per cent are at the Advanced level. In accordance with the expectation, more students are found successful at the Basic level, and then with the increase in the score range, the proportion of successful students declines. Boys performed better at the basic level, but girls outperformed boys in the other two levels.

Figure 9.1: Composite Scores of Bangla (Grade 3)

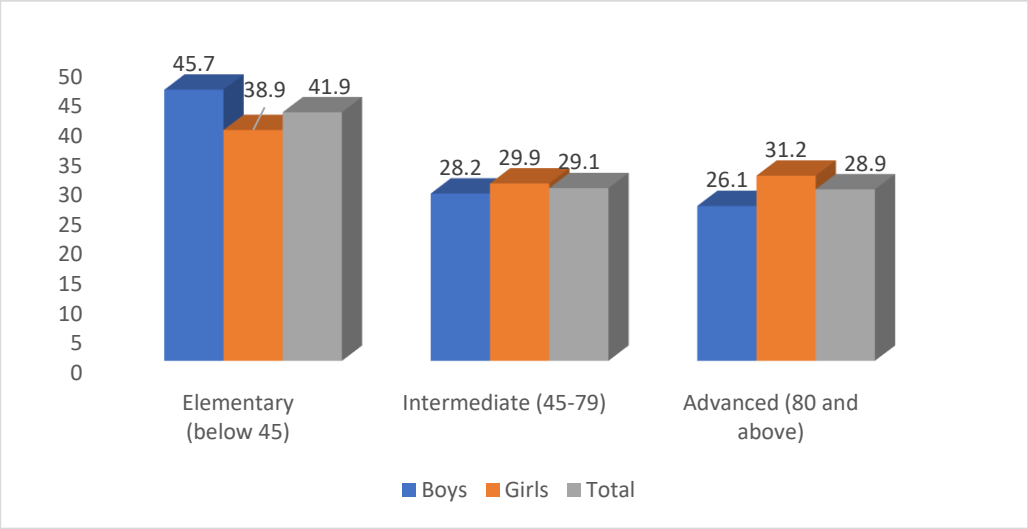
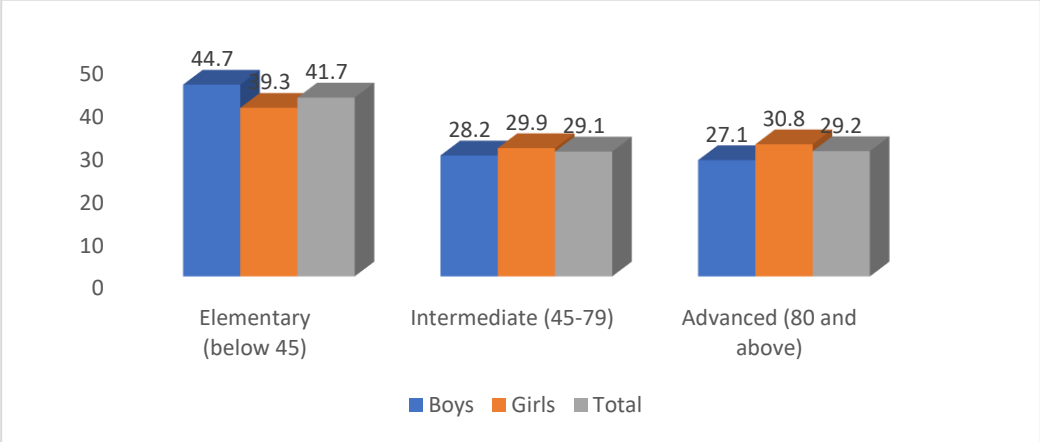


Figure 9.2: Composite Scores of Bangla (Grade 4)



For composite scores in Mathematics in grade 3, approximately 48 per cent of students are of Basic level, 36 per cent belong to the Proficient level, and only 16 per cent of the students could cross the cut-score of the Advanced level. A similar progression is visible for grade 4 students. The highest percentage of students is seen in the lowest score range, and the lowest is in the highest score category. In contrast to the performance in Bangla, for Mathematics, girls performed better only at the Basic level, but boys outperformed girls at the higher performance levels.

