

**Directorate of Secondary and Higher Education (DSHE)
Secondary and Higher Education Division (SHED)
Ministry of Education
People's Republic of Bangladesh**

Data Collection Survey on Secondary Education Sector

Final Report

July 2023

JAPAN INTERNATIONAL COOPERATION AGENCY

**PADECO Co., Ltd.
IC Net Limited
INTEM Consulting, Inc.**

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Summary

Chapter 1 Outline of This Survey

The People's Republic of Bangladesh ("Bangladesh") has long been labeled the poorest country in the world; however, in 2005, Bangladesh was included in the Next 11, a group of countries expected to achieve the next highest economic growth after the BRICs, and the country's development has been remarkable. Vision 2041, the successor to Vision 2021, a comprehensive manifesto that aimed for rapid progress by 2021, the 50th anniversary of Bangladesh's independence, aims to become a middle-income country by 2031 and a developed country by 2041. Recognizing the need to shift from a labor-intensive to a knowledge- and capital-intensive economy in order to become a developed country, the vision advocates the improvement of human resources, including the improvement of the quality of primary and secondary education.

Primary education has improved significantly in recent years, thanks to the efforts of the government and support from Development Partners (DP). The Net Enrollment Ratio (NER) improved from 87.2% (2005) to 97.42% (2021), and the completion ratio from 53% (2005) to 85.85% (2021). On the other hand, secondary education lags behind primary education in improving enrollment rates and other improvement efforts. The NER for secondary education (G6-G10), including madrasa programs, is 70.25% (2021), and for higher secondary education, 40.54% (2021). Completion rates are 64.34% (2021) for secondary education (G6-G10) and 78.86% (2021) for higher secondary, which means that a low percentage of enrolled students are graduating and investments in education are not translating into efficient graduation. To address these challenges, the first SWAp, the Secondary Education Development Program (SEDP), was launched in 2018.

JICA started to support technical education for industrial human resource development in 2019, but during the implementation of the said cooperation, it was confirmed that the basic academic skills and specialized knowledge of students in polytechnic institutes had not reached the level required by industry. Therefore, it is considered necessary to raise the level of basic academic skills centering on science and mathematics in secondary education (general education), which connects primary education and technical education, but JICA has not provided cooperation in secondary education (general education) to date. Therefore, it is necessary to broadly confirm the details of support needs with a view to addressing secondary education (G6-G12) as a priority issue in the future.

This survey was conducted to confirm and analyze the current situation and challenges of secondary education (G6-G12) in Bangladesh, trends in other DPs, and the intentions and support needs of the Bangladeshi government, based on the results of JICA's cooperation in the education sector to date, and to consider the direction of JICA's future cooperation in the secondary education (general education) and specific candidate projects. The survey was conducted from July 2022 to July 2023 and was carried out by nine experts.

Chapter 2 Political and Socioeconomical Condition

Bangladesh has the world's 8th largest population of approximately 166.3 million (2021). With a population density of 1,277 persons/km², Bangladesh has the world's highest population density of any country with a population over 10 million, and its average annual population growth rate is 0.97%. Although the population is still growing, the rate of population growth is much slower than in the past. In 1994, 47.2% of women had their first marriage by the age of 15, but this figure had dropped to 19.3% by 2018. Medical care and living and nutritional conditions have also

improved. In terms of infant mortality (per 1,000 live births), Bangladesh had the second highest mortality rate among neighboring countries in 1990, after Pakistan, but had the lowest rate among neighboring countries in 2020. Thus, while the total fertility rate has declined significantly due to a gradual increase in the age of marriage, the overall population continues to grow due to improvements in mortality and life expectancy resulting from improved medical care and nutrition. In other words, the population of the younger generations is shrinking. Although the working-age population is expected to increase over the next decade or so, there are indications that population growth may slow and that the country may be headed toward an aging society in which a small number of younger people support a large number of elderly people.

Bangladesh is also characterized by high population density. The population density of the capital city of Dhaka is particularly high, increasing rapidly from 685 persons/km² in 1974, the year of independence, to 1,521 persons/km² in 2011. This increase is much higher than the natural population growth rate and is thought to be mainly due to the population influx into the capital city. One factor contributing to the influx of population into urban areas is the disparity between urban and rural areas, but this disparity is dissipating. By 2020, the electrification rate had improved significantly, and the difference between urban and rural areas had almost disappeared. The installation of toilets also improved significantly between 2011 and 2020, with 91.2% of urban areas and 73.5% of rural areas having toilets. On the other hand, access to running water remains low in both urban and rural areas. The percentage of those who go on to secondary education (G6-G10) is approximately 50% in urban areas and 40% in rural areas, a disparity of about 10%. On the other hand, the poverty rate is on a downward trend. Both rural and urban poverty rates are on a downward trend, with a 26.7-point gap between urban and rural areas in 1995/96, but the gap narrowed to 17.1 points in 2000, 13.9 points in 2010, and 7.5 points in 2016. However, there are still differences in individual areas. By Division, Rangpur's poverty rate is 47.23%, 31.23% higher than Dhaka's 16.0%.

Economic growth is steady. Bangladesh was once considered one of the poorest countries in the world, but in recent years it has maintained an average annual Gross Domestic Product (GDP) growth rate of about 6%, which is higher than the world average. In future projections, the difference between GDP growth and price inflation is unlikely to diverge significantly, and from a macro perspective, stable growth is expected for the nation. With a strong economy and a cheap and abundant labor force, Bangladesh's unemployment rate is not high, hovering at 4~5% until 2019, but rising by about 1% to 5.4% in 2020. However, since a large share of Bangladeshis are employed in the informal sector (around 85%), there is likely to be a large number of potentially unemployed people in Bangladesh. In terms of the percentage of workers by industry, the primary sector has consistently declined, while the secondary sector increased from 14% in 2005/06 to 21% in 2013, but showed stagnation in 2016/17.

Chapter 3. Overall View of the Secondary Education Subsector

The educational system can be divided into three main categories: general education (5-3-2-2 system), technical education, and madrasa education. Primary education is compulsory for G1-5. Secondary education consists of three stages (a total of seven years): junior secondary education (G6-8, three years), secondary education (G9-10, two years), and higher secondary education (G11-12, two years). There used to be a final examination at the end of each stage, but in recent years, only the Secondary School Certificate Examination (SSCE) and Higher Secondary Certificate Examination (HSCE) have been offered.

While more than half of all primary schools are government schools, non-government schools account for more than 90% of secondary schools. Although they are non-government schools, their curriculum and textbooks are developed by the government, and they receive a large subsidy

from the government for the basic salaries of some teachers, capital and some operating expenses, etc. A new curriculum is being introduced in 2023, which will be a common course up to secondary education, and from higher secondary education, students will have the choice of three courses: science, humanities, and business. Primary schools (G1-5) will have three terms, and thereafter will have two semesters.

In secondary education, one of the features of the system is the teacher salary subsidy system (Monthly Pay Order: MPO). Schools registered with the government become MPO-accredited, and the government provides basic salaries for some regular teachers in MPO-accredited schools. That is, non-government schools can be classified as MPO-accredited or non-accredited. The percentage of MPO-accredited schools is 78%. Out of the total number of 364,882 teachers, 270,714 (74%) are MPO teachers.

The number of secondary education students has increased in recent years. While the total number of students in primary education has gradually decreased as a result of the increasing enrollment at school age and the results of reduced dropout and retention rates, the number of students in post-primary education continues to grow, and since 2017, the number of students enrolled in post-primary education has exceeded the number of students in primary education. Scholarships have also contributed significantly to this. The various scholarship programs for secondary education used to be disorganized, but are now unified under the Harmonized Stipend Program (HSP). Various measures have also been taken to increase the enrollment rate. The NER for primary education exceeded 97% in 2013, almost reaching full enrollment, and the NER for secondary education (G6-10) improved significantly from 49.1% in 2009 to 70.3% in 2021. Gender disparities are not observed, but regional disparities remain.

A major influence on the learning environment is the Teacher-Student Ratio (TSR), with non-government schools having a lower TSR than government schools.

Although the pass rate for the final certification examinations for each stage is high, it does not reflect the level of learning attainment. To fill in the missing information, the National Assessment of Secondary Students (NASS) is being conducted as a sample survey in English, Bengali, and mathematics in secondary education with the support of the World Bank. An improvement in academic performance was observed in 2019 compared to 2017.

The survey team analyzed the EMIS data regarding the school's facility environment. The results showed that only 20% of the schools had a science laboratory and 20% had an ICT room with at least one computer.

The Bangladeshi government's response to the COVID-19 spread was swift. On March 16, 2020, after the first infected person was confirmed on March 8, 2020, the government ordered the closure of all schools, and from March 18, schools, including colleges nationwide, were closed. The lifting of the school closure was on September 12, 2021, which was indeed a year-and-a-half-long period of closure. During this period, alternative education was provided through TV programs, radio programs, and online classes. Many teachers also received support from the a2i (aspire to Innovation) program and recorded their own classes and posted them on social media. Fortunately, there was little impact on enrollment.

Chapter 4. Policies and Regulations Related to Secondary Education

The Perspective Plan of Bangladesh 2010-2021 (PP2021), based on the "Vision 2021," the manifesto of the second term of the Hasina administration that set a goal of becoming a middle-income country by 2021, the 50th anniversary of independence, aims to create a nation without

extreme polarization between rich and poor. Its successor, the Perspective Plan of Bangladesh 2021-2041 (PP2041), aims to eradicate poverty, to become an upper middle-income country by FY2031 and a high-income country by FY2041, to shift to an economy centered on industrial and digital economies, to become a knowledge-intensive nation and a skills-intensive society. To achieve this goal, emphasis will also be placed on secondary education with the goal of achieving a 0% dropout rate by 2031. In the area of improving the quality of education, emphasis is placed on science, mathematics, language skills education, and ICT education.

The Eighth Five-Year Plan 2020-2025, which outlines how to realize the vision of PP 2041, includes goals such as improving enrollment rates and improving the number of students per teacher. Strategies for secondary education include: 1) reforming testing and assessment methods for student learning outcomes (with emphasis on assessment of competency acquisition), 2) increasing enrollment in science courses, 3) introducing a common curriculum up to G10, 4) expanding the role of ICT-based learning, and 5) introducing vocational training courses in secondary education.

The National Education Policy 2010 (NEP2010) is the only comprehensive policy document that comprehensively addresses education in Bangladesh, where there is no comprehensive statute equivalent to the Education Act. NEP2010 describes important policies, such as the change of primary education from the current five-year system to an eight-year system. Typical statements on secondary education are: 1) the purpose and goal of secondary education is to develop learners' intellectual and inner abilities and to acquire the ability to compete in the labor market; 2) schools offering science courses will be equipped with laboratories with the necessary laboratory equipment; 3) the Teacher Students Ratio (TSR) will be improved to 30 by 2018; 4) Provide teacher training for teachers of all subjects; 5) Emphasize science and mathematics and regularly conduct practical lessons in science education; 6) Utilize computers for instruction from the primary education level; and 7) Develop creative testing methods to assess mastery of course content rather than rote learning. The goals of teacher training include: 1) improving teaching methods, subject knowledge, personalities, and qualities, and 2) developing the ability to effectively conduct classes using new teaching materials and methods. Furthermore, to improve the insufficient number of trainees accepted by teacher training institutions, the following measures were taken: 1) Establishment of one Regional Academy for Educational Management (RAEM) in each division; 2) increase the number of Training College (TTC) Govt. schools by restricting the establishment of Non-Govt. TTC which is under standard level.

The Education Sector Plan (ESP) 2020/21 - 2024/25 aims to achieve full enrollment up to G8 by 2030, and includes the installation of toilet facilities in all schools and the provision of opportunities for non-formal education for out-of-school children to receive life skills and vocational education up to G8. To improve quality, the curriculum and textbooks will be revised to focus on core competencies rather than rote learning, and a balanced learning assessment system will be introduced that includes formative and summative assessments. In addition, participation in PISA (Program for International Student Assessment), TIMSS (Trends in International Mathematics and Science Study), etc. are mentioned. ESP also includes the enhancement of Continuous Professional Development (CPD) for teachers.

Chapter 5. Administrative and Financial Affairs Related to Secondary Education

The civil service in Bangladesh is divided into four classes, from Class 1 to 4, according to the nature of their work. Class 1 is divided into Cadre and Non-Cadre. Cadres are senior civil servants (career bureaucrats) called Bangladesh Civil Service (BCS), and there are 26 Cadres in total. Cadres are classified into three categories: General Cadres, Professional Cadres, and General and Technical Cadres. Cadre (Administration) and Cadre (General Education) are typical examples

of positions related to secondary education. Class 1 is subject to transfer; BCS (Administration) transfers between ministries, while BCS (General Education) transfers within MOE.

The national administrative structure in Bangladesh is more fragmented than in many other countries, with nearly 40 ministries/divisions, which are frequently reorganized. Currently, two ministries are responsible for education administration. The Ministry of Primary and Mass Education (MOPME) is in charge of primary education, literacy, and non-formal education, while the Ministry of Education (MOE) is in charge of secondary, technical education, higher education, and madrasa education. The MOE is divided into two divisions: the Secondary and Higher Education Division (SHED), which is responsible for secondary and higher education, and the Technical and Madrasa Education Division (TMED), which is responsible for technical and madrasa education. There are also a number of external organizations related to MOE.

Although there are many organizations under SHED, this chapter focuses on the following organizations.

- Directorate of Secondary and Higher Education (DSHE)
- National Academy for Educational Management (NAEM)
- National Curriculum and Textbook Board (NCTB)
- Education Engineering Department (EED)
- Bangladesh Bureau of Educational Information and Statistics (BANBEIS)
- Non-Government Teachers Registration and Certification Authority (NTRCA)
- Department of Inspection and Audit (DIA)
- Local administration

Bangladesh has 11 Education Boards throughout the country that are independent of MOE in their organizational chart. Of these, nine are for general education, one for madrasa education, and one for technical education. The Boards of Intermediate and Secondary Education (BISE), one in each of the eight divisions and one in Comilla, make a total of nine BISEs, which are responsible for conducting public examinations, accrediting new non-government schools when they open, and supervising, managing, and developing non-government schools, as well as student management (correcting name errors and handling transfers).

In the education budget, primary education ranked first within the education sector with 45.2% of expenditures in FY 2017-18, but gradually the share of secondary and higher education increased to 48.1% in FY 2021-22, 13.4 percentage points more than the 34.7% of primary education. Thus, the share of primary education is gradually declining in the budget as well.

Chapter 6. Curriculum and Teaching and Learning Materials for Secondary Education

The NCTB is responsible for the development, printing, and distribution of curriculum and textbooks from KG to secondary education (general education). The secondary education curriculum was developed in 1995 and revised in 2012, and the curriculum for G6-7 was revised in 2023; G8 and beyond will be revised sequentially starting in 2024. In preparing the secondary curriculum, the Curriculum Development and Revision Committee drafts the curriculum, which is then reviewed by a higher-level committee and finally approved by MOE. Textbooks are drafted by the NCTB, reviewed by subject-specific committees, and then approved by the MOE. There is only one national textbook, and all schools in the country use the national curriculum and textbooks, regardless of whether they are government or non-government schools. The new curriculum to be introduced in 2023 is called the Competency-Based Curriculum and will be based on the Experiential Learning Approach (ELA) and the promotion of formative assessment. The following is an analysis of the revised curriculum and textbooks (2023 edition).

Mathematics (G6)

- **Unit:** It was difficult to understand the relationship between the Competency set in the curriculum and the learning content, and many units were included in each Competency.
- **Classroom organization:** The lesson structure was greatly improved by incorporating many illustrations and activities in the textbooks to help students' understanding, and by encouraging students to think and understand by themselves through the activities. However, it has become like activity oriented, and many unnecessary activities and contents are included.
- **Connection with primary education:** There is no significant gap in terms of difficulty and content of the questions. Many illustrations and activities are used to help students understand, and there are few gaps in learning methods.
- **Assessment:** The assessment methods described in the curriculum and textbooks are only general descriptions and are difficult for teachers to implement.

Science (G6)

- **Units:** Compared to mathematics, the new curriculum and corresponding units in the new textbooks are more clearly described in science, and Competencies are also subdivided, so it is easier to understand which Competency is to be acquired in which unit than in mathematics.
- **Classroom organization:** In-class activities are described in detail. The new textbook is divided into two books, one with textbook-like explanations and the other focusing on student activities and experiments. However, there is no connection between the two books, making it difficult to understand the different roles and teaching methods of each.
- **Assessment:** As with mathematics, it is difficult for teachers to understand specific assessment methods.

Chapter 7. Academic Assessment in Secondary Education

The academic assessment system for secondary education (general education) is currently undergoing a redesign and is in flux. For this reason, this chapter summarizes the current status and issues for each element within the concept based on the most recent conception of the system as of June 2023. Under the current conception, the assessment of academic achievement can be divided into two categories: the academic assessment of each student and the student achievement survey. The academic assessment of each student can be divided into an in-school assessment and a certificate exam at each stage of completion. As for student achievement surveys, the NASS, a sample academic achievement test for secondary education for the purpose of policy advocacy, is being implemented with the support of the World Bank.

The characteristics of each assessment are described below.

- **In-School Assessment:** In-School assessment is divided into Assessment During Learning (ADL) and term-end exam. ADL consists of two parts: formative assessment (FA) to assess student learning during class and summative assessment (SA) to test understanding at the end of each topic, for example. Each student's academic performance will be assessed by a summative evaluation of the SA of the ADL and the term-end exam. Students will be automatically promoted to the 10th grade.
- **The certificate examinations for completion** are conducted and administered by the BISE, which are located in nine locations throughout Bangladesh. There are a total of 12 subjects (7 required and 5 elective) for SSCE at the end of G10 and 13 subjects (5 required and 8 elective) for HSCE at the end of G12. Since examination questions are developed by each BISE, the difficulty level of the examinations will not be exactly the same for each BISE. Currently, efforts are being made to standardize the design of the questions. SSCE/HSCE is an important

examination that determines whether or not a student will be admitted to a university, and under the new curriculum, the results of the internal formative assessment (50% for SSCE and 30% for HSCE) will be added to SSCE and HSCE scores. Academic achievement differences are observed among schools, with varying pass rates on SSCE/HSCE and the percentage of students obtaining a GPA of 5.0.

- **National Assessment of Secondary Students (NASS):** Since 2012, sample assessments have been conducted almost every two years for policy evaluation and decision making. The target grades are 6, 8, and 10, and the subjects administered are Bengali, English and Mathematics.

Chapter 8. Teachers of Secondary Education

Secondary school teachers in Bangladesh are broadly classified into three categories: Govt. school teachers, Non-Govt. school MPO teachers, and Non-Govt school non-MPO teachers (mainly part-time teachers). Government school teachers, who are government employees, are subject to the Government Servant (Conduct) Rules 1979, while non-government school teachers are governed by the teachers' terms and conditions of service regulations prescribed by BISE. Although the rules prohibit side jobs except with the prior permission of the appointing authority, in practice, many teachers are engaged in paid tutoring of students outside of school classes, which is one of the factors hindering the improvement of the quality of education in Bangladesh. Government school teachers are recruited through the BCS exam conducted by the PSC, while non-government school teachers are recruited through the NTRCA recruitment exam. Non-MPO teachers are mostly part-time teachers and are recruited through the School Management Committee (SMC) in secondary schools (G6-10) and through the Governing Body in the higher secondary schools (G11-12).

According to the Bangladesh population projections by age group, the population under the age of 19 will peak and decline in the future, and the quantitative demand for teachers is expected to decrease accordingly. In fact, the number of students in secondary education (G6-G10) has been declining since 2018, while the number of students in higher secondary education (G11-12) has remained almost flat, with a slight increase between 2020 and 2021. However, the Teacher Student Ratio (TSR) for secondary education (G6-10) is 38 as of 2021, which is 8 above the NEP 2010 policy target of 30. There is a shortage of approximately 73,000 teachers to make up this difference, but with approximately 18,000 teachers passing the NTRCA recruitment exam in 2019, it will take at least four years to make up this shortage, assuming the same number of teachers are added each year. Therefore, the shortage of teachers in secondary education in Bangladesh is expected to continue for the foreseeable future.

The survey team conducted classroom assessments and analysis of questions and activities using lesson observation tools in G6 and G7 science and math classes that were being taught based on the 2023 curriculum and textbooks (16 classes in 7 schools in total). The overall issues observed were as follows.

- In both mathematics and science, activities were incorporated according to the textbooks and teacher's guides, and many lessons showed the intention of asking questions to students. However, most of the questions were simple yes-or-no answers or simple knowledge questions, and the number of questions that made students think did not increase.
- Many of the activities were conducted after the teacher explained the content of the activity, or were conducted in sequence while the teacher explained everything, and activities in which the students had to think and derive answers were not conducted.

- In order to improve the above issues, it is necessary to describe in more detail in the teachers' guide how to conduct the activities and what questions to ask students and how to ask them, as well as to provide guidance on how to conduct activities and how to ask questions in the teachers' training.

Chapter 9. Teacher Training in Secondary Education

Teacher training greatly affects the quality of teachers. In Bangladesh, however, a bachelor's degree in any field is sufficient to become a secondary education teacher, and the distinction between Pre-Service Training (PRESET), which provides the basic skills necessary to become a teacher, and In-Service Training (INSET), which strengthens those skills after becoming a teacher, is ambiguous. PRESET and INSET in secondary education in Bangladesh are mainly provided by TTC, HSTTI, NAEM, IER, and BOU, and their roles are as follows. Of these, BOU is a distance learning institution with no school building.

Type	Number of Institutions	PRESET	INSET	
		G6-10	G6-10	G11-12
TTC	14 Govt. colleges, 90 non-Govt college	✓	✓	
IER	4 universities (Dhaka, Rajshahi, Chittagong, Khulna)	✓		
BOU	1 HQ, 12 Regional Resource Centers, 80 Sub-regional Centers	✓	✓	
HSTTI	5 Govt. institutions	-		✓
NAEM	1 institution	-	✓	✓

PRESET: Newly hired secondary school (G6-10) teachers who have not yet earned a Bachelor of Education (B.Ed.) degree are required to obtain the B.Ed. degree at a TTC or other institution within five years of employment. For higher secondary school teachers, the B.Ed. degree is not mandatory, but Govt. school teachers are required to take the Foundation Training Course (FTC) at NAEM after being hired. The challenges for PRESET in Bangladesh are 1) BOU, which allows students to attend school one day a week to complete their degree, attracts many students, and the B.Ed. course at TTC is facing a serious shortage of students; 2) obtaining a degree has become the objective rather than developing skills as a teacher; 3) science experiments are not being taught because there is no point allocation within the B.Ed. course curriculum;

INSET: It is mainly provided by NAEM and HSTTI. NAEM mainly targets Govt. school teachers and provides FTC to new higher secondary school teachers and educational management and administration training to secondary school principals, etc. HSTTI provides subject-based training, Computer teacher training, and educational administration and management training mainly for non-Govt. higher secondary school teachers. In these INSETs, the majority of training content is related to educational administration and management, teaching methods, ICT, English, etc. Most of the subject-based training in HSTTI is also training in teaching methods. As a result, training related to specialized subject-specific content is rarely provided. Compared to the total number of secondary school teachers (G6-12) of approximately 320,000, the combined annual training capacity of NAEM and HSTTI (all five schools) is about 6,000, which is not enough at all. Thus, INSET in Bangladesh faces significant challenges in terms of both quality and quantity, and there is a great need for support.

Chapter 10. ICT/DX and Distance Education in Secondary Education

With "Digital Bangladesh," Bangladesh has made great strides in digitization. Its successor, "Smart Bangladesh," utilizes ICT to enable a smart transformation of society as a whole, including cashless payments and paperless provision of public services. In addition, various educational policies advocate the acquisition of 21st-century skills through technology-based distance education and blended learning that combines distance and face-to-face learning.

On the other hand, secondary education, including teacher training facilities, lacks the resources to implement distance learning and blended learning. Many of the Govt. TTC do not have teachers specializing in ICT classes, and many of the PCs in the TTC are obsolete or broken down and no longer usable. It was identified as a common issue that HSTTI has a low amount of money allocated to purchase ICT equipment and the inability to afford to replace PCs. Additionally, there are only five HSTTIs in Bangladesh, resulting in its limited capacity to accept teachers for training. The survey team also confirmed that there is a shortage of teachers to teach ICT subjects in secondary schools, and that there are no PC classrooms and few PCs available for use.

Thus, there is a significant lack of resources needed to achieve the goals stated in the high policies. In order to fill this gap, there is an urgent need to equip TTC and secondary schools with ICT equipment. In addition, teacher training is required to improve ICT literacy of teachers. One way to do this is to implement blended learning so that as many teachers as possible can receive training. In addition to NAEM and HSTTI, which have the potential for distance learning, UITRCE, which is scheduled to be established in every upazila, would be a good candidate for a provider of blended learning. In addition, it is highly significant to consider collaboration with the private sector, since the private sector has the resources to complete the entire process from e-learning content development, including LMS development, to production, editing, and delivery.

Chapter 11. Teacher Training Facilities for Secondary Education

There are 14 Govt TTCs, most of which are located in urban or suburban areas and have relatively large sites. Most of them are reinforced concrete buildings, including administration buildings, academic buildings, hostels, and faculty dormitories. The age of the buildings varies from TTC to TTC, but most of them are old, dating from the 1950s to the 1990s. Some of the older buildings are still in use today, although some of them are highly hazardous, with exposed reinforcing steel bars due to concrete delamination of columns and beams. Each facility is supplied with electricity by a power distribution company, but due to power shortages, rolling blackouts are scheduled almost every day.

There are five HSTTIs in the country. The buildings of each HSTTI were constructed between 1994 and 1999, either on the grounds of or adjacent to the Govt. TTC. The main buildings of HSTTI consist of an administration building, an academic building, trainee hostels, and faculty and staff dormitories, all of which are reinforced concrete structures. Some of the facilities are in need of repair, as the concrete is delaminated, and the reinforcing steel bars are exposed. The power supply is the same as that of the neighboring Govt. TTC.

NAEM is located in Dhaka City's education area and plays a central role as a training center for in-service teachers. Eighteen buildings, built between 1959 and 2011, are located within NAEM's premises, with more than 50 rooms of various sizes used as training rooms. NAEM has the capacity to train a maximum of about 3,000 trainees per year, and plans are under consideration to establish branch facilities in the other divisions, as it would take a long time to train all in-service teachers in Bangladesh. In addition, a new women's hostel is being considered due to the aging of existing facilities and lack of capacity.

Chapter 12. Development Partner Support for Secondary Education

Aid coordination is active in Bangladesh as a number of DPs have been supporting the country for many years. For aid coordination, the Economic Relations Division (ERD) of the Ministry of Finance has a permanent unit to improve the effectiveness and efficiency of aid from DPs. The Local Consultative Group (LCG), which is the coordinating body between the government and

DPs, has sectoral groups under it, and the Education Local Consultative Group (ELCG) is the group for the education sector.

The introduction of SWAp in the secondary education subsector was slower than in primary education, and the first SWAp in secondary education, the SEDP, was launched with a timeline of 2018 to 2023. The SEDP adopted the Treasury model, with the World Bank and the Asian Development Bank providing loans and technical assistance, and UNICEF and UNESCO acting as parallel funding donors under the SEDP with individual PDMs. With an approximate budget size of US\$2,000 million, the SEDP focused on implementing reforms in the secondary education portion of the NEP 2010, with a set of three outcome areas: a) Enhanced quality and relevance of secondary education; b) Improved access and retention; and c) Strengthened governance, management and planning. However, due to the use of a Single budget modality and lack of coordination among the DPs, the administration of the SEDP faced difficulties. Therefore, there was little momentum within MOE to continue the SWAp after the SEDP, and the Bangladesh government decided in October 2022 not to conduct the second phase of the SEDP, i.e., not to continue the SWAp. However, it was decided in early February 2023 to extend the current SEDP itself for two years, until June 2025 (mainly to continue the Harmonized Scholarship Program (HSP) and teacher training).

Although the SEDP will be extended, it has been agreed that the Government of Bangladesh will request individual projects from the DP. Therefore, DSHE has already requested the World Bank and the Asian Development Bank to support the project under the traditional individual assistance approach, which is not a SWAp.

The World Bank is preparing a new project, Learning Acceleration in Secondary Education (LAISE). The budget is US\$2,475 million, of which US\$700 million will come from the World Bank credit. The Program Information Document (PID) has already been released, but its contents were under review at the time of our interview on February 26, 2023. The Asian Development Bank has received a request from the Bangladesh government to implement a new project, the "Next generation education program," but the details of the support are yet to be determined. UNESCO will continue its support with DSHE, BANBEIS, and NAEM in the areas of education for global citizenship and sustainable development, educational ICT and blended education, and educational data management. UNICEF will also continue its curriculum revision with NCTB until 2026, and will work with NAEM to revise the CPD framework for the NAEM scope, develop a teacher capacity framework, and incorporate the new curriculum into teacher training. United States Agency for International Development (USAID) will implement the Higher Secondary Education Activity (HSEA), a five-year project from June 2023 to May 2028, targeting teacher training in higher secondary education.

Chapter 13. Draft of Issues and Suggestions for Future Improvements in Secondary Education

While support for primary education has achieved some success although quality remains a challenge, there are many challenges for secondary education. The low quality of education is particularly serious. The government believes that the low academic achievement of students is a result of rote learning, and has placed the Experiential Learning Approach (ELA) at the center of the new curriculum and textbooks, which will be gradually introduced from FY2023, with the aim of helping students acquire competencies that will enable them to play an active role in society. This revision has improved the clarity of the textbooks compared to the 2012 edition and has also improved them by including examples of activities. However, although the curriculum and the educational evaluation system should have been developed simultaneously, the curriculum was developed first, so the method of implementing the educational evaluation system has not yet been

determined, and great confusion is expected to continue in the future. In addition, teacher training is important because teachers who have earned their degrees through rote learning are unable to change their teaching methods on their own, but teacher training has many challenges in terms of both quality and quantity.

Against these backgrounds, DSHE requested support for teacher training, teacher training facilities, blended learning (combining face-to-face and distance learning), and assessment of student achievement. The NCTB requested support for the capacity building of NCTB staff regarding the overall reform of the educational evaluation system and the development of digital teaching materials.

To address these issues and requests, JICA's support would be more appropriate if it were based on JICA's cluster for improving the quality of education, "Improving Learning through the Development of Textbooks and Teaching Materials," and included science, mathematics, and ELA, which are Japan's strengths, as elements of the support.

We propose that the scale of JICA's assistance start from a small scale, as JICA has experience in supporting both the primary and technical education subsectors, but has little experience in supporting the secondary education subsector. After expanding the human network in the secondary education sub-sector through the small-scale project, a technical cooperation project should be implemented as full-scale support. Specifically, we propose the following two types of support.

- 1) Training in Japan focusing on educational evaluation system
- 2) Technical Cooperation Project contributing to "improvement of learning"
- 3) Technical Cooperation Project for Learning and Evaluation

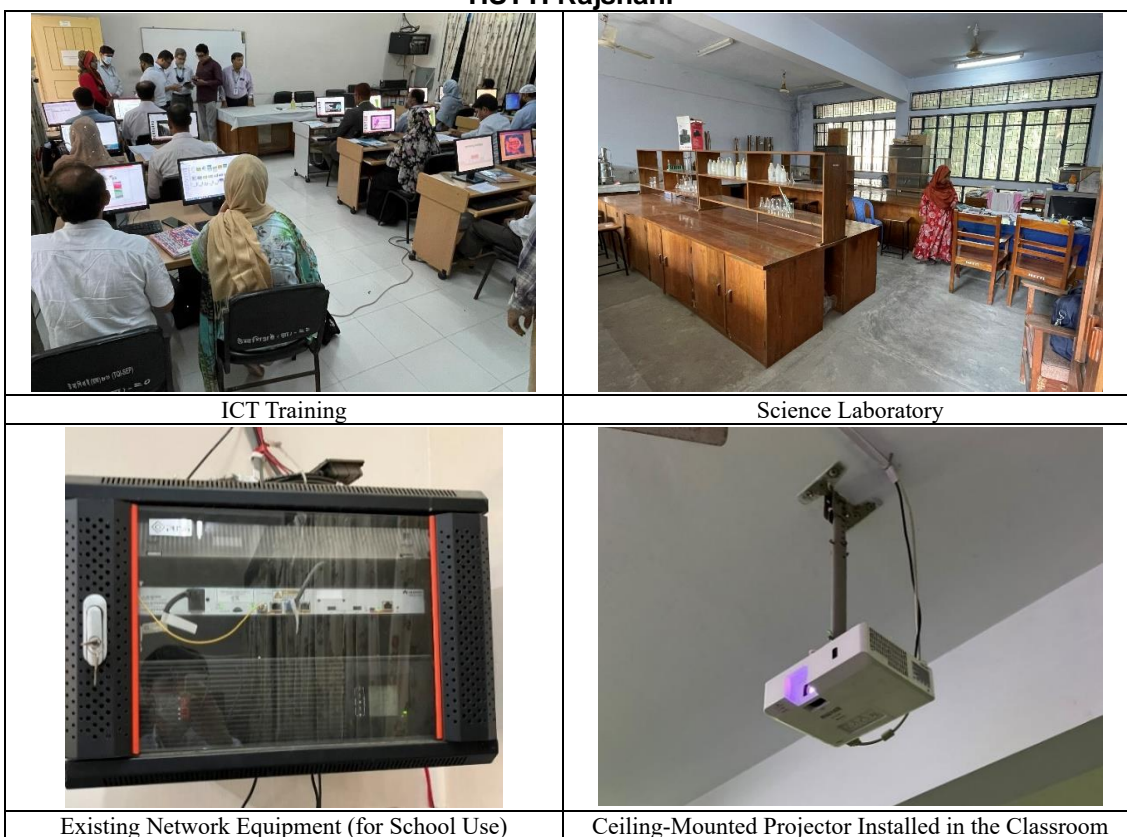
The training in Japan program is positioned as small-scale support.

Photos

HSTTI Barisal



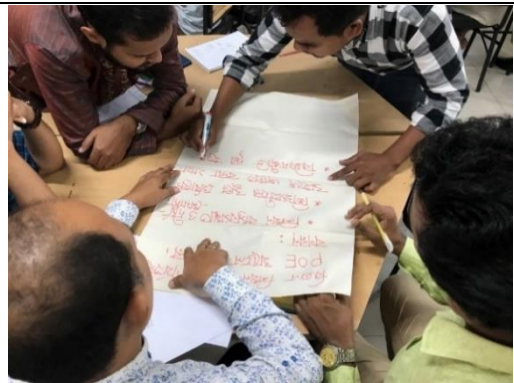



HSTTI Rajshahi



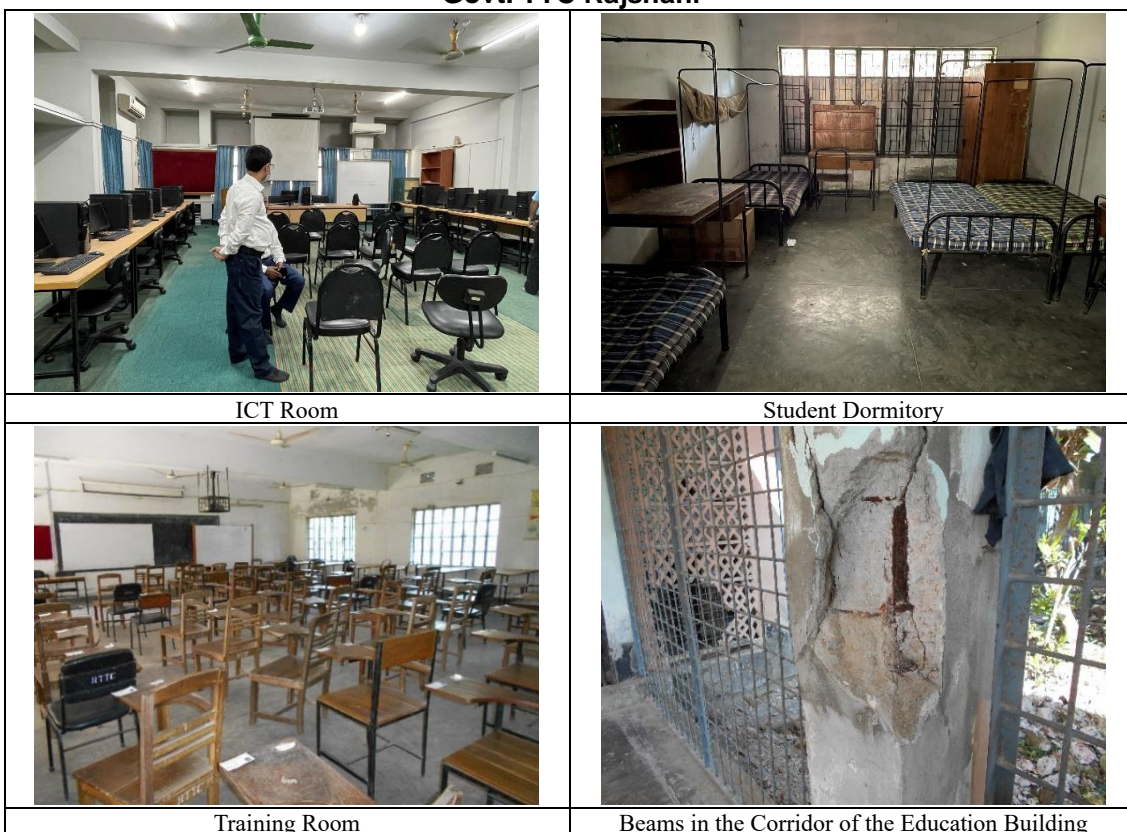
Govt. TTC Dhaka

	
<p>Science Laboratory</p>	<p>Deterioration of Hostel Ceilings and Beams</p>
	
<p>Deterioration of Classroom Ceilings</p>	<p>Wi-Fi Routers Located throughout the School</p>

Govt. TTC Barisal

	
<p>Group Work in Science Training</p>	<p>Student Dormitory</p>
	
<p>Emergency Power Supply for PC Lab</p>	<p>Water Tank in Hostel</p>









Govt. TTC Rajshahi



Non-Govt. Adarsha Shikho Proshikhan TTC (Rajshahi)



NAEM

	
<p>Discussion by Training Participants</p>	<p>Foundation Training</p>
	
<p>ICT Room</p>	<p>Conference Room</p>
	
<p>Standard Training Room</p>	<p>Accommodations for Training Participants</p>
	
<p>Switching Hubs in Server Racks</p>	<p>Router Installed on Premises</p>

Azimpur Government Girls School & College (Dhaka)



Gouranadi Girls School & College (Barisal)



Baya High School & College (Rajshahi)



Shahid Nader Ali Girls School and College (Rajshahi)







Udayan Higher Secondary School (Autonomous School Affiliated with Dhaka Univ.)