Figure 9.3: Composite Scores of Mathematics (Grade 3)

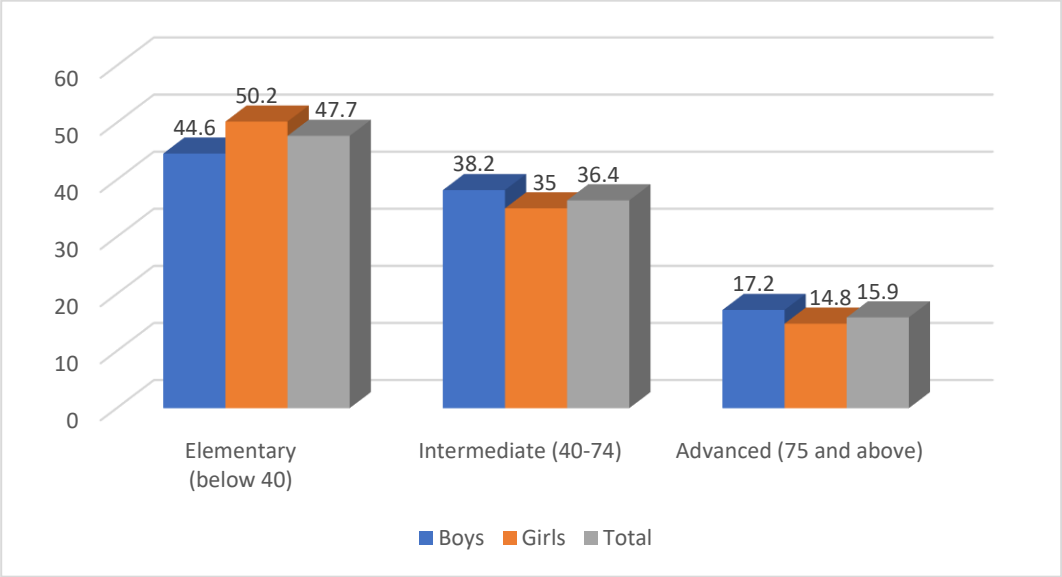
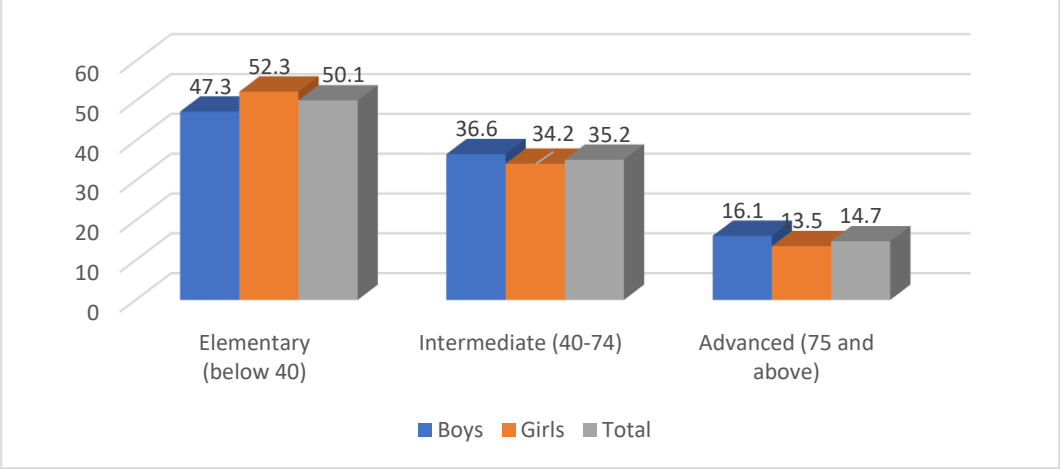


Figure 9.4: Composite Scores of Mathematics (Grade 4)



Composite Score by Location of Schools

Location-wise composite scores are presented below. As observed from data, urban performed better compared to that of the rural, and the char performed the worst. The char schools have the highest percentage of students in the Basic category among all four location types. It performed the worst in the two higher-order performance levels. This trend in performance is applicable for both grades and in both subjects, suggesting that schools in char areas might be falling behind in ensuring quality education for their children.

Table 9.2: Composite Score Disaggregated by Location of Schools

Description	Basic (below 40)		Proficient (40-74)		Advanced (75 and above)	
	N	%	N	%	N	%
Grade 3 (Bangla)						
Rural	9429	43	6421	30	5882	27
Urban	616	23	817	30	1264	47
Char	1932	57	872	26	611	18
Hill	932	32	858	29	1151	39
Grade 3 (Mathematics)						
Rural	10590	49	7997	37	3145	15
Urban	741	28	1146	43	810	30
Char	2160	63	1006	30	249	7
Hill	1167	40	1075	37	699	24
Grade 4 (Bangla)						
Rural	9585	43	6391	29	6277	28
Urban	614	23	889	33	1207	45
Char	1859	54	919	27	681	20
Hill	991	34	936	32	1010	34
Grade 4 (Mathematics)						
Rural	11432	51	7737	35	3084	14
Urban	867	32	1210	45	633	23
Char	2194	63	976	28	289	8
Hill	1192	41	1135	39	610	21

Performance of the Students by Background Characteristics

The data presented in Tables 53 through 62 pertains to grade 3 and grade 4 students in both Bangla and Mathematics. Our investigation focuses on two extreme performance levels: the *"below basic"* and *"advanced"* categories, as determined by content-domain analysis.

Our key observations reveal distinct characteristics associated with student performance:

1. **Poor Performance Characteristics**:
    - Students with **less-educated parents** tend to exhibit relatively poor performance.
    - Schools located **far from Upazila headquarters** also correlate with lower student achievement.
    - **Economically disadvantaged households**, as indicated by household income, contribute to subpar performance.
    - Lack of **participation in extra-curricular activities** is associated with weaker academic outcomes.
2. **Strong Performance Characteristics**:
    - Students with **educated and/or affluent parents** tend to excel academically.

- Schools situated **near Upazila headquarters** show a positive impact on student achievement.
- Active **participation in extra-curricular activities** is linked to better performance.

These patterns shed light on the interplay between student background, school location, and academic success. Understanding these dynamics can inform targeted interventions to improve overall educational outcomes.

Performance of the Students by Upazila

The performance of students in both Bangla and Mathematics across Upazilas for grades 3 and 4 is depicted through four maps. In this analysis, we categorise the performance levels based on aggregate scores and the mean ± 1 standard deviation range:

1. **Medium Category**: This range represents the mean score plus or minus one standard deviation. It serves as the benchmark for average performance.
2. **Low Category**: Upazilas falling below the medium range.
3. **High Category**: Upazilas surpassing the medium range.

Upon examining the maps, we observe that highly performing Upazilas are relatively scarce in number, whereas a larger proportion of Upazilas fall into the low or medium performance levels.

Table 9.3: Student's Performance (Grade 3) by Background Characteristics: Mother's Education

Mother's Education		Bangla			Math		
		Below Basic	Advanced level	Total	Below Basic	Advanced level	Total
Cannot read or write/never went to school	N	1,771	697	3,375	1,916	314	3,375
	R%	52.5	20.7	100.0	56.8	9.3	100.0
	C%	21.2	10.4	15.8	20.0	8.4	15.8
Below primary	N	1,787	709	3,462	2,017	349	3,462
	R%	51.6	20.5	100.0	58.3	10.1	100.0
	C%	21.4	10.5	16.2	21.0	9.3	16.2
Below secondary	N	3,887	3,099	10,085	4,517	1,637	10,085
	R%	38.5	30.7	100.0	44.8	16.2	100.0
	C%	46.6	46.0	47.2	47.0	43.6	47.2
Secondary	N	662	1,089	2,555	847	640	2,555
	R%	25.9	42.6	100.0	33.2	25.1	100.0
	C%	7.9	16.2	12.0	8.8	17.0	12.0
Higher secondary and above	N	243	1,137	1,882	309	819	1,882
	R%	12.9	60.4	100.0	16.4	43.5	100.0
	C%	2.9	16.9	8.8	3.2	21.8	8.8
Total	N	8,350	6,731	21,359	9,606	3,759	21,359
	R%	39.1	31.5	100.0	45.0	17.6	100.0
	C%	100.0	100.0	100.0	100.0	100.0	100.0