	
Science Laboratory (Chemistry)	Equipment in Science Laboratory (Physics)
	
Student Project Production (Biology)	ICT Labo





I.E.S Uchcha Madyamic Bidyalaya School & College

	
Classes (Girls)	Classes (Boys)
	
Chemical Cabinet in Science Lab	Microscope in Science Lab

Barisa Model School & College

	
<p>School Build</p>	<p>Water Fountain in the School Building</p>
	
<p>PC Classroom (Equipment Specs are Outdated)</p>	<p>Science Laboratory</p>

Dhaka Univ. IER

	
<p>Campus</p>	<p>Physics Laboratory</p>
	
<p>Chemistry Laboratory</p>	<p>ICT Room</p>

UITRCE



UDC



BOU



Others



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- Attachment 2: Simulation of the Cost and Number of Days required for INSET in Science and Mathematics
- Attachment 3: DLI MATRIX of SEDP
- Attachment 4: Inception Report Briefing Slides
- Attachment 5: Minutes of the 1st Meeting between the DSHE and JICA Survey Team on the Inception Report Briefing
- Attachment 6: Draft Final Report Briefing Slides
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Abbreviations and Acronyms

a2i	aspire to innovation
A2I	Access to Information
ACR	Annual Confidential Report
ADL	Assessment During Learning
BANBEIS	Bangladesh Bureau of Educational Information and Statistics
BCS	Bangladesh Civil Service
BDT	Bangladesh Taka
B.Ed.	Bachelor of Education
BEDU	Bangladesh Examination Development Unit
BISE	Board of Intermediate and Secondary Education
BNP	Bangladesh National Party
BOU	Bangladesh Open University
CGPA	Cumulative Grade Point Average
CPD	Continuous Professional Development
DP	Development Partner
DPP	Development Project Proposal
DSHE	Directorate of Secondary and Higher Education
DX	Digital Transformation
EED	Education Engineering Department
ELA	Experiential Learning Approach
ELCG	Education Local Consultative Group
EMIS	Education Management Information System
ERD	Economic Relations Division
FA	Formative Assessment
FTC	Foundation Training Course
GDP	Gross Domestic Product
GER	Gross Enrollment Ratio
GPA	Grade Point Average
HSC	Higher Secondary Certificate
HSCE	Higher Secondary Certificate Examination
HSP	Harmonized Stipend Program
HSTTI	Higher Secondary Teachers Training Institute
ICT	Information and Communication Technology
IER	Institution of Education and Research
INSET	In-Service Teacher Training
JICA	Japan International Cooperation Agency
JSC	Junior Secondary Certificate
JSCE	Junior Secondary Certificate Examination
KOICA	Korea International Cooperation Agency
LASI	Learning Assessment of Secondary Institution
LCG	Local Consultative Group
MOE	Ministry of Education
MOPME	Ministry of Primary and Mass Education
MPO	Monthly Pay Order

NAEM	National Academy for Educational Management
NASS	National Assessment of Secondary Students
NCTB	National Curriculum and Textbook Board
NCPF	National Curriculum Policy Framework
NEP 2010	National Education Policy 2010
NER	Net Enrollment Ratio
NSA	National Student Assessment
NTRCA	Non-Government Teachers' Registration and Certification Authority
NU	National University
PEDP	Primary Education Development Program
PP	Perspective Plan of Bangladesh
PRESET	Pre-Service Teacher Training
PEC	Primary Education Certificate
PECE	Primary Education Certificate Examination
PTI	Primary Teachers Training Institute
RAEM	Regional Academy for Educational Management
RC	Regional Resource Center
SA	Summative Assessment
SC	Sub-regional Resource Center
SEQAEP	Secondary Education Quality and Access Enhancement Project
SESDP	Secondary Education Sector Development Program
SESIP	Secondary Education Sector Investment Program
SHED	Secondary and Higher Education Division
SMC	School Managing Committee
SPI	Students per Institution
SRA	Sub Result Area
SSC	Secondary School Certificate
SSCE	Secondary School Certificate Examination
SWAp	Sector Wide Approach
TMED	Technical and Madrasah Education Division
ToT	Training of Trainers
TSR	Teacher Student Ratio
TTC	Teacher Training College
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
USAID	United States Agency for International Development

Chapter 1. Outline of This Survey

1.1 Background of the Survey

The People's Republic of Bangladesh (hereinafter referred to as "Bangladesh") has long been labeled as one of the poorest countries in the world, but it has undergone a major transformation in recent years: in 2005, Bangladesh was included in the Next 11, which is expected to grow next to the BRICs¹, and in 2021, the 50th anniversary of its independence, Bangladesh was included in the Next 11. In 2008, the ruling party Awami League (AL) adopted "Vision 2021," a comprehensive manifesto aiming for a breakthrough by 2021, the 50th anniversary of Bangladesh's independence, and in 2015, Bangladesh joined the countries of low- and middle-income countries as defined by the World Bank. In 2020, Bangladesh adopted "Vision 2041" which is a successor of "Vision 2021" and aims to be one of the middle-income countries by 2031 and one of the developed countries by 2041. To raise the national income of the country, Vision 2041 calls for further utilization of labor-intensive industries, where Bangladesh's strength lies in its low-cost labor force. The vision is to improve human resources by transferring the labor force work to knowledge-based work by improving the quality of primary and secondary education, etc. The Eighth Five-Year Plan (FY2020/21-FY2024/25), a national development plan designed to realize this vision, emphasizes the development of industrial human resources in order to foster new high-value-added industries and ensure competitiveness in international markets. With a population of over 169.3 million (World Bank, 2021), of which 44.80 million (26%) are under the age of 14 (World Bank, 2020), education is becoming even more important for the country's economic development while taking advantage of its demographic dividend.

(1) Current Situation and Issues in Education System in Bangladesh

The education system can be broadly divided into three categories: general education, technical education, and madrasah education, which was strongly influenced by the sovereign nation of Great Britain. General education system is based on the 5-3-2-2 system, with grades 1-5 for primary education stage, grades 6-8 for junior secondary education stage, grades 9-10 for secondary education stage, and grades 11-12 for higher secondary education stage. The main feature of each stage is that students take an examination at the end of each stage to obtain a certificate of completion for each stage².

Primary education has improved significantly in recent years due to the efforts of the government and support from Development Partners (DPs). The Net Enrollment Ratio (NER) has improved from 87.2% (2005) to 97.42% (2021), and the completion rate from 53% (2005) to 85.85% (2021) (Bangladesh Bureau of Educational Information & Statistics (BANBEIS) 2021). The Sector Wide Approach (SWAp) aid coordination framework has been adopted since 1997, and the Japan International Cooperation Agency (JICA) has been providing technical assistance since 2004 through the "Strengthening of Science and Mathematics Education in Primary Schools Project" and other projects. The education sector in Bangladesh has been implementing the SWAp since 2004. The SWAp is a major feature of the country's education sector.

Compared to primary education, secondary education lags behind in efforts to improve enrollment and other areas. The NER for junior secondary education and secondary education, including madrasah courses, is 70.25%, and 40.54% for higher secondary education. Completion rates are 64.34% (2021) for junior secondary education and secondary education and 78.86% (2021) for higher secondary education. So, the percentage of enrolled students reaching graduation is low,

¹ A term coined from the initial letters of Brazil, Russia, India, and China. It has been widely used by the public since Goldman Sachs used it in a report issued in 2003.

² However, the Primary School Certificate Examination (PSCE) will be abolished from 2022, and the Junior Secondary Certificate Examination (JSCE) is also being considered for abolition.

and investments in education are not efficiently translating into increased numbers of graduates. Vision 2041 also recognizes that improving internal efficiency in education is important for rapid economic development. It also faces equity challenges. Enrollment is particularly low among the poor because, unlike primary education, secondary education is not compulsory, 97% of schools are non-governmental, and although there is a government subsidy system, school fees are not yet fully free (BANBEIS 2018). In addition, there is a shortage of teachers and quality issues, particularly in the subjects of mathematics, science, and English, and many students are not achieving grade-appropriate academic performance³. In addition, school closures due to the COVID-19 outbreak for about 18 months since March 2020 have led to concerns about the seriousness of learning delays. The method of academic assessments has not been standardized, and student achievement has not been properly assessed. To address these challenges, the first SWAp, the Secondary Education Development Program (SEDP), was launched in 2018 and is expected to end in 2023.

Table 1-1 Comparison of Key Indicators for Primary and Secondary Education (2021)

	Primary Education	Secondary (G6-G10)	Higher Secondary
NER	97.41%	70.25%	40.54%
Completion Rate	85.85%	64.34%	78.86%

Source: Created by the Survey Team based on BANBEIS 2021

(2) Status of Support in the Education Sector in Bangladesh

JICA started technical education support for industrial human resource development in 2019⁴, but in this cooperation, it was confirmed that the basic academic skills and specialized knowledge of students at polytechnic institutions have not reached the level required by the industrial sector. Therefore, it is considered necessary to raise the level of basic academic skills centering on science and mathematics subjects in secondary education (general education system), which connects primary education and technical education. However, JICA has not provided cooperation in secondary education (general education system) so far because its main support area were primary education and technical education. Therefore, it is necessary to broadly confirm the details of support needs with a view to addressing secondary education as a priority issue in the future.

Along with the support needs, there is also a high need for DP analysis to help optimize Japan's support methods in Bangladesh, where the SWAp method, in which many DPs cooperate with each other, is strong. While SWAp has been actively adopted in the primary education subsector since 1997, the introduction of SWAp in the secondary education subsector has lagged behind primary education, with full-scale SWAp starting from SEDP in 2018. Given this situation, there is a high need for DP analysis.

1.2 Purpose of the Survey

This study will confirm and analyze the current situation and challenges of secondary education in Bangladesh, trends in other DPs, and the intentions and support needs of the Bangladeshi government, based on the results of JICA's cooperation in the education sector so far. This survey is intended to collect and confirm basic information for considering the future direction of JICA's cooperation in the secondary education sub-sector (general education system) and specific

³ Learning Assessment of Secondary Institutions (LASI) 2017

⁴ Technical cooperation to improve the quality of education at polytechnic institutions: "Project for Improvement of Technical Education for Industrial Human Resources Development" (from FY 2018) and grant aid to provide equipment for practical training to the schools supported by the same technical cooperation (FY 2021).

candidate projects; however, this survey was not created at the request of the Bangladesh government, but rather conducted by JICA's initiative.

1.3 Schedule of the Survey

The schedule of the survey is shown as below.

Table 1-2 Schedule of the Survey

Schedule	Filed/Japan	Item of Survey
Jul – Sep 2022	1st Work in Japan	1-1: Literature review, 1-2: Survey Method and Work Plan Dev for Process 2, 1-3: Presentation of the IC/R to JICA, 1-4: Presentation of the IC/R to the Bangladesh government
Sep – Nov 2022	1st survey in Bangladesh	2-1: Aid Coordination Framework and Trends in Other DPs, 2-2: Curriculum and teaching materials, 2-3: Teachers, 2-4: Teacher training and training facilities, 2-5: Achievement and assessment, 2-6: ICT/DX and distance learning, 2-7: Impact of COVID-19, 2-8: Interim report of 1st survey in Bangladesh
Dec 2022 – Jan 2023	2nd Work in Japan	3-1: Progress Report Preparation, 3-2: Discussion with JICA on the direction of the survey, 3-3: Coordination of 2nd survey in Bangladesh
Feb – Mar 2023	2nd survey in Bangladesh	4-1: Additional Information Collection
Mar – May 2023	3rd Work in Japan	5-1: Identification of priority issues and support need analysis 5-2: Finding resources in Japan for secondary education 5-3: Recommendations to JICA regarding the direction of support and new projects 5-4: Preparation of DFR and explanation and discussion with JICA
Jun 2023	3rd survey in Bangladesh	6-1: Explain of the DFR to the Govt. of Bangladesh 6-2: Additional information collection as needed
Jun – Jul 2023	4th Work in Japan	7-1: Final Report Preparation

Source: JICA Survey Team

1.4 Composition of JICA Survey Team

The composition of JICA Survey Team is shown as below.

Table 1-3 Member of the JICA Survey Team

Name	Position	Company
Tatsuya NAGUMO	Team Leader	PADECO Co., Ltd.
Yusuke MORI	Deputy Team Leader/Teacher Training	IC Net Limited.
Kenji OHARA	Science and Math Education	PADECO Co., Ltd.
Saeri MUTO	ICT utilization and distance education 1	INTEM Consulting, Inc.
Ipppei KATO	ICT utilization and distance education 2	INTEM Consulting, Inc.
Anjan DAS	ICT utilization and distance education 2	Kaicom Solutions Japan (IC Net Limited)
Wataru SHIGA	Teacher Training Facilities	INTEM Consulting, Inc.
Yuki OHASHI	Achievement and assessment 1	PADECO Co., Ltd.
Kaori TANAKA	Achievement and assessment 2	PADECO Co., Ltd.

Source: JICA Survey Team

A number of consultants from BacBon Limited, a local consulting firm, also participated in the field study, as represented in the table below.

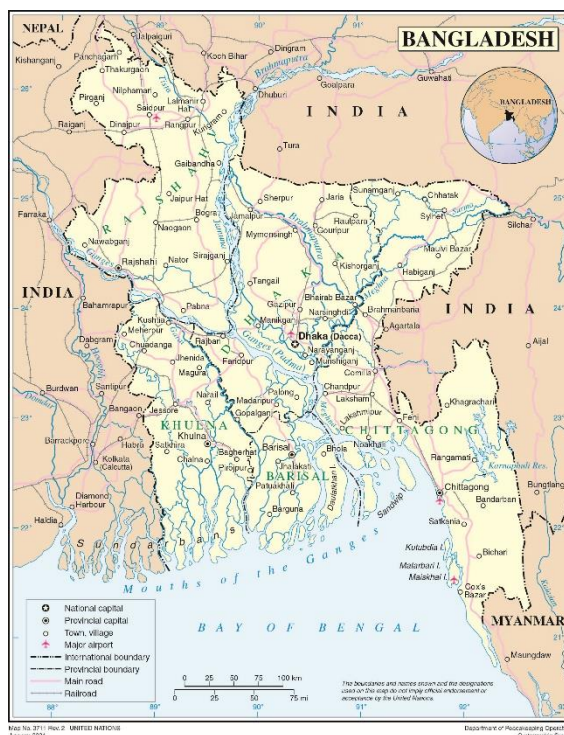
Table 1-4 Member of Local Consultant

Name	Position	Company
Mr. Md. Arif Ullah Khan	Senior Researcher and Education Expert	BacBon Limited
Mr. Muhammad Aminur Rahman	Senior Researcher and Field Expert	BacBon Limited

Source: JICA Survey Team

Chapter 2. Political and Socioeconomic Condition

Bangladesh is located in the Bengal region of South Asia, in a delta area where rivers such as the Ganges converge. Bangladesh has a surface area of 147,570 square kilometers⁵, which is almost the same as the total area of Hokkaido and the Tohoku region (147,314 square kilometers)⁶. With a population of approximately 166.3 million (2021)⁷, it is the 8th most populous country in the world. With a population density of 1,277 persons per square kilometer⁸, it is the world's most densely populated country with a population of 10 million or more, and its average annual population growth rate is 0.97%⁹. The country is surrounded by India, except for the southeastern part which borders Myanmar and the south which borders the Bay of Bengal. Although the land is fertile, the damage to agricultural product and social infrastructure due to flooding, cyclones, and other disasters caused by the monsoon climate are challenges.



This chapter will review the political and socioeconomic situation surrounding education in Bangladesh.

2.1 The Changing Political Situation in Bangladesh

By the time the Bengal region came under the rule of the Maurya Dynasty, which unified northern India in the 4th century B.C., the production of cotton textiles, which is the main industry today, had become active. Various religions spread in Bengal: Hinduism from around the 4th century B.C. (Gupta dynasty), Buddhism from around the 8th century B.C. (Pala dynasty), and Islam from the 12th century B.C. (Sena dynasty). When British India separated into India and Pakistan in 1947, East Bengal, due to its large Muslim population, chose to belong to Pakistan whose national policy is Islam. However, the movement to make Urdu, the language of West Pakistan, the official language of Pakistan triggered a movement for greater autonomy, and on December 16, 1971, the country achieved de facto independence as Bangladesh. After gaining independence, Bangladesh promulgated a constitution in 1972 that set "socialism," "nationalism," "separation of church and state," and "democracy" as the basic principles of the nation. However, due to confusion over independence, a weak industrial base, and a shortage of human resources, the situation in the country deteriorated drastically after 1974, and famine spread. As a result, a coup d'état by military officers led to the formation of a military government in 1975.

In the late 1990s, at the end of the military regime, a movement for democracy grew and President Ershad resigned in December 1990. Since then, a regime change through the democratic process has taken root in Bangladesh. BNP (Bangladesh National Party) won in February 1991 election,

⁵ World Bank 2018

⁶ Geospatial Information Authority of Japan

⁷ World Bank 2021

⁸ World Bank 2021

⁹ World Bank 2021

Awami League won in June 1996 election, and a four-party coalition led by the BNP and Jamaati-Islami won the October 2001 election. In September 1991, under the BNP administration, constitutional amendments were made to change the system from a presidential system, in which the president holds executive power, to a parliamentary cabinet system, in which the prime minister holds executive power. Since the June 1996 general election, general elections have been held under an interim election management cabinet in order to ensure fair and neutral elections.

Thus, while Bangladesh has made some progress in terms of democratization, what emerged was a completely uncompromising conflict between the Awami League and the BNP. Although there are no major policy differences between the two parties, the opposition frequently boycotts parliament, making it difficult for parliamentary democracy to function effectively, and the opposition's hartals (general strikes) have had a negative impact on economic activity. Due to the intensification of the conflict between these political parties, the election cabinet continued under a state of emergency declaration, and anti-corruption measures were promoted. In 2008, the Awami League won the general election with its manifesto "Vision 2021"¹⁰, which set a goal of becoming a middle-income country by 2021, the 50th anniversary of its independence, and the second term of the Hasina administration was inaugurated. The Awami League won the general election in December 2018 and became the ruling party for a third consecutive term (the fourth term of the Hasina government). There was much turmoil during the election period, with the opposition demanding that the electoral commission invalidate the election results and hold re-elections, and a series of clashes that resulted in deaths.

2.2 Social Situation in Bangladesh

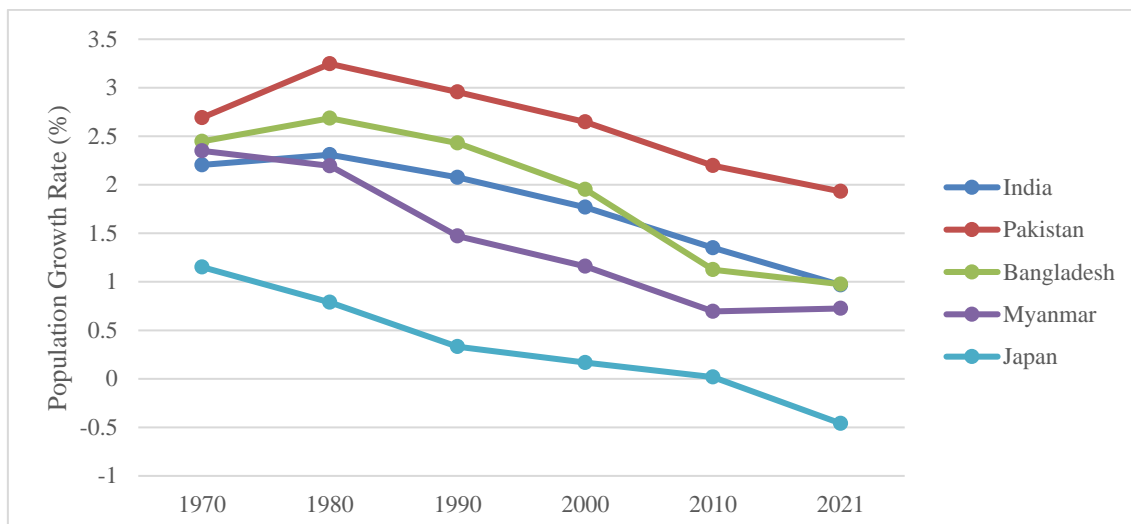
This section provides an overview of the social and economic situation in Bangladesh in terms of comparisons with other countries and changes over time.

(1) Population and Population Growth

Bangladesh has the 8th largest population in the world at 169.4 million (2021)¹¹. The average annual population growth rate peaked at 2.8% around 1980 after the War of Independence in 1971. Population growth declined slowly to 0.97% in 2021, which was lower than the global average of 1.1%. This trend is the same in the neighboring countries of India, Pakistan, and Myanmar (see next figure). However, the high rate of population growth so far has more than doubled the population from approximately 71.5 million in 1974 to more than twice that in 2021.

¹⁰ Vision 2021 is a manifesto document compiled by the Awami League of Bangladesh prior to the 2008 general elections, and has influenced Bangladesh's major plans, including the Perspective Plan and the Five-Year Plan. The document calls for participatory democracy, establishment of an efficient government system, eradication of poverty, and transition to a middle-income country (with an annual per capita income of about \$2,000). The country became independent in 1971, and 2021 will mark the 50th anniversary of its independence.

¹¹ From WB, World Development Indicator; 1st China, 2nd India, 3rd U.S., then 8th Indonesia, Brazil, Pakistan, Nigeria.



Source: Created by the Survey Team based on World Development Indicator (World Bank)

Figure 2-1 Population Growth Rate Trends in Neighboring Countries

(2) Population Growth Trends and Factors (marriage, childbirth, medical care)

Bangladesh's high population growth rate to date is largely due to high fertility rates because of early marriage among women and improved health care.

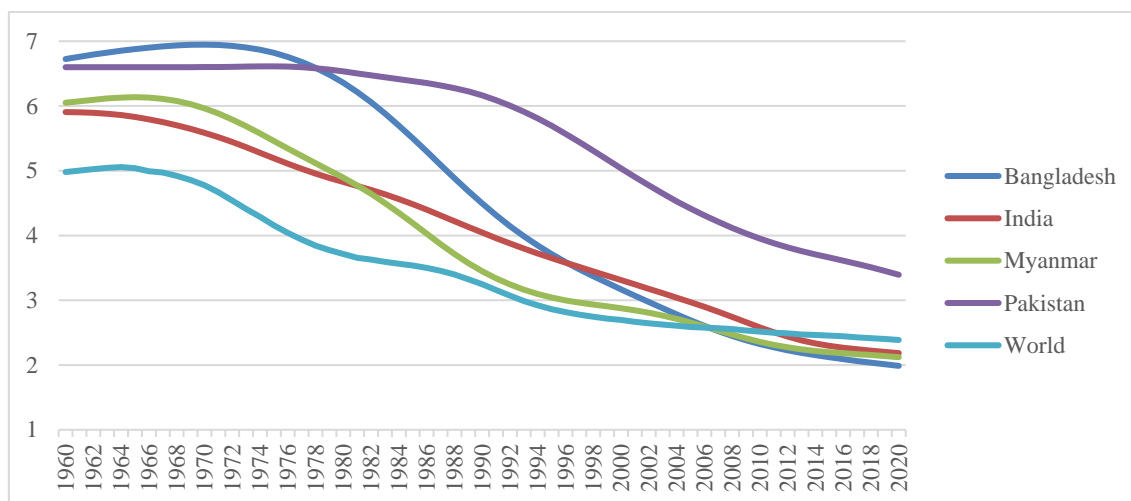
The following table shows the percentage of women aged 20-24 who were first married by age 15 and the percentage who were first married by age 18 in the 1990s and 2010s. Bangladesh and its neighbors (India, Pakistan, and Myanmar) saw a greater decline in the percentage of women's early marriage in the 2010s than in the 1990s. In Bangladesh, for example, 47.2% of women had their first marriage by the age of 15 in 1994, but by 2018 this had dropped to 19.3%. However, even in 2018, 58.9% of women in Bangladesh had their first marriage by the age of 18. This is very early compared to other neighboring countries, indicating a marked trend of early marriage. The legal marriage age in Bangladesh is 21 for men and 18 for women, indicating that women routinely marry at an age below that of the legal marriageable age.

Table 2-1 First Marriages of Women in Bangladesh and Neighboring Countries

Countries	Women who were first married by age 15 (% of women ages 20-24)		Women who were first married by age 18 (% of women ages 20-24)	
	1990s	2010s	1990s	2010s
Bangladesh	47.2 (1994)	19.3 (2018)	73.3(1994)	58.9 (2018)
India	17.6 (1993)	5.4 (2016)	50.2 (1993)	25.3 (2016)
Pakistan	11.4 (1991)	3.6 (2018)	31.6(1991)	18.3 (2018)
Myanmar	No Data	1.9 (2016)	No data	16 (2016)

Source: Created by the Survey Team based on World Development Indicator (World Bank)

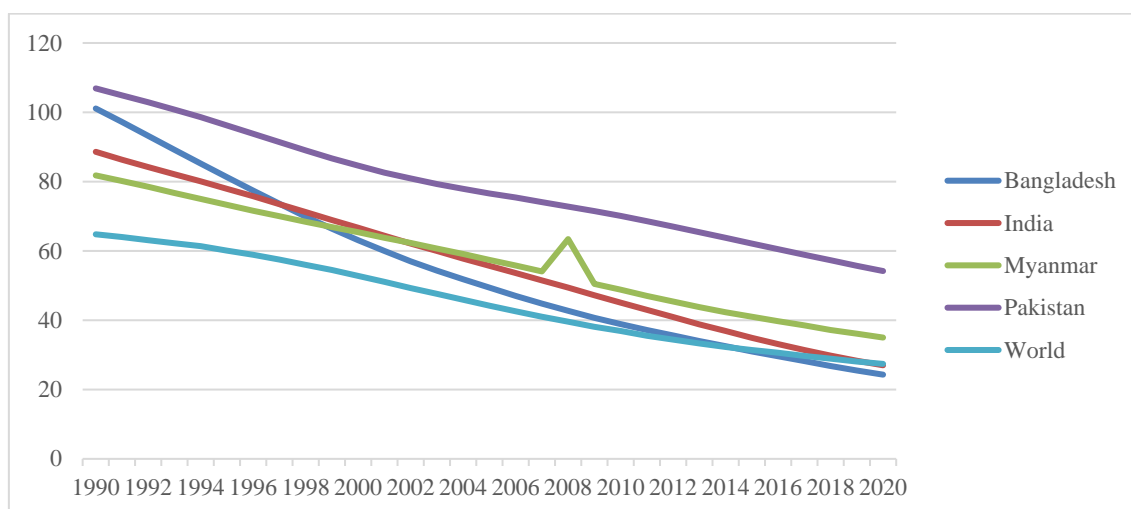
The following chart shows the trend of the total fertility rate. The total fertility rates of the world average and neighboring countries have also continued to decline after peaking around 1970. Bangladesh also decreased from a peak of 6.947 (1970) to 1.987 (2020). Among neighboring countries, Pakistan remains high above 3, while Bangladesh is about the same as the world average.



Source: Created by the Survey Team based on World Development Indicator (World Bank)

Figure 2-2 Total Fertility Rate in Bangladesh and Neighboring Countries

Infant mortality rates and life expectancy have improved due to improvements in medical care, living conditions and nutritional availability. Figure 2-3 shows the infant mortality rate (per 1,000 live births) for Bangladesh and neighboring countries. Mortality rates continue to decline worldwide; in 1990, Bangladesh had the second highest mortality rate after Pakistan, but by 2020 it will have the lowest rate among neighboring countries.

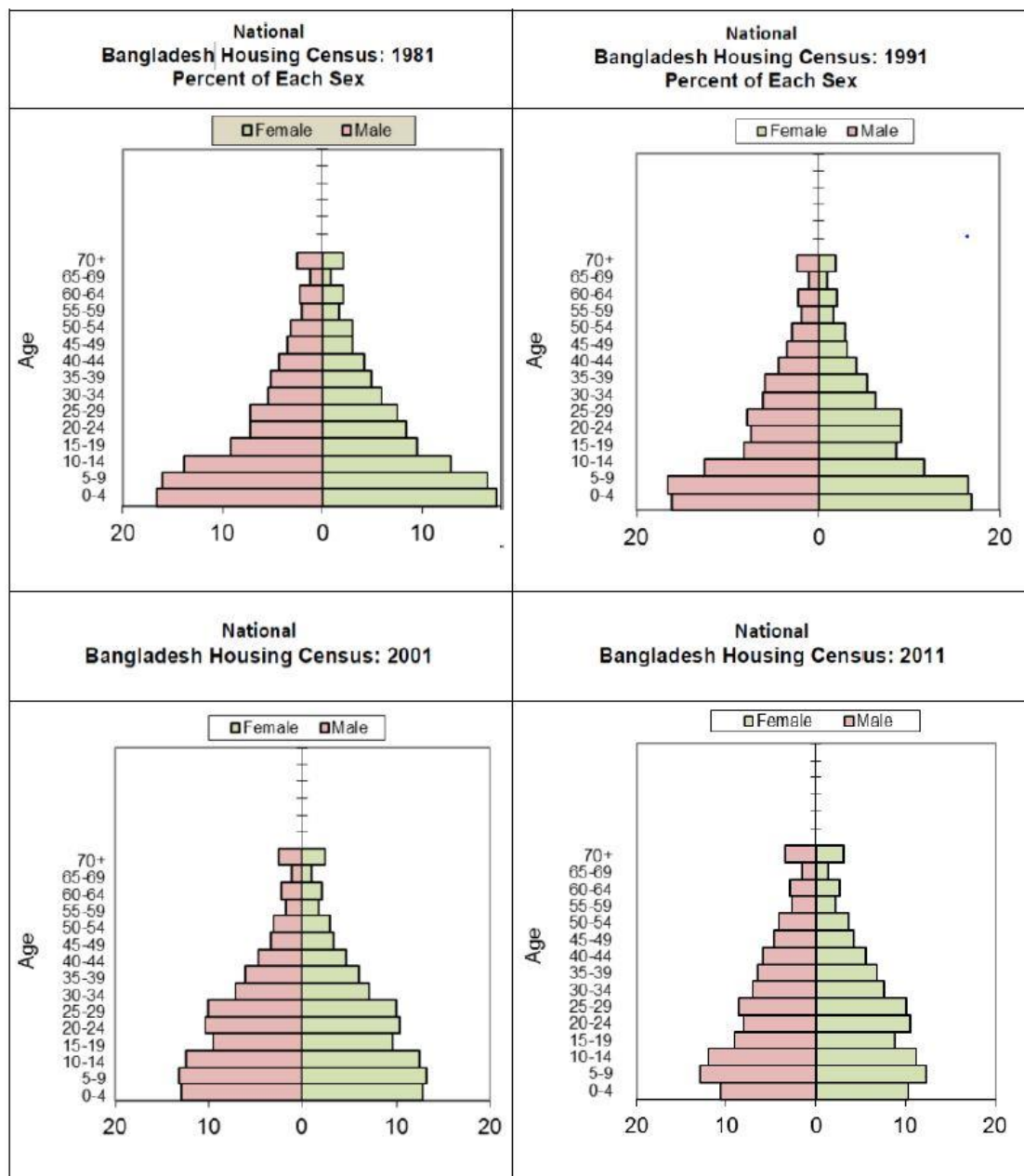


Source: Created by the Survey Team based on World Development Indicator (World Bank)

Figure 2-3 Infant Mortality Rate (out of 1000) in Bangladesh and Neighboring Countries

Thus, while the total fertility rate has declined significantly due to a gradual increase in the age of marriage, the overall population continues to increase due to improvements in mortality and life expectancy resulting from improved medical care and nutrition. In other words, the population of the younger generation is getting smaller. The population pyramid in the figure below, taken from the Bangladesh Bureau of Statistics report "Population Monograph of Bangladesh: Age-Sex Composition of Bangladesh Population- Population [2015]" shows that until the 2001 census, the 0-15 age group was the largest population group in the country. The pyramid diagram shows that the 0-5 age group began to decline in 2011, indicating that the base of the population pyramid is

collapsing. Although the working-age population is expected to increase over the next decade or so, this suggests that population growth will slow down and that we may be heading toward an aging society in which a small number of young people will support a large number of elderly people.



Source: Excerpt from page 30 Bangladesh Bureau of Statistics [2015] 'Population Monograph of Bangladesh: Age-Sex Composition of Bangladesh Population- Population'

Figure 2-4 Changes in the Population Pyramid from 1981 to 2011

(3) Population Projections

Population projections by the Bangladesh government based on the 2011 census are shown in the table below. Assuming that life expectancy will be 79 years for men and 80 years for women in 2061, the population is projected in three different patterns: Scenario 1, in which the total fertility

rate is maintained at 2.3; Scenario 2, in which the rate declines to 1.9; and Scenario 3, in which the rate declines significantly to 1.6.

Table 2-2 Population Projections and Assumptions

Year	Average Remaining Life at Birth		Total Fertility Rate			Population Projections (in thousands)		
	Male	Female	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2	Scenario 3
2011	67	68	2.3	2.3	2.3	149,764	149,764	149,764
2016	68	69	2.3	2.3	2.3	160,221	160,221	160,221
2021	69	70	2.3	2.1	2.1	171,684	171,684	171,684
2026	70	72	2.3	1.9	1.9	183,593	182,096	182,096
2031	71	73	2.3	1.9	1.6	195,176	190,735	190,735
2036	73	74	2.3	1.9	1.6	205,793	198,503	196,299
2041	74	75	2.3	1.9	1.6	215,899	205,638	201,314
2046	75	76	2.3	1.9	1.6	225,386	211,663	205,255
2051	77	78	2.3	1.9	1.6	234,382	216,465	207,869
2056	78	79	2.3	1.9	1.6	243,287	220,559	209,466
2061	79	80	2.3	1.9	1.6	251,450	223,390	209,415

Source: Bangladesh Bureau of Statistics 'Population projection of Bangladesh Dynamics and Trends 2011-2061' Table 4.3

Referring to the population of 166.3 million in 2021 and the total fertility rate of 1.987, this scenario is closest to Scenario 3 at this time. The following table shows the projected population change by age group (selected up to age 24) under Scenario 3.

Table 2-3 Projected Population Change by Age for Scenario 3 (to age 24)

Unit: thousands of people

Age	2011	2016	2021	2026	2031	2036	2041	2046	2051	2056	2061
0-4	15,659	15,175	16,310	15,709	14,218	11,751	11,598	11,392	10,926	10,317	9,594
5-9	18,894	14,981	14,570	15,716	15,210	13,808	11,460	11,338	11,162	10,746	10,164
10-14	17,314	18,831	14,935	14,532	15,681	15,180	13,785	11,443	11,323	11,151	10,736
15-19	13,375	17,267	18,785	14,903	14,505	15,655	15,159	13,768	11,432	11,314	11,142
20-24	13,829	13,328	17,214	18,733	14,868	14,475	15,629	15,137	13,750	11,419	11,302

Source: Created by the Survey Team based on Bangladesh Bureau of Statistics 'Population projection of Bangladesh Dynamics and Trends 2011-2061' Table 4.8

The peaks will be in 2026 for the 5-9 age group, which covers mainly the primary education age group, in 2031 for the 10-14 age group, which covers primary to junior secondary education, and in 2036 for the 15-19 age group, which covers senior to higher secondary education. In other words, if Enrollment Ratios remain unchanged, the total number of facilities and teachers needed is expected to trend downward after these years.

(4) Urban Development and Population Inflow

Bangladesh is one of the most densely populated countries in the world. The population density of Dhaka, the capital city, is particularly high, rising sharply from 685 persons/km² in 1974, the year of independence, to 1,521 persons/km² in 2011¹². This increase is much higher than the natural population growth rate, and is thought to be mainly due to the influx of population to the capital city¹³. Urban population growth was significant, increasing from 8.78% of the total

¹² Bangladesh Bureau of Statistics (2015) "Population Distribution and Internal Migration in Bangladesh (Population Monograph: Volume 6)"

¹³ The Population and Housing Census 2011 National Volume-3 Urban Area Report (2014) lists the main reasons for urban population growth as 1) natural increase in urban population, 2) influx of people into cities, 3) expansion of urban areas, and 4) definition of urban changes in the definition of a city. In addition to Dhaka, other areas with high population growth rates include Chittagong, the second largest industrial city after Dhaka; Gazipur; Cox's Bazar, where

population in 1974 to 28.0% in 2011. Similarly, the number of cities increased from 108 in 1974 to 506 in 2011¹⁴. The average annual population growth in urban areas is higher than the average annual population growth rate for the nation as a whole, indicating that cities are gradually expanding.

(5) Disparities

One factor contributing to the influx of population into urban areas is the disparity between urban and rural areas. The following table shows the Gini coefficient, an indicator of the degree of income equality and inequality in a country or region. Nationally, the coefficient gradually worsened from 0.388 in 1991/92 to 0.482 in 2016. For urban areas only, the coefficient improved from 0.497 in 2000 to 0.452 in 2010 and slightly worsened to 0.454 in 2016. Rural areas, on the other hand, have consistently worsened from 0.393 in 2000 to 0.498 in 2016. Thus, the widening income disparity in rural areas should be noted.

Table 2-4 Transition of the Gini Coefficient

Area	1991/92 (%)	2000 (%)	2005 (%)	2010 (%)	2016 (%)
All	0.388	0.451	0.467	0.458	0.482
Urban	N/A	0.497	0.497	0.452	0.454
Rural	N/A	0.393	0.428	0.431	0.498

Source:

1991/1992 JICA [2012] "Poverty Profile Bangladesh.

2000-2010: Bangladesh Bureau of Statistics (2010 'Report of the Household Income & Expenditure Survey 2010')

2016: Bangladesh Bureau of Statistics (2022) "Statistical Yearbook Bangladesh 2021 41st edition draft"

The following table shows the penetration rates of major infrastructures by urban and rural areas: until 2011, there was still a large gap between urban and rural areas, but by 2020, the electrification rate had improved significantly and the difference between urban and rural areas had almost disappeared. The installation of toilets also improved significantly from 2011 to 2020, with 91.2% of urban areas and 73.5% of rural areas having toilets. On the other hand, access to tap water remains low in both urban and rural areas.