Table 9.4: Student's Performance (Grade 3) by Background Characteristics: Father's Education

Father's Education		Bangla			Math		
		Below Basic	Advanced level	Total	Below Basic	Advanced level	Total
Cannot read or write/never went to school	N	2,217	866	4,239	2,437	397	4,239
	R%	52.3	20.43	100	57.49	9.37	100
	C%	28.23	13.65	21.1	26.95	11.21	21.1
Below primary	N	1,585	720	3,268	1,806	349	3,268
	R%	48.5	22.0	100.0	55.3	10.7	100.0
	C%	20.2	11.4	16.3	20.0	9.9	16.3
Below secondary	N	3,027	2,242	7,670	3,513	1,205	7,670
	R%	39.5	29.2	100.0	45.8	15.7	100.0
	C%	38.6	35.3	38.2	38.9	34.0	38.2
Secondary	N	672	984	2,335	834	540	2,335
	R%	28.8	42.1	100.0	35.7	23.1	100.0
	C%	8.6	15.5	11.6	9.2	15.3	11.6
Higher secondary and above	N	351	1,533	2,580	453	1,050	2,580
	R%	13.6	59.4	100.0	17.6	40.7	100.0
	C%	4.5	24.2	12.8	5.0	29.7	12.8
Total	N	7,852	6,345	20,092	9,043	3,541	20,092
	R%	39.1	31.6	100.0	45.0	17.6	100.0
	C%	100.0	100.0	100.0	100.0	100.0	100.0

Table 9.5: Student's Performance (Grade 3) by Distance from Upazila Headquarter

Distance		Bangla			Math		
		Below Basic	Advanced level	Total	Below Basic	Advanced level	Total
Less than 5 km	N	2,020	2,322	6,111	2,308	1,492	6,111
	R%	33.1	38.0	100.0	37.8	24.4	100.0
	C%	15.7	26.1	19.9	15.8	30.4	19.9
6-10 Km	N	3,204	2,165	7,764	3,672	1,154	7,764
	R%	41.3	27.9	100.0	47.3	14.9	100.0
	C%	24.8	24.3	25.2	25.1	23.5	25.2
More than 10 Km	N	7,685	4,421	16,910	8,678	2,257	16,910
	R%	45.5	26.1	100.0	51.3	13.4	100.0
	C%	59.5	49.6	54.9	59.2	46.0	54.9
Total	N	12,909	8,908	30,785	14,658	4,903	30,785
	R%	41.9	28.9	100.0	47.6	15.9	100.0
	C%	100.0	100.0	100.0	100.0	100.0	100.0

Table 9.6: Student's Performance (Grade 3) by Household Income

Household Income (BDT)		Bangla			Math		
		Below Basic	Advanced level	Total	Below Basic	Advanced level	Total
Below 10,000	N	2,674	1,091	5,140	2,986	532	5,140
	R%	52.0	21.2	100.0	58.1	10.4	100.0
	C%	32.7	17.1	25.1	32.2	14.7	25.1
10,000-20,000	N	4,215	3,072	10,444	4,721	1,693	10,444
	R%	40.4	29.4	100.0	45.2	16.2	100.0
	C%	51.6	48.1	51.0	50.9	46.6	51.0
20,001-40,000	N	1,036	1,718	3,886	1,282	1,081	3,886
	R%	26.7	44.2	100.0	33.0	27.8	100.0
	C%	12.7	26.9	19.0	13.8	29.8	19.0
40,000 above	N	249	509	1,018	289	325	1,018
	R%	24.5	50.0	100.0	28.4	31.9	100.0
	C%	3.1	8.0	5.0	3.1	9.0	5.0
Total	N	8,174	6,390	20,488	9,278	3,631	20,488
	R%	39.9	31.2	100.0	45.3	17.7	100.0
	C%	100.0	100.0	100.0	100.0	100.0	100.0

Table 9.7: Student's Performance (Grade 3) by Participation in Extracurricular Activities

Participation in ECAs		Bangla			Math		
		Below Basic	Advanced level	Total	Below Basic	Advanced level	Total
Participated	N	6,216	5,384	16,499	7,036	3,097	16,499
	R%	37.7	32.6	100.0	42.7	18.8	100.0
	C%	47.9	60.1	53.3	47.7	63.0	53.3
Not participated	N	6,761	3,580	14,467	7,728	1,820	14,467
	R%	46.7	24.8	100.0	53.4	12.6	100.0
	C%	52.1	39.9	46.7	52.3	37.0	46.7
Total	N	12,977	8,964	30,966	14,764	4,917	30,966
	R%	41.9	29.0	100.0	47.7	15.9	100.0
	C%	100.0	100.0	100.0	100.0	100.0	100.0

Table 9.8: Student's Performance (Grade 4) by Background Characteristics: Mother's Education

Mother's Education		Bangla			Math		
		Below Basic	Advanced level	Total	Below Basic	Advanced level	Total
Cannot read or write/ never went to school	N	1,953	621	3,476	2,205	264	3,476
	R%	56.2	17.9	100.0	63.4	7.6	100.0
	C%	20.8	8.3	14.5	19.2	7.0	14.5
Below primary	N	1,606	768	3,252	1,894	331	3,252
	R%	49.4	23.6	100.0	58.2	10.2	100.0
	C%	17.1	10.2	13.5	16.5	8.7	13.5
Below secondary	N	4,798	3,577	12,174	5,964	1,711	12,174
	R%	39.4	29.4	100.0	49.0	14.1	100.0
	C%	51.0	47.6	50.7	52.0	45.1	50.7
Secondary	N	785	1,306	3,004	1,021	683	3,004
	R%	26.1	43.5	100.0	34.0	22.7	100.0
	C%	8.3	17.4	12.5	8.9	18.0	12.5
Higher secondary and above	N	272	1,245	2,107	396	807	2,107
	R%	12.9	59.1	100.0	18.8	38.3	100.0
	C%	2.9	16.6	8.8	3.5	21.3	8.8
Total	N	9,414	7,517	24,013	11,480	3,796	24,013
	R%	39.2	31.3	100.0	47.8	15.8	100.0
	C%	100.0	100.0	100.0	100.0	100.0	100.0

Table 9.9: Student's Performance (Grade 4) by Background Characteristics: Father's Education

Father's Education		Bangla			Math		
		Below Basic	Advanced level	Total	Below Basic	Advanced level	Total
Cannot read or write/ never went to school	N	2,412	714	4,320	2,808	321	4,320
	R%	55.8	16.5	100.0	65.0	7.4	100.0
	C%	27.4	10.3	19.3	26.1	9.1	19.3
Below primary	N	1,563	783	3,194	1,787	329	3,194
	R%	48.9	24.5	100.0	56.0	10.3	100.0
	C%	17.8	11.2	14.3	16.6	9.4	14.3
Below secondary	N	3,657	2,707	9,235	4,554	1,297	9,235
	R%	39.6	29.3	100.0	49.3	14.0	100.0
	C%	41.5	38.9	41.3	42.4	36.9	41.3
Secondary	N	751	1,080	2,699	1,013	543	2,699
	R%	27.8	40.0	100.0	37.5	20.1	100.0
	C%	8.5	15.5	12.1	9.4	15.4	12.1
Higher secondary and above	N	424	1,684	2,923	591	1,026	2,923
	R%	14.5	57.6	100.0	20.2	35.1	100.0
	C%	4.8	24.2	13.1	5.5	29.2	13.1
Total	N	8,807	6,968	22,371	10,753	3,516	22,371
	R%	39.4	31.2	100.0	48.1	15.7	100.0
	C%	100.0	100.0	100.0	100.0	100.0	100.0