Table 2-5 Comparison and Transition of Electrification Rates, Tap Water for Drinking, and Toilet Coverage between Urban and Rural Areas

Item	Area	1991(%)	2001(%)	2011(%)	2020 (%)
Electrification rates	All	12.3	31.5	56.5	92.2
	Urban	58.1	70.9	86.8	97.8
	Rural	4.6	20.1	47.3	94.8
Tap water for drinking	All	4.3	6.0	10.7	No data
	Urban	22.5	25.5	38.3	23.4
	Rural	0.1	0.3	2.3	2.8
Installation of toilet	All	25.1	36.9	12.5	No data
	Urban	40.24	67.3	42.4	91.2
	Rural	6.09	28.2	19.8	73.5

Source:

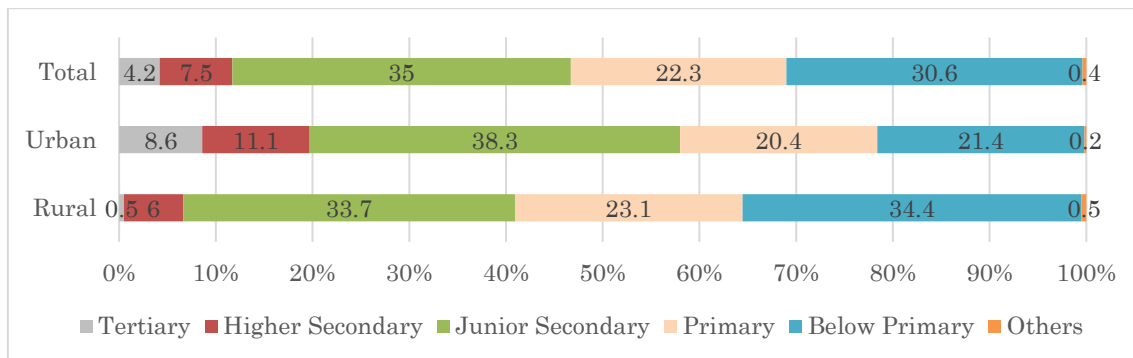
1991, 2001, 2011: Bangladesh Bureau of Statistics[2015] 'Population Monograph of Bangladesh: Population Distribution and Internal Migration in Bangladesh'

2020: Bangladesh Bureau of Statistics (2022) 'Statistical Yearbook Bangladesh 2021 41st edition draft'

tourism is increasing; and Narayanganj, where the textile industry is thriving. According to the Bangladesh Bureau of Statistics, Population Distribution and Internal Migration in Bangladesh, the population growth rates for the 20 years from 1991 to 2011 were 1.44% in Chittagong, 2.1% in Gazipur, 1.61% in Cox's Bazar Narayanganj 1.69%.

¹⁴ Bangladesh Bureau of Statistics (2014) *Population and Housing Census 2011 National Volume-3 Urban Area Report*

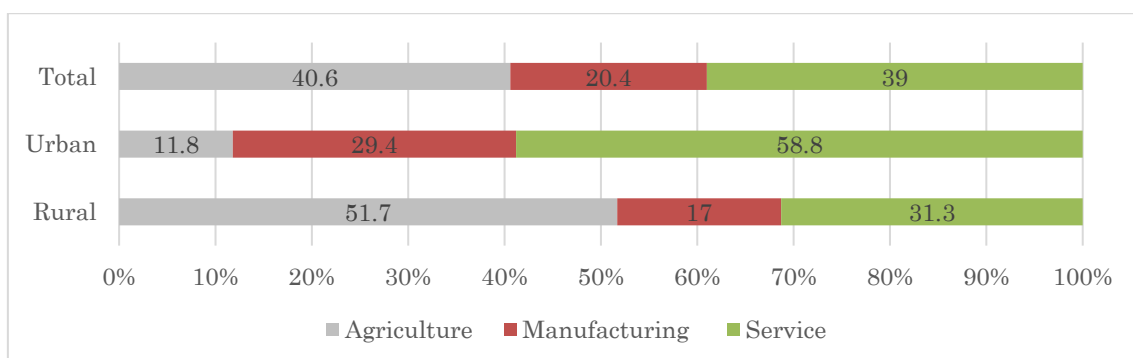
The following table shows the level of education completion by urban and rural areas among the population aged 15 and over. About 50% of the urban population progresses to secondary education, while 40% of the rural population does so, a disparity of about 10% between urban and rural areas. Only 41% have completed primary education or have not completed primary education in urban areas, compared to about 57% in rural areas, a gap of 16%.



Source: Bangladesh Bureau of Statistics (2018) 'Labor Force Survey Bangladesh 2016-2017'

Figure 2-5 Educational Completion Levels of 15+ by Rural and Urban

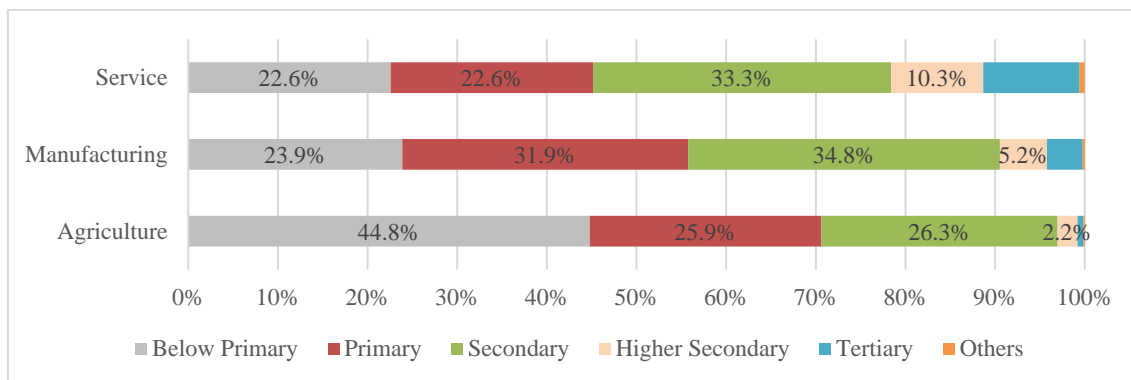
In terms of workers' employment sectors, about 88% of urban workers are employed in manufacturing and services and 11.8% in agriculture, compared to 51.7% in rural areas.



Source: Bangladesh Bureau of Statistics (2018) 'Labor Force Survey Bangladesh 2016-2017'

Figure 2-6 Employment Sectors of Workers aged 15 Years and Older by Rural and Urban Areas

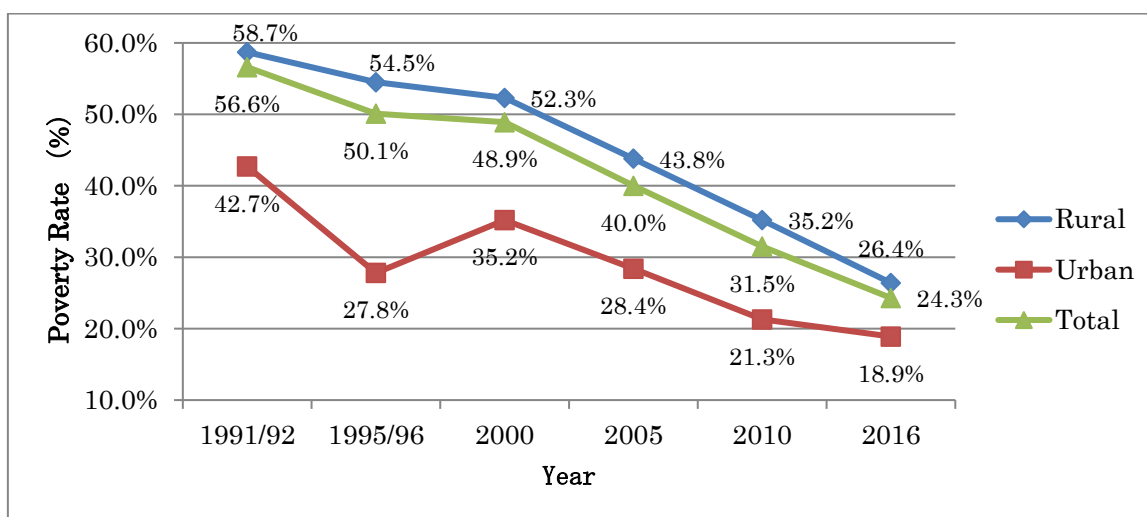
When analyzing employment fields by level of education completion, workers with relatively low levels of education completion tend to work in the agricultural sector, while those with higher levels of education completion tend to work in services sectors. As cities become more industrialized, occupational fields such as finance, distribution, information technology, and commerce will develop, and it is expected that workers in urban areas will pursue relatively higher levels of education and then find employment in these service sectors and industries.



Source: created by the Survey Team based on Bangladesh Bureau of Statistics (2018) 'Labor Force Survey Bangladesh 2016-2017'

Figure 2-7 Education Completion Levels of Workers by Employment Sector

On the other hand, the gap in poverty rates¹⁵ is on a downward trend. Both rural and urban poverty rates have been declining, with the gap between urban and rural areas ranging from 26.7 percentage points in 1995/96 to 17.1 percentage points in 2000, 13.9 percentage points in 2010, and 7.5 percentage points in 2016.

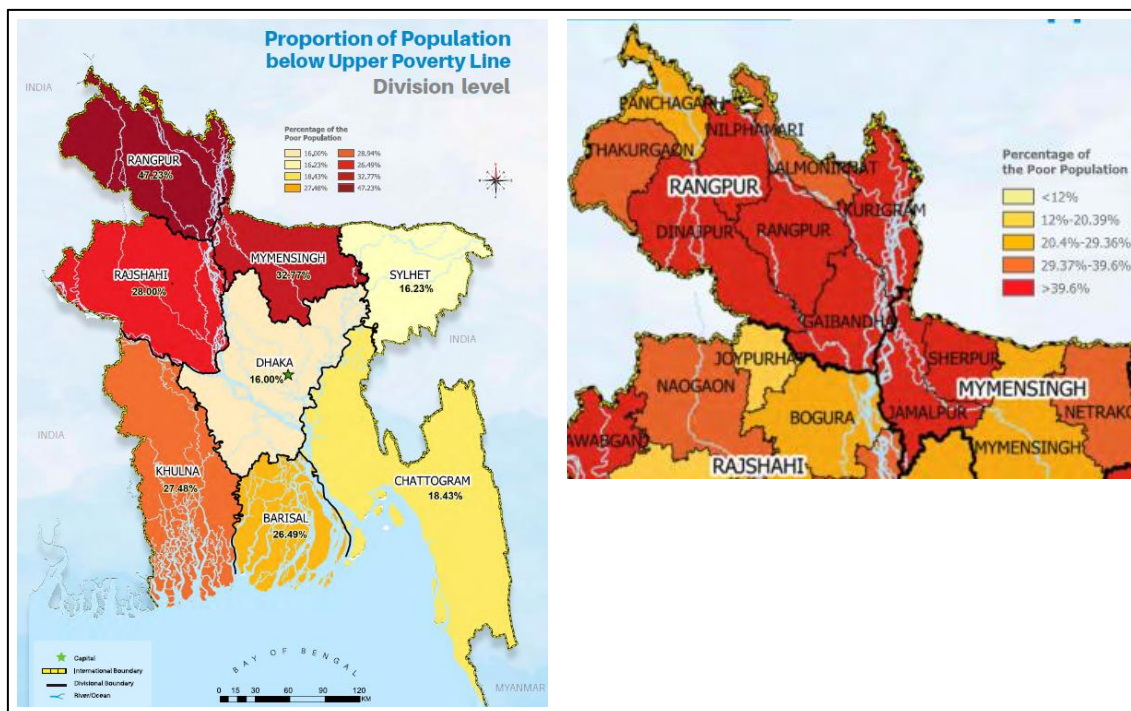


Source: created by the Survey Team based on Bangladesh Bureau of Statistics(2010) 'Report of the Household Income & Expenditure Survey 2010' Bangladesh Bureau of Statistics (2019) 'Report of the Household Income & Expenditure Survey 2016'

Figure 2-8 Trend in Poverty Rate (Head Count Rate)

However, there are still large differences when looking at individual regions. Poverty rates by region are shown in the next figure.

¹⁵ The Cost of Basic Needs (CBN) method is adopted, which defines the poverty line as the level of cost required to cover basic needs such as food and non-food items commensurate with the standard caloric intake per household member, and defines poverty as below that poverty line.



Source: Bangladesh Bureau of Statistics “Poverty Maps of Bangladesh 2016”

Figure 2-9 Poverty Maps by Division (Left) and by District within Rangpur Division (Right)

At the division level, Rangpur has the highest poverty rate, with 47.23% at the poverty line. This is 31.23% higher than the lowest rate of 16.0% in Dhaka. A look at the districts also confirms the disparity even within the same Rangpur.

(6) Gender

Although more than 90% of the population is Muslim, the Bangladesh government is promoting women’s advancement politically, with the current prime minister being a woman and two women (including the prime minister) to be elected as cabinet ministers in 2021. From 1991 to 2001, the percentage of women in the National Assembly was 40 to 43, or about 13% of the total number of members. But since 2009, women have been allowed to hold 50 of the 350 seats in the National Assembly¹⁶, and in 2021, women held 73 of the 350 seats, or 20.9% of the total number of members. While ranking 111th out of 190 countries worldwide, the figures are on par with those of the neighboring countries, such as Japan (9.9%), India (14.4%), Pakistan (20.2%), Vietnam (26.7%), and Cambodia (21.6%)¹⁷.

Table 2-6 Change in Number and Percentage of Female Council Members to All Council Members

Item	1991	1996	2001	2011	2021
Number of female council members	42	43	41	69	73
Percentage of female council members to all council members	12.7%	13.0%	12.4%	19.7%	20.9%

Source: 1991-2011: Bangladesh Planning Commission [2012] ‘The Millennium Development Goals Bangladesh Press Report 2011’ 2021: Inter-Parliamentary Union [2021] “Women in Politics:2021”

¹⁶ Soga Law Office [2014] “Research Study on the Basic Legal System of Bangladesh.”

¹⁷ All data is from Inter-Parliamentary Union [2021] “Women in Politics:2021”

The economic gender gap is still large, but is gradually improving. The following table shows the labor participation rate by gender and its differentials: from 61.3% in 2002-2003, the differential has gradually decreased to 44.2% in 2016. While the female employment rate has improved and the gender gap has improved, the decline in the male labor participation rate has also contributed to the decrease in the gender gap.

Table 2-7 Change in Labor Participation Rate

	2002/03	2005/06	2010	2013	2016
All	57.3%	58.5%	59.3%	57.1%	58.2%
Male	87.4%	86.8%	82.5%	81.7%	80.5%
Female	26.1%	29.2%	36.0%	33.5%	36.3%
Gender gap	61.3%	57.6%	46.5%	48.2%	44.2%

Source:

2016: Bangladesh Bureau of Statistics[2018] 'Labour Force Survey Bangladesh 2016-17'

Other data: Bangladesh Bureau of Statistics[2013] 'Labour Force Survey Bangladesh 2013'

The following table shows the distribution by gender of occupational fields in which those aged 15 years and older are engaged. 59.7% of women are engaged in agriculture and 40.3% in non-agriculture. The percentage of women engaged in non-agriculture¹⁸ is a measure of the extent to which the labor market is open to women. 31.9% of women were engaged in non-agriculture in 2005-2006, and the percentage improved slightly to 35.2% in 2010, but is still limited.

Table 2-8 Gender Distribution of Occupational Fields of 15 Years and Older in 2016

	Male (%)	Female (%)	All (%)
Agriculture	32.2%	59.7%	40.6%
Manufacturing industry	22.0%	16.9%	20.4%
Service industry	45.8%	23.5%	39.0%

Source: Bangladesh Bureau of Statistics [2018] 'Labour Force Survey Bangladesh 2016-17'

(7) Political Corruption

The Political Corruption Perception Index is an index based on 13 different questionnaires on the perceived degree of corruption in the relationship between public and private institutions. It has been published annually by Transparency International since 1995. Bangladesh's 2021 index is 26, ranking 147th out of 180 countries, not much changed from its 2015 ranking of 139th out of 168 countries. In 2021, Japan is ranked 18th. Neighboring countries ranked above Bangladesh are India (85th), Vietnam (87th), Thailand (110th), Nepal (117th), Pakistan (140th), and Myanmar (140th). Below Bangladesh is Cambodia (157th).

Bangladesh has determined that it needs to improve its governance sector, especially in combating corruption, in order to achieve its 2021 Long-Term Plan and its medium-term development plan, the Sixth Five-Year Plan (2011-2015). In addition, the government has begun to take national anti-corruption measures through its accession to the UN Convention against Corruption in 2007, the establishment of the Anti-Corruption Commission, and the approval of the National Integrity Strategy by the Cabinet of Ministers in 2012.

2.3 Economic, Industrial and Employment Situation in Bangladesh

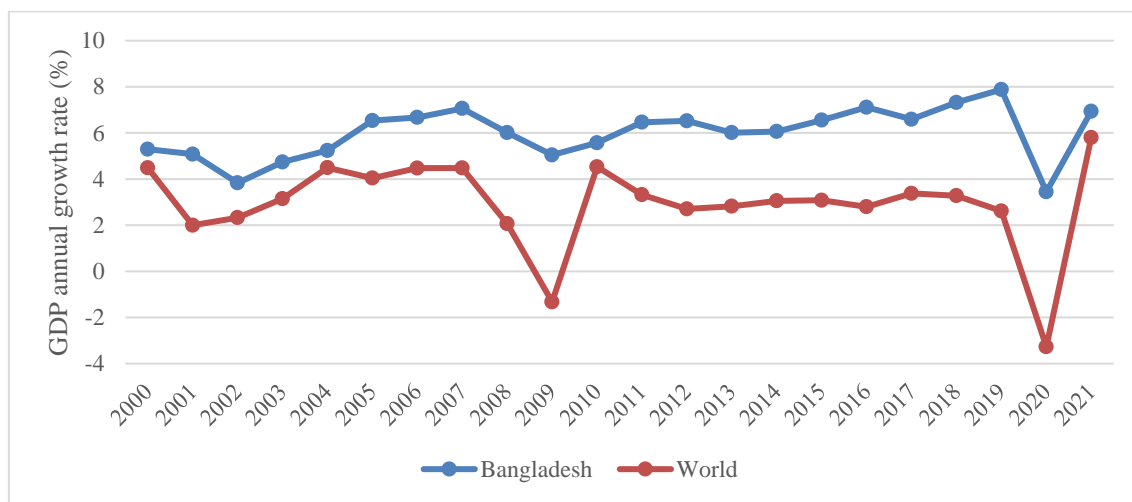
The previous section showed that the disparity between urban and rural areas still persists, but that the population growth rate remains high due to early marriages of women and improved

¹⁸ JICA (2012), Poverty Profile - Bangladesh.

health care. This population growth is supported by a strong economy. This section describes the economy and industries that support this growth.

(1) Economic Growth

Bangladesh was once considered one of the poorest countries in the world, but in recent years, as shown in the following chart, the country has maintained an average annual Gross Domestic Product (GDP) growth rate of about 6%, which is higher than the world average. Bangladesh has maintained positive growth even when the global economy experienced negative growth, such as the COVID-19 outbreak in 2020.



Source: created by the Survey Team based on Data bank in World Bank

Figure 2-10 GDP Annual Growth Rate

The GDP annual growth rate for 2021 is 6.9%, with forecast figures for 2022 and 2023 at 6.9% and 7.1%, respectively. In future projections, the difference between the GDP growth rate and the price inflation rate is unlikely to diverge significantly, and from a macro perspective, stable growth is expected for the nation.

Table 2-9 GDP Annual Growth Rate

Economic Indicator	2021	2022 Prediction	2023 Prediction
GDP growth rate	6.9%	6.9%	7.1%
Inflation rate	5.6%	6.0%	5.9%
Current account balance	-0.9%	-2.7%	-1.8%

Source: Asian Development Bank, <http://www.adb.org/countries/bangladesh/economy>

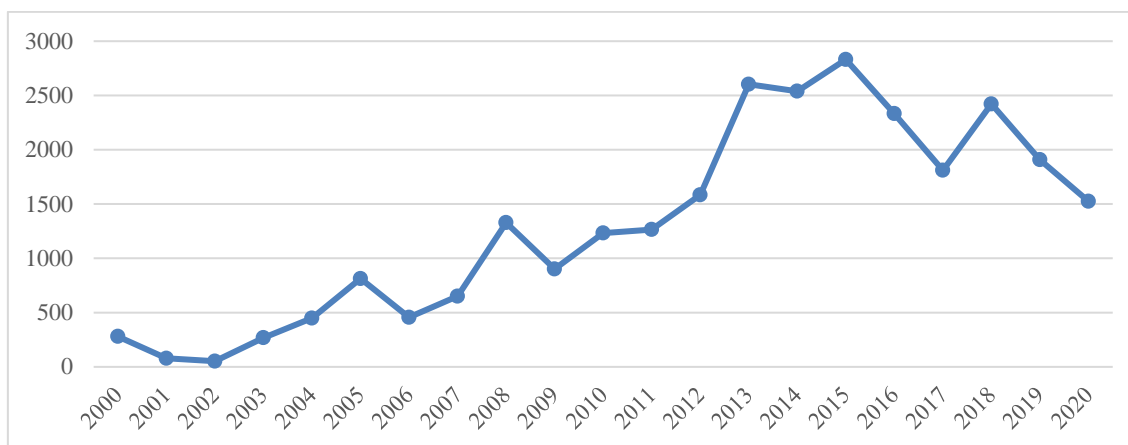
The following table also shows GDP growth rates over the past five years and the sectors that contribute to them. Although all components fell in 2020, many returned to their original levels by 2021. Private investment was high in 2018, but on average contributes between 20% and 30%, except in 2020.

Table 2-10 Contribution of Each Sector to GDP Growth

Component	FY17	FY18	FY19	FY20	FY21
Consumer spending	4.19	6.28	3.30	1.98	5.27
Govt. consumption	0.42	0.31	0.78	0.12	0.41
Private investment	1.36	3.42	2.16	0.06	1.91
Public investment	1.17	0.31	0.05	1.19	0.68
Net exports	-1.16	-3.33	1.35	-0.18	-1.46
Statistical discrepancy	0.60	0.33	0.24	0.28	0.12
Real GDP growth (%)	6.59	7.32	7.88	3.45	6.94

Source: Bangladesh Ministry of Finance 'Medium Term Macroeconomic Policy Statement 2022-23'

The following chart shows the recent trends in foreign direct investment (FDI): besides the global deflationary recession in 2009 and the COVID-19 outbreak in 2020, the FDI increased up to 2015 slowed down and entered a downward trend from 2016 onwards. This was followed by negative growth due to the COVID-19 outbreak. Despite the declining trend, even in 2020, the level of investment is still at the same level as it was in 2012.



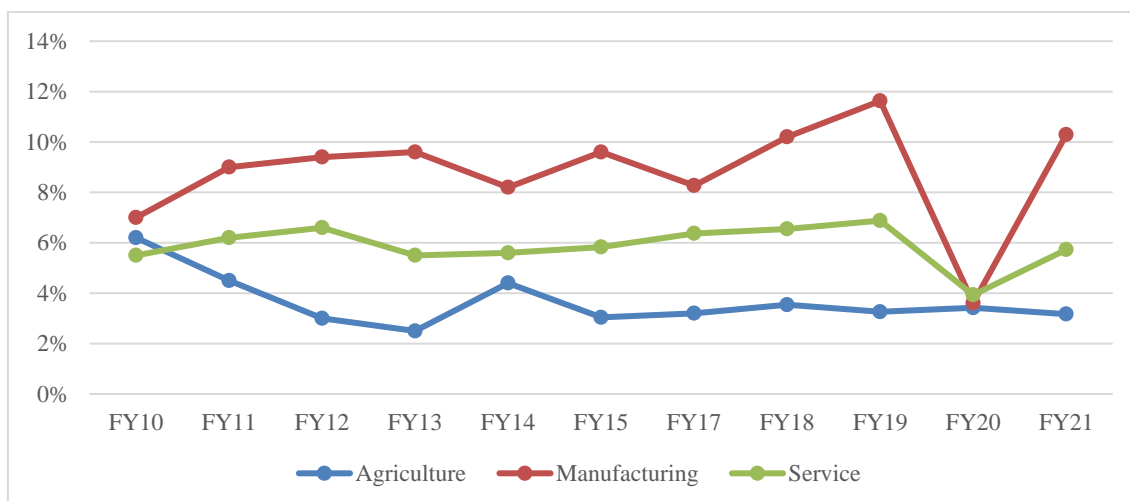
Source: Created by the Survey Team based on Databank in World Bank

Figure 2-11 Overseas Direct Investment, Net Inflow (BOP¹⁹, Current Million US\$)

(2) Growth by Sector

In terms of growth by sector, the primary industry, led by agriculture, showed a downward trend until FY 2013, but stopped declining by FY 2013, and has been growing at a stable rate of about 3% since then. The tertiary industry, mainly services, continued to grow at a stable rate of about 6% from FY 2010 to FY 2019, but was significantly affected by the COVID-19 outbreak in FY 2020. The secondary industry, mainly industry, shows a similar trend to the tertiary industry, but was more affected by the COVID-19 outbreak than the tertiary industry; however, both showed recovery in FY2021. The primary industry is also characterized by the fact that it has not been affected by the COVID-19 outbreak.

¹⁹ International balance of payments

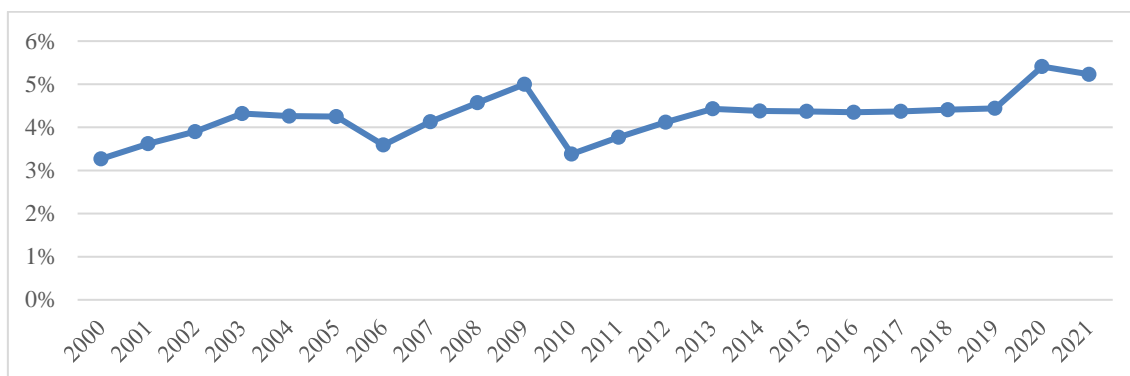


Source: Created by the Survey Team based on Bangladesh Ministry of Finance ‘Medium Term Macroeconomic Policy Statement 2015-16 to 2017-18’ and ‘Medium Term Macroeconomic Policy Statement 2022-23’

Figure 2-12 Growth Rate by Sector

(3) Employment Situation

With a strong economy and cheap and abundant labor force, Bangladesh's unemployment rate is not high, hovering around 4% to 5% until 2019, but rose by about 1% to 5.4% in 2020.



Source: World Bank Data

Figure 2-13 Unemployment Rate in Bangladesh

As shown in the following table, Bangladesh has a large share of employment in the informal sector²⁰, around 85%. Therefore, it can be assumed that there are many potentially unemployed persons.

²⁰ According to “Labour Force Survey Bangladesh”, informal sector is defined as self-employed with no employees, self-employed with employees, family workers, Members of informal producers' cooperatives (not established as legal entities, Employees holding informal jobs as defined according to the employment relationship (in law or in practice, jobs not subject to national labour legislation, income taxation, social protection or entitlement to certain employment benefits (paid annual or sick leave, etc.), Own-account workers engaged in production of goods exclusively for own final use by their household.

Table 2-11 Percentage of Employment (Formal and Informal Sector)

Item	2005/06	2010	2013	2016/17
Formal sector	21.5%	12.6%	12.6%	14.9%
Informal sector (Sum of both sex)	78.5%	87.4%	87.4%	85.1%
Of which, Informal sector (male)	76.2%	85.5%	86.3%	82.1%
Of which, Informal sector (female)	85.8%	92.0%	90.3%	91.8%

Source: Created by the Survey Team based on Bangladesh Bureau of Statistics 'Labour Force Survey Bangladesh 2013' and 'Labour Force Survey Bangladesh 2016-17'

Labor participation rates are shown in the following table: overall, 58.2% of people participated in labor activities in 2016/17. This has remained largely unchanged since 2002/03; however, the labor participation rate of women has gradually increased from 26% in 2002/03 to 36.3% in 2016/17. This suggests that economic growth has promoted women's labor participation in society, but there is still a considerable gap between men and women.

Table 2-12 Labor Participation Rate

Item	2002/03	2005/06	2010	2013	2016/17
All	57.3%	58.5%	59.3%	57.1%	58.2%
Male	87.4%	86.8%	82.5%	81.7%	80.5%
Female	26.1%	29.2%	36.0%	33.5%	36.3%

Source: Created by the Survey Team based on Bangladesh Bureau of Statistics 'Labour Force Survey Bangladesh 2013' and 'Labour Force Survey Bangladesh 2016-17'

(4) Domestic Bangladeshi Industrial Human Resources

The following table shows changes over time in the percentage of workers by industry. The primary industry has consistently declined, dropping to 40.6% in 2016/17. The secondary industry increased from 14% in 2005/06 to 21% in 2013, but showed stagnation in 2016/17.

Table 2-13 Percentage of Workers by Industry

Industry	2005/06	2010	2013	2016/17
Primary industry	48%	47%	45%	40.6%
Secondary industry	14%	18%	21%	20.4%
Tertiary industry	37%	35%	34%	39.0%

Source: Created by the Survey Team based on Bangladesh Bureau of Statistics 'Labour Force Survey Bangladesh 2013' and 'Labour Force Survey Bangladesh 2016-17'

Chapter 3. Overall View of the Secondary Education Subsector

The previous chapter summarized the political-social and economic situation as the environment surrounding education in Bangladesh. In this chapter, up to section 3.4, we will look at education as a whole, and then analyze the situation in each subsector from 3.5 onward to examine what challenges exist.

3.1 History of Education

Bangladesh had Islamic education until British colonization. After 1765, when Bangladesh became a state of Bengal and Assam in British India, secondary education as elite education started, and Kolkata Alia Madrasah was established in 1781 and Benaras Sanskrit College was established in 1792. The importance of education was recognized by Article 43 of the Imperial Act of 1813 (East India Company Act), which advocated the promotion of the local language and literature and the dissemination of Western scientific knowledge to the Indian people, and English education for the upper classes was supported²¹. In 1837, English became the official language of India, which led to a rapid expansion of English-language schools²². Single-course secondary education was introduced in 1883 in British India. From 1883 to 1959, a number of education boards were established, all of which recommended a common curriculum for secondary education²³. However, during the Pakistani period, three courses were introduced in 1959 from grade 8 onward: arts, science, and business, instead of the single course that had been in place previously. Schools and colleges operated by community and private individuals were registered by the government in 1984, and regular teachers in registered schools were paid through the Monthly Pay Order (MPO) system²⁴. In 1992, the Female Secondary Assistance Project (FSAP) was launched to improve the enrollment rate of girls in secondary education.

Primary education lagged far behind secondary education, which began in the late 19th century with the introduction of tiered education (with primary school as the entry point)²⁵. The tax collection introduced in India for the establishment of primary school as mass education did not take place in Bengal, but local governments took the initiative in expanding primary school²⁶. The Compulsory Education Act was enforced in some areas from 1917 to 1927. Report defined pre-school education from 3 to 6 years old and free primary education from 6 to 14 years old (6-11 years old as early basic education and 11-14 years old as late basic education).

During the Pakistani era, which began in 1947, the government continued to aim for the complete spread of primary education based on the concept of free and compulsory education, and in its First Five-Year Plan (1955-1960), the government planned to achieve this goal in 20 years, but the enrollment rate remained sluggish. After independence in 1971, under the strong centralization of power, various policies and plans were put in place, such as the nationalization of primary school (1973), the nationalization of the teaching profession through the National

²¹ Kumar, K. (1991). *A Political Agenda of Education: A Study of Colonist and Nationalist Ideas*. New Delhi: Sage.

²² Ghosh, S. C. (1993). English in Taste, in Opinions, in words and intellect: Indoctrinating the Indian through textbook, curriculum, and education. In J.A. Mangan (Ed), *The imperial curriculum: Racial images and education in British colonial experience* (pp 175-193). London and New York: Routledge.

²³ 8th Five year plan 2020-2025

²⁴ Subsidy system for teacher salary payments to non-public schools and private educational institutions

²⁵ At the same time, the prefectural education bureau was established and the supervision system was inaugurated, universities were established, a subsidy system for private schools was introduced, and teacher training institutions were established. Chanana, K. (1994). Social change or social reform: Women, education and family in preindependence India. In C. C. Mukhopadhyay and S. Seymour (Eds.), (pp 35-58). *Women, Education and Family Structure in India*. Boulder, CO: Westview Press.

²⁶ BANBEIS Publication 56(1987). *Primary Education in Bangladesh*

Primary Schools (1973), the full enrollment plan for primary education (ages 6-11) in the new First Five-Year Plan (1973-78), and the Primary Education Act (1985). In 1990, the Compulsory Education Law was enacted, making primary education free and compulsory. In 1992, the "Food for Education Program" was launched²⁷, and with the support of Development Partners (DPs), the country has been promoting this program. The Net Enrollment Ratio (NER) for primary education increased from 60.5% in 1990 to 86.7% in 2002, and to 95.6% in 2010.

In tertiary education, the University of Dhaka was established in 1921, late in the long British colonial period, and the second university did not appear until 1953, when Rajshahi University was established in the Pakistani era. By the time of independence in 1971, four universities (Chittagong University, Jahangirnagar University, Bangladesh University of Engineering and Technology (BUET) and Bangladesh Agricultural University (BAU) had been established. A 1973 decree granted the public universities strong autonomy as a perk. The public universities had played a major role in the country's independence in 1971. After independence, the number of universities increased significantly, but private universities were not established for a long time. Toward the end of the military regime, the 1992 Private Universities Act was enacted to permit the establishment of private institutions of tertiary education due to the growing demand for tertiary education, the absolute lack of capacity in public universities, and the intention to prevent the exodus of students to India, the UK, the US, and other countries. The Act was amended in 1998, and the current version was enacted in 2010. Technical education, like university education, started late, with only five training institutions before the Pakistan era in 1947. By 1960, during the Pakistani era, four engineering diploma level schools had been established²⁸, but their quantitative expansion did not occur until the 1960s²⁹.

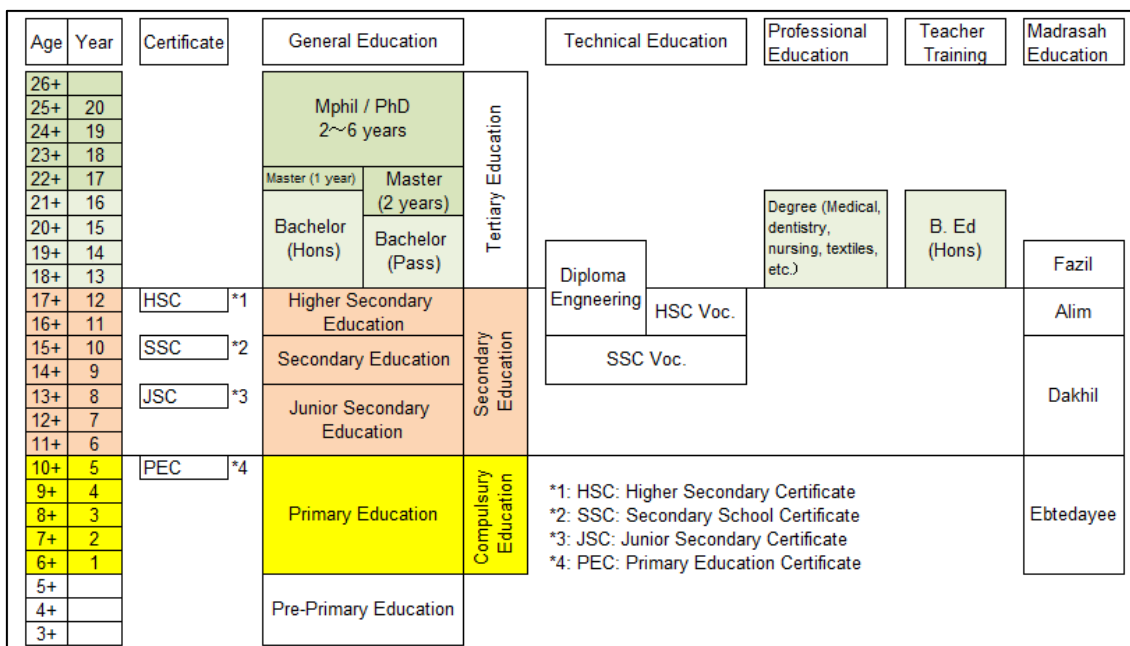
3.2 Education System

The education system in Bangladesh can be broadly classified into three categories: general education, technical education, and madrasah education, which were strongly influenced by the British, the country's former suzerain state. In addition to these three types of education, there are specialized education and teacher training programs. The following diagram summarizes the system.

²⁷ It continued until 2002. Twenty percent of all elementary school benefited from this.

²⁸ Dhaka Polytechnic Institute, Institute of Textile Technology, Institute of Leather Technology, Institute of Glass and Ceramic

²⁹ BANBEIS Publication 70(1988). Technical Education in Bangladesh



Source: JICA [2017] Bangladesh Preparatory Survey for Education Sector Final Report

Figure 3-1 Education System in Bangladesh

(1) General Education

The general education system is a 5-3-2-2 system. Primary Education is grades 1-5. Secondary education consists of three stages (7 years total): Junior Secondary Education (grades 6-8, 3 years), Senior Secondary Education (grades 9-10, 2 years), and Higher Secondary Education (grades 11-12, 2 years). The 13th grade is the university level. At the end of each stage of study, students must pass the following final examinations to advance to the next stage of study.

- Primary Education Certificate Examination (PECE)
- Junior Secondary Certificate Examination (JSCE)
- Secondary School Certificate Examination (SSCE)
- Higher Secondary Certificate Examination (HSCE)

Of these, the PECE has been decided to be abolished and the JSCE is also set to be abolished in January 2023³⁰.

Bangladesh's primary education system is one of the largest centrally managed education systems in the world. Of the total primary education institutions, more than half are government schools and the rest are non-government schools. In secondary education, on the other hand, non-government schools account for more than 90%. Non-government schools, however, receive significant government subsidies, including base salaries for some teachers and capital and some operating expenses. Curriculum and examinations at the end of grades 8, 10, and 12 are also publicly funded³¹.

³⁰ <https://www.dhakatribune.com/bangladesh/2023/01/16/jsc-jdc-exams-scrapped-permanently> (Confirmed on 1/16/2023)

³¹ ESP 2020/21-2024/25

The five years of primary education (ages 6-11) are compulsory. Under the NEP 2010, described below, it was decided to extend primary education to 8 years (ages 6-14) in grades 1-8. However, this has not yet been extended as of 2022.

Courses Provided in Secondary School

Only compulsory courses exist in junior secondary education, and all students must take the same courses. From secondary education, a course selection system will be introduced, and students will have to choose one of three courses: science, humanities, or business.

From the new curriculum starting in January 2023, the course system in secondary education will be abolished and the common course is implemented. This applies not only to the general education system but also to the Madrasah education system, and all students will take the same curriculum regardless of whether they are in the general or madrasah education system until Grade 10.

(2) Madrasah Education System

Madrasah education system³² can be classified into several categories, such as Aliya Madrasah, Qawmi Madrasah, etc., depending on their system.

Aliya Madrasah range from primary to university level, and have a system that corresponds to the general education system in terms of school phases and length of study, and an examination-based advancement system. The Madrasah Education Board oversees all aspects of education, from administration to content. Teachers are paid by the government, but they have to have a timetable that guarantees a national curriculum. Aliya Madrasah have an Ebtedayee, which corresponds to primary school, a Dakhil, which corresponds to junior secondary and secondary school, an Alim, which corresponds to higher secondary school (college), a Fazil, which corresponds to Degree pass course level, and a Kamil, which corresponds to Post graduate or masters level. Religious subjects such as Arabic, Quran, Hadith Fiqh etc. are different from general education, and because of these subjects, transfer from Alia Madrasah to the general education system is possible, but not vice versa.

Qawmi Madrasah does not receive any support from the Ministry of Education (MOE), but provides its own Islamic education based on its own curriculum, using Arabic, Farsi, and Urdu as the teaching languages, and is funded mainly by donations from the villagers and from Bangladeshis who have migrated to Middle Eastern countries. According to the survey conducted in 2010 by Banbeis, there are about 14,000 schools nationwide. Qawmi Madrasah education is divided into several stages as follows: 1) Al Marhalatul Ibtidayyah or Qawmi Primary/Primary Madrasah for 6 years equivalent to primary education, 2) Marhalatul Mutawassitah, , a three-year study of G6-G8, 3) Al-Marhalatul Sanabiatul (G9-G10 for two years), 4) Al-Marhalatul Sanabiyah Al Uliya (G11 to G12 for two years), 5) Marhalatul Fazilat (graduate degree level in two years from G13 to G14), 6) Marhalatul Takmil (master degree level in two years). After this, there are diploma education courses and research education courses. Qawmi Madrasah does not keep track of the number of students enrolled in its schools, and the number is unknown, but it is believed to be as high as 1.4 million³³.

³² According to Tatsuya Kusakabe (2010), "The 'Age of Education' and Madrasa," the definition of what the word "madrasa" means in the Islamic world is quite broad. Originally, it meant an institution of higher learning for the study of Islamic studies, and was first built around the 10th century in the Khorasan region of Iran. Even today, madrasas are being built all over the world to provide Islamic education. They range from pre-school to graduate schools, and from small, rural temple school to university campuses that are comparable in size to those of large Japanese universities. In some areas, Islamic education in the form of a maktab, or temple and child school, is also called madrasa.

³³ Local newspaper "Protomuar" <http://en.prothom-alo.com/bangladesh/news/67081/14-lakh-students-study-in-14-000-Qawmi-madrasas>

Other activities include 24-hour boarding, study of the Arabic, Bangla, and English alphabet and words through play and reading the Quran aloud at Maktab/Nurani, the equivalent of a kindergarten, and rote dancing of the Quran at Hafezi, the equivalent of primary education.

(3) Technical Education System

Technical education and vocational training are provided under several ministries and agencies, including the MOE and the Ministry of Expatriates' Welfare and Overseas Employment, which plays a central role in technical education and vocational training. The technical education and vocational training offered under the MOE, which plays a central role in technical education and vocational training, can be broadly classified into four programs.

SSC Vocational is offered in grades 9-10, and HSC Vocational in grades 11-12. The engineering diploma programs offered by polytechnic institutes are grades 11-14 and bachelor of engineering programs are grades 13-16.

After completing junior secondary education, two career paths are established: a general education system and a vocational training program.

The senior secondary education vocational training courses are equally qualified to take the JSCE examination as the general education system, and upon completion, students can obtain a JSCE certificate of completion. However, the total number of classes is more than that of the general education system due to the additional number of vocational training classes. There are three types of post-secondary courses: general education courses, vocational training courses, and engineering diploma courses. Students who have completed senior secondary vocational training program at a technical secondary school are not required to continue on to higher secondary vocational training program, but may choose the engineering diploma program.

Upon completion of higher secondary education vocational training program, students are equally qualified to take the HSCE examination as those in the general education system. The number of classes is greater than that of the general education system because of the additional vocational training classes.

The minimum entrance requirement for the Engineering Diploma Program is completion of Secondary School (General Education system) or Senior Secondary Vocational Training Program, although some students enter the Engineering Diploma Program after completing Higher Secondary Vocational Training Program. Until now, there was no preferential system in place to allow students to transfer to the third year of the engineering diploma program, but MOE has decided to allow students who have completed higher secondary education (science) to transfer to the third semester of the engineering junior college and those who have completed senior secondary education vocational training program to the fourth semester of the engineering junior college, effective from the 2016 curriculum.

Those who wish to become teachers in technical education and vocational training institutions after completing the engineering diploma program may enter the Technical Teachers Training College (TTTC), which offers a diploma in technical education and a bachelor's degree in technical education. Diploma in Technical Education or Bachelor's Degree in Technical Education. The diploma program lasts one year and the bachelor's program lasts two years.

3.3 School Calendar and Semesters

The school calendar in Bangladesh is complex and varies according to the stage of learning; the school calendar is shown here using a child who entered the first grade of primary school in 2010 as an example.

The school calendar for the 10 years from primary to secondary education (G1 to G10) runs from January to December; the PECE is administered in the last month of G5 and the JSCE in the last month of G8. After the examinations, students can proceed immediately to the next educational stage. However, the SSCE for G10 to G11 is administered in February, after all G10 students have completed their studies. It takes several months for the results to be announced, and they have to wait until June. Therefore, the school calendar for higher secondary education is from July to June. On the other hand, the HSCE is administered in April of G12, but since the university entrance examination period is after the completion of G12, university studies begin in April. However, officially, the students are considered to have started their university studies in July 2022, immediately after completing G12, and it has become customary for students who started their university studies in January 2023 to officially state on their resume, etc. that they started their university studies in 2022/2023.

Table 3-1 School Calendar and Timing of Various Certification Exams

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	G1											
2011	G2											
2012	G3											
2013	G4											
2014	G5										PECE	
2015	G6											
2016	G7											
2017	G8										JSCE	
2018	G9											
2019	G10											
2020		SSCE				Result	G11					
2021							G12					
2022								University Entrance Exam				
				HSCE		Result					Admission for university	
2023	G13					Exam						Exam
2024	G14					Exam						Exam
2025	G15					Exam						Exam
2026	G16					Exam						Exam

Note that only primary school (G1-G5) have a three-term system, and the system is further complicated by the fact that from G6 onward, the system has two semesters. It has been decided that junior secondary education (G6-G8) will be incorporated into primary school and PECE will be abolished, but the timing of its introduction has not yet been determined.

3.4 Relationship between Educational Stage, Education Type in Education Statistics, and Type of School

The general education system in Bangladesh takes the following educational stages: primary education (5 years), junior secondary education (3 years), secondary education (2 years), higher secondary education (2 years), and tertiary education; however, educational statistics and daily conversation do not follow these categories, and instead use the categories of primary education, school education, college education, Madrasah education, university education, etc. In this section, education categories in educational statistics and in daily conversation are referred to as

"education type" for the sake of convenience. Since the educational stages and statistical categories are the same for primary education, Table 3-2 shows the relationship for primary education and onward. School education covers junior secondary education (grades 6-8) and secondary education (grades 9-10). College education covers higher secondary education (grades 11-12) and tertiary education (bachelor's and master's degrees). School education is provided by Junior Secondary Schools (grades 6-8) and Secondary Schools (grades 6-10). However, since the number of secondary school teachers is statistically grouped under school education, it is impossible to distinguish between those working in junior secondary school and those working in secondary school. In addition, in the majority of cases, actual schools also provide both junior secondary education and secondary education in the same school. Therefore, it is not possible to calculate the number of students per teacher for junior secondary education and secondary education. Furthermore, if Madrasah education is also included, it is difficult to determine the number of students at each educational stage.

Table 3-2 Relationship between Post-Primary Educational Stage and Education Type

Education Type in Education Statistics	School Type	Secondary Education			Post-Secondary Education Non Tertiary	Tertiary Education	
		Junior Secondary	Secondary	Higher Secondary		Bachelor's Degree	Master's Degree
		G6-8	G9-10	G11-12			
School Education	Junior Secondary School	○					
	Secondary School	○	○				
College Education	School & College			○		○	
	Higher Secondary College			○			
	Bachelor College					○	
	Master College					○	
Madrasah Education		○	○	○	○	○	
Professional Education					○	○	
Teacher Training					○	○	
Technical Vocational Education			○	○	○		
University Education						○	

Source: JICA Survey Team

3.5 Status of Secondary Schools (General Education System)

In this section, the current status of secondary education (grades 6 through 12) will be described with additional statistical information.

(1) Number of Students by Educational Stage

The following table shows the number of students in each educational stage, including madrasah education. The average number of students per grade³⁴ drops significantly as the educational stage increases, and the percentage of female students is high up to secondary education stage, and drops from higher secondary education stage, but is generally very high.

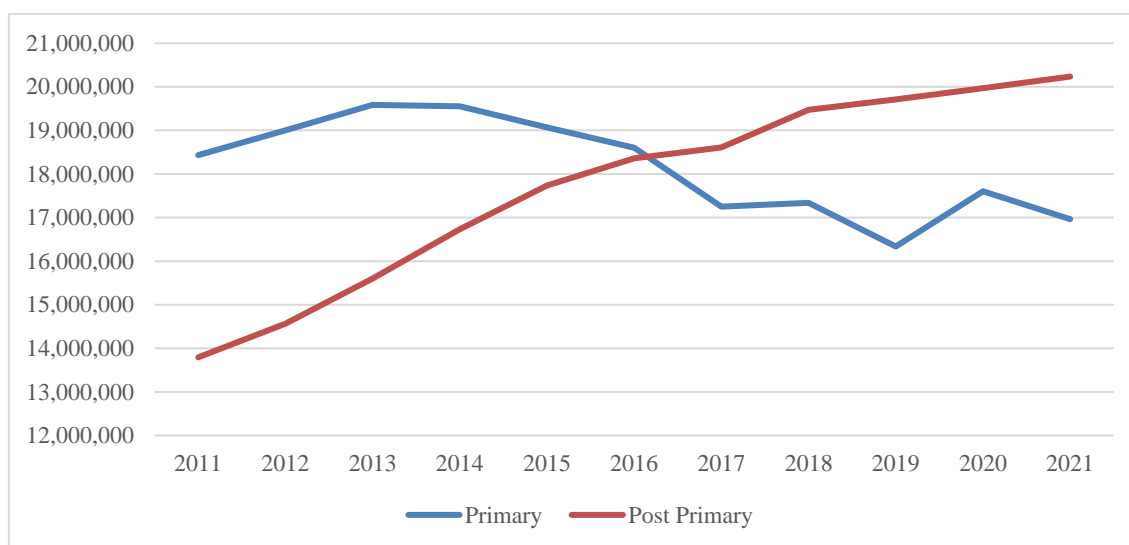
³⁴ The number of students at each educational stage divided by the number of grades is referred to here as the "average number of students per grade."

Table 3-3 Number of Students by Educational Stage

Educational Stage	Grades	No. of Students	No. of Female Student	% of Female Students	Average No. of Students in Each Grade
Primary Education	G1-5	16,964,967	8,381,644	49.4%	3,392,993
Junior Secondary Education	G6-8	7,853,383	4,329,153	55.1%	2,617,794
Secondary Education	G9-10	4,897,467	2,609,192	53.3%	2,448,734
Higher Secondary Education (including Diploma)	G11-12	3,603,857	1,647,566	45.7%	1,801,929
Bachelor + Master		3,879,939	1,723,872	44.4%	-
Total number of post primary education		20,234,646	10,309,783	51.0%	
Total		37,199,613	18,691,427	50.2%	

Source: Created by the Survey Team based on Bangladesh Bureau of Educational Information & Statistics (BANBEIS) 2021 and Bangladesh Primary Education Statistics 2021.

The next figure shows the number of students in primary and post-primary education (from 6th grade to master's degree), including madrasah and technical education since 2011. The total number of students in primary education has gradually decreased as a result of the increasing enrollment of students at school age and the reduction of dropout and retention rates. On the other hand, the number of students in post-primary education has continued to grow, and since 2017, the number of students enrolled in post-primary education has exceeded the number of students enrolled in primary education.



Source: Created by the Survey Team based on BANBEIS2021 and Bangladesh Primary Education Statistics 2021

Figure 3-2 Number of Students in Primary and Post-Primary Education

(2) Scale and Indicators by Education Type

The number of schools, teachers, and students by education type and various indicators are shown in the following table. Indicators are Teacher Student Ratio (TSR), Students per Institution (SPI), and Teachers per Institution (TPI). TSR in Schools, Schools & Colleges, Colleges and University Education exceed 30. The SPI, excluding universities, shows that colleges are 1,300 and school & colleges are 1,115, while primary education is 143 and technical and vocational education are 163, which are relatively small. The majority of female teachers are in English Medium³⁵ (72.4%) and Primary Education (61.3%), while the rest of the schools have more male teachers.

³⁵ An educational institution that uses English as a medium of communication rather than as a subject or subject.

Table 3-4 Number of Schools, Teachers, and Students by Education Type

Education Type	No. of School	No. of Teachers			No. of Students	Indicator		
		Total	Female	% of Female		TSR	SPI	TPI
Primary school	118,891	657,203	403,191	61.3%	16,964,967	26	143	6
School	18,874	237,272	66,266	27.9%	8,930,245	38	473	13
School & College	1,420	53,235	17,165	32.2%	1,583,050	30	1115	37
College	3,309	113,286	28,952	25.6%	4,303,265	38	1300	34
Madrasah	9,291	110,901	21,329	19.2%	2,657,252	24	286	12
Professional Education	2,489	36,745	7,133	19.4%	762,108	21	306	15
Teacher Education	821	17,176	7,540	43.9%	191,409	11	233	21
Technical Vocational education	209	2,952	869	29.4%	33,996	12	163	14
University Education	160	30,976	9,084	29.3%	1,233,529	40	7710	194
English Medium	137	6,453	4,671	72.4%	26,596	4	194	47
Total of post primary Education	36,710	608,996	163,009	26.8%	19,721,450	32	537	17
Total	155,601	1,266,199	566,200	44.7%	36,686,417	29	236	8

Source: Created by the Survey Team based on BANBEIS2021 and Bangladesh Primary Education Statistics 2021

(3) Government School and Non-Government School

Bangladesh is characterized by a large number of government schools in primary education and a large number of non-government schools in secondary education. Table 3-5 shows the number and percentage of government and non-government schools for primary and secondary education.

Table 3-5 Number of Government and Non-Government School

Education Stage	System	No. of Schools			%	
		Government	Non-Government	Total	Government	Non-Government
Primary Education		65,566	53,325	118,891	55%	45%
Secondary Education	General Education	1,309	22,294	23,603	6%	94%
	Madrasah Education	3	9,288	9,291	0%	100%
	Tech - Voc (Independent)	309	2,180	2,489	12%	88%
	English Medium		137	137	0%	100%
	Total	1,621	33,899	35,520	5%	95%
Total		67,187	87,224	154,411	44%	56%

Source: Created by the Survey Team based on BANBEIS2021

The total number of primary schools is 118,891, 3.3 times that of the 35,520 secondary schools. Government Primary Schools account for 55% of the primary schools, while the remaining 45% are non-government schools. The opposite is true for secondary education, which is dominated by non-government schools. Secondary education includes general education system, madrasah education system, vocational training (independent schools), and English medium schools. The number of schools and their share of the total secondary education institutions are: 23,603 (66%) for general education, 9,291 (26%) for madrasah, 2,489 (7%) for vocational training (independent schools), and 137 (less than 1%) for English medium schools. In some cases, vocational training schools are attached to general education schools in addition to independent schools. The ratio of government/non-government schools is 5% for government schools and 95% for non-government schools for secondary education as a whole. The same is true for general education programs, where government schools account for 6% and non-government schools for the remaining 94%. Thus, secondary education is characterized by the fact that non-government schools account for the majority of schools.

Table 3-6 shows the number of students in primary and secondary education stage by government and non-government schools.

Table 3-6 Number of Students in Government and Non-Government Schools

Education Stage	School Type	Number of Students			%	
		Government	Non-Government	Total	Government	Non-Government
Primary Education		13,484,617	6,616,355	20,100,972	67%	33%
Secondary Education	General Education	3,100,538	11,716,022	14,816,560	21%	79%
	Madrasah Education	6,875	2,650,377	2,657,252	0%	100%
	Tech - Voc (Independent)	277,722	484,386	762,108	36%	64%
	English Medium	0	26,596	26,596	0%	100%
	Total	3,385,135	14,877,381	18,262,516	19%	81%
Total		16,869,752	21,493,736	38,363,488	44%	56%

Source: Created by the Survey Team based on BANBEIS2021

In secondary education (general education system), the percentage of students in government schools is 21%. This is 15 percentage points higher than the government school share of 6% for the number of schools. Thus, there is a strong tendency for more students to be enrolled in government schools. Table 3-7 shows the SPI by government and non-government schools. In the secondary school (general education system), the SPI of government schools is 2,369, while that of non-government schools is 526, a difference of more than four times. The trend toward larger school size in government schools is evident in all primary and secondary schools.

Table 3-7 SPI in Government and Non-Government School

Educational Stage	School Type	Government	Non-Government
Primary Education		206	124
Secondary education	General Education	2,369	526
	Madrasah Education	2,292	285
	Technical-Vocational (Independent)	899	222
	English Medium		194
	Total	2,088	439
Total		251	246

Source: Created by the Survey Team based on BANBEIS2021

(4) Autonomous Schools in Government Schools

Among government schools, there are some special schools with autonomous functions. For example, Udayan High School, which is affiliated with the University of Dhaka, is a 12-year integrated school from primary to higher secondary and famous for its excellence, but it is different from other government schools. Unlike other schools, Udayan High School is self-governed by a board of directors. The president is a bureaucrat appointed by MOE. The curriculum and administrative structure of the school follow the standards set by the government, but the board of directors can make various operational decisions, including the appointment and dismissal of the principal (such as hiring and evaluation criteria for teachers, and the setting of revenue items and prices), and salaries are paid by the school (therefore, the items listed in Section 8.3 are not applicable). Although the schools receive government subsidies in the form of goods (e.g., PCs) and monthly pay orders (MPO) for teachers, they are allowed to generate their own income and operate the schools with their own income. The main sources of income are tuition, enrollment fees, laboratory fees, and other donations. Many of the school's science and mathematics teachers (4 out of 5 interviewed) hold Bachelor of Science or Master of Science degrees from the University of Dhaka. Teachers' evaluation criteria reflect the results of students' SSCE and HSCE. Therefore, the survey team perceives that the teachers' approach to teaching is

strongly based on the SSCE and HSCE. There are about 10 such schools in total in Dhaka City and other metropolitan areas such as Chittagong.

(5) Non-Government School and Teacher Subsidy System (Monthly Pay Order: MPO)

A key feature of secondary education in Bangladesh is the Teachers' Monthly Pay Order (MPO)³⁶. Non-government schools have been registered by the government since 1984, and those registered schools are MPO accredited, meaning that the basic salaries of some regular teachers in MPO accredited schools are paid by the government. In other words, non-government schools can be classified as MPO-accredited or non-accredited; schools that are not accredited under the MPO system pay teachers' salaries from their own funds. MPO-accredited schools are governed by the policies and regulations of the Board of Intermediate and Secondary Education (BISE), which is established in each of the nine education jurisdictions, while non-MPO-accredited schools are governed by the same regulations, they may establish their own regulations.

According to the data from the Education Management Information System (EMIS) Report (2022), of the 33,580 secondary schools, including madrasah schools, 26,067 are MPO accredited, which is 78% of all schools. Of the total number of teachers (364,882), 270,714 (74%) are MPO teachers.

(6) Admission Requirements

The minimum requirement for admission to each secondary school is to pass the qualifying examination for the completion of the previous educational stage. However, if a student wishes to enter another school, admission is determined by whether or not the results of the final qualifying examination meet the standards set by each school. For example, for admission to a well-known non-government high school in Dhaka, the SSCE score is a requirement for admission (PECE and JSCE results are not taken into account), and the minimum passing level is 3.0 to 4.0, depending on the school. Some international schools and some well-known non-government schools in the metropolitan area conduct individual entrance examinations.

(7) Tuition

Tuition (enrollment fees and tuition) varies widely from school to school. In general, tuition fees at non-MPO accredited schools, where teacher salaries are secured from their own funds, are high. However, there are cases where even MPO-accredited schools are expensive, and even in rural areas, some schools require tuition fees of over BDT 100,000 per year. For example, rural schools require 1,000 to 5,000 BDT per year, while urban schools require 5,000 to 100,000 BDT. The regional differences in the cost of attending school are further widened by the fact that students must pay for transportation and food to attend urban schools, compared to rural schools where students walk to school from their homes and have lunch at home. Even in rural schools, additional costs such as the purchase of textbooks and uniforms make it difficult for students to pay school fees in rural areas, where there are many poor people, and many students require scholarships.

(8) Stipend

The following table shows MOE's Stipend expenditures for the 2020-21 fiscal year. Various stipend programs for secondary education used to exist, but they were unified by the SEDP, and only the Harmonized Stipend Program (HSP) is for secondary education. The HSP has awarded a total of over 5.2 million stipends to students, 64% of whom are female. The percentage of students who received stipend through the HSP is approximately 33% in the junior secondary

³⁶ Subsidy system for teacher salary payments to various non-public schools and private educational institutions

education and 29% in the secondary education³⁷. MOE also offers the Degree (pass) and Equivalent Students Stipend under the Prime Minister's Education Assistance Trust for post-secondary education, but when comparing the number of recipients and the amount spent, the percentage of HSP for secondary education is about 96%.

Table 3-8 Expenditure of Stipend (FY 2022-21)

Stipend	Education Stage	Number of Recipients			% of Female	Billion (BDT)
		Male	Female	Total		
Improving Access and Retention Through Harmonized Stipend Program (HSP)	Junior secondary & secondary	1,545,286	2,653,305	4,198,591	63%	15.89
	Higher Secondary	342,239	710,052	1,052,291	67%	9.20
	Sub total	1,887,525	3,363,357	5,250,882	64%	25.09
Degree (pass) and Equivalent Students Stipend under Prime Minister's Education Assistance Trust	Degree (pass)	57,798	124,305	182,103	68%	0.97
Total		1,945,323	3,487,662	5,432,985	64%	26.06

Source: Created by the Survey Team based on BANBEIS 2021

In addition, there is a scholarship program for outstanding students, but the number of recipients for 2020-21 is 217,442 and the amount spent is 1.21 billion BDT (both from BANBEIS 2021), less than 1/20th of the stipend's size.

Table 3-9 Scholarship Program

Name of the Program	Target	Period	Fund
Higher Secondary Female Stipend Project (Phase-3)	Female students (G11-12)	2005-2008	Bangladesh government
Secondary Education Quality and Access Enhancement Project (SEQAEP)	G6-10	2008-2014	World Bank
Secondary Education Sector Investment Program	G6-10	2013-2023	ADB

Source: JICA Survey Team

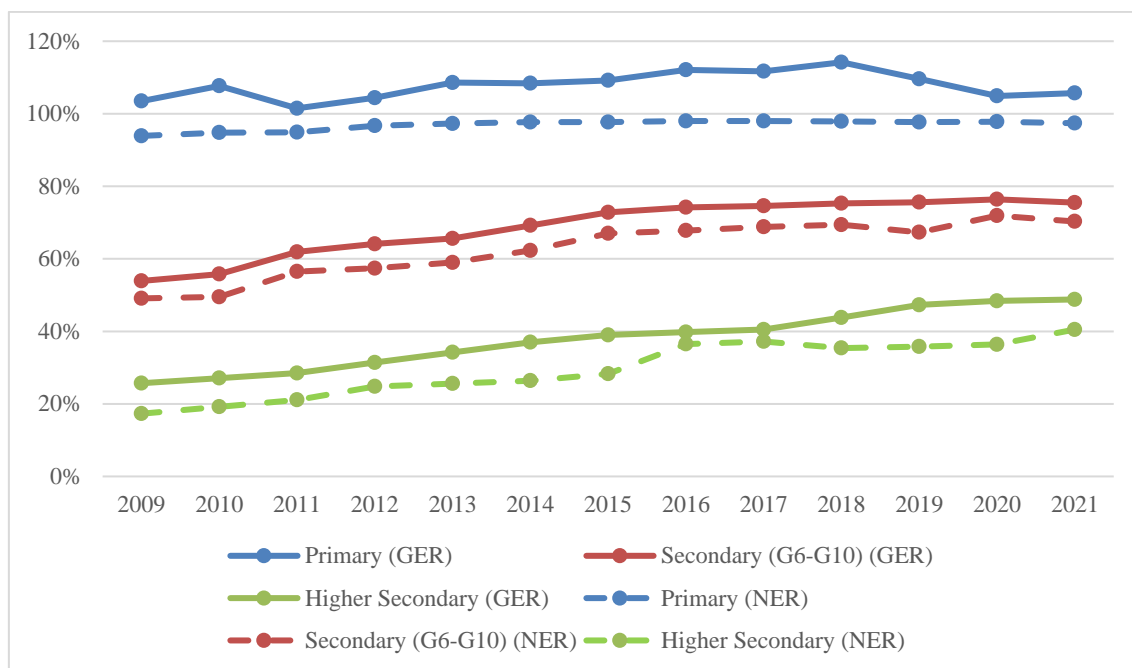
(9) Enrollment Ratio

The Bangladesh government has implemented various measures to improve school enrollment. In primary education, stipends for students were institutionalized in 2016, and since 2017, stipends have been streamlined by transferring funds directly to parents' mobile bank accounts. In secondary education, a number of stipend projects have been implemented since 1982 to promote girls' enrollment in secondary education. Free textbooks have been provided to primary and secondary students since 2009, and 350 million textbooks have been distributed to 40 million students for the 2020 school year. The school meal program, based on the school meal policy, provides meals to students in 15,700 schools. To increase enrollment in secondary education and higher secondary education, emphasis is being placed on "vocalization" by including vocational content in the curriculum and expanding vocational training programs to general education schools. These and other policies have led to a significant improvement in enrollment ratios at the primary and secondary levels³⁸.

The Gross Enrollment Ratio (GER) and NER are shown in the following figures as trends in access from primary to higher secondary education. All educational levels include madrasah education and technical education.

³⁷ The Survey Team calculated these figures based on the number of students in each educational stage in Table 3-2.

³⁸ From Education Sector Plan (ESP) 2020/21-2024/25



Source: Created by the Survey Team based on BANBEIS 2021

Figure 3-3 Trends in GER and NER

The NER for primary education exceeded 97% in 2013, with almost full enrollment; the double-shift system was introduced in the 1990s with the goal of achieving Education for All, and at one point, 90% of government schools, which represent the majority of all primary schools, had a double-shift system. However, while the double-shift system contributed significantly to increasing enrollment, it had a negative impact on learning time, with 38 hours and 25 minutes of class time per week in the single-shift system and 22 hours and 30 minutes in the double-shift system, making the double-shift system only 58% of the time of the single-shift system³⁹. For this reason, the introduction of single shift is being promoted in primary education, using the percentage of schools with single shift as one of the indicators. By contrast, the improvement in NER has slowed since it exceeded 97%. The GER temporarily exceeded 114% in 2018, but gradually improved to 105.7% in 2021.

Junior secondary education and secondary education have improved significantly, from 53.9% in 2009 to 75.5% in 2021 for GER and from 49.1% in 2009 to 70.3% in 2021 for NER. The gap in NER with primary education has also gradually narrowed: from 44.8 percentage points in 2009 to 27.2 percentage points in 2021.

In higher secondary education, the GER has almost doubled in size, from 25.7% in 2009 to 48.8% in 2021; the NER has more than doubled, from 17.3% in 2009 to 40.5% in 2021. In both cases, the improvement trends for GER and NER are the same. The gap between the NER and primary education has narrowed by about 20 points, from 77.6 points in 2009 to 56.9 points in 2021.

Note that the GER for tertiary education is 20.19% in 2021⁴⁰.

Gender Gap

The following table shows Enrollment Ratios by educational stage and gender.

³⁹ Mark Bray, UNESCO (2008) "Double-Shift Schooling: Design and operation for cost-effectiveness"

⁴⁰ Bangladesh Bureau of Educational Information & Statistics (BANBEIS) 2021

Table 3-10 Enrollment Ratios and GPI by Educational Stage and Gender, 2021

Education Stage	NER(%)		Gender Parity Index (GPI) ⁴¹
	Boy	Girl	
Primary Education	97.39	97.44	1.00
Junior secondary education and secondary education	63.29	79.09	1.25
Higher secondary education	41.88	40.49	0.97
Tertiary education (Gross enrollment rate)	22.14	18.20	0.82

Source: Created by the Survey Team based on BANBEIS2021

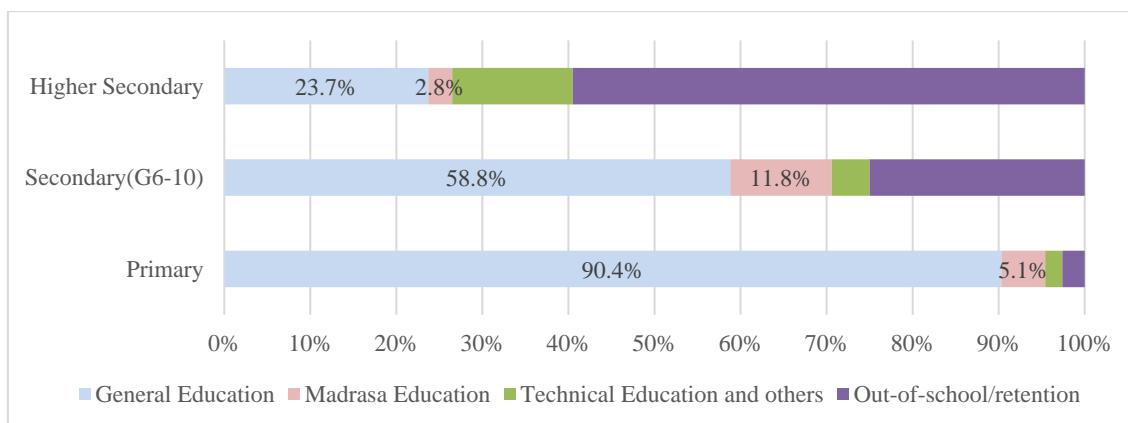
For NER, girls outnumber boys in primary education, junior secondary education and secondary education, and the difference is only 1.39 percentage points, although it reverses in higher secondary education. Thus, girls are not at a disadvantage in the NER. In tertiary education, on the other hand, boys are dominant (however, tertiary education is based on GER).

Regional Disparity

Although there are few indicators that provide a bird's eye view of regional disparities in the education sector as a whole, NERs for primary education by district are available for each district, and since the overall NER is above 97%, there are few differences between districts. Only 94.17% in Norshingdi (Dhaka Division) and 94.37% in Joypurhat (Rajshahi Division) were below 95%. No data were available for post-secondary education.

Disparities between Education System

Based on multiple data sources, the following graph shows whether children of each grade school age are in general education, madrasah education, technical education, or other, out of school or staying out of school as of 2021.



Source: Created by the Survey Team based on BANBEIS2021

Figure 3-4 Distribution of Status of Children in Each Grade School Age as of 2021

Among school-aged children in primary education, 90.4% are enrolled in general education, 5.1% in madrasah education, 2.0% in other schools, and 2.6% are retained or not enrolled. Among children of school age in junior secondary education and secondary education, 58.8% are enrolled in general education, which is a much smaller percentage than in primary education. On the other hand, the percentage of children enrolled in madrasah education doubles to 11.8%. Note that 4.4% of children are enrolled in technical education and others, but technical education begins at the

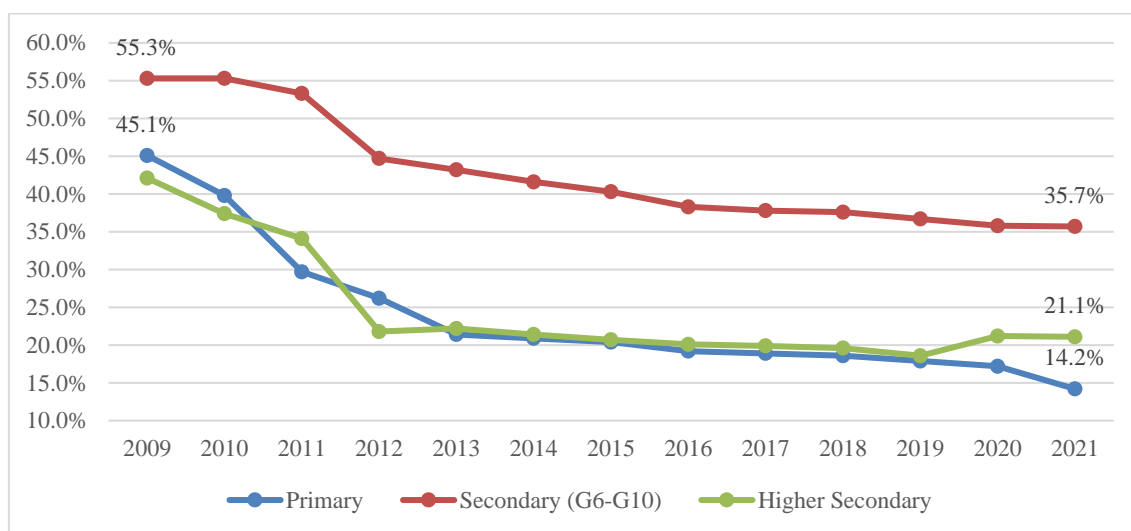
⁴¹ The WB calculation method, (girls divided by boys), was used.

secondary education stage. The number of children classified as retaining or not attending school increases to 25.0%. General education decreases even more significantly to 23.7% in higher secondary education. Madrasah education also declines significantly to 2.8%. Technical and other education increases to 14.0%. The percentage of students staying in school or not attending school is 59.5%, which includes employment and marriage.

(10) Dropout and Repetition Rates

Students choose to either drop out or remain in school if they are not doing well academically or if their attendance is insufficient. This section analyzes trends in dropout and repetition.

The following figure shows the dropout rate by educational stage: primary, secondary education (G6-10), and higher secondary education. The dropout rate in this figure does not represent the dropout rate per grade level, but rather the dropout rate per stage of education. In other words, the dropout rates for primary and secondary (G6-10) represent the dropout rate over a five-year period, while the dropout rate for higher secondary school represents the dropout rate over a two-year period.



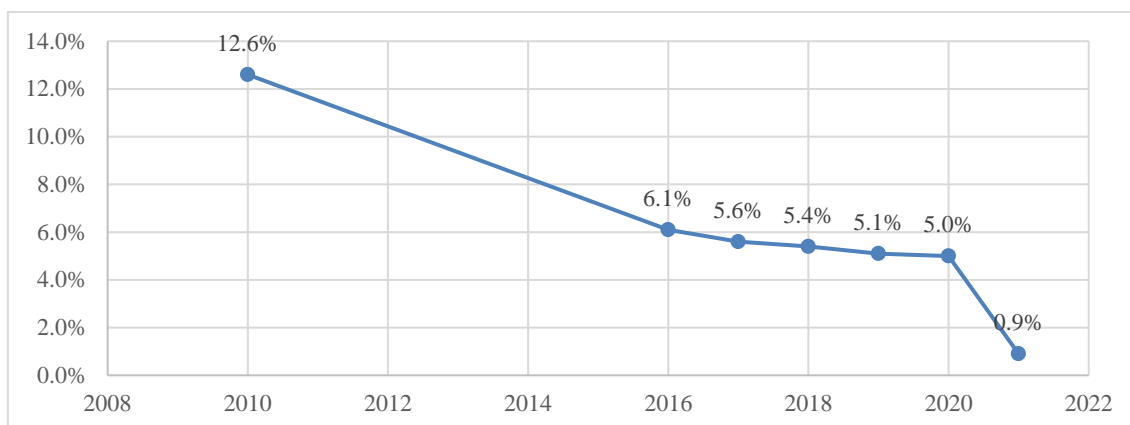
Source: Created by the Survey Team based on BANBEIS2021

Figure 3-5 Dropout Rates by Educational Stage

Primary and secondary (G6-10) are comparable because their duration is the same over a five-year period. In 2009, there was a difference of 10.2 percentage points between primary and secondary (G6-10), with primary at 45.1% and secondary (G6-10) at 55.3%. Both are improving, but the degree of improvement is higher for primary, and by 2021, the gap had widened to 14.2% for primary and 35.7% for secondary (G6-10), a difference of 21.5 percentage points.

Although at first glance, the dropout rate for the higher secondary education stage appears to be the same as that of primary, it is the dropout rate after two years of schooling. Therefore, dropouts at the higher secondary are considered to be more serious.

The next figure shows the repetition rate for primary education. The repetition rate has been improving, from 12.6% in 2010 to 0.9% in 2021.



Source: Created by the Survey Team based on BANBEIS2021

Figure 3-6 Trends in Repetition Rates for Primary Education

Gender Disparity

The next table shows dropout rates by gender by educational stage in 2021. As above, the dropout rates are for the entire duration of each educational stage. The dropout rate is higher for boys at the primary level, but it is higher for girls at secondary (G6-10). Child marriage among girls is thought to be one of the factors. The percentage of child marriage among girls under the age of 15 is still high at 19.8% in 2019⁴², suggesting that child marriage among girls may contribute to the high dropout rate in the junior secondary and secondary education.

Table 3-11 Dropout Rates by Gender by Education Stage (2021)

Education Stage	Dropout Rate (%)		Gender Parity Index (GPI) ⁴³
	Male	Female	
Primary education	19.10	15.50	0.81
Secondary (G6-10)	32.50	40.29	1.24
Higher secondary education	20.74	21.56	1.04

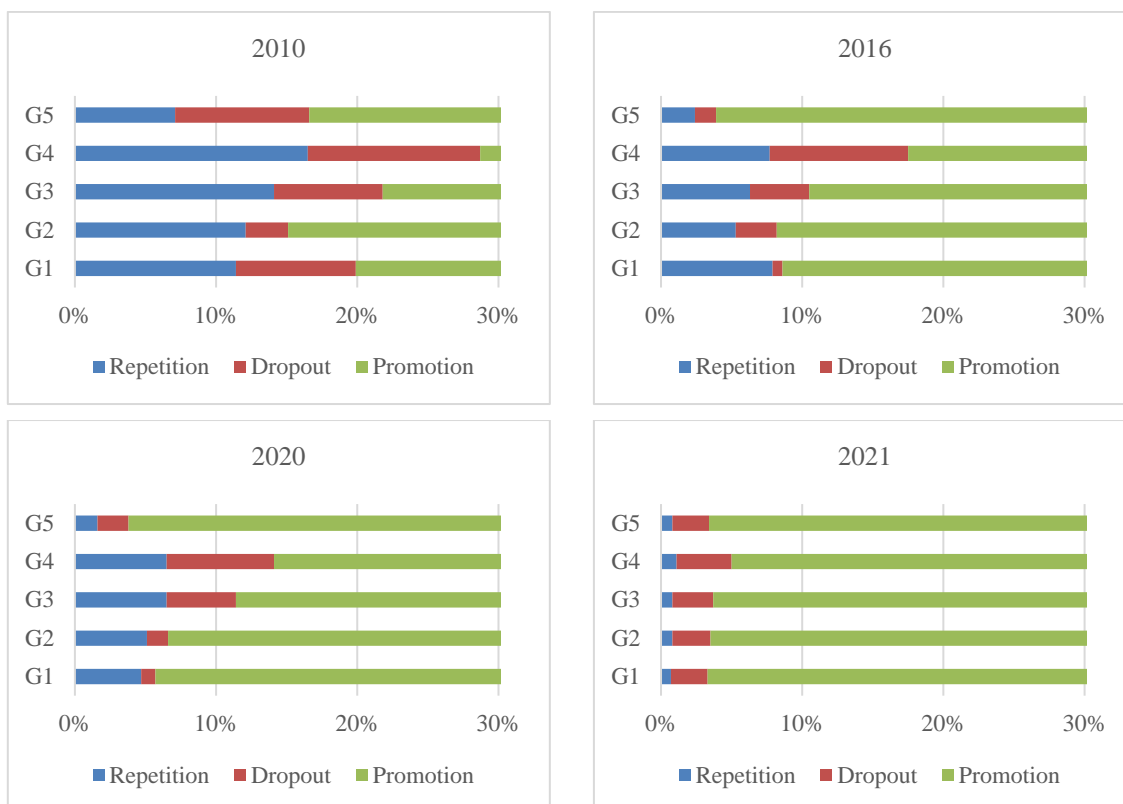
Source: Created by the Survey Team based on BANBEIS2021

Differences by Grade

The next figure shows the percentage of students retaining, dropping out, and moving up to next grade by grade level in primary education: in 2010, the percentage of students repeating the same grade (blue in the figure) and dropping out (red in the figure) were both high, but by 2020 the percentage of dropouts first decreased, and by 2021 the percentage of students retaining decreased.