Table 9.10: Student's Performance (Grade 4) by Distance from Upazila Headquarter

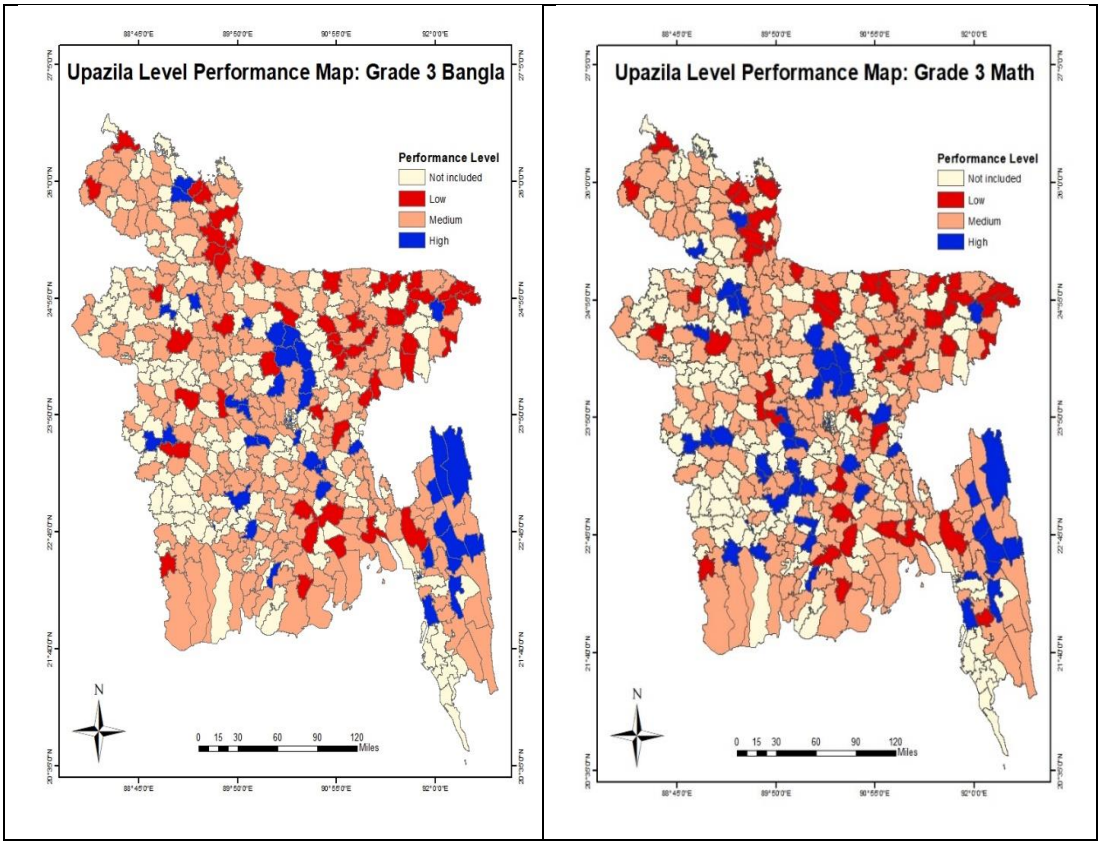
Distance		Bangla			Math		
		Below Basic	Advanced level	Total	Below Basic	Advanced level	Total
Less than 5 km	N	2,006	2,190	6,112	2,477	1,195	6,112
	R%	32.8	35.8	100.0	40.5	19.6	100.0
	C%	15.4	23.9	19.5	15.8	25.9	19.5
6-10 Km	N	3,324	2,252	7,906	3,983	1,127	7,906
	R%	42.0	28.5	100.0	50.4	14.3	100.0
	C%	25.5	24.5	25.2	25.4	24.4	25.2
More than 10 Km	N	7,719	4,733	17,341	9,225	2,294	17,341
	R%	44.5	27.3	100.0	53.2	13.2	100.0
	C%	59.2	51.6	55.3	58.8	49.7	55.3
Total	N	13,049	9,175	31,359	15,685	4,616	31,359
	R%	41.6	29.3	100.0	50.0	14.7	100.0
	C%	100.0	100.0	100.0	100.0	100.0	100.0