⁴² Education Sector Plan (ESP) 2020/21-2024/25

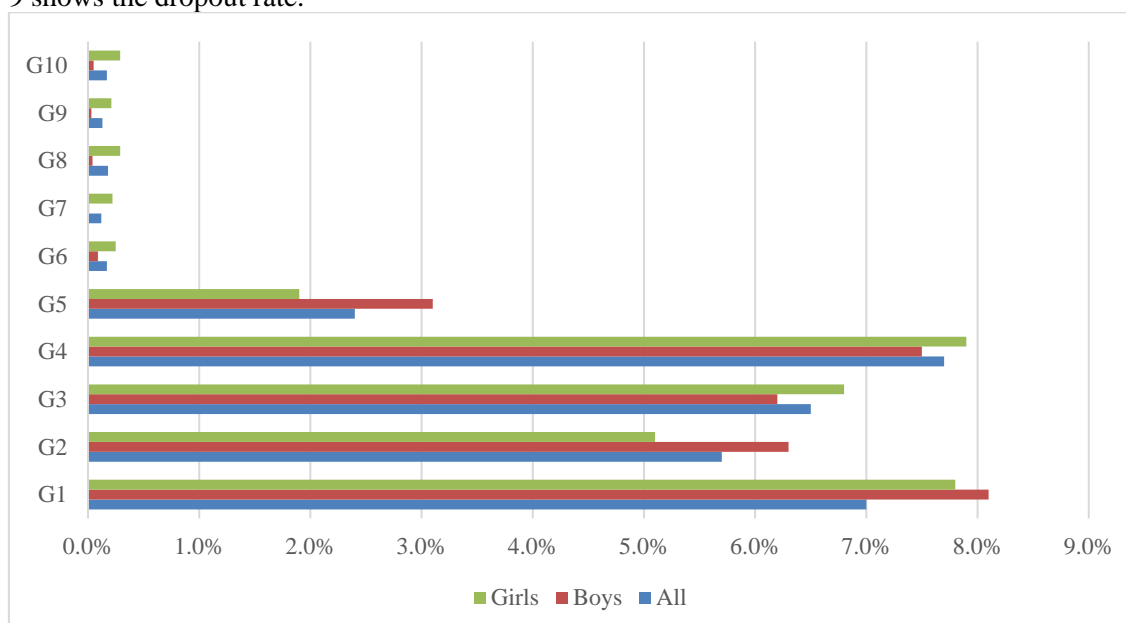
⁴³ The WB calculation method, (girls divided by boys), was used.



Source: Created by the Survey Team based on BANBEIS2021

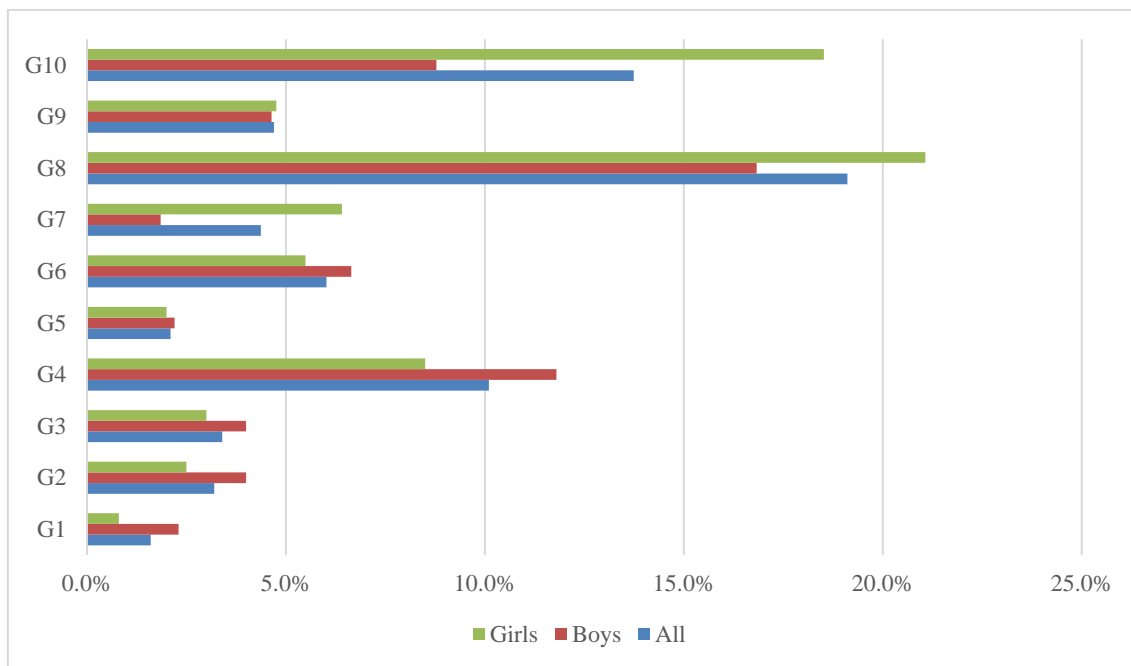
Figure 3-7 Percentage of Students Repetition, Dropping Out, and Moving up to Next Grade by Grade Level in Primary Education

To analyze trends by grade level, we organize data from 2015, when data by grade level from primary to secondary education are available. Figure 3-8 shows the repetition rate and Figure 3-9 shows the dropout rate.



Source: Created by the Survey Team based on BANBEIS2015

Figure 3-8 Repetition Rate by Gender from G1 to G10 (2015)



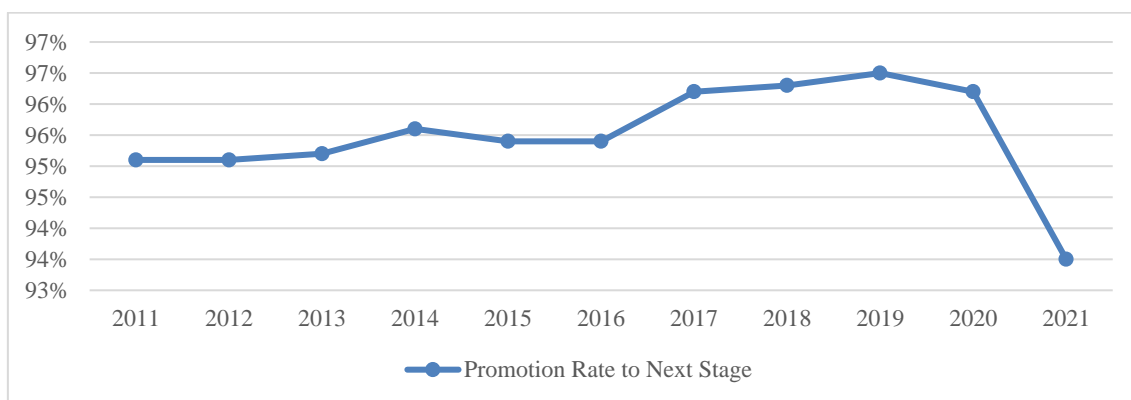
Source: Created by the Survey Team based on BANBEIS2015

Figure 3-9 Dropout Rate by Gender from G1 to G10 (2015)

At the primary level, repetition is more common than dropping out. However, by 2021, repetition was less than 1%. In secondary, on the other hand, almost no students retain the same grade in school, and many students choose to drop out. The dropout rate is particularly high for G8 and G10. By gender, girls (green in the figure) choose to drop out significantly more than boys (red in the figure).

(11) Promotion Rate to Next Educational Stage

In 2021, the NER for primary education was 97.4%, while the NER for junior secondary and secondary education was 70.3%, a difference of 27.2 percentage points, but this is not the result of primary education graduates giving up on entering junior secondary education. The next figure shows the transition rate from primary education to junior secondary education, which has been consistently high at over 95% from 2011 to 2020; the sharp drop to 93.5% in 2021 was presumably due to the COVID-19 outbreak.

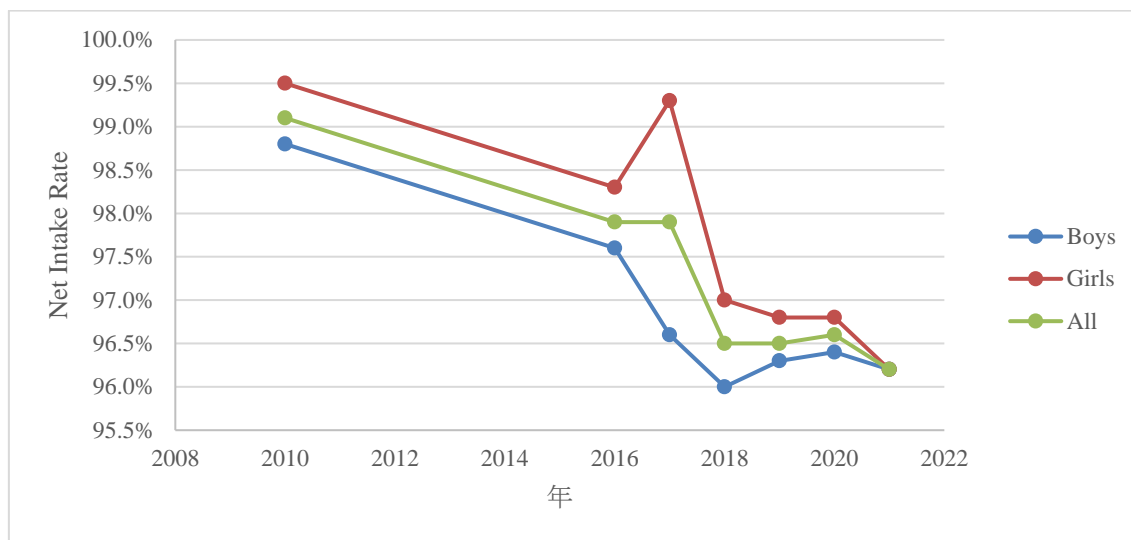


Source: Created by the Survey Team based on BANBEIS2021

Figure 3-10 The Percentage of Students Entering from Primary Education to the G6 of Junior Secondary Education

(12) Intake Rate

The next figure shows Net Intake Rate in the first year of primary education, which was best in 2010, but has been gradually declining. However, the rate of decline is decreasing, and in 2021, the rate of boys and girls students was almost the same, at 96.2%



Source: Created by the Survey Team based on BANBEIS2021

Figure 3-11 Net Intake Rate by Gender

(13) Teacher Student Ratio

A major influence on the learning environment is the Teacher Student Ratio (TSR), the number of students per teacher. The following table summarizes the TSR differences between government and non-government schools. The TSR of non-government schools is lower than that of government schools in all education types, indicating that the learning environment in non-government schools is better than those in government schools in this respect.

The National Curriculum and Textbook Board (NCTB) has established a policy that 12 teachers are required per school to teach all subjects in the secondary school curriculum. Currently, the average number of teachers per school is 11.7, and there are schools that do not cover all elective subjects and schools that do not allow students to enter certain courses, including science courses.

Table 3-12 Comparison of Government and Non-Government Schools in Teacher Student Ratio (TSR) (FY2021)

Education Type	Government School	Non-Government School
Primary school education	38	22
School education	53	37
School and College	41	29
College education	88	22

Source: Created by the Survey Team based on BANBEIS2021

Regional Disparity

For Secondary Schools only, TSR was calculated from the number of teachers and students in each division. The division with higher TSR (lower quality education) are colored in gray and progressively lower in white. Table 3-13 shows the TSR by division, with Sylhet, Chattogram,

and Mymensingh having the highest TSR in that order, and a gap between Sylhet, the highest, and Rangpur, the lowest was 24.

Table 3-13 Number of Teachers, Students, and TSR in Secondary Schools in Each Division

Division	Number of Teacher	Number of Student	TSR
Barishal	18,294	616,959	34
Chattogram	40,766	2,085,176	51
Dhaka	61,850	2,385,905	39
Khulna	35,726	1,092,183	31
Mymensingh	18,150	773,023	43
Rajshahi	36,663	1,306,724	36
Rangpur	43,150	1,286,109	30
Sylhet	11,969	643,943	54

Source: Created by the Survey Team based on BANBEIS2021

Table 3-14 shows the TSR by district, with Cox's Bazar and Sunamganj having the highest TSR of 62 and a difference from Pirojpur's lowest TSR of 25 is 37.

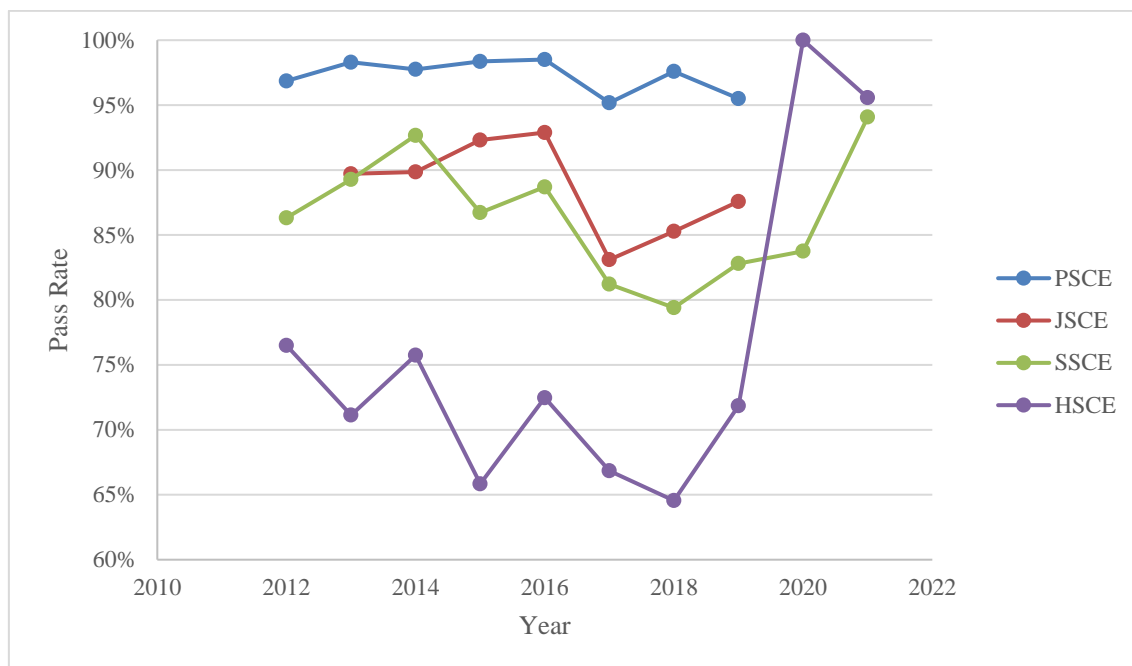
Table 3-14 Number of Teachers, Students, and TSR in Secondary Schools in Each District

Division	District	Number of Teacher	Number of Student	TSR	Division	District	Number of Teacher	Number of Student	TSR	
Barishal	Barguna	1,847	64,452	35	Khulna	Jashore	7,111	179,889	25	
	Barishal	5,208	187,509	36		Jhenaidah	3,887	131,043	34	
	Bhola	2,868	124,763	44		Khulna	5,372	148,544	28	
	Jhalokati	2,043	52,334	26		Kushtia	4,026	158,009	39	
	Patuakhali	3,251	109,510	34		Magura	2,174	66,646	31	
	Pirojpur	3,077	78,391	25		Meherpur	1,753	56,808	32	
Chattogram	Bandarban	597	25,922	43		Norail	1,640	54,166	33	
	Brahamanbaria	3,335	199,959	60		Satkhira	4,220	122,671	29	
	Chandpur	3,549	175,136	49		Mymensingh	Jamalpur	4,667	197,479	42
	Chattogram	11,858	596,839	50			Mymensingh	8,024	334,904	42
	Coxs Bazar	2,466	153,130	62			Netrakona	3,154	141,482	45
	Cumilla	8,250	405,139	49	Sherpur		2,305	99,158	43	
	Feni	2,479	110,750	45	Rajshahi	Bogura	6,187	220,880	36	
	Khagrachhari	1,138	48,621	43		Joypurhat	1,951	59,734	31	
	Lakshmipur	2,079	108,349	52		Naogaon	5,426	164,393	30	
	Noakhali	3,783	215,489	57		Natore	4,271	124,175	29	
	Rangamati	1,232	45,842	37		Nawabganj	2,915	112,886	39	
Dhaka	Dhaka	21,582	640,784	30		Pabna	4,053	193,790	48	
	Faridpur	3,236	134,981	42		Rajshahi	7,339	199,130	27	
	Gazipur	7,664	242,444	32	Sirajganj	4,521	231,736	51		
	Gopalganj	2,436	95,688	39	Rangpur	Dinajpur	8,787	243,972	28	
	Kishoreganj	3,414	190,878	56		Gaibandha	5,885	186,653	32	
	Madaripur	2,077	95,626	46		Kurigram	5,297	146,482	28	
	Manikganj	2,172	107,455	49		Lalmonirhat	3,269	108,111	33	
	Munshiganj	1,840	102,730	56		Nilphamari	4,287	152,531	36	
	Narayanganj	3,694	168,765	46		Panchagarh	3,730	97,877	26	
	Narsingdi	3,866	164,984	43		Rangpur	7,009	217,870	31	
	Rajbari	1,891	81,950	43		Thakurgaon	4,886	132,613	27	
	Shariatpur	1,451	83,032	57	Sylhet	Habiganj	2,103	128,376	61	
	Tangail	6,527	276,588	42		Maulvibazar	2,565	138,050	54	
Khulna	Bagerhat	3,710	95,851	26		Sunamganj	2,411	149,875	62	
	Chuadanga	1,833	78,556	43		Sylhet	4,890	227,642	47	

Source: Created by the Survey Team based on BANBEIS2021

(14) Results of Examinations to Certify the Completion of Each Educational Stage

The chart below shows the pass rates for the PECE, JSCE, SSCE, and HSCE for the past 10 years; the PECE and JSCE were not offered in 2020 and 2021. Pass rates have remained flat at around 97% for the PECE; for the JSCE, the pass rate plummeted from 92.89% in 2016 to 83.10% in 2017, but has been on a recovery path since then. It has also remained stable, averaging around 88%; SSCE has also remained around 80%-90%; HSCE has remained around 70% until 2019, but will reach 100% in 2020 and will remain high at 95.57% in 2021.

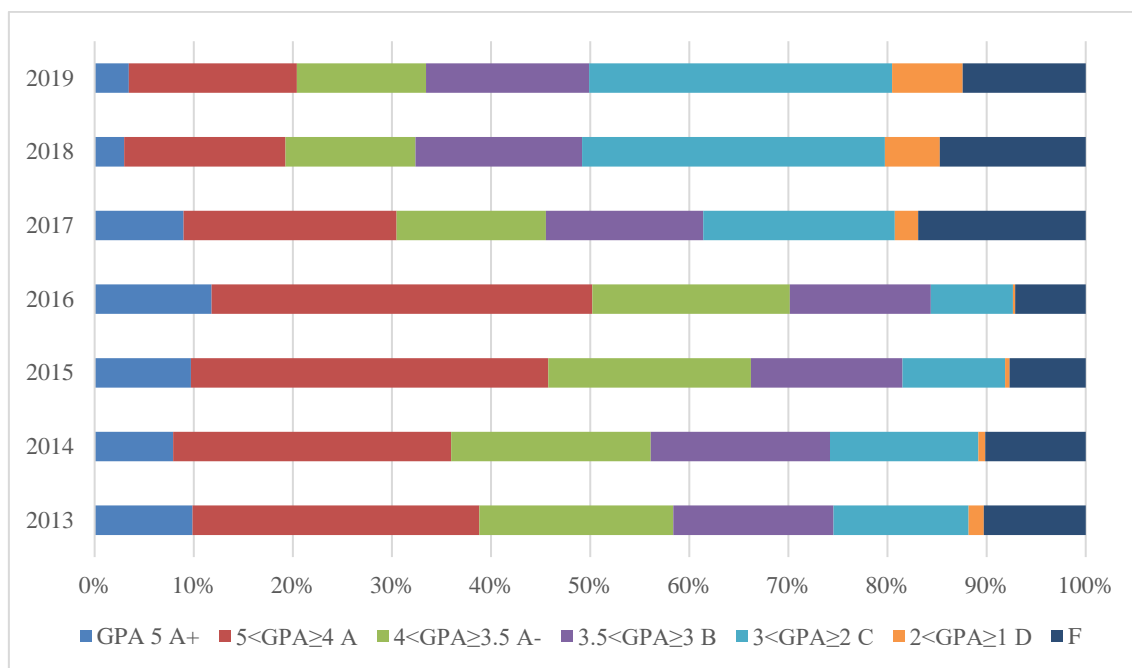


Source: Created by the Survey Team based on BANBEIS2021

Figure 3-12 Trends in Pass Rate for the PECE, JSCE, SSCE and HSCE

Thus, although each education stage has high pass rates in their final certification examinations, it should be noted that these high pass rates do not reflect the learning achievement level. For example, the PECE and JSCE are passed with a 33% correct response rate. This means that a large number of students have not mastered what they should have learned in primary education are passing the PECE and entering secondary education. This lack of basic academic skills is thought to be one of the reasons for the high dropout rate in secondary education.

The next figure shows the percentage of JSCE results by grade. The grades adopt a Grade Point Average (GPA) system. The percentage of JSCE students who scored 80 or above and are given GPA5 (A+), the best score, is only about 10%. F indicates failure and D, C, B shows the grade is getting better.



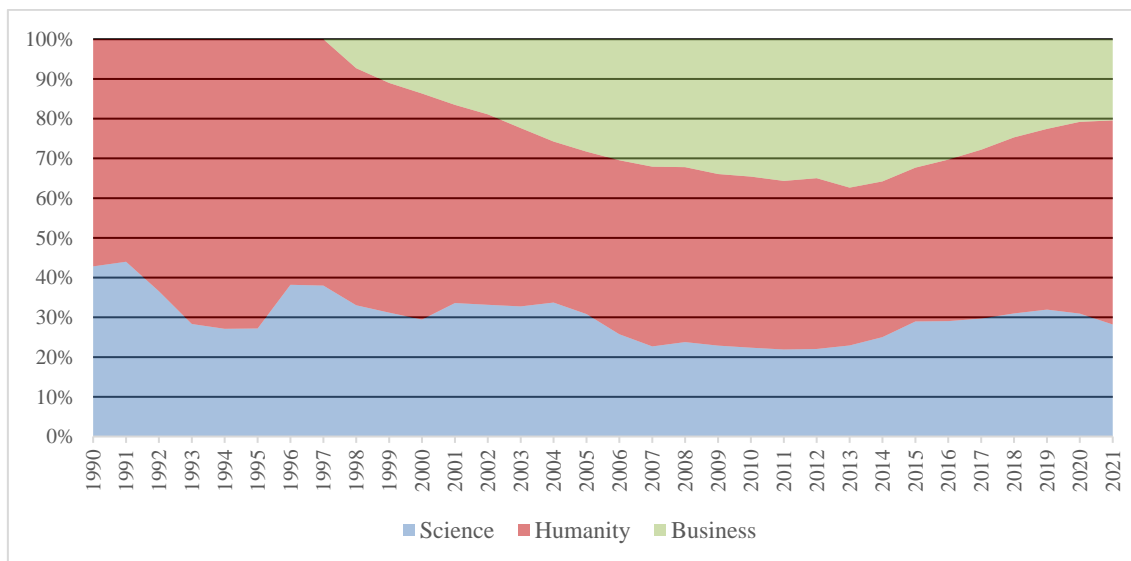
Source: Created by the Survey Team based on BANBEIS2021

Figure 3-13 Trend in Percentage of JSCE Result by Grade

This pass rate does not represent Bangladesh's national performance, as BISEs in each division prepare their own exam questions for the JSCE and subsequent exam, leading to difficulties in policy making.

(15) Percentage of Candidates and Pass Rate for SSCE and HSCE by Course

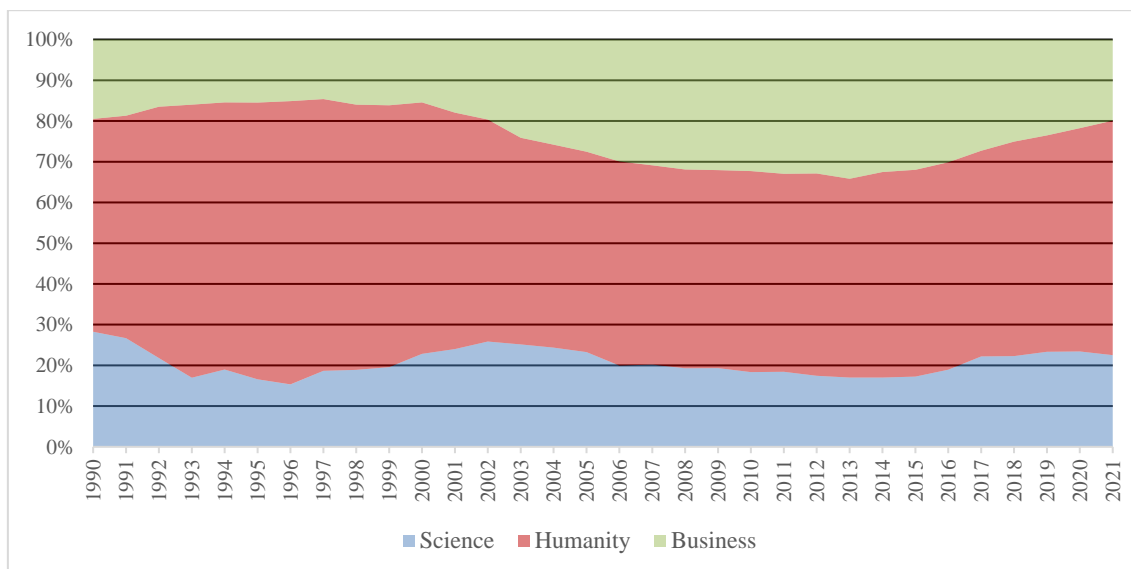
The SSCE and HSCE will be taken for each of the three courses: science, humanities, and business. This gives an indication of the popularity of each course. Figure 3-14 shows the percentage change in the number of examinees by course for the SSCE, and Figure 3-15 shows the percentage change in the number of examinees by course for the HSCE. The SSCE did not have a business course until 1997, and a business course was added in 1998. After business courses were added to the SSCE, the percentage of candidates taking business courses continued to increase until around 2013, after which it began to decline. In the 1990s, the percentage of science courses exceeded 40% in some years, but in the 2010s, the percentage has remained between 20% and 30%.



Source: Created by the Survey Team based on BANBEIS2021

Figure 3-14 Percentage Change of SSCE Examinees by Course

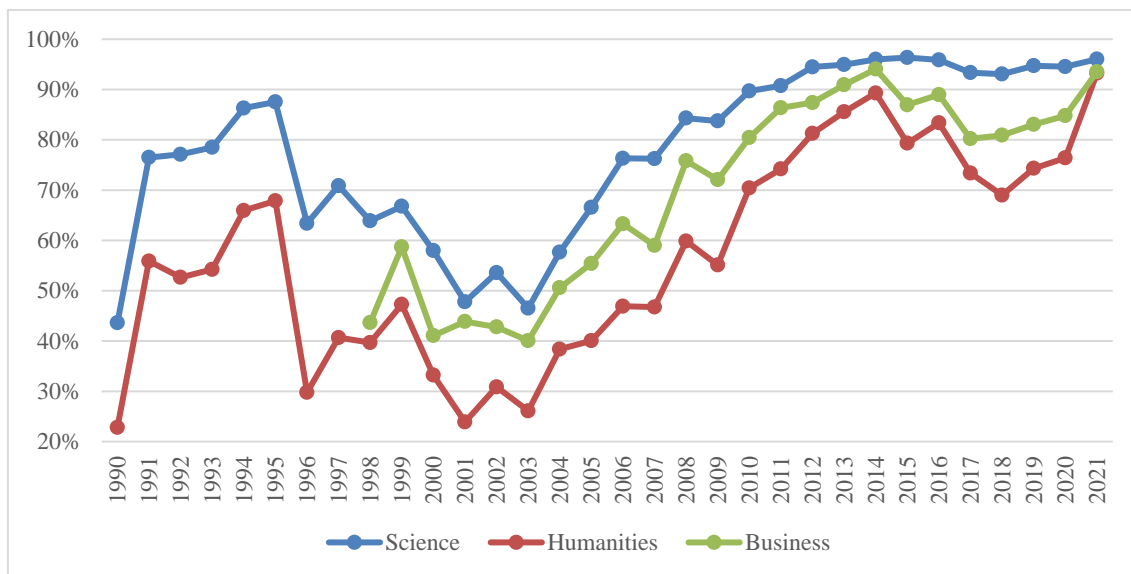
HSCE has had business courses since 1990, but the same business courses, like SSCE, reached their peak around 2013. Science courses, on the other hand, have remained unchanged in recent years at around 20%.



Source: Created by the Survey Team based on BANBEIS2021

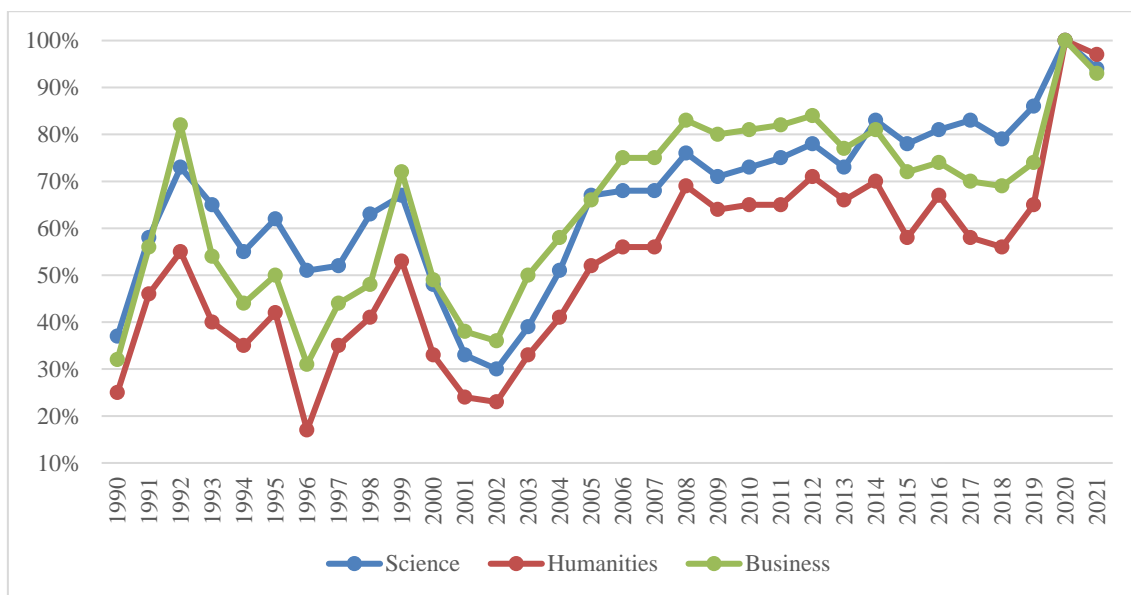
Figure 3-15 Percentage Change of HSCE Examinees by Course

Figure 3-16 and Figure 3-17 show the trend in pass rates by course for the SSCE and the HSCE respectively. Although there are some differences among the courses, the pass rates for all courses show the same trend. In other words, the pass rate was low in 1990, but increased from 1991 onwards, with a large drop in the early 2000s, followed by a gradual increase in the pass rate, which has exceeded 90% in recent years. In addition, by course, the pass rate for both SSCE and HSCE tends to be low for humanities courses.



Source: Created by the Survey Team based on BANBEIS2021

Figure 3-16 Trend in SSCE Pass Rates by Course



Source: Created by the Survey Team based on BANBEIS2021

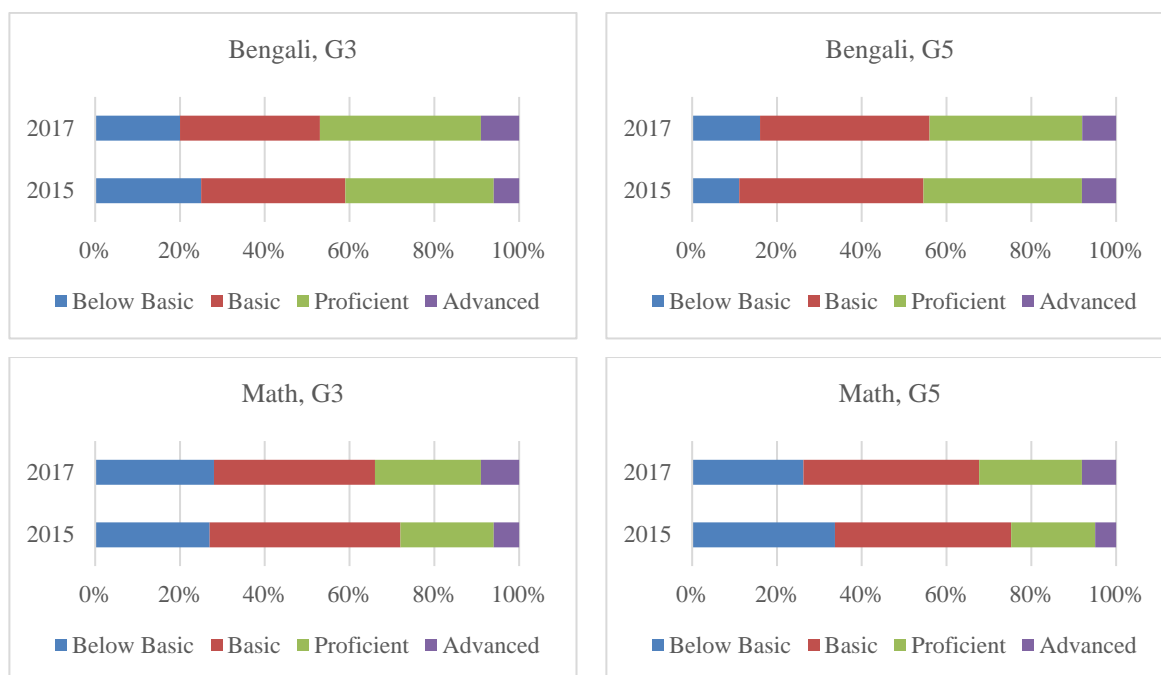
Figure 3-17 Trend in HSCE Pass Rates by Course

(16) Learning Achievement Assessment and Factor Analysis

As noted above, the final certification exams for each educational stage do not necessarily indicate learning achievement. To compensate for this, sample surveys have been conducted in primary and secondary education.

In primary education, the National Student Assessment (NSA) has been conducted every other year since 2011; the latest version of the NSA is the NSA 2017, conducted in 2017. The NSA targets grades 3 and 5, and the subjects are Bangla and math, which are aligned with the curriculum, so its achievement footprint measures provide an idea of how much has been accomplished against the curriculum. Overall, students judged to be below grade level

expectations improved in NSA 2017 over NSA 2015, except for Bangla in Grade 5. However, there are still 20% of 2017 students below standard in Bangla in Grade 3, 16% in Bangla in Grade 5, 28% in math in Grade 3, and 26% in math in Grade 5.



Source: Created by the Survey Team based on The National Student Assessment 2017

Figure 3-18 Summary of NSA Result (2017)

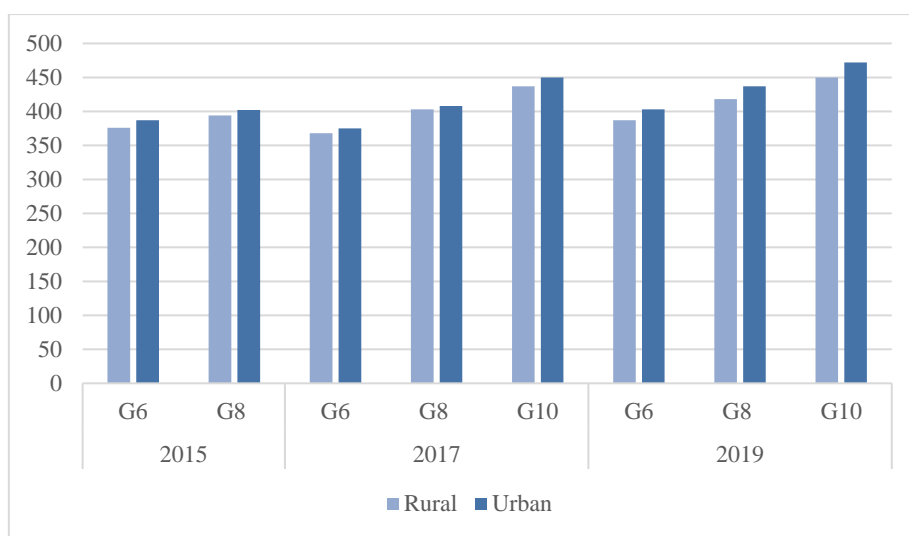
In secondary education, a sample survey-based assessment of learning achievement has been conducted every other year since 2012 under the support from the World Bank. The assessment was called the Learning Assessment of Secondary Institutions (LASI) before 2017 and was renamed the National Assessment of Secondary Students (NASS) in 2019. The three subjects covered are English, Bangla, and mathematics (see Section 7.3 for details). In each case, a questionnaire survey of students and teachers was also conducted to analyze factors such as learning environment and learning achievement. They were also designed to allow for comparisons between each test. The significance of this evaluation of secondary education lies in the fact that the same test is administered throughout the country.

Student performance in LASI2017 was observed to improve in 8th grade Bangla and English compared to LASI2015. No other improvements were observed. NASS2019 improved performance in all subjects and grades compared to LASI2017. The following points were also observed in NASS2019.

- **Grades:** there were differences in average scores across grades, with higher scores depending on the length of study period.
- **Division:** There is wide variation in student performance across divisions. Rajshahi consistently performs higher in all subjects and grades, while Sylhet consistently performs the lowest in all subjects and grades.
- **Gender:** Girls outperform boys in all three grades in language (Bangla and English), but no gender differences are observed in mathematics.
- **Rural/Urban:** Urban students perform significantly higher than rural students in all subjects and grades. This is especially true in language subjects.

- **General Education/Madrasah:** The general education system outperforms madrasahs in all subjects.
- **Student Factors:** Attendance, time spent studying at home, parents' educational background, relationship with teachers, and safety and comfort at school are positively correlated with grades.
- **Teacher Factor:** years of experience, education, ICT training, and advice on improving the quality of teaching are positively correlated with student performance.
- **Principal Factor:** The educational background of the principal, job satisfaction of the teachers in his/her school, high level of student and parental support, and lack of problems with insufficient operational funding are positively correlated with student performance.

A comparison of urban and rural areas in mathematics in 2015, 2017, and 2019 is also shown in the next figure. Urban areas performed better than rural areas. This trend was the same for English and Bangla.



Source: Prepared by the Survey Team from the LASI/NASS Final Report

Figure 3-19 Comparison of Urban and Rural Math Test Results (Median)

(17) Facility Environment

EMIS data were analyzed with respect to the school facility environment. School and School & College were selected as the school category, and College-only schools that may include technical education programs, madrasah programs, or 13th grade and above were removed.

- **Science Laboratories:** the EMIS (2022) data contains information on 124 schools. Twenty-five (20%) of the 124 schools had science laboratories. Three of these schools did not have electricity in their science laboratories. Another 3 schools have laboratories but no experimental equipment.
- **ICT Rooms:** Of the 7,605 schools listed in the EMIS (2021) data, 1,552 (20%) had at least one computer in their ICT rooms. 1,392 schools (18%) have a printer in the ICT room.
- **Library:** 2,612 (34%) of the 7,605 schools in the EMIS (2021) data have a library with at least one book.

(18) Career of Graduates (Progression Rate to Next Education and Educational Institution, Employment Rate and Job Place)

None of the schools we visited had statistical information on employment or higher education destinations, nor did the regional education offices. We interviewed teachers at several schools to get their impressions.

- Many students continue their study in engineering and medical universities (private and public); 5-10% are military; about 2% of women married; a few employed. (Barishal Govt. Model School & College)
- 30% of the students are in public universities including engineering, medical and Barishal University, 40% in local universities, 30% married, drop out or employed. (Gouranadi Girls School & College, Barishal)

3.6 Impact of the COVID-19 Outbreak in Secondary Education

COVID-19 was confirmed in Wuhan, Hubei Province, People's Republic of China, in December 2019. The World Health Organization (WHO) declared a Public Health Emergency of International Concern (PHEIC) for covid-19 infection on January 30, 2020. Subsequently, on March 11, based on the status of the global spread of infection and the severity of the disease, the WHO declared that the COVID-19 could be considered a pandemic. This section analyzes the impact of the COVID-19 outbreak in Bangladesh, which has also had a major impact on the education sector in Japan, including the closure of schools.

(1) Bangladesh Government's Response

The first case of COVID-19 in Bangladesh was confirmed on March 8, 2020. The Bangladesh government responded quickly, issuing guidance on basic preventive measures against Covid-19 for garment factories on the following day, March 9.

School Closure

The MOE responded quickly, ordering all schools to close on March 16, and schools, including colleges nationwide, were closed from March 18. A lockdown was also initiated in late March. The lockdown was lifted on May 31, and traffic restrictions were lifted on September 1, but school closures continued. The lockdown was lifted temporarily, but eventually continued intermittently until it was lifted on August 11. Following this, the school closure was finally lifted on September 12, 2021. In fact, the school had been closed for a year and a half. On the day the school reopened, the local media reported the sight of children coming to school with great anticipation and hugging their schoolmates. However, due to infection control measures, students were not allowed to attend school every day after the reopening, but instead attended school on different days of the week for each grade level and hybridized classroom teaching and home study (including online classes). Subsequently, all educational institutions except for some universities were closed again on January 21, 2022 due to the resurgence of infection in the country, but the closure was lifted at the end of February, and schools continued to open since then.

Impact on the Certification Examinations for the Completion of Each Stage

The COVID-19 outbreak had a significant impact on the final certification examinations at each educational stage: the SSCE, which was administered in February 2020, was unaffected, but the HSCE, which was scheduled to be held in April, was postponed. In late August, it was announced that the JSCE and PECE, which are usually held in November, would not be held in 2020, and that the HSCE results would be awarded based on past SSCE and JSCE results. In July 2021, MOE decided to hold the SSCE and HSCE in November and December 2021, respectively, but the HSCE was to be an examination in only three main subjects.

(2) Alternative Education During School Closures⁴⁴

The following alternative educational measures were taken to continue learning during school closures.

- **TV Program:** 51% of the population has a television. TV lessons were broadcast to this population. The program was broadcasted on the National Assembly channel, which is available free of charge. Implementation began three weeks after the closing of the schools, initially for secondary education classes. Access to television is uneven. 90% of wealthy households in the top 20% economically own a TV set, while only 4.8% of poor households in the bottom 20% own a TV set. There is also a disparity in ownership between rural (43.9%) and urban households.
- **Radio Program:** More than 200 radio lessons in mathematics, Bangla, English, and social studies were broadcasted for the primary education level. The lessons followed national curriculum and were developed in collaboration with UNESCO. Household ownership of radios is low, less than 1% nationwide, but over 90% of households have access to cell phones that can broadcast radio programs, which were used.
- **Online Classes:** Lessons were uploaded to various online platforms, including YouTube, Google Classroom, and Zoom. Students were able to watch the classes as many times as they wanted at their own convenience. Many teachers were supported by the aspire to innovation (a2i) program and recorded their own classes and posted them on social media. In addition, an Edu Hub was set up with 25,000 pieces of content from all over Bangladesh that could be accessed by teachers and students with the appropriate devices and equipment. Although many teachers and students participated, computer ownership remained low.

There are barriers to implementing these alternatives. First, there are disparities in access to distance education using technology. In addition to this, there is a disparity in support at home. In many areas, students were able to have regular contact with teachers by phone or individual visits, but this was a part of a targeted program.

These situations were also observed in learning hours. According to a survey conducted by the Asian Development Bank⁴⁵ for 1,806 students (8-14 years old) in 32 of the 64 districts, the minimum 4.5 hours per day allocated for learning before COVID-19 but the learning hours had decreased to 1.6 hours as of August 2021. 46% of children cited the lack of TV, smartphones, and other devices as the reason for their absence. and that they never participated in distance education. Contact and support by teachers during school closure is also limited.

Impact for Teacher Training

The Diploma in Primary Education (DPEd) program was offered online by the Primary Teachers Training Institute (PTI) after July 2020. Students were able to access the program from home but were unable to take classes and cover the entire curriculum until July. In August 2020, the In-Service Teacher Training (INSET) program, subject-specific training, resumed online in four upazilas.

In May 2020, one month after the lockdown, the Teacher Training College (TTC) for secondary education teacher created a timetable for online classes in response to the government's Circular and continued online classes using Zoom and Google meet. Information was also shared and

⁴⁴ Summarized based on Unicef (2021) "Bangladesh Case Study Situation Analysis on the Effects of and Responses to COVID-19 on the Education Sector in Asia"

⁴⁵ ADB (2021) "ADB Briefs Impact of COVID-19 on Primary School Students in Disadvantaged Areas of Bangladesh"

communicated with students using Facebook and Messenger. Students participated in online classes from their personal smartphones, with 50% to 100% of students participating.

During the school closures, many teachers uploaded their own lessons online. This gave teachers the opportunity to watch and learn from each other's videos. On the other hand, many teachers also lacked digital technology. This also posed difficulties in areas with frequent power outages.

(3) School Reopening⁴⁶

MOE and the Ministry of Primary and Mass Education (MOPME) developed school reopening guidelines to reopen schools. The guidelines were developed by the central ministry but can be localized by individual schools as needed. School principals, educators, and the community were included in the discussions during regular meetings to develop the school reopening plan. The main focus of the guidelines was on safe and secure school operation, with standard measures adopted around the world, such as face masks for all students, no more than two students on a couch at a time, online classes encouraged, and hand washing facilities in schools. However, in Bangladesh, inadequate Water, Sanitation and Hygiene (WASH) facilities and overcrowded classrooms made implementation difficult in reality.

(4) Impact for Enrollment Ratio

As mentioned in Section 3.5, little difference is observed between 2019 and 2020/2021 for NER compared to 2019 and 2020/2021 for both primary and secondary (G6-12) education. The dropout rate worsened from 18.6% (2019) to 21.1% (2021) in higher secondary, while no worsening was observed in primary education, junior secondary education and secondary education. The percentage of students entering from primary to junior secondary education dropped from 96.2% in 2020 to 93.5% in 2021.

Most secondary schools continued to offer classes online, but many students did not have ICT equipment or Internet access, and some schools stopped online classes after about 4-5 months during the 18-month school closure period. However, during the school closure period, it was announced that the Bangladesh government would use a shortened syllabus for exams instead of the regular syllabus, which may have mitigated the impact of online classes on Enrollment Ratios.

(5) Impact on Learning

The Bangladesh Examination Development Unit (BEDU) of the BISE conducted a test to determine the status of the learning gap with the learning required by the curriculum (learning gap) amid the COVID-19 outbreak. The test was administered to 14,000 G8 students in the 2021 school year through an online exam in Bangla, English, and mathematics at 710 educational institutions. The exam questions included reading comprehension and grammar in Bangla and English, and measurement, geometry, statistics, and algebra in mathematics. The extent of the learning gap was categorized according to the percentage of students who failed: 30% to 49% failure was classified as a learning gap (low), 50% to 59% as a learning gap (medium), and more than 60% as a learning gap (high). Less than 30% was no learning gap. The main results are as follows:

- **National Status and Differences by Subject:** The following table shows the learning gap status at the national level for Bangla, English, and Math. It is observed that Bangla is almost evenly distributed with 20% no learning gap, 25% learning gap (low), 31% learning gap (medium), and 24% learning gap (high), while Mathematics is polarized with 31% no learning gap and 39% learning gap (high).

⁴⁶ Summarize based on Unicef (2021) "Bangladesh Case Study Situation Analysis on the Effects of and Responses to COVID-19 on the Education Sector in Asia"

Table 3-15 Learning Gap in 3 Subjects (National Level)

	No Learning Gap	Learning Gap “Low”	Learning Gap “Medium”	Learning Gap “High”
Bangla	20%	25%	31%	24%
English	24%	20%	38%	18%
Math	31%	16%	14%	39%

Source: Created by the Survey Team based on Bangladesh Examination Development Unit

- **Learning Gap by Gender:** No significant difference was observed by gender.
- **Learning Gap by Areas:** By division, the learning gap was high in all subjects in Sylhet and Chittagong division and low in Khulna Rangpur division. By district, 70% to 90% of students had high learning gaps in all three subjects, especially in Rangamati and Khagrachari in Chittagong division. The learning gap is smaller in the plain areas than in the hilly, coastal, char and haor areas. The learning gap was particularly high in hilly areas. In the urban-rural comparison, there was a difference of 7 percentage points, with a 36% loss in urban areas versus 43% in rural areas.
- **Learning Gap by Education System Differences:** students in the madrasah had a 10-15% higher percentage of students in learning gaps in all three subjects than students in the general education system.
- **Impact on Participation in Learning Activities during School Closure:** Students who did not participate in learning activities (online classes and learning assignments) conducted by the central office and individual schools had a 15-20% higher percentage of students judged to have a high learning gap in all three subjects compared to students who did participate.
- **Availability of Digital Devices and Internet Access:** students with Internet access and digital devices had a 10-15% lower rate of learning gaps than those without.

This study is not comparable to previous study data. However, since "Availability of digital devices and Internet access" had a negative impact on the learning gap, and "Impact of participation in learning activities during school closure" also had a negative impact on the learning gap, we can consider that for the groups that cannot participate in these opportunities, the learning loss due to the COVID-19 outbreak was more severe for those who are unable to participate in these opportunities.

Chapter 4. Policies and Regulations Related to Secondary Education

The ruling party of the Bangladesh government has set forth a long-term roadmap, "Vision 2021" and "Vision 2041," and has launched medium-term policies such as a five-year plan related to these roadmaps to present a bright future vision of a growing Bangladesh to the world. These national policies are discussed in section 4.1, and section 4.2 summarizes the education policy, especially the secondary education part, which is a subordinate policy of this mid-term plan.

4.1 Secondary Education in National Policy

Article 17 of the Bangladesh Constitution stipulates that the state is obligated to establish a "universal system of education" and "provide free and compulsory education to all children," and the Compulsory Education Act and other laws have been enacted on this basis. In addition, the Development Plan of Bangladesh has formulated the Eighth Five-Year Plan, which is consistent with the Perspective Plan of Bangladesh 2021-2041. This section outlines these national policies and plans.

4.1.1 Constitution

The Constitution provides for education and labor in several articles. First, Article 15 states that basic needs including food, clothing, shelter, education, and medical care, as well as employment, are the fundamental responsibility of the state, and that the state will increase productivity to achieve this through a planned economy. Article 17 speaks specifically to education, stating that the state is obligated to establish an education system for all and provide free and compulsory education to all children. Article 19 advocates equal opportunity under the law and states that the state will take effective measures to eliminate any social and economic inequalities. Regarding labor, Article 20 states that work is both a right and a duty of citizens. Article 28 states that the state shall not discriminate on the basis of religion, race, social class, sex, place of birth, or any other grounds, while this article does not exclude consideration for women and children.

4.1.2 Perspective Plan of Bangladesh 2021-2041: PP2041

The Perspective Plan of Bangladesh 2021-2041 (PP2041) is the successor to the Perspective Plan of Bangladesh 2010-2021 (PP2021), which was prepared based on the "Vision 2021" manifesto of the second term Hasina administration, which aimed to become a middle-income country by 2021, the 50th anniversary of independence.

PP2021 aims for Bangladesh to become a middle-income country with the goal of achieving a Gross Domestic Product (GDP) growth rate of 10% by 2021, reducing the poverty rate to 13.5%, eliminating economic and social disparities, achieving progress in social development, etc., and achieving a standard of living at the level of middle-income countries for all citizens. The goal is to achieve a society in which all citizens can enjoy a standard of living comparable to that of middle-income countries. Although it failed to become a middle-income country by 2021, it became a low-and-middle-income country in 2015, as defined by the World Bank, and has continued to develop favorably with a GDP growth rate of around 7%.

To follow this growth, PP2041 sets the following goals:

- Eradicate extreme poverty by 2031; reduce poverty rate below 3% by 2041.
- Become an upper middle-income country by 2031; become a high-income country by 2041.

- Aim for future structural transformation through industrialization with a focus on export-oriented manufacturing.
- Increase agricultural productivity and ensure future nutrition and food security.
- The service sector of the future will bridge the transition of the rural agricultural economy to an industrial and digital economy centered on the industrial and digital economy.
- Make urban migration an integral part of the high-income economic transition strategy.
- Promote rapid, efficient, and sustainable growth through efficient energy and infrastructure.
- Build resilience to climate change and other environmental challenges.
- Establish itself as a knowledge-intensive nation and promote a skills-intensive society.

Toward these goals, PP2041 describes a strategy for the next 20 years based on four institutional pillars: governance, democratization, decentralization, and capacity building. PP2041 consists of 12 chapters, with education included in Chapter 5, "Human Development Through Quality Education And Harnessing the Demographic Dividend. Chapter 5 consists of health and education. Education includes general education, technical education, and madrasah education. The following is a summary of the education section of Chapter 5 as it relates to secondary education.

Progress on PP2021:

Enrollment in secondary education expanded steadily during PP2021, with the Net Enrollment Ratio (NER) expanding from 46% in FY 2010 to 67% in FY 2018.

Goals of PP2041

The following table shows the targets for secondary education, primary and higher education connected to secondary education, and the education budget. For secondary education, NER and dropout rate were chosen as indicators. Particular emphasis is placed on the dropout rate, with the goal of reducing it to 0% by 2031.

Table 4-1 Goals related to Secondary Education in PP 2041

Indicators	FY2018 (Base year)	FY2031 (Mid-term)	FY2041 (Target)
Primary Education NER (%)	97.9	100.0	100.0
Primary Education dropout rate (%)	19.1	0.0	0.0
Secondary Education NER (%)	62.3	90.0	95.0
Secondary Education dropout rate (%)	38.3	0.0	0.0
Tertiary Education enrollment rate (%)	17.8	50.0	80.0
Public spending on education (% of GDP)	2.0	3.5	4.0

Source: Perspective Plan of Bangladesh 2021-2041:

Strategies for Primary and Secondary Education

Primary and secondary education together have their strategies described. Seven strategies for primary and secondary education are listed, one for madrasah education and one for non-formal education. The five items, except for these two, are related to secondary education to a lesser or greater extent, and these five items are summarized below.

- **Strengthen Public-Private Partnerships:** Further strengthen public-private partnerships in the provision of primary and secondary education. The public sector will be responsible for ensuring that children receive at least 12 years of education by 2031. The provision of education by non-government schools for children from families of economic means will be further stimulated through supportive policies and regulations. Appropriate policies will be put in place to strengthen support for children in urban slums, areas with limited access to education, and out-of-school children.

- **Improve the Quality of Education:** Strengthen the quality of facilities, educational specialists, curriculum, books, equipment, and parental involvement in primary and secondary education to dramatically improve the quality of learning at every stage of education, beginning with the primary level. Strengthen early childhood learning programs. Emphasize science, math, and language skills education; emphasize ICT education beginning at the primary level; and strengthen the quality of education at all levels of education, starting with the primary level.
- **Wipe Out Waste in Education:** Provide every child with 12 years of education by preventing the waste of resources. To achieve this, the dropout rate should be reduced to zero in primary and secondary education by 2031. Decentralization and parental involvement in school administration will help with this. Prevent child marriage by disseminating information through campaigns, community participation, parent counseling, and other preventive measures.
- **Leveraging the Demographic Bonus:** Two activities are needed to make the demographic bonus pay dividends to the people: 1) significantly increase secondary school enrollment and 2) provide training to the labor force (especially women). In this regard, equity is important: PP 2041 focuses on ensuring fully free education for all children up to grade 12 by 2031, in order to leverage the demographic bonus and turn it into dividends; for the completion of 12 years of compulsory education, special emphasis is given to support for children in hard-to-reach areas, urban slums, and from poor families in rural areas. Emphasis will be placed on scholarships, free school meals, and free health checkups.
- **Promote Decentralization of School Service Delivery:** The current centralized delivery of public education will be reviewed with an emphasis on decentralization. Policy making and funding will remain with the central government. Local governments will be strengthened to fulfill this implementation responsibility.

Digital matters are covered in Chapter 9, "Creating an Innovation Economy for Bangladesh Through Fostering ICT and Scientific Research" in the "Creating an Innovation Economy for Bangladesh Through Fostering ICT and Scientific Research" section. However, the descriptions linking digital and education are concentrated in the tertiary education subsector. Most of the descriptions related to education relate to progress to date, and future plans are limited in PP2041. Relevant to secondary education are those related to aspire to innovation (a2i).

a2i is a special program managed by the ICT division that aims to innovate public services (ensuring that all citizens have easy and affordable access to quality public services). PP2041 shows the "Teachers Portal" as progress in the education sector. The portal brought together 403,507 teachers, with over 250,000 educational contents posted by each teacher for mutual access. The portal has content that can be used immediately by teachers who view it, for example, a PowerPoint handout for a physics static electricity class. It also reported that more than 170,000 informative lessons were delivered using multimedia classrooms.

4.1.3 8th Five-Year Plan 2020-2025

The 8th Five-year plan 2020-2025 is a five-year plan that shows how to realize the vision presented in PP2041. Education is presented in "Chapter 11: Education Sector Development Strategy" and digital strategy is presented in "Chapter 12: Leveraging DIGITAL BANGLADESH and ICT Strategy for Higher Growth".

Chapter 11 presents general education (pre-school, primary, secondary, and higher education) technical education, madrasah education, and non-formal education, including adult child education. Of these, secondary education is summarized below, with attention to its connection with primary and tertiary education.

Progress on the Seventh Five-Year Plan (2016-2020) (with a focus on secondary education)

- **Demand:** As primary education expands and its completion rate steadily increases, demand for secondary education is increasing.
- **Enrollment:** Enrollment in secondary education is rising for both boys and girls; in 2019, more than 20,000 institutions offered secondary education to 10.3 million students. The percentage of girls enrolled is 54.41%, with girls outnumbering boys. This is the result of school support programs and scholarships and other programs for girls.
- **Completion Rate:** The completion rate is low at around 64%. This rate is significantly higher for boys than for girls.
- **Inclusive:** 21.77% of secondary schools have adopted facilities and materials for students with disabilities. The government aims to achieve 80% by the end of 2025.
- **ICT:** ICT courses have been introduced in secondary education, computer centers have been established in educational institutions, and teachers have been trained in their use. The Ministry of Education (MOE) and the Ministry of Primary and Mass Education (MOPME) are working on two initiatives: 1) Multimedia Classrooms (MMC) and 2) teacher-led digital content development. The digitization of classrooms is underway through two separate projects under MOE and MOPME. These projects aim to equip 20,500 schools at the secondary level with MMC equipped with Internet access, a laptop computer and one multimedia unit each. The targets for access to electricity, computers, and the Internet in secondary schools are as follows.

Table 4-2 Targets for Infrastructure Installation in Secondary Schools

Items	2019	2025
Access to electricity	94.86%	100%
Access to computers for educational purposes	76.72%	100%
Access to the Internet for educational purposes	37.64%	100%

Source: Prepared by the Survey Team based on the 8th Five year plan 2020-2025

- **Teachers:** The number of students and the number of institutions has increased rapidly, but the growth rate of teachers has been lower: the number of students per institution has increased from 413 (2012) to 500 (2019), but the number of teachers has not increased from 12 per institution. That is, the number of students per teacher increased from 34 to 44 during this period.
- **Textbooks:** Since 2009, textbooks for the upcoming year have been distributed free of charge every December.

Challenges

- **Low Enrollment:** The Gross Enrollment Ratio (GER) for 2019 was 61% and the NER was 53%.
- **Fall in Popularity of Science Courses:** The percentage of science course students who passed the Secondary School Certificate Examination (SSCE) decreased from just under 50% (1998) to 28% (2019). Business courses, on the other hand, jumped from 7% (1998) to 19% (2019). To achieve national development goals, it is necessary to have a large number of science course graduates. There is also a shortage of science teachers.
- **Inequity:** The total enrollment rate is 24% for the poor and 76% for the non-poor, which is highly inequitable.

Aspects of Educational Equity

It spends a section on the equity aspect of education and emphasizes the importance of equity. The emphasis on equity is stated as it is mentioned that although Enrollment Ratios have improved, there is a large gap in Enrollment Ratios between the poor and non-poor in all schooling age

groups from primary to tertiary education. Access to Water, Sanitation and Hygiene (WASH) is also emphasized here, noting that by 2019, 92% of schools will have access to water, 65% will have gender-segregated toilets, but only 39% of schools will have access to soap.

Goals in the Eighth Five-Year Plan (2020-2025)

The following table shows the targets for secondary education in the Eighth Five-Year Plan (2020-2025) The dropout rate, which was emphasized in PP 2041, is not included in the targets for the Eighth Five-Year Plan. Instead, they include improving the enrollment rate and improving teacher-student ratio (TSR) by increasing the number of teachers.

Table 4-3 Goals in Secondary Education in the Eighth Five-Year Plan 2020-2025

Indicators	2020	2025
Gross Enrollment Rate (%)	64	72
Net Enrollment Rate (%)	56	64
Teacher-student ratio (TSR)	40	30
Student per institutions (SPI)	498	502
Teacher per institutions (TPI)	12	17

Source: Prepared by the Survey Team based on 8th Five year plan 2020-2025

Strategies in Secondary Education in the Eighth Five-Year Plan (2020-2025)

- **Development of Better Tools for Measuring Learning Outcomes:** The secondary education level is a preparatory stage for tertiary and vocational education, and inadequate learning at this level will not allow for effective investment in Tertiary education. The National Student Assessment (NSA) conducted by the Directorate of Primary Education (DPE) showed that learning outcomes in primary education are low, so a similar national assessment should be conducted at the secondary level.
- **Reform of Testing and Assessment Methods for Student Learning Outcomes:** Reforms have already begun, but the emphasis will shift from rote learning to assessment of competency acquisition. To ensure the quality, validity, and reliability of Bangladesh's examination and assessment system, an autonomous body, the National Examination and Assessment Centre (NEAC), has been established and the National Examination and Assessment Centre Act (2020) is underway. The National Examination and Assessment Centre Act 2020 is currently being enacted.
- **Increase Enrollment in Science Courses:** The low number of students taking science courses in the SSCE and Higher Secondary Certificate Examination (HSCE) does not meet the government's development goals. The solution is to train science teachers and identify young, high-potential students and direct them to science courses.
- **Introduction of a Common Curriculum up to Grade 10:** The single course, which lasted from 1883 to 1959, was divided into a course system starting in 1959. However, taking into consideration the fact that it is too early to let students in the G8 decide their future, that all secondary school students need to receive equal and fair education, and that all secondary school students need to study science, arts, and business equally in order to develop human resources to cope with the 4th industrial revolution, the Bangladesh government decided to make a single course of study through the 10th grade.
- **Improving Equity:** Inequity is one of the challenges in secondary education. Total Enrollment Ratios for the poor and non-poor at the secondary level are 24% and 76% respectively, which is inequitable. One possible reason for this is that poor families tend to send boys to school and girls to paid or unpaid domestic work. Child marriage is also rampant, despite legal restrictions. To correct these disparities, scholarships and financial incentives for parents will be provided.
- **Expanding the Role of ICT-based Learning:** During the COVID-19 outbreak, ICT-based learning proved to be effective for educational activities at a distance. Therefore,

efforts will be made to build infrastructure for ICT-based learning to minimize student learning losses during natural disasters. To promote the establishment of more ICT classrooms in secondary schools, with the goal of having state-of-the-art ICT classrooms in all educational institutions. Train teachers on ICT subjects and ICT-based learning systems. Promote the conversion of classrooms to multimedia classrooms (from the current 15% to 100% by 2023), and promote collaboration between a2i and MOE. This document also introduces Teachers Portal (Shikhok Batayan). The government plans to have 900,000 teachers participate in the project by 2021, and to adopt a framework that will allow all primary and secondary schools to conduct at least one hour of in-school learning using these resources.

- **Introduction of Vocational Training Courses in Secondary Education:** Pre-VOC and VOC vocational training courses will be introduced in secondary education so that students can complete secondary education with some degree of vocational skills. Already piloted in 640 schools, all secondary school graduates will be enrolled in these courses by 2023.
- **Improve TVET's Reputation:** TVET has a poor reputation in Bangladesh, which hinders enrollment. First, introduce vocational training courses so that students understand the demands of the job market at an early stage. Also, internship and practical training programs should be encouraged.
- **Industry-school Collaboration:** Despite its importance, industry-school collaboration is not progressing due to structural rigidity and lack of incentives. To improve this, we plan to offer financial incentives to industry, scholarships to students, and awards to TVET institutions for placing students in industry.
- **Finance:** The Sustainable Development Goals call for all children to have 12 years of free compulsory education by 2030. This means that children between the ages of 15 and 18 will be in school. To achieve this goal, the government will not only increase budget allocations to the education sector, but also encourage the private sector to invest in education.

Digital strategies for education are addressed in section 12.4.14 in ICT use for recovery from COVID19, including the creation of policies to promote the growth of blended learning with ICT by 2021. The policies pertaining to ICT and education are as follows. Education is looking to the fourth industrial revolution.

Table 4-4 Policy on ICT and Education

Action Agenda	Policy Implication	Timing
Transformation of education to 4IR adjusted blended learning approach for all citizens	Digital Education Policy [in alignment with 8th Five-Year Plan] Upgradation of Intellectual Property Rights [IPR] Policy to ensure appropriate encryption and to protect the providers of online education	FY2023

Source: 8th Five year plan 2020-2025

Although the Eighth Five-Year Plan contains no further reference to blended learning, the National Blended Education Master Plan 2022-2041 defines blended learning as a combination of high-tech, low-tech, and no-tech, depending on the state of development of each site's ICT use (see Section 10.1).

4.1.4 Digital Bangladesh Strategy

The name Digital Bangladesh appears frequently in Bangladeshi government policy documents. However, there is no specific policy document called Digital Bangladesh. Digital Bangladesh is a strategy, or should we call it a policy, that aims to make effective use of technology, not only in

terms of computer use, but also in terms of solving problems of education, health, job opportunities, and poverty reduction. The four main components in the Digital Bangladesh strategy are.

- **Human Resource Development:** Human resource development is a key element in the realization of Digital Bangladesh.
- **Accessibility:** Ensure that all citizens have access to Digital Bangladesh.
- **Poverty Reduction:** Ensure that the benefits of Digital Bangladesh reach the poor.
- **Business Sector:** Promote market access and ICT businesses that support the Digital Bangladesh strategy. Grow the ICT sector into an export sector.

4.2 Key Laws, Regulations and Policies on Education

The government enacted the Primary Education (Compulsory) Act, 1990 in 1990 and adopted the National Education Policy (NEP2010) in 2010. The NEP2010 includes goals and strategies for each subsector from primary to tertiary education.

4.2.1 Primary Education (Compulsory) Act, 1990

The law, enacted in 1990, clearly states that primary education is compulsory education and that parents are obliged to enroll their children in the primary school of their residence unless there are special reasons⁴⁷ not to do so. The law also mandates the establishment of an Obligatory Primary Education Committee in each region and specifies the members, roles, and penalties of this committee.

4.2.2 National Education Policy 2010 (NEP2010)

In Bangladesh, there is no comprehensive statute equivalent to the Education Act, and the only policy document that comprehensively addresses education is NEP 2010. Therefore, NEP2010 provides objectives and strategic directions for each of the following.

⁴⁷ Illness, lack of an primary school within 2 km of the area of residence, a determination by the primary education administrator that the student has received other education equivalent to primary education, or a determination by the primary education administrator that the student is not fit to receive primary education due to intellectual disability.

Table 4-5 List of Items in NEP2010

1	Aims and Objectives of Education	15	Law Studies
2	Pre-Primary and Primary Education	16	Women's Education
3	Adult and Non-Formal Education	17	Fine Arts and Crafts Education
4	Secondary Education	18	Special Education, Health and Physical Education, Scout, Girls' Guide and Bratachari
5	Vocational and Technical Education	19	Sports Education
6	Madrasah Education	20	Libraries
7	Religious and Moral Education	21	Examination and Evaluation
8	Higher Education	22	Students' Welfare and Counselling
9	Engineering Education	23	Admission of the Students
10	Medical, Nursing and Health Education	24	Teachers' Training
11	Science Education	25	Status, Rights and Responsibilities of Teachers
12	Information and Technology	26	Curriculum, Syllabus and Textbooks
13	Business Studies	27	Educational Administration
14	Agriculture Studies	28	Some Special Initiatives to be taken regardless of Educational Levels

Source: Prepared by the Survey Team based on NEP2010

A number of important policies are listed in NEP2010. The most significant policy is the policy to change primary education from the current five-year system to an eight-year system. Curriculum and textbook development, teacher training, and administrative reforms are also planned for the eight-year system, and the need for additional school buildings and teachers is recognized. The strategy for technical education and vocational training includes not only technical education and vocational training institutions, but also strategies for pre-entry (e.g., primary education) to technical education and vocational training institutions. For example, it states that ICT education should be taught from primary education, taking into account the need for it in technical education and vocational training. The eight-year system of primary education was once reported in newspapers to be introduced from 2017, and the possibility of its realization increased, but as of 2022, it has not been introduced.

Below is a summary of the content related to secondary education (general education system).

Secondary Education (Chapter 4)

- Grades in the secondary education stage: from grade 6 to grade 12.
- Aims and objectives of secondary education: a) development of the learner's intellect and inner abilities; b) acquisition of skills to compete in the labor market; c) development and consolidation of knowledge from primary education and acquisition of basic skills necessary for Tertiary education; d) correction of inequitable education; e) design and implementation of a common curriculum and syllabus, regardless of the course chosen.
- Language of instruction: Bangla, but English may be used depending on the capacity of the institution.
- Curriculum, syllabus, and textbooks: The required courses will be common to all three programs: General Education, Madrasah, and Technical Education. Subject content specific to each program will be designed and developed according to the needs of each program.
- The National Curriculum and Textbook Board (NCTB) will design a common curriculum for the secondary education stage, excluding special subjects in the Madrasah and Technical Education, and develop and supply the necessary textbooks. The Madrasah Education Board and the Technical Education Board will be responsible for the design

and development of textbooks and curricula for special subjects in madrasah and technical education.

- Guarantee infrastructure development and access to educational materials, and provide a well-equipped library and sports equipment facilities.
- Every school offering science subjects must have a laboratory with necessary tools and apparatus and its proper use and maintenance will be ensured.
- Measures will be taken to expedite government support on a priority basis (such as salary and benefits of teachers, the instruments and materials for teaching sciences etc.) to the schools offering various subjects of science or subjects related to social sciences and business studies, such as economics, accounting and other subjects like information technology, computer sciences connected with technical education. All these subjects are closely related to economic activities and development of technology.
- Teacher-student ratio will have to be progressively raised in phases to 1:30 by 2018.
- Teacher Recruitment: Adequate number of subject-wise teachers for different streams will be selected every year by the proposed Non-Government Teachers' Selection Commission following an appropriate process of written and oral examination. This Commission will function like the Public Service Commission. Appropriate authority will appoint teachers in different institutions from the selected persons.
- Teacher Training: Training will be arranged for all the teachers of all subjects. Untrained teachers need to undergo training immediately. Newly appointed teachers will undergo primary training before they join their work. Priority will be given to the trained teachers while filling in vacancies.
- Student assessment: Conduct a national SSCE and HSCE at the end of grades 10 and 12. A grading system will be applied to both examinations. The results of the examinations will be used to determine scholarships for the following educational stage.
- Supervision of schools by the administration: The administration will conduct regular monitoring and verification of educational institutions.

Science Education (Chapter 11)

- Math: Focus on math because science is closely related to math.
- Textbooks and teaching methods: Develop textbooks and teaching methods that enable students to acquire the basic skills necessary for science
- Practice: Since practice is important in science education, have science and math classes regularly incorporate lessons that require students to practice.
- Dissemination: To promote science and mathematics, science fairs, math Olympiads, etc. will be held at each school and at the national level in conjunction with sports and cultural weeks.

Information Technology Education (Chapter 12)

- Right from the Primary level of education, computer will be used as a tool of teaching.
- All students will be computer-literate before they reach the secondary level.
- Secondary education level students are supposed to study computer science along with mathematics and science.

Examination and Evaluation (Chapter 21)

- Develop **creative ways** to assess mastery of course content rather than rote learning.
- The Junior Secondary Certificate Examination (JSCE) will be administered by each Board of Education. It is not a rote learning test but a test of creativity. Scholarships are awarded based on test results.
- Students not taking part in this public examination will be eligible to have a certificate from the school attesting the completion of studies till grade eight including the report of

evaluation of internal examination and continual assessment with their date of birth recorded in the certificate.

- The national level SSCE will be administered at the end of 10th grade and the HSCE will be administered at the end of 12th grade. The results of both examinations will be used to determine the acceptance or rejection of scholarships for subsequent educational programs. **Both examinations will include questions that test creativity rather than memorization, and evaluation will be based on the results of the examinations.**
- If a student fails one or two subjects in a public examination at the secondary level, he/she shall be allowed to participate in the same subject examination twice. If the curriculum or syllabus has been changed, the student will be allowed to take the subject examinations of the previous curriculum or syllabus.

Teachers' Training (Chapter 24)

- **Analysis of the Current Status of Teacher Training:** A transparent recruitment process is necessary to secure quality teachers, and quality teacher education is necessary to improve the professionalism of teachers. However, the existing teacher training system in Bangladesh is not up to the expected standard (obtaining certificates has become an objective, and the system has become an exam preparation system that focuses on theory and rote memorization with a lack of practice).
- **Current Status of Teacher Training Institutions:** There are 14 government Teacher Training Colleges (TTC), one National Academy for Educational Management (NAEM), 5 Higher Secondary Teachers Training Institutes (HSTTI) that provide subject-specific training for secondary teachers, and 1 Institute of Education and Research (IER) at the Dhaka University and 106 non-government TTCs. 14 government TTCs offer Bachelor of Education (B.Ed.) courses, and Bangladesh Open University (BOU) offers B.Ed. courses through distance education.
- **Objectives and Goals of Teacher Training:** NEP2010 defines the objectives and goals as follows. 1) Improvement of teaching methods, subject knowledge, personality, and qualifications as a teacher, 2) Development of ability to effectively conduct classes using new teaching materials and methods, 3) Acquisition of expertise to write research papers and reports, 4) Ability to treat all people equally regardless of religion, race, and socioeconomic conditions, 5) Be able to make extensive use of ICT through participation in information technology training.
- **Teacher development after hiring:** Immediately after their recruitment, secondary teachers will undergo 2 months' foundation training and for the college teachers it will be 4 months. The secondary level teachers must take part in courses of B.Ed within 3 years of joining their posts.
- The government college teachers are usually trained at NAEM, and this training will continue. Phase wise, every teacher will have to undergo freshers' courses every 3 years. Steps will be taken to establish one Regional Academy of Educational Management (RAEM) in each division to accelerate the course-based training programs.
- Comprehensive training will be introduced for employees at middle and senior levels to create qualified and confident officials in educational administration.
- A basic training will be organized for the non-government schools and colleges teachers. These teachers will also be trained at HSTTI. The existing subject-based training conducted at HSTTI will be strengthened.
- In order to standardize the quality of all training institutions and with a view to creating a standard environment in them, the officials of equal status of different institutions will be transferred from one to the other.
- Training facilities of the trainers will be created both at home and abroad to upgrade their standard. Existing special training for Head teachers and Principals will continue.

- Internet connection will be provided to all educational and training institutions to help all academic staff/personnel update themselves with the latest information.
- Continuous assessment will be conducted to evaluate the proficiency of the trained teachers. Any weakness found will be remedied through special measures.
- Teachers' organizations should be encouraged to play their roles in upgrading the standard of teachers and not just in realizing their professional demands.
- Universities will be encouraged to initiate training programs for the young/fresh teachers.
- Increment of financial grants/remunerations and other facilities for the trainees will be ensured.
- Training programs should be made more realistic and effective. To do so and to ensure full-time training, the establishment of non-government TTCs of inferior standard will be discouraged. Rather, the number of governments TTC will be increased to a rational number and full residential facilities will be provided to the trainees to make the training programs meaningful and effective.