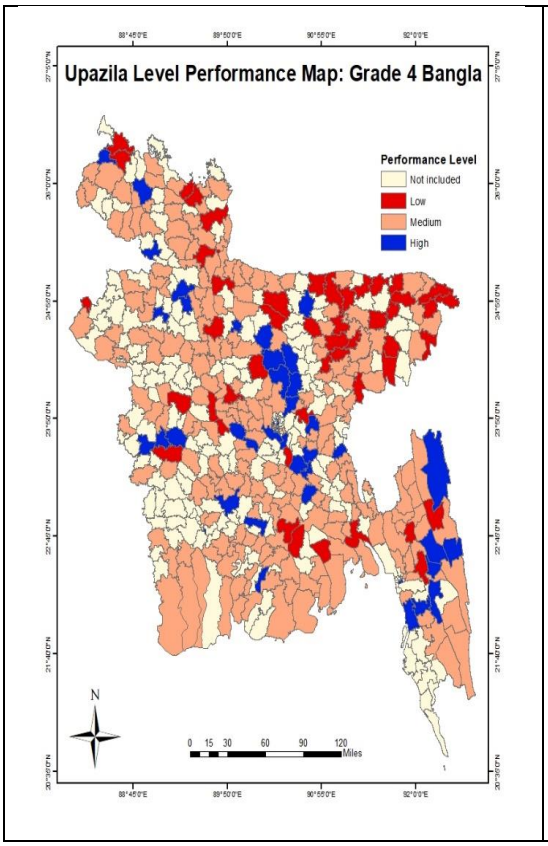
Table 9.11: Student's Performance (Grade 4) by Household Income

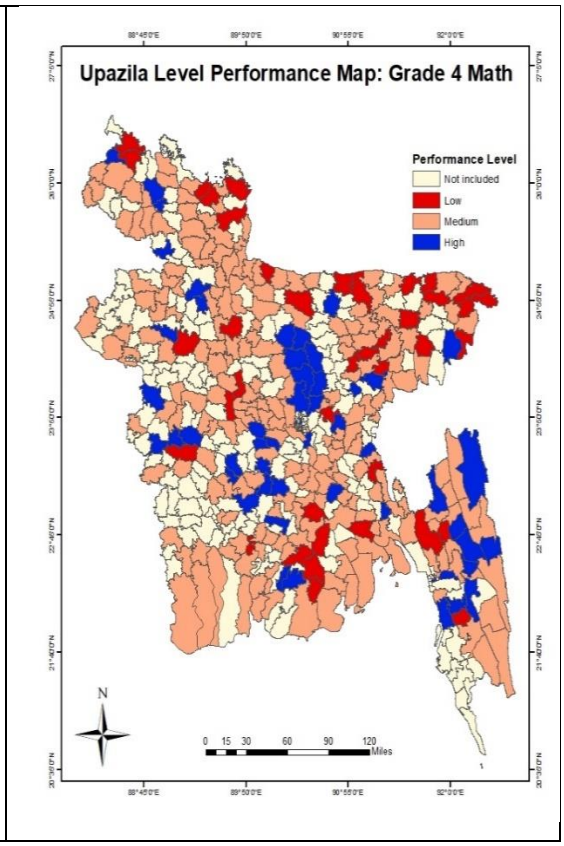
Household Income (BDT)		Bangla			Math		
		Below Basic	Advanced level	Total	Below Basic	Advanced level	Total
Below 10,000	N	2,484	888	4,616	2,880	389	4,616
	R%	53.8	19.2	100.0	62.4	8.4	100.0
	C%	30.6	13.4	22.3	29.4	11.5	22.3
10,000-20,000	N	4,216	3,249	10,682	5,096	1,627	10,682
	R%	39.5	30.4	100.0	47.7	15.2	100.0
	C%	52.0	49.2	51.5	52.0	47.9	51.5
20,001-40,000	N	1111.0	1871.0	4228.0	1458.0	1042.0	4228.0
	R%	26.3	44.3	100.0	34.5	24.7	100.0
	C%	13.7	28.3	20.4	14.9	30.7	20.4
40,000 above	N	295	597	1,218	369	336	1,218
	R%	24.2	49.0	100.0	30.3	27.6	100.0
	C%	3.6	9.0	5.9	3.8	9.9	5.9
Total	N	8,106	6,605	20,744	9,803	3,394	20,744
	R%	39.1	31.8	100.0	47.3	16.4	100.0
	C%	100.0	100.0	100.0	100.0	100.0	100.0