Educational Administration (Chapter 27)

- The power, responsibilities and authority of secondary educational administration will be devolved at division, district and upazila levels. The position of District Education Offices will be graded at par with other District officials.
- If necessary, the school/college management committees will be strengthened with larger authority. Measures for supervision will be taken with joint participation of guardians, local people interested in education and representatives of local government.
- The post of school inspectors will be created in proportion to the number of schools to strengthen academic supervision and monitoring so that at least one school is brought under close supervision once a month.
- The Education Management Information System (EMIS) computer cell in the Directorate will be expanded and modernized. To build up an IT-based MOE, the computer cell of the Ministry will be expanded and updated and necessary manpower will be recruited.
- Educational institutions will be identified through the school-mapping program and these institutions will be selected for academic approval and coverage of Monthly Pay Order (MPO).
- Eliminate disparities in the treatment of teachers and staff in government and non-government schools.
- Consider policies to convert non-government schools into government schools.
- Take steps to establish government schools in all upazilas.

4.2.3 Education Sector Plan (ESP) 2020/21-2024/25

The ESP was issued after the COVID-19 outbreak began, and its impact is also reflected in the plan's content; the goals of the ESP are as follows:

Overarching Goals of ESP: Overarching Goal of ESP: Contribute to the achieving the SDG4 goal of equitable, accessible and quality education towards building a sustainable and prosperous society and promoting lifelong learning for all, in line with the objective of Bangladesh becoming a developed country by 2041.

To achieve this goal, three sub-goals have been established: access and equity, quality and relevance, and governance and management.

Under Access and Equity, the goal is full enrollment up to grade 8 by 2030. All schools will have access to facilities (e.g., toilets) that meet the needs of all children, provide opportunities for out-

of-school children of secondary school age to receive life skills and vocational education content up to grade 8 as non-formal education, and provide alternative education related to TVET. In addition, based on the lessons learned from the spread of COVID-19, the government aims to strengthen its organizational and coordination capacity to ensure continuity in education, keeping in mind emergencies such as natural disasters.

Under quality and relevance, the government aims to achieve learning outcomes in specific subjects (Bangla, English, mathematics, and science). To achieve this, the quality of curriculum, textbooks, and teaching materials (including ICT and science laboratories) will be improved and effective teaching techniques will be established. In addition, teacher training and Continuous Professional Development (CPD) will be enhanced to increase the number of qualified teachers in Bangla, English, mathematics, science, and ICT. Furthermore, the government aims to improve formative and summative assessments and high-quality, standardized educational assessments.

In Governance and Management, the goal is to gradually decentralize planning, management, and budget authority functions; improve school management by strengthening the capacity of school principals and others; and increase budget allocation to secondary education and improve the efficiency and effectiveness of budget execution.

With these overarching goals and the goals of the three subgoals in mind, strategies in eight subsectors are described. While NEP2010 defined the secondary education grade range as grades 6-12, the ESP describes School (grades 6-10) and higher secondary (grades 11-12) separately, but their content is very similar to each other. For this reason, this section summarizes school and higher secondary under the section "Sub-sector Strategies for Secondary Education.

In addition, the following five areas are discussed as Sector Reform (Cross-Sectoral) Strategies: 1) Education Workforce for School Education, 2) Implications of climate change and natural and man-made emergencies, 3) ICT for and in Education, 21st Century Skills and the Fourth Industrial Revolution (4IR), 4) Inclusion Priorities, 5) Assessment of Student Learning and System Performance. This section summarizes 1), 3), and 5).

(1) Sub-sector Strategies for Secondary Education

Access and Equity

The main focus is on the following four points

- **Improvement of NER:** Full enrollment up to grade 8 by 2025, and increased enrollment up to grade 10 by 2030. The NER for higher secondary education will also aim to achieve 50% by 2025 and 75% by 2030.
- **Equity:** Provide life skills and primary and secondary education content through non-formal education to out-of-school children of secondary school age (12-18). Scholarships and other support will be provided for students who need assistance due to poverty, disability, gender, ethnic minorities, etc.
- **Facilities:** Increase the number of schools with adequate facilities (WASH), furniture, electricity, science labs, computer labs, laboratories, libraries and provide funds for maintenance and repair. Convert all school classrooms to multimedia classrooms.
- **Emergency Response:** Developing an education continuity plan, including access to the Internet, etc.

The following table shows the main goals of secondary and higher secondary education.

Table 4-6 Monitoring Framework (Access and Equity)

Items	Baseline 2019	2025
NER (Lower Secondary)	59%	80%
NER (Secondary)	37%	70%
NER (Higher Secondary)	26%	50%
Schools equipped with adequate classrooms and facilities	-	70%
Schools and educational institutions with adequate facilities maintenance budget	-	70%

Source: Prepared by the Survey Team based on ESP 2020/21-2024/25

Quality and Relevance

The ESP states that based on the experience gained from the implementation of the NSA, the National Assessment of Secondary Students (NASS) and the Low Achievement Assessment of Secondary Institutions (LASI), the government recognizes the low level of achievement and the challenges in measuring academic achievement and is considering the need to participate in international assessments of academic achievement. Specifically, PISA (Program for International Student Assessment), TIMSS (Trends in International Mathematics and Science Study), and PIRLS (Progress in International Reading Literacy Study) have been mentioned as candidates. Two challenges to learning attainment have also been identified. The first is the quality of the incoming students: according to NSA results, primary school graduates do not have the basic academic skills needed to enter secondary school, even in the core subjects of Bangla and mathematics. The second challenge is teachers, because of the increased number of subjects at the secondary level, teachers need to be certified and trained in specific subjects.

The challenges related to teachers are manifold. First, there is an imbalance in the number of teachers by subject area. There is a shortage of teachers, especially in subjects such as mathematics, science, English, and computer skills. This is especially serious in non-government schools. (There is a policy change to introduce a common curriculum up to grade 10 and to start the course system in grade 11 instead of the current grade 9.) The report also states the need to improve the status and compensation of teachers and develop career paths in order to attract better talent to the teaching profession. Related to this, the assignment of high-quality teachers, teacher training, in-service teacher training, and standards-based performance evaluation are also considered essential. To address the issue of the traditionally low number of female teachers in secondary education, the introduction of a quota for female teachers is also being considered.

There are also facility challenges. Almost all schools lack functional science laboratories and have limited ICT facilities. Most schools do not have functional libraries and reading habits at home are limited.

Based on the above mentioned current situation, the ESP has the following policies:

- **Number and Quality of Teachers:** To cope with increasing enrollment in the future, improving the learning environment (increase the number of schools with less than 30 students per class), and correcting bias in the number of teachers by subject, the number of female teachers will be increased, and CPD training and qualification training will be provided. Orientation on curriculum and supplementary materials will also be provided. The dropout rate will also be reduced by improving the quality of learning (from 20% in 2019 to less than 10% in 2025 in the higher secondary).
- **Revision of Curriculum:** with the aim of common core competencies for all students up to grade ten without separate tracks; emphasis on curriculum development as a continuing process, with stronger articulation, reduced content load, school-based learning assessment, etc.

- **Evaluation of Learning Achievement:** In introducing the above curriculum, a balanced learning evaluation of formative and summative assessment will be introduced for the acquisition of core competencies rather than rote learning. The development, trial and application of assessment tools and teacher training will be implemented in phases. Special emphasis will be placed on subjects such as Bangla, English, Science, Mathematics, and ICT.
- **Teaching Materials (including ICT):** Supplementary reading materials that foster reading habits will also be provided. Online teacher capacity building through an Internet-based portal site for teachers and digital supplementary materials will also be increased.
- **Vocational Training:** make pre-vocational education and vocational courses compulsory in secondary education and develop educational institutions with the necessary logistics.

The following table shows the main goals of secondary and higher secondary education.

Table 4-7 Monitoring Framework (Quality and Relevance)

Items	Baseline 2020	2025
Percentage of schools with TSR less than 30 students	TBD	50% (secondary) 60% (higher secondary)
Percentage of qualified teachers trained in pedagogy (B.Ed. or higher in the junior secondary and secondary, no mention in the higher secondary)	26% (junior secondary) 73% (secondary) - (higher secondary)	50% (junior secondary) 80% (secondary) 80% (higher secondary)
Percentage of teachers and educators participating in CPD	-	15 or more days of CPD per year for 100% of teachers
Percentage of schools capable of teaching using supplementary materials, learning aids, and ICT materials	-	The percentage of schools with a medium level of implementation of the items listed on the left reached 50%, and that of schools with a high level of implementation reached 30%.
Percentage of schools that plan and implement formative evaluation	-	100%

Source: Prepared by the Survey Team based on ESP 2020/21-2024/25

Governance and Management

As with primary education, secondary education operates under a centralized system, but differs significantly in that more than 90% of schools are established by the community and run by their respective School Management Committees (SMCs). In recent years, secondary education has introduced MPOs, e-procurement, and integrated budget and accounting systems (iBAS), but still lacks coordination in governance, planning, monitoring, and budgeting. In addition, the percentage of teachers whose salaries are paid from student tuition remains high and is significantly lower than that of MPO teachers. Therefore, wage guidelines are needed to either increase the number of teachers eligible for MPOs or to increase the salaries of teachers whose schools pay their salaries. Decentralization at all levels of government is also insufficient. Based on the above situation, the following policies are in place:

- **Decentralization:** Establishment of an upazila resource team in each upazila; strengthening of local administration and teacher training institutions (training, operational support, supervision, and support for stronger collaboration with academic and research institutions); implementation of leadership development programs for school directors and SMCs.
- **Budget Increase:** increase budget for more MPO teachers and establish criteria for allocation.

- **PPP:** Public-Private Partnerships (PPP) for quality and equity in secondary education.

(2) Sector Reform (Cross-Sectoral) Strategies

Education Workforce for School Education

This section focuses on teachers in grades 1-12, including madrasahs. According to the Primary Education Annual Sector Performance Report 2017 (DPE, 2017), as of 2016, the percentage of teachers who met the minimum professional qualifications (C-in-Ed diploma) was over 94%. However, the report notes that even classes taught by these qualified teachers have not led to improved student learning outcomes. In primary schools, the number of students per teacher is high and the amount of time spent in school is low by international comparison. School teaching is the most common field of employment for university / college graduates, but it is not the career of choice for the best students, but rather the recipient of the bottom graduating class. The method used is to hire graduates from various faculties as primary and secondary teachers and have them take a one to one and a half year pedagogical training course, but the salary is also low. As a result, more than 22% of teachers reported tutoring as a second job (in fact, the percentage is likely higher). There are a great many issues related to teachers, including incentives, career development, performance standards, and professional support. Teacher numbers are also inadequate: in 2018, there are 685,000 teachers in primary and 680,000 in secondary, but the teacher-student ratio (TSR) is 30 in primary, 34 in junior secondary and secondary, and 15 in higher secondary. There are, of course, regional disparities. In particular, there is a shortage of teachers, especially in junior secondary school, and a large increase in the number of teachers is necessary to raise the enrollment rate. In order to improve the quality of education, it is necessary to increase the salaries and quality of teachers and to increase the number of teachers; therefore, an increase in the budget is essential. To this end, improvement of teacher training and CPD are necessary. Teacher training also requires a four-year educational degree program.

The main goals at ESP are as follows:

- Establishment of appropriate percentages of teachers, administrators, etc.
- Feasibility Study for improving teacher training (educational degree programs)
- Development of CPD, career paths, compensation and incentives, performance standards, etc.

ICT for and in Education, 21st Century Skills and the Fourth Industrial Revolution (4IR)

In its "Vision 2021," the Bangladesh government aims to build a "Digital Bangladesh" and to utilize information and communication technology (ICT) in all areas. In its "Master Plan for ICT in Education in Bangladesh (2012-2021)," MOE has outlined a policy to modernize the education system through the use of ICT and to improve teaching and learning through technology. The progress report of this master plan describes the results of the introduction of multimedia classrooms in schools, the preparation of an ICT curriculum in secondary education, and an awareness campaign on digital portals for teachers and students under the Access to Information (A2I) program.

However, there are still many challenges to effective use of ICT technology in education: when schools were closed due to the COVID-19 outbreak, MOE used public television channels to broadcast school lessons. However, educational activities using ICT were limited because students had limited Internet access. Urban schools use broadband with unlimited data, while rural schools, especially in coastal, hilly, and highland areas, have to pay for every megabyte of mobile data. In addition, according to BANBEIS statistics, about 10% of secondary schools do not have electricity in their buildings, and there is a need to consider how to include 21st century skills and the 4th Industrial Revolution (4IR) as they relate to ICT.

Against this background, ESP deals with ICT, 21st century skills, and 4IR as a set, and these objectives in ESP are as follows.

- Toward Digital Bangladesh, promote an ICT-based teaching and learning environment, reduce the ICT gap between urban and rural areas, provide learning content through distance education, improve the capacity of educational technicians, and use ICT in monitoring and managing educational programs and institutions.
- Conceptualize 21st century skills and the 4th Industrial Revolution (4IR) and review the understanding of these.
- Strengthen the portal site for teachers under the a2i initiative (evaluate the number of members as an indicator), develop professional development for teachers and educational professionals based on e-tutorials/e-learning and other planning, and use ICT for self-study, etc.

Assessment of Student Learning and System Performance

There are two interrelated aspects of learning assessment: a) measurement of student learning outcomes and b) evaluation of the functioning of the system necessary to achieve student learning outcomes. Public summative assessment is a useful tool for a). However, an appropriate balance between formative and summative assessment is needed to focus on the quality of learning rather than on grades. The setting of goals and the performance of the system as a whole, including school functioning, teacher job performance, funding and its use, etc., are related to b).

There are two national examinations in primary education. The Primary Education Completion Examination (PECE), administered at the national level, was introduced in 2010, and the National Student Assessment (NSA), a sample survey of learning outcomes in Bangla and mathematics, has been conducted every two years since 2011. There is also the JSCE at the end of 8th grade. These exams create undue anxiety and pressure on students and parents. As a result, they increase dependence on tutors, rote learning, and corruption. They also result in teachers working outside of the classroom, including tutoring. There is a strong need to assess student achievement at milestones in school life. However, there is a need to re-examine whether the assessment methods and practices are fit for purpose: NSA assesses Bangla and math performance in grades 3 and 5, and in contrast to PECE, where over 95% of students passed, the majority of students at NSA are not achieving the required level of Bangla and math in grades 3 and 5.

There is no assessment of student achievement at the secondary level on a scale comparable to the NSA for primary education. However, the Learning Assessment of Secondary Institutions (LASI), which sampled 6th graders in 2015, showed that students at the secondary level have low proficiency in Bangla and math.

Based on these results, two strategies will be considered: a) conducting regular achievement assessments at milestones such as 3rd, 5th, and 8th grades, and b) participating in international assessments such as PISA, TIMSS, and PIRLS in the future.

4.2.4 Transforming Education Summit (TES)

The Transforming Education Summit (TES) was held in New York, U.S.A., September 16-19, 2022, bringing together cabinet-level officials from around the world to address the global crisis in education, namely the crisis of equity, inclusion, and quality. On September 19, the final day of the summit, countries announced their commitments to education. Bangladesh identified six priorities for medium- and long-term educational transformation. A summary of each is as follows.

- **Curriculum:** The committee approved a new curriculum framework for pre-K through 12th grade that addresses 21st century skills, the 4th Industrial Revolution, and Vision 2041. Practice-based learning, interdisciplinary approach, and formative assessment were adopted as key approaches.
- **Digital Transformation:** Using EdTech, social media, and other platforms to reform the blended approach, digital literacy and skills of teachers, students, and parents.
- **Blended Education:** The National Blended Education Master Plan and curriculum reform will be combined to promote a variety of changes. These consist of five components: 1) teaching and learning, 2) instructional content and materials, 3) assessment, 4) teacher professional development, and 5) policy management and partnerships.
- **Technical and Vocational Education:** Implementation in line with the National Qualifications Framework.
- **Tertiary education:** Emphasis on industry-academia collaboration and research investment.
- **Teaching Workforce:** Allocate sufficient funds to promote quality teacher training, in-service teacher training, professional development, and the enhancement of the social status of teachers.

Secondary education is largely concerned with curriculum, digital transformation, blended education, and teaching workforce.

Chapter 5. Administrative and Financial Affairs Related to Secondary Education

The national administrative structure in Bangladesh is more fragmented than in many other countries. There are nearly 40 ministries/divisions alone, which are frequently reorganized. Currently, two ministries are in charge of education administration in Bangladesh. The Ministry of Primary and Mass Education (MOPME) is in charge of primary education, literacy, and non-formal education, while the Ministry of Education (MOE) is in charge of secondary, technical, tertiary, and madrasah education.

The MOE has two major divisions: the Secondary and Higher Education Division (SHED), which is responsible for secondary and Tertiary education, and the Technical and Madrasah Education Division (TMED), which is responsible for technical and madrasah education. There are also a number of external organizations related to MOE.

This chapter describes the administrative and financial aspects related to secondary education. Section 5.1 provides an overview of the civil service system, which is necessary to understand public administration. Section 5.2 describes SHED and its subordinate organizations, Section 5.3 describes the Board of Intermediate and Secondary Education (BISE) outside the MOE, and Section 5.4 summarizes secondary education finance.

5.1 Hierarchy and Transfers in the Civil Service System

There are four classes of civil servants in Bangladesh, depending on the nature of their work.

Table 5-1 Hierarchy and Number of Civil Servants

Class	Job Description	Number	Ratio
Class 1	Official Positions, Administrative and Professional Positions	185,000	12%
Class 2	Supervisory duties	170,000	11%
Class 3	clerical work	900,000	60%
Class 4	Miscellaneous duties	250,000	17%
	Total	1,505,000	100%

Source: Statistics of Civil Officers and Staffs 2020

Class 1 is divided into Cadre and Non-Cadre. Cadre are the senior civil servants (career bureaucrats) of the Bangladesh Civil Service (BCS), and there are a total of 26 job classifications (Cadre). 26 job classifications (Cadre) are divided into General Cadres, Professional Cadres, and General and Technical Cadres. The Cadre related to secondary education are represented by the General Cadre (Administration) and the Technical Cadre (General Education). Recruitment is done by the Public Service Commission.

Personnel transfers

Class 1 is subject to transfer; BCS (Administration) also transfers between ministries, and BCS (General Education) is essentially a transfer within MOE. Although there are no written rules governing transfers, it is customary for employees to remain in one location for up to three years⁴⁸. This includes transfers to the provincial education office, but not to the Upazila Secondary Education Officer (USEO).

The USEO has a transfer policy: USEO employees are transferred only between USEOs, not to a higher level organization. In principle, after three years of service, an employee may apply for transfer.

⁴⁸ From an interview with Dhaka DEO (February 8, 2023)

5.2 Secondary and Higher Education Division (SHED) of the Ministry of Education (MOE) and Its Subordinate Organizations

SHED is the highest policy-making body of the government for the operation and development of the post-primary education sector, excluding technical education and madrasah education. It also formulates laws, rules, and regulations for the management and operation of the post-primary education sector and its institutions, and has jurisdiction over the attached bodies for the management and supervision of educational institutions (post-secondary, universities, and colleges).

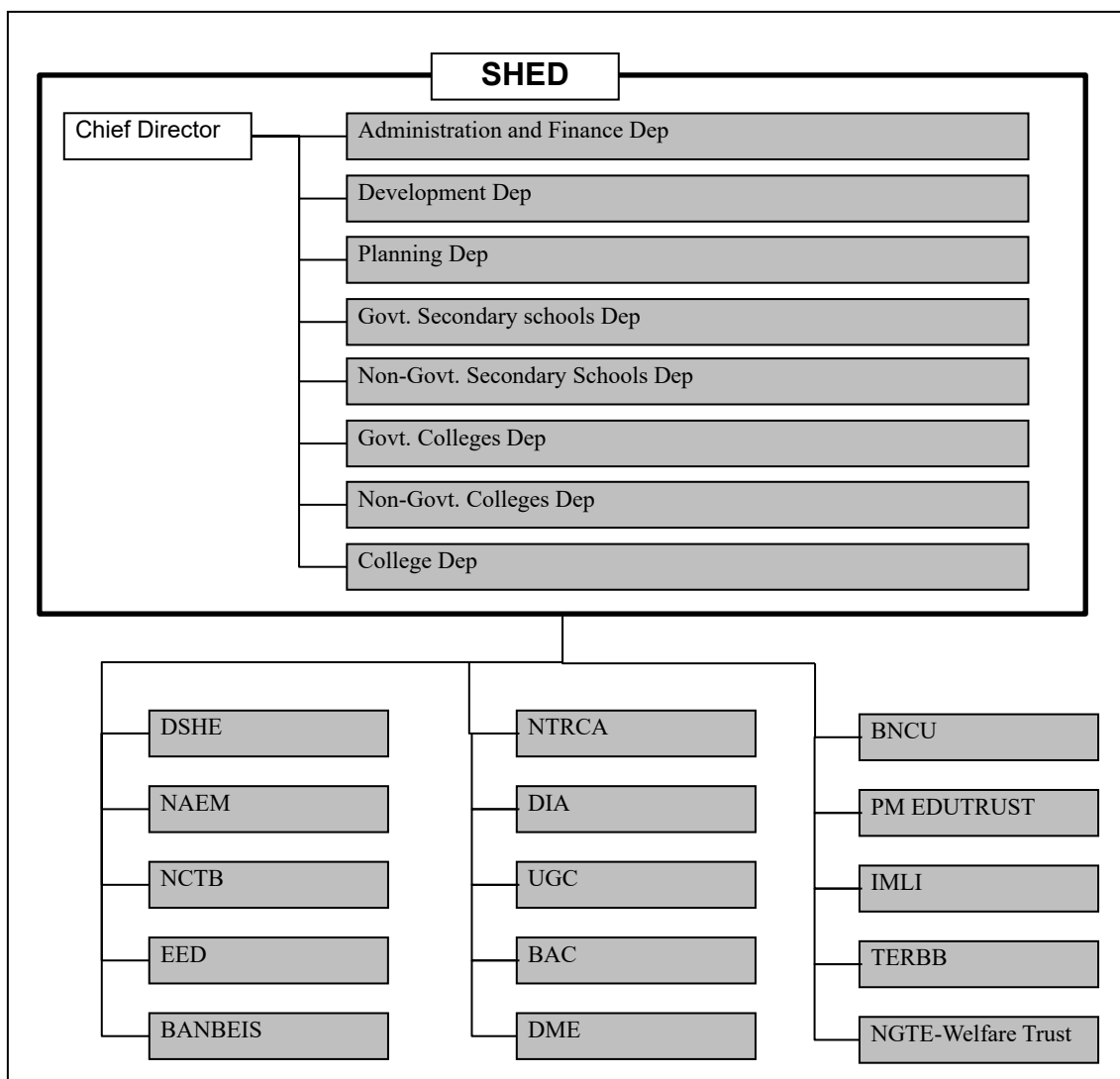
SHED's vision is "Quality education for all", and its mission is "Human resources creation with well-educated, skilled and advanced morals by combining general, science and technology-based education and training".

SHED is under the secretary and is composed of 1) Administration and Finance Dept., 2) Development Dept., 3) Planning Dept., 4) Government Secondary schools Dep, 5) Non-government Secondary Schools Dept., 6) Government Colleges Dept., 7) Non-Government Colleges Dept., and 8) College Dept..

The following organizations are subordinate to SHED.

1. Directorate of Secondary and Higher Education (DSHE)
2. National Academy for Educational Management (NAEM)
3. National Curriculum and Textbook Board (NCTB)
4. Education Engineering Department (EED)
5. Bangladesh Bureau of Educational Information and Statistics (BANBEIS)
6. Non-Government Teachers Registration and Certification Authority (NTRCA)
7. Department of Inspection and Audit (DIA)
8. University Grant Commission (UGC)
9. Bangladesh Accreditation Council (BAC)
10. Directorate of Madrasha Education (DME)
11. Bangladesh National Commission for UNESCO (BNCU)
12. Prime Minister's Education Assistant Trust (PM EDUTRUST)
13. International Mother Language Institute (IMLI)
14. Non-Government Teacher Employee Retirement Benefit Board (TERBB)
15. Non-Government Teachers & Employee Welfare Trust (NGTE-Welfare Trust)

Organizational relationships are shown in the figure below.



Source: Prepared by the Survey Team

Figure 5-1 SHED Organization Chart and its Subordinate Organizations

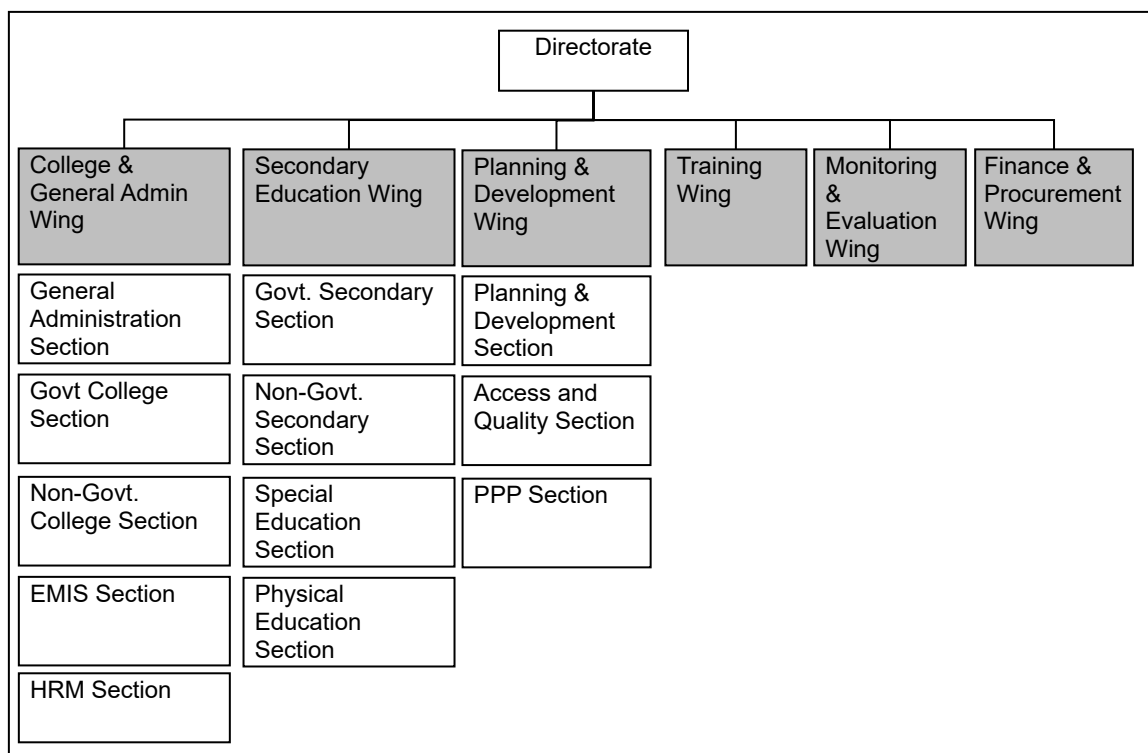
In this section, we summarize 1-7 below, which are closely related to secondary education.

(1) Directorate of Secondary and Higher Education (DSHE)

DSHE is responsible for the management and supervision of secondary education, and higher education excluding universities, and local education offices. The following are covered by the DSHE. Universities are administered by the University Grant Commission.

- Government and Non-Government Colleges
- Government and Non-Government Secondary Schools
- Government Commercial Institutions
- Teacher Training Colleges (TTC)
- Division Education Offices, District Education Offices, Upazilla Secondary Education Offices

An organizational chart is shown in the figure below.



Source: DSHE

Figure 5-2 DSHE Organization Chart

Educational Institutions under the Jurisdiction of DSHE

DSHE is responsible for various educational institutions related to secondary education: junior secondary schools and secondary schools (school), higher secondary schools (college), and TTCs. Schools are supervised by DSHE and local administration, while colleges are supervised by the DSHE without the involvement of the local administration. The TTCs are managed by the National University (NU) and DSHE, with NU responsible for academic aspects such as curriculum, examinations, and monitoring, and DSHE responsible for administrative aspects such as appointment and transfer of teaching staff and monitoring of the TTC.

(2) National Academy for Educational Management (NAEM)

NAEM is an institution whose main function is to provide training to teachers in the secondary and higher education stages in order to guarantee the quality of post-primary education.

Activities of NAEM

NAEM conducts the following activities.

- Planning, development and implementation of training
 - For Secondary (G6-G10) of General Education: Principal training (45 days), ICT and English training for teachers
 - For College (G11-G12) of General Education: 4-month foundation course
 - Basic training for newly recruited Bangladesh Civil Service (BCS) education cadre
- Organizing workshops, seminars and conferences on issues related to educational development.
- Surveys and research on educational issues.
- Assistance in formulating educational policies.

History

NAEM's history dates back to 1959, when it was established as the Education Extension Center under the auspices of the United States Agency for International Development (USAID) to provide in-service teacher training in teaching methods to secondary school teachers. In 1971, it was upgraded to the Bangladesh Education Extension and Research Institute (BEERI), which added research and training functions for educational administrators and college / madrasah teachers. In 1982, it was merged with the National Institute of Educational Management and Research (NIEMR) and renamed the National Institute for Education Administration Extension and Research (NIEAER). In 1991, it was renamed the National Academy for Educational Management (NAEM).

Organization of NAEM

NAEM is a training institution under the MOE. The highest decision-making body is the Board of Governors, chaired by the Minister of Education. The Board also includes the Secretary of SHED as Vice Chair, the Director General of NAEM as Member Secretary, the Secretary of the Ministry of Public Administration, the secretary of the Ministry of Finance, and the Director of DSHE. The members include the Secretary of the Ministry of Public Administration, the Secretary of the Ministry of Finance, and the Director General of DSHE.

NAEM has a total staff of 82, including 28 full-time and 54 temporary development budget employees, 28 of which are employed under the Secondary Education Sector Investment Program (SESIP), which is scheduled to end in 2023. NAEM has the following four departments under the Director General

- **Planning & Development Division:** Shall be responsible for the overall planning of NAEM's activities and the design of development projects. In collaboration with the Training and Implementation Division, it prepares the annual training calendar detailing the training programs planned for the year. The computer lab is also part of this division.
- **Training & Implementation Division:** Designs curricula, develops manuals, implements activities, prepares course reports, assists trainees in completing assignments, and conducts seminars and workshops.
- **Research & Documentation Division:** Conducts research and solicitation for research, publishes the Newsletter four times a year, publishes the NAEM Journal semiannually, publishes the Annual Report, etc.
- **Administration & Finance Division:** Administration and general affairs, accounting and budgeting, internal and external audits, supervision of NAEM construction, repair and renovation, procurement of training materials, equipment and facilities, etc.

Training Functions

In principle, participants at NAEM are required to stay overnight at the dormitory. 514 participants can be accommodated at NAEM at the same time in the following five dormitory buildings.

Table 5-2 Accommodation Buildings at NAEM

Name of the Dormitory	Type	Number of people who can be accommodated
Shaheed Buddhijibi	General (for Men)	304
Shaheed Janani	For Women	56
Shaheed Muktijoddha	General (for men)	60
Omar Ekushey	For women and their children	18
Sonar Bangla	General (for men)	76

Source: NAEM Annual Report 2021/22

Budget

NAEM operates on a 100% government revenue budget. Information on budget execution for the past two years is summarized in the following table: actual expenditures for FY 2021-2022 amounted to BDT 432,600,990.

Table 5-3 NAEM Budget Information

FY	Budget	Actual Expenditures	Return	Rate of Execution
FY2020-2021	269,122,000	253,815,997	15,311,343	94.31%
FY2021-2022	478,137,000	432,600,990	45,536,010	90.48%

Source: NAEM Annual Report 2021/22

(3) National Curriculum and Textbook Board (NCTB)

The NCTB operates under the MOE; the most recent rationale for the establishment of the NCTB is the NCTB Act (2018); according to the NCTB Act, the NCTB has two committees: the Curriculum Development Committee and the Textbook Committee.

The NCTB develops, publishes, prints, and sends to schools all curricula, textbooks, and teaching materials for grades 1 through 12, as well as provides teacher training. The teacher training is up to the training of master trainers, and the DSHE is responsible for further training.

Curriculum, textbooks, and teaching materials are summarized in the table below, as the role of the NCTB varies by type of education. The NCTB is the world's largest publisher of textbooks.

Table 5-4 Role of National Curriculum and Textbook Board (NCTB)

Educational Stage and Education Type	Development of Curriculum, Textbooks and Materials	Printing and Distribution of Textbooks (free of charge)
Preschool Education	Subject	Subject
Primary Education	Subject	Subject
Secondary Education	Subject	Subject
Ebtedayee	-	Subject
Dakhil	-	Subject
Dakhil Vocational	-	Subject

Source: Prepared by the Survey Team based on information from NCTB

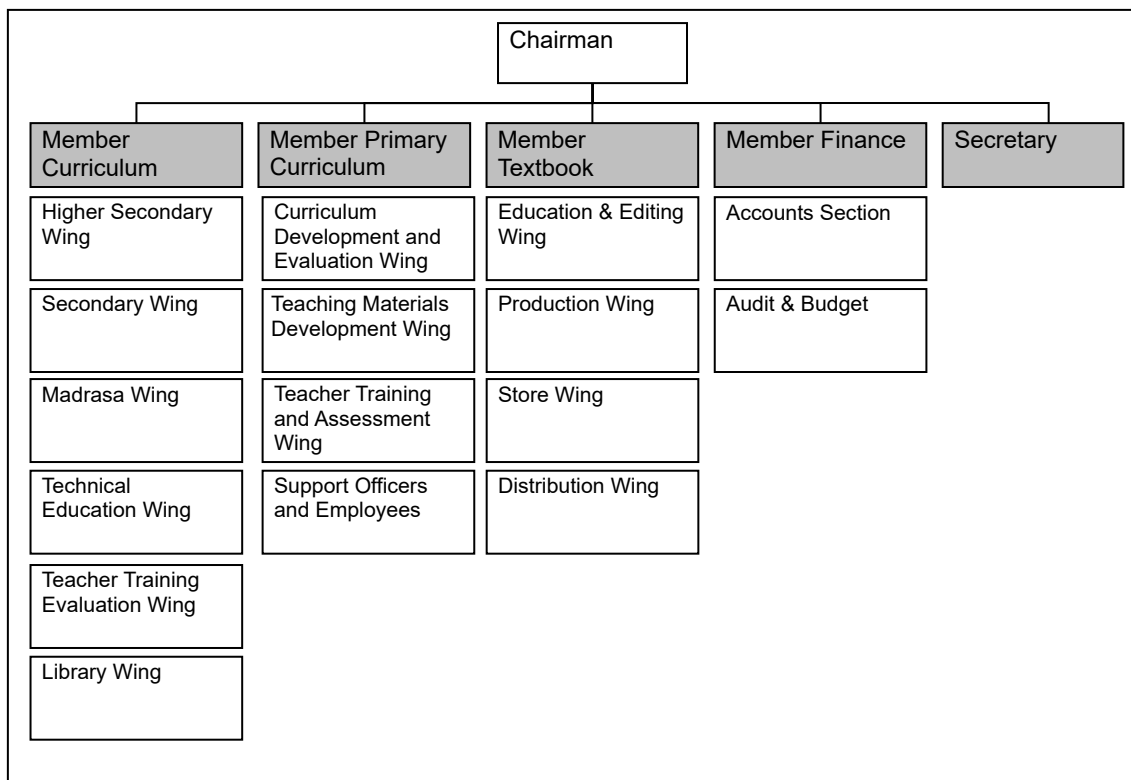
Currently, the NCTB handles both textbooks and curriculum, although this was done separately until 1983.

For textbooks, the East Bengal School Textbook Board was first established after independence from the British colony in 1947 and a textbook development organization was set up; the Textbook Act of 1954 established an independent body, the School Textbook Board. After independence from Pakistan, the Board was reorganized into the Bangladesh School Textbook Board (BSTB).

For curriculum, the National Curriculum Development Centre (NCDC) was established in 1981.

In 1983, the BSTB and NCDC were merged to form the NCTB in order to improve consistency and uniformity of curriculum and textbooks.

The current NCTB organizational chart is shown below.



Source: NCTB

Figure 5-3 NCTB Organization Chart

(4) Education Engineering Department (EED)

EED is the school-related infrastructure arm that plans, designs, monitors, and reports on the construction status of educational facilities. It covers a wide range of subjects, both government and non-government, including secondary schools, colleges, vocational training institutions, polytechnic institutes, and madrasahs.

EED was established in 1972, after the War of Independence, to rebuild and repair educational institutions. In recent years, EED has been involved in the construction of multimedia classrooms, Internet connectivity, and ICT facilities to build Digital Bangladesh.

The functions of EED are as follows:

- Development planning, design, monitoring and reporting of educational institutions
- Construction, renovation, and repair of secondary schools (including colleges) and polytechnic institutions
- Implementation of MOE development projects and programs

(5) Bangladesh Bureau of Educational Information and Statistics (BANBEIS)

BANBEIS is responsible for data collection and analysis in secondary education and other subsectors. It was founded in 1974. It publishes statistical information annually around May.

(6) Directorate of Inspection and Audit (DIA)

The DIA promotes the proper use of public funds by supervising, inspecting, and advising educational institutions (mainly non-governmental educational institutions) with inputs of public

funds, especially in improving their management. It was founded in 1980 with 7,500 employees and is now a huge organization with 28,000 employees. Its seven main roles are as follows:

1. Oversight of whether government subsidies were used as originally intended.
2. Inspection of teachers and staff receiving Monthly Pay Order (MPO) subsidies to ensure that they are qualified for support.
3. Inspection of non-government educational institutions' plans for quality improvement.
4. Supervision of academic activities of governmental and non-governmental educational institutions.
5. Annual audits of non-government educational institutions.
6. Taking necessary action to appoint accounting firms and inspecting audit reports by such firms.
7. Special audits of MOE-affiliated institutions when directed to do so.

(7) Non-Government Teachers' Registration and Certification Authority (NTRCA)

NTRCA was established as the implementing agency for the Non-government Teachers' Registration and Certification Act of 2005, which was approved by Congress in 2005. NTRCA conducts teacher registration examinations, and registration to control and improve the quality of teachers in non-government schools (Private, NGO, community, madrasah, etc.) that are paid with government subsidies⁴⁹.

(8) Local Administration in Secondary Education

Bangladesh is administratively divided into 8 Divisions, 64 Districts/Zilla and 489 Sub-districts/Upazilla. Rural areas are under Unions (4,572 Unions), and urban areas are under Cities (11 City Corporations) and General Cities (324 Paurashavas). The number of local governments fluctuates frequently due to divisions and transfers to urban municipalities, etc.

Supervision and monitoring of junior secondary schools and secondary schools will be carried out by the local administration (Divisional Education Office, District Education Office, Upazilla Secondary Education Office), while the DSHE will directly supervise and monitor the higher secondary schools (Colleges).

District Education Office

The District Education Office will be staffed by Class 1, Class 3, and Class 4 employees. The following posts are available for Class 1. This structure is the same for all DEOs.

- District Education Officer
- Assistant District Education Officer
- Assistant Inspector
- District Training Coordinator
- Research Officer
- Assistant Programmer

⁴⁹ The process that led to the establishment of NTRCA was due to challenges to receiving government subsidies. The priority was to secure teachers as soon as possible to receive government subsidies, and there was a School Managing Committee (SMC) that compromised the quality of teachers. In some cases, the teachers were acquaintances of the SMC members. These teachers were often not willing to improve their own quality through in-service teacher training. As a result, most of the teachers receiving subsidies did not meet the required qualifications, and it became a well-known fact that the quality of non-government secondary schools was extremely poor compared to government schools. To counteract this, government-subsidized teachers were subjected to a government selection examination.