Table 9.12: Student's Performance (Grade 4) by Participation in Extracurricular Activities

Participation in ECAs		Bangla			Math		
		Below Basic	Advanced level	Total	Below Basic	Advanced level	Total
Participated	N	6992	6060	18575	8525	3216	18575
	R%	37.6	32.6	100.0	45.9	17.3	100.0
	C%	53.2	65.8	58.9	54.0	69.6	58.9
Not participated	N	6141	3144	12938	7263	1408	12938
	R%	47.5	24.3	100.0	56.1	10.9	100.0
	C%	46.8	34.2	41.1	46.0	30.5	41.1
Total	N	13133	9204	31513	15788	4624	31513
	R%	41.7	29.2	100.0	50.1	14.7	100.0
	C%	100.0	100.0	100.0	100.0	100.0	100.0




Upazila Level Performance Map: Grade 4 Bangla
Performance Level
Not included
Low
Medium
High
N
0 15 30 60 90 120
Miles


Upazila Level Performance Map: Grade 4 Math
Performance Level
Not included
Low
Medium
High
N
0 15 30 60 90 120
Miles

CHAPTER 10
SUMMARY AND CONCLUSIONS

Our analysis reveals significant learning gaps in primary education, exacerbated by the COVID-19 pandemic. This study, focusing on government primary schools, shows an 8.7 per cent decline in student enrolment from 2019 to 2022, with the most significant drop (18 per cent) in char/coastal areas and the least (3.3 per cent) in urban settings. Performance evaluations in both Bangla and Mathematics highlight the gap in learning, with Mathematics showing more pronounced deficiencies. Girls outperformed boys in Bangla, while the reverse was true for Mathematics. Variations in performance also emerged across different geographical locations and were influenced by school and socio-economic factors. These findings underline the urgent need for targeted interventions to address the educational disruptions caused by the pandemic.

Based on the analyses presented in the report, the following may be taken into consideration to recover the heavy deficiency caused by various factors, including the COVID-19 pandemic.

Acknowledgement and Communication: Recognise the learning gaps and communicate this challenge to all stakeholders to foster a collective response.

Stakeholder Engagement: Develop a shared understanding among policymakers, educators, parents, and students through meetings and workshops to align efforts in addressing learning gaps.

Blended Learning Approach: Integrate remote and in-person learning to provide a comprehensive educational experience, enhancing access and quality of education.

Teacher Training: Prepare teachers for blended and accelerated learning environments through motivational and skill-enhancing training programs.

Targeted Interventions: Implement specialised strategies for hard-to-reach and disadvantaged students, ensuring inclusivity and equity in educational recovery efforts.

Dedicated Educational Broadcasting: Launch a state-run TV channel focused on educational content to extend learning opportunities to a wider student population.

Monitoring and Evaluation: Establish robust monitoring and progress-tracking mechanisms to ensure effective implementation and timely adjustments based on feedback and outcomes.

By adopting these recommendations, we can mitigate the impact of educational disruptions and improve learning outcomes for primary school students, fostering a resilient and inclusive educational system.

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