In addition, there will be Class 3 Accountants, Office Assistants, etc., and Class 4 Security Guards, Janitors, etc.

The role of the District Education Office will be as follows:

- Management of activities related to secondary education (e.g. sports)
- Academic supervision of secondary education
- Supervision of Upazila Secondary Education Office (USEO)
- Regular auditing and monitoring of secondary schools (accompanied by USEO staff)
- MPO applications for secondary schools, textbook distribution and student scholarships, etc.
- MPO teacher recruitment (check the number of teachers and shortages in each school and report vacancies to NTRCA)
- Coordination between DSHE and BISE

Upazilla Secondary Education Office

The personnel structure of the Upazila Secondary Education Office is as follows:

- Upazila Secondary Education Officer
- Assistant Upazila Secondary Education Officer
- Upazila Academic Supervisor

However, many of the posts are vacant depending on the number of schools under the jurisdiction of the USEO. For example, Narsingdi Sadar upazila (Narsingdi district, Dhaka Division), which was visited during this study, had only one upazila secondary education officer (USEO).

The roles of the upazila secondary education officer and the assistant upazila secondary education officer are as follows:

- Manage activities related to secondary education in each upazila (e.g. sports)
- Academic supervision of secondary education in each upazila
- Reporting to the Superintendent of each upazila
- Reporting to the District Education Office
- Regular auditing and monitoring of secondary schools in each upazila (1-2 visits per year per school)⁵⁰. The monitoring is mainly related to administration.
- Community-based disaster relief, mainly due to flooding (e.g., management of schools as shelters)
- SMC election supervision (targeting madrasahs (G1-G10) and general education (G6-G10))
- Monthly coordination meetings with all principals (to ensure that schools are being managed in accordance with government regulations)
- MPO teacher recruitment (check the number of teachers and shortages at each school and report vacancies to NTRCA)
- Distribution of textbooks

On the other hand, upazila academic supervisors provide guidance to teachers on how to improve their teaching. There is no subject-specific supervisor, as there is only a maximum of one supervisor for each upazila. However, upazila academic supervisors usually have basic knowledge of all subjects and can provide simple guidance. However, the upazila academic

⁵⁰ From interviews at the two USEOs (Narsingdi Sadar and Barishal) interviewed by the Survey Team

supervisors have a lower rank than Govt. school teachers and a higher rank than non-Govt. school teachers, which makes it difficult for them to provide guidance to Govt. school teachers.

5.3 Boards of Intermediate and Secondary Education (BISE)

Bangladesh has 12 Education Boards throughout the country. Of these, 9 are for general education, 1 for madrasah education, 1 for technical education and 1 for Diploma-In-Business Studies Course (DIBS, Dhaka). Education Boards are independent of MOE in terms of their organizational chart. In reality, however, they often function as subordinate organizations of MOE.

The official name of the Board of Education for General Education is Boards of Intermediate and Secondary Education (BISE). There is one BISE in each of the eight divisions, plus one in Comilla, for a total of nine. Comilla is included because it is halfway between Sylhet and Chittagong.

BISE is responsible for administering the following three public examinations, accrediting new non-government schools when they open, and supervising, managing, and developing non-government schools and managing students (correcting errors in students' names and handling students when they transfer schools).

- Junior Secondary Certificate Examination (JSCE)
- Secondary School Certificate Examination (SSCE)
- Higher Secondary Certificate Examination (HSCE))

Each of the nine BISEs is a separate and independent organization approved by the National Assembly. Each BISE has a board of directors, which is headed by an administrative officer appointed by the MOE. BISE is under the jurisdiction of MOE, but not under the institutional chain of command, and its main source of revenue is the collection of examination fees from students. If there is a shortfall, it is covered by the government. In this sense, BISE is highly independent, but its budget must be approved by MOE. However, any changes in examination fees must be approved by MOE.

BISE (Dhaka), for example, was established by the Government of Bangladesh on May 7, 1921, during the British rule, as a government agency. BISE (Dhaka) serves as the mother organization of other BISEs, and the Chairman of BISE (Dhaka) also chairs the Board of Coordination among the BISEs. BISE (Dhaka) has 350 full-time employees and 100 external employees, for a total of about 450. The organization has six departments: 1) Registration section, 2) Examination Section, 3) Certification Section, 4) Name and Age Correction Section, 5) Institutions Approval Section, 6) Accounting Section.

5.4 Education Finance

This section summarizes trends in education financing, spending outcomes, and financing challenges.

The following table shows budget trends in education sector relative to the national budget. Overall education sector spending as a percentage of the national budget ranges from 11-15%, while its share of Gross Domestic Product (GDP) remains in the 2% range. While the national budget increased 1.8 times between FY 2015-16 and FY 2020-21 on a Taka basis, spending on the education sector increased accordingly, nearly doubling.

Table 5-5 Budget Trends in the Education Sector

Fiscal Year	National Budget (10 million BDT)	Education Budget (10 million BDT)	Education Budget as % of National Budget (%)	Share (%) of GDP
2015-16	295,100	34,770	11.78	2.74
2016-17	284,382	43,871	15.43	2.74
2017-18	341,793	48,689	14.25	2.71
2018-19	399,956	54,091	13.52	2.73
2019-20	420,160	63,153	15.03	2.8
2020-21	538,983	68,828	12.77	2.86
2021-22	603,681	75,929	12.58	--

Source: Prepared by the Survey Team based on BANBEIS 2021.

The following table shows the breakdown of expenditures within the education sector: in 2017-18, primary education was the largest spender within the education sector with a 45.2% share of expenditures, but the share of SHED (Secondary and Higher Education Division) gradually increased and by 2021-22 Secondary and Tertiary education accounted for 48.1% of the total, 13.4 percentage points higher than the 34.7% of primary education.

Table 5-6 Breakdown of Expenditures within the Education Sector

Items	Fiscal Year	Primary	SHED	TMED	Other Ministries	Total
Expenditures (10 million BDT)	2017-18	22,023	21,525	5,141	--	48,689
	2018-19	22,466	25,868	5,757	--	54,091
	2019-20	24,041	28,401	7,307	3,404	63,153
	2020-21	24,939	32,685	7,576	3,628	68,828
	2021-22	26,314	36,487	9,154	3,974	75,929
Percentage	2017-18	45.2%	44.2%	10.6%		
	2018-19	41.5%	47.8%	10.6%		
	2019-20	38.1%	45.0%	11.6%	5.4%	
	2020-21	36.2%	47.5%	11.0%	5.3%	
	2021-22	34.7%	48.1%	12.1%	5.2%	

Source : Prepared by the Survey Team based on BANBEIS 2021.

The following table shows expenditures by educational stage in FY2020-21 and investment as a percentage of expenditures (FY2020/21 and FY2014-15). Compared to FY2014-15, the investment percentage increased in FY2020-21. This indicates that the company is now able to make capital expenditures to improve its business.

Table 5-7 Ratio of Investment to Expenditures by Educational Stage

Educational Stage	Expenditure in 2020-21 (million BDT)			Investment Ratio (%)	
	Current	Investments	Total	2020-21	2014-15
Junior Secondary	10,346	5,149	15,495	33.2%	16.0%
Higher Secondary	10,762	5,356	16,119	33.2%	11.4%
Post-Secondary Non-Tertiary ⁵¹	437	218	655	33.3%	13.3%
Tertiary	5,111	2,544	7,655	33.2%	22.4%
Total	26,656	13,267	39,924	33.2%	16.1%

Source : Prepared by the Survey Team based on BANBEIS 2015 and BANBEIS 2021.

The following table shows the trend of Monthly Pay Order (MPO) expenditures for non-government schools by Education Type. The education budget roughly doubled from 2015-16 to 2020-21 (Table 5-5), while spending on MPOs was less than 1.5 times higher over the same period.

⁵¹ In the BANBEIS report, post-secondary Technical and Vocational falls under this category.

Table 5-8 MPO Expenditures to Non-Government Schools by Education Type

(Unit: Billion BDT)

Educational Type	2011 /12	2012 /13	2013 /14	2014 /15	2015 -16	2016 /17	2017 /18	2018 /19	2019 /20	2020 /21
School Education (Jr.& secondary)	25	26	32	34	55	57	57	60	96	100
College Education (Higher Sec. and Bachelor)	13	14	20	17	27	27	27	29		
Post-primary madrasah education	15	16	17	21	33	33	33	37	37	41
Total	52	55	69	72	115	118	117	127	133	142

Source : Prepared by the Survey Team based on BANBEIS 2021.

Chapter 6. Curriculum and Teaching and Learning Materials for Secondary Education

The National Curriculum and Textbook Board (NCTB), an external bureau of the Ministry of Education (MOE), is the central organization for the development, publication, printing, and distribution of curriculum, textbooks, and teaching materials for early childhood education through secondary education (general education system). This section summarizes the development, publication, printing, and distribution of curriculum, textbooks, and other teaching and learning materials.

6.1 Features of the Current Curriculum (National Curriculum 2012)

The current curriculum for secondary education was published in 2012. This curriculum is based on the National Education Policy 2010 (NEP 2010) and is the first revision in 17 years since the previous curriculum was developed in 1995.

The revision from the previous curriculum to the current curriculum was supported by the Secondary Education Sector Development Program (SESDP) of the Asian Development Bank. First, a nationwide survey was conducted to evaluate the old curriculum with the cooperation of 192 schools (128 junior secondary schools and 64 secondary schools) in 16 regions. A survey of industry and NGOs was also conducted, and a workshop on curriculum improvement was held in conjunction with the formulation of NEP 2010. Prior to this workshop, a total of six countries (India, Sri Lanka, Malaysia, New Zealand, Australia, and Canada) were surveyed, and based on two years of study and consultation, a new national curriculum, National Curriculum 2012, was developed⁵².

The key points of the changes from the old curriculum to the current curriculum, as organized by Mohammed Zakir Hossain⁵³, Additional Director of Barisal HSTTI, are summarized below.

- **Partial Commonization with the Madrasah Program:** Students in G6-G8 of the Madrasah program study the same subjects as those in the General Education system. In addition, students in G9-G10 study the same major subjects as those in the general education system, with the exception of religion and moral education. This is expected to minimize the discrepancies and educational gaps between the two systems and help students develop a common attitude and character.
- **Integration of Knowledge, Skills, and Values:** In order to help students develop in a balanced manner, knowledge, skills, and values appropriate for the 21st century have been integrated.
- **Introduction of 21st Century Skills and New Subjects:** Learning outcomes included higher order cognitive skills, creative and critical thinking, problem solving, and communication skills. New areas of study included 1) ICT (G 6-G12), 2) Bangladesh and Global Studies (G6-G8)⁵⁴, 3) Career Education (G6-G10)⁵⁵, and 4) Physical Education. Finance and Banking were also added to the business courses after G9. In addition to new subjects, new content was also integrated into the curriculum.

⁵² Mohammed Zakir Hossain (2015) "National Curriculum 2012 Moving Towards the 21 Century"

⁵³ Mohammed Zakir Hossain (2015) "National Curriculum 2012: Moving Towards the 21st Century"

⁵⁴ An interdisciplinary subject consisting of history, geography, civics, and economics. It was expected to provide an opportunity for students to learn about current global issues and gain knowledge about environmental and climate issues of the 21st century and how to be a global citizen.

⁵⁵ The goal was to be able to evaluate one's strengths and aptitudes, identify possible career paths that match one's interests and abilities, and act responsibly and morally at work, in society, and at home.

- **Reduction of content load:** instructional hours for each subject were indicated in the curriculum, and the instructional content for each subject was developed based on the assigned class hours. There were no changes for grades 6-12.
- **Activity based learning processes and integration of ICT in class teaching:** Teacher-centered traditional teaching methods are encouraged to be replaced by student-centered teaching methods whenever possible. Teachers are also encouraged to use digital content and multimedia in their classes.
- **Class periods management:** The class periods for the General Education system and the Madrasah education system were unified, with the first semester (January to June) and the second semester (July to December). Reduce the number of examinations from three per year to two. The number of national holidays was reduced and class hours were increased. Schools were open 220 days per year, 6 days per week; G5-G8 have 34 periods per week and G9-G10 have 36 periods per week (6 periods per day). The single-shift schools begin at 9:30 a.m. and end at 4:30 p.m., with a 50-minute break after the fourth period. Double-shift schools start at 7:00 a.m. and end at 12:30 p.m., with a 25-minute break after the fourth period.
- **Assessment:** An integrated assessment system including Formative Assessment (FA), terminal examinations, and certificate exam for completion of each stage shall be adopted. FA is an integral part of teaching and learning activities. In order to enhance the validity and reliability of the certificate exam for completion of each stage, it shall be structured to assess competencies such as knowledge, utilization, and reasoning skills, based on the principle of "creative problem".
- **Co-Curricular:** Co-curricular, the extension of the classroom teaching learning process, is considered an integral part of the secondary education curriculum. Co-Curricular activities are designed to produce well-disciplined individuals who are cooperative, self-confident, responsible and caring, and possess leadership qualities with high moral values.

As described above, major reforms were made from the previous curriculum. However, the issue of the lack of consistency in the curriculum from primary to secondary remained (see section 6.4).

With the exception of international schools that follow foreign curricula, the curricula of both government and non-government schools follow the curriculum developed by the NCTB.

6.2 Features of the New Curriculum to be Introduced in 2023

Process aimed at creating a coherent curriculum from early childhood education to secondary education (G12) were initiated from 2019. However, the coordination of this process was extremely difficult because the education sector is divided into the Ministry of Primary and Mass Education (MOPME) and MOE. As a result, although complete harmonization has not been established, the National Curriculum Policy Framework (NCPF) was developed, and development of curriculum and textbook will be conducted in accordance with this framework to achieve a certain degree of harmonization.

In secondary education, G6 and 7 will take the lead; pilot activities in G6 will proceed from the beginning of 2022, and national implementation has been launched to begin in G6 and 7 in FY2023. In this section, we first review the differences between the new curriculum and the current curriculum. The features of the new curriculum are as follows.

- **Integration of Curriculum up to G10:** In the current curriculum, the general education system from the secondary education stage is divided into three courses: science, humanities, and business, as well as a madrasah education system. Under the new curriculum, both the general education and madrasah education system are taught in the

same subjects up to G10. The General Education system will be divided into courses from G11 onward.

- **Mathematics as a Single Subject:** The current curriculum, which differentiates between general mathematics and higher mathematics (Higher Math) from G9, will be integrated in the new curriculum.
- **From Outcome to Competency:** The primary curriculum was Competency Based, but the secondary curriculum will also be Competency Based, with 10 Competencies.
- **Practice Based Learning:** In order to acquire competencies, learning through experiments, real-life experiences, and other practical activities is aimed at. This is not limited to science, but can be applied to all subjects. Teachers' teaching abilities are an essential factor in achieving this, and teacher training must be enhanced. In addition, it is necessary to improve school facilities and teaching equipment.
- **Enhance Inclusive Education:** set up classes for students with Special Educational Needs, train teachers, and provide teaching aids. This needs to be implemented appropriately, especially in rural areas.
- **Promotion of Formative Assessment⁵⁶:** Although Formative Assessment (FA) has already introduced in the current curriculum, there are many cases where it has not been put into practice. Therefore, the introduction of this system will be promoted in all subjects. Teacher training is important for this purpose. FA was introduced in 1995 before introduction of the current curriculum, and teacher training was conducted also. However, it failed due to strong opposition from parents and schools, which place a high priority on test results. Therefore, the introduction of FA requires a change in the mindset of those involved. In the new curriculum, students in G6-10 will be assessed with 60% in FA and 40% in Summative Assessment (SA). Rubrics for conducting FA are provided in the final volume of the new Teachers' Guides.
- **Promotion of Digital Technology:** ICT in the current curriculum will be renamed to digital technology and continue to be promoted. Coding will be introduced as part of this process.

6.3 Structure for Development and Revision of New Curriculum and Teaching and Learning Materials

The development process of new curriculum and teaching and learning materials are generally the same at the primary and secondary education. The curriculum revision currently in place is based on the procedures stated in the NCPF. The procedure goes through six phases: current curriculum assessment, situation analysis, leveling, committee establishment, development, and approval.

In the current curriculum assessment phase, gaps in the current curriculum that do not meet the learning needs of students are analyzed and gaps are identified. Curricula from other countries and national and international curriculum-related research are also used as references.

In the situation analysis phase, the strengths, weaknesses, and challenges of the curriculum stakeholders are analyzed and summarized in a needs assessment report. In order to fulfill the identified needs, the report will be compiled taking into consideration the capacity of the government, as well as an analysis of the overall socio-economic situation in Bangladesh, including educational institutions.

In the leveling phase, necessary consideration will be taken to equalize all educational systems and levels and to balance educational standards and opportunities, taking into account various

⁵⁶ In Bangladesh, it is often referred to as Continuous Assessment instead of Formative Assessment.

types of education such as general education, madrasah education, and technical education, as well as socioeconomic, geographical, ethnic, and other backgrounds.

During the committee establishment phase, various committees will be established, subject to MOE and MOPME approval, to develop curricula, textbooks, and other teaching and learning materials. A National Curriculum Framework will also be developed.

During the development phase, the Subject Based Curriculum Development and Revision Committee will draft the curriculum. The number of people appointed to the committee varies depending on the subject, but in principle it consists of (1) one university faculty member, (2) two in-service teachers, (3) one pedagogy specialist, (4) at least one curriculum specialist, and (5) one coordinator. For science (physics, chemistry, biology (botany and zoology)), a subject specialist and an in-service teacher will also be appointed for each subject. This Subject Based Curriculum Development and Revision Committee will develop the curriculum in detail and finalize the drafts.

At the approval stage, the above drafts are reviewed by the Curriculum Development and Revision Core Committee (CDRCC) and approved by the National Curriculum Coordination Committee (NCCC) and approved by the ministry (MOE for secondary and MOPME for primary).

For textbooks, the NCTB prepares the draft, which is reviewed by the Subject Wise Committee (almost the same members as the Subject Based Curriculum Development and Revision Committee), approved by the NCCC, and then approved by the ministries. There is only one textbook for each of the primary and secondary levels, and all schools, whether government or non-government, are required to use the national curriculum and textbooks. The printing and distribution of textbooks is done by private companies through an international competitive bidding process under the responsibility of the NCTB.

6.4 Curriculum and Textbook Analysis (Mathematic)

(1) Curriculum (2012 edition)

The curriculum for mathematics (2012 edition), especially the contents of G6 through G8 of the junior secondary school, were analyzed in terms of study units, their structure, and connections with primary education, and compared with the units in the Japanese curriculum. In addition, the G6 curriculum (2023 edition) was compared and analyzed with the current curriculum.

Table 6-1 Unit Classification of Curriculum Units in Junior Secondary Education (Math) (2012 edition) and Comparison with Primary and Japan

Area	Primary School	Junior Secondary			Topics in Japanese Junior High School
		Grade 6	Grade 7	Grade 8	
Number and Expression	8 digits integer, number line, comparison of numbers	Natural number, prime number	Rational and irrational number		Prime number
	Factor, prime factorization	Negative number, addition and subtraction of negative number	Square and square root, rational and irrational numbers in number line		Positive and negative numbers, square root, rational and irrational numbers
	Four arithmetic operations (4 digits x 3 digits, 5 digits ÷ 3digits)				
	LCM, GCF	LCM, GCF			(GCF and LCM in G5)
	Four arithmetic operations of fractions and decimals	Four arithmetic operations of fractions and decimals			Fractions and decimals in G 3-6; decimal multiplication and division in G 5; fraction multiplication and division in G 6
	Four arithmetic operations with brackets				
		Exponential			(Exponential in Senior High School)
	Polynomial (linear equation)	Polynomial, addition and subtraction of linear expression	Four arithmetic operations of Polynomial (basic)	Four arithmetic operations of Polynomial (advance)	Four arithmetic operations of Polynomial
			Quadratic expression, factorization, HCF · LCM of polynomial	Factorization of quadratic expression, HCF and LCM among polynomials	Factorization of polynomials
			Fractional polynomial	Four arithmetic operations of Fractional polynomial	(Partial fractional decomposition in Senior High)
			Linear equation	Linear equation	Linear equation, simultaneous linear equations, quadratic equation
				Sequence	(Sequence in Senior High)
				Set, Venn Diagram, union, intersection	Set, (Venn Diagram, union, intersection in Senior High)
Calculator and PC					

Area	Primary School	Junior Secondary			Topics in Japanese Junior High School
		Grade 6	Grade 7	Grade 8	
Geometry		Dots, lines, plane, three-dimensional graphic			Plane figure, parallel translation (Triangle, rectangle, square, parallelogram, trapezium, rhombus in primary)
	Rectangle, square, parallelogram, trapezium, rhombus, circle	Triangle, rectangle, square, parallelogram, trapezium, rhombus		Rectangle, parallelogram, trapezium, rhombus, Kite	
	Calculation by unit amount, unit of length and calculation, area of rectangle, unit of weight and calculation, unit of volume and calculation		Unit of length and measurement, unit of weight and measurement, volume of liquid	Unit of length and weight, volume of liquid	(in G4 and 5)
	Area of rectangle and triangle		Area, area of various figures	Area and volume of figures	Surface area and volume of solid figures (area of figures in G4-6)
	Time and conversion of unit				
		Line segment, angle between two lines, length of line segment, drawing of line segment	Intersecting and parallel line segment, angle between two lines, angle formed by two parallel and intersecting line segments		Characteristics of parallel line
			Basic theorem of geometry on triangle		
			Congruent and similar conditions for triangles	Basic theorem for rectangle, area	Congruent and similar conditions for figures
				the Pythagorean theorem	the Pythagorean theorem
				Theorem for circle, circle, arc, string, diameter	Circumferential and central angles
				Three-dimensional shape	
Function			Coordinates, linear equation by using coordinate system	Proportional, inversely proportional, linear and quadratic function	
Data	Average	Ratios	Ratio, profit and loss	Profit, simple interest, compound interest	(% in G5, proportion in G6)
	Percentage, simple interest	Percentage			
		Calculation of unit			(G5)
		Organizing information, mode and median, line graphs			mode, median, and Histograms and representative values, errors and approximations, probabilities, sample surveys
	Data organization, frequency distribution, histograms		Data and its organization, primary data, secondary data, frequency distribution tables, histograms	Frequency distribution table, class range, histogram, pie chart, arithmetic mean, average, median	

About the Unit

Many contents are treated throughout the grades. The main issues are summarized below.

- **Overlapping Units:** Some units are nearly same in content and difficulty compared to those in the primary education (fractions, decimals, shapes, units of length and weight). There are also units that are nearly same in content to those in the previous grade level (polynomial, length, weight, and volume).
- **Insufficient Treatment of Important Units:** "Coordinates" are very important content and should be treated as a chapter in junior secondary education in the study of functions and graphs. However, it is treated as one method to obtain the solutions of linear equations. In addition, three-dimensional figures and linear and quadratic functions and their graphs are not incorporated despite their importance.
- **Connections to Other Units:** Some units (sequences and sets) are independent and not connected to any other unit. In particular, the sequence of numbers, although it deals with the basic content of the arithmetic and geometric progression, is not treated in the upper grades (9th and 10th grades) and in other units.

Structure of the Lessons

Regarding the structure of the lessons, the curriculum is sufficiently detailed in terms of what needs to be checked for student understanding and the activities to be conducted in the lessons. However, in order to put them into practice, it is necessary to describe them in more detail in textbooks and teacher's guides so that the necessary questions and activities can be asked and carried out.

Connection with Primary Level

Despite the issues mentioned above, there are no major gaps in the level or content of the questions, and there are no major problems with the curriculum connection. However, there is a significant difference between the G5 and G6 in terms of textbooks, which may be a problem for students who are more familiar with the textbooks to enter the study at the secondary level and will be discussed in detail in the next section on textbooks.

(2) About Curriculum (2023 edition)

The attempt to make it a Competence Based curriculum is understandable, but the learning content is not clear. The curriculum 2023 edition sets a wide range of Competencies required as learning outcomes, which leads to a large number of units being included in the curriculum, making it unclear what mathematical competences students should acquire through the units as a curriculum. The activities described in the curriculum are also only broadly described. The assessment methods are also only described in general terms, perhaps for the purpose of broad coverage, and it can be inferred that they are difficult to implement. The assessment tools are also vague, as it states that "a variety of tools will be used to assess" and there are many ambiguous parts. It is also difficult to understand the relationship with textbooks and teacher's guides and the sequence of units. Considerable additional input (e.g. training) is required to enable teachers to teach in line with this curriculum.

Table 6-2 Part of Basic Calculation in Curriculum 2023 edition

Class-based competency	Learning experiences and learning reaching strategies	Assessment areas and assessment techniques	Types of teaching materials and special instruction	Content	Relationship with other qualifications and subjects	Integration instructions
6.2 Ability to use estimation and calculation skills to solve mathematical problems using standardized and written / systematic techniques	<p>By mastering a variety of estimation and calculation skills techniques, students will be able to combine standardized and written/methodical strategies to solve mathematical problem.</p> <p>Description of Learning Experience:</p> <ul style="list-style-type: none"> • Students will identify standardized and written/methodical strategies for solving a specific mathematical problem individually • Through group/pair practice drills (for example: four-digit addition/ subtraction, two-digit multiplication / division, multiplication /division of decimals and whole numbers) will practice multiple techniques of estimation and calculation skills and describe to each other the techniques they have applied. • Students will discuss in groups to identify areas of application of standard solving mathematical problems in different fields, 	<p><i>Critical thinking ability and use of quick data analysis, estimation, and calculation skills</i></p> <p>Teacher will assess using observation checklist. The teacher will assess the student's speed of solving mathematical problems through estimation and calculation using rubrics and worksheets.</p>	<ul style="list-style-type: none"> • Teacher assistants • Textbook • Worksheet • Observation checklist • Rubrics • Standard • Practice drills 	<p>Development of calculation, history/story of number system, subtraction, subtraction in native style, subtraction in international style, interrelationship between domestic and international style of counting, determining the position of numbers on number line, addition, subtraction, multiplication, division, $1/0$ and $0/0$ with the help of number line definitions and explanations, mathematical proofs and discussions, word problems, natural numbers, prime and composite numbers, coprime numbers, divisibility by 2, 3, 4, 5, 9 prime composite and coprime numbers, greatest common factor, least common factor, whole numbers (with explanation of 0 and 1) concept of negative numbers, method of writing negative numbers, use of positive/negative numbers in different situations in real life, placing whole numbers on number line, order of whole numbers, addition of whole numbers using number line, subtraction of whole number using number line, fractions multiplication, inverse fractions, division of common fractions, relationship between common and decimal fractions, multiplication of decimal fractions, division of decimal</p>	<ul style="list-style-type: none"> • Competence in Mathematics 6.1, 6.6, 6.8 (partly earned) • Digital technology (solve the mathematical problem) • Science (estimate) 	<p>Adopting the special strategies considering students with on special needs (e.g. physical gestures while describing each child's learning experience, displaying materials/drawing pictures or diagrams, providing necessary materials for the visually impaired.</p>

Source : Grade 6 Mathematics Curriculum 2023 edition

It is necessary to be specific, e.g. which specific checklist and how to measure the speed of calculation (not mentioned in the rubric).

The lack of specific information on teaching materials etc. makes it difficult to know what teaching materials are actually used and how they are used. It is necessary to state which specific Worksheet should be used.

A lot of topics (learning contents) included under the same Competency

(3) Textbooks (2012 edition)

Textbooks (2012 edition) were analyzed for consistency with the curriculum, content, and connection with the primary level.

Alignment of Curriculum (2012 edition) and Textbooks (2012 edition)

In the textbooks (2012 edition), the learning objectives of the curriculum are listed at the beginning of each unit, suggesting an intention to align the curriculum with the textbook content. However, for the in-class assessments and activities described in the curriculum, the textbook does not include specific related activities. Since there are no teacher's guides, it would be difficult for teachers to implement the content of the curriculum in this textbook.

About the Structure of Textbooks

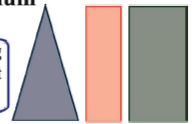
In most cases, definitions and explanations are written first in all units of math textbooks for all level of secondary education, and diagrams and examples are written afterwards. Next come examples, followed by exercises. Too much content is stated in the textbooks and is difficult for students to read and understand (see Figures 6-1 and 6-2). The structure of all textbooks is similar to textbooks for universities, and it is assumed that this is due to the fact that Junior Secondary education and secondary education textbooks are written in the same way as the higher secondary education textbooks. There are also many problems, perhaps to allow students to solve enough practice problems. This may be an attempt to combine the textbook and the exercise book, so that the students can cover the course in one book.

The biggest issue with the textbooks (2012 edition) is that, as mentioned above, there is a big difference between the primary education textbooks and the junior secondary education textbooks: the G5 math textbook starts with key questions and is structured so that student can learn by themselves through activities, and it is full of illustrations and charts that are necessary for learning. However, the charts and diagrams inserted in G6 textbooks are limited to the minimum necessary, and rather than students thinking, teachers explain as in the textbook and students solve the exercises that follow (see Figures 6-1 and 6-2). It can be inferred that many students are confused by the difference in teaching and learning methods, as they change from the learning flow they were accustomed to in primary education textbooks for five years to a text-based textbook in the G6.


However, the textbooks (2023 edition) significantly improve on the above-mentioned problems (see below for details).

10.2. Parallelogram and Trapezium

Make quadrilaterals by overlapping the figures shown on the right. What shapes can we make?



We know that rectangle's two pairs of opposite sides are equal and parallel.



Below the text are six quadrilaterals labeled a through f, formed by overlapping the rectangles in different ways.

Divide these 6 quadrilaterals into groups paying attention to parallel sides.

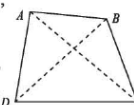
Parallel sides	Quadrilaterals
1 pair of sides is parallel.	
Both pairs of sides are parallel.	

Is there a rectangle in these 6 quadrilaterals? If there is, write the reason that you think of it as a rectangle.

6.6 Quadrilateral

A quadrilateral is a figure closed by four line segments. The line segments are the sides of the quadrilateral.

In the adjoining figure, $ABCD$ is a quadrilateral. AB , BC , CD and DA are four sides of the quadrilateral. The four vertices of the quadrilateral are A, B, C and D . The angles $\angle ABC$, $\angle BCD$, $\angle CDA$ and $\angle DAB$ are four angles. The line segments AC and BD are two diagonals of the quadrilateral. We often denote the quadrilateral $ABCD$ by $\square ABCD$.



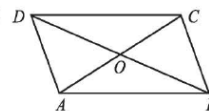
Activity:

- On assumption, draw a quadrilateral.
 - Measure and note down the lengths of its four sides.
 - Measure and note down its four angles. Find the sum of the four angles.

Quadrilaterals are classified by different characteristics.

Parallelogram

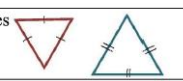


A parallelogram is a quadrilateral with opposite sides parallel. In the figure, $ABCD$ is a parallelogram. Measure and notice that lengths of any two opposite sides are equal: $AB = CD$ and $BC = AD$. Also measure the four angles with a protractor to see that $\angle DAB = \angle BCD$ and $\angle ABC = \angle CDA$. But the pairs $\angle DAB, \angle BCD$ and $\angle ABC, \angle CDA$ are vertically opposite angles. So



Source: Bangladesh Math Textbook for G5 and G6

Figure 6-1 Treatment of Parallelograms in G5 (left) and G6 (right) Math Textbooks (2012 edition)

Triangle based on the sides :

Three equal sides		Equilateral Triangle
Two equal sides		Isosceles Triangle
No equal sides		Scalene Triangle

Using a protractor, let's measure the size of each angle of the triangles in the previous page.



Equilateral Triangle has three equal angles, and they are always 60° .

Isosceles Triangle has two equal angles.

Scalene Triangle has no equal angles.



Not only the length of the side but also the angles characterize triangles.

OK. Now let's try to draw triangles.



6.5 Triangles

A triangle is a figure closed by three line segments. The line segments are known as sides of the triangle. The point common to any pair of sides is a vertex. The sides form angles at the vertices. A triangle has three sides and three angles. The sum of the lengths of three sides of the triangle is the perimeter. By a triangle we also denote the region closed by the sides.

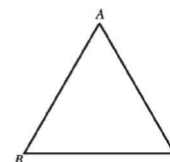
In the figure ABC is a triangle. A, B, C are three vertices. AB, BC, CA are three sides and $\angle BAC, \angle ABC, \angle BCA$ are three angles of the triangle. The sum of the measurements of AB, BC and CA is the perimeter of the triangle.



In respect of sides, the triangles are of three types : equilateral, isosceles, scalene.

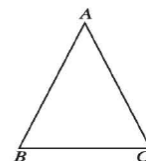
Equilateral Triangle

An equilateral triangle is a triangle of equal sides. The triangle ABC is an equilateral triangle, because, side $AB =$ side $BC =$ side CA .



Isosceles Triangle

Only two sides of an isosceles triangle are equal. The triangle ABC is an isosceles triangle, because side $AB =$ side $CA \neq$ side BC .



Source: Bangladesh Math Textbook for G5 and G6

Figure 6-2 Triangles in G4 (left) and G6 (right) Math Textbooks (2012 edition)

(4) Textbooks (2023 edition)

The textbooks 2023 edition have been significantly improved by incorporating more illustrations and activities to aid students' understanding, with the intention of encouraging students to think and understand for themselves through the activities. However, it has become like an activity supremacy principle, and many unnecessary activities and content are included because of the attempt to incorporate activities in every unit. Two examples are shown as follows.

- In G6, students have already learnt about addition, subtraction and multiplication, and there is no need to go to the trouble of learning it on a number line, even though it is not a unit where the number line is studied in depth.

- In the chapter on numbers, which is taught at the beginning of G6, the task is shown in the right-hand figure. Subtracting three different randomly chosen one-digit numbers in ascending order from three different one-digit numbers in descending order yields the same number (9) in the tens place. However, this activity is not relevant for achieving the unit goal. If the activity is to be meaningful, students should form groups with other students and each group should calculate with a different number. This will make them realize that the tens place is always 9, and then ask them to think about why the tens place is 9.

Magic of Three Cards

- Take a paper and tear it into 8 pieces. After that, write the numbers from 1 to 8 on those papers.



- Select any three pieces of paper from the eight pieces.
(Example)

Selected Number Cards



- Take the three numbers from the selected three pieces of paper and form the highest and smallest possible numbers. Now, subtract the smallest number from the highest number.

(Example)

6	3	2	Highest Number of three digits
-	2	3	Smallest Number of three digits
3	9	6	
18			

Figure 6-3 G6 Math Textbook P.18

Thus, neither textbooks nor teachers are designed to elicit student activity. Therefore, as it is, it is difficult for teachers to utilize them well so that students can 'discover' the important principles.

6.5 Curriculum and Textbook Analysis (Science)

Because science covers a wide range of fields, this section describes some units of science, rather than checking the overall structure and details of the content, as is the case with mathematics.

Curriculum (2012 edition)

The curriculum covers a wide range of topics, and the necessary content is covered. However, some units are too detailed. In particular, in the area of biology, there are many areas that are too detailed, such as having students memorize the names of organs and the types of tastes that can be sensed by the parts of the tongue. As in mathematics, the activities in class are described in detail, but assessment is based on in-class activities. (The textbook only states "Will evaluate using instruction of Class Work," but no specifics are given.

Textbooks (2012 edition)

The textbooks are detailed and look like reference books or dictionaries. Comparing G5 and G6 textbooks, as shown in the figure below, the G5 textbooks are designed to make students think and learn based on key questions, while the G6 textbooks are almost entirely written explanations, with only minimal diagrams inserted. In addition, the information necessary to implement the assessments and activities described in the curriculum is not included.

Plants and Animals

1. Differences between plants and animals

Plants and animals are both living things. Can you see any differences? How can we differentiate between plants and animals?

QUESTION : What are the differences between plants and animals?

Activity : Characteristics of plants and animals

What to Do:

1. Make a table like the one shown below.

Questions	Plants	Animals
How do they get energy?		
What body parts do they have?		
How do they move from place to place?		
How do they respond to a stimulation?		
Anything else?		

2. Make a list of the characteristics of plants and animals in the table.
3. Comparing the characteristics identify how to differ plants from animals.
4. Share your idea with your classmates.

Can you remember the characteristics of plants and animals?

An animal has legs, wings or fins to move but plants are rooted in the ground.

Lesson -1, 2: Description of A Plant Cell

Body of all organisms is composed of one or more cells. A typical plant cell comprises of two parts – cell wall and protoplasm.

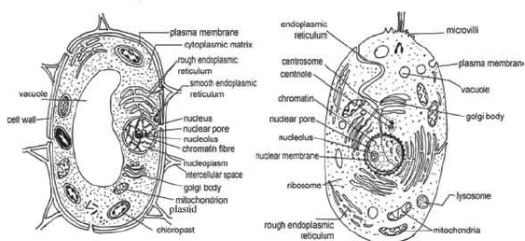
Cell wall: In plant cell there is a hard and thick non-living wall, which is called cell wall. It is composed of cellulose. Animal cells do not have this wall. It is covered with a thin membrane, called plasma membrane. The main function of cell wall is to protect the living parts of the cell and delimiting the boundary of the cell.

Protoplasm: Protoplasm is semisolid, jelly like sticky and granular living substance. Signs of life are emerged due to various reactions within the protoplasm. It is composed of various organic and inorganic substances. The water constitutes the 67-90% of the Protoplasm.

Protoplasm contains cytoplasm & nucleus, which are the two main parts of cell.

Cytoplasm: Jelly like substances outside the nucleus is named as cytoplasm. Living structures inside cytoplasm that take part in various physiological activities of the cell are called cytoplasmic organelles. In a typical cell normally the following organelles are found –

1. Plastid
2. Mitochondria
3. Golgi body
4. Endoplasmic Reticulum
5. Ribosome
6. Lysosome and
7. Centriole.



Source: Bangladesh Science Textbook for G5 and G6


Figure 6-4 Comparison of G5 (left) and G6 (right) Science Textbooks (2012 edition)

Curriculum and Textbook (2023 edition)

The 2023 curriculum for science is less detailed and easier to understand than the 2012 curriculum. Compared to mathematics, the corresponding units are clearly described; Competencies are also more subdivided than in mathematics, so it is easier to understand which Competencies are to be acquired in which units. However, as with mathematics, specific assessment methods are difficult to understand in science as well.

There are two types of books in 2023 edition, one with textbook-like explanations and the other focusing on student activities and experiments. There is no connection between the two books, making it difficult to understand the different roles and teaching methods of each. In the classroom observations carried out by the survey team, it was observed that the two books were not used well together.

Science



What are the questions that arise in your mind as you look up at the sky? Write them down here. Once the task is complete, check answers to which of them you could find out.

Session One

Let's start with looking overhead at the sky. What do we find in the sky? Quickly fill in the list below:

What are there in the daytime sky	What are there in the nighttime sky
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Is the colour of the sky at dawn and afternoon same? What about the colour of evening sky? Does the sky change its colour so many times as it does in the morning, noon and afternoon? Which sky of a specific hour of day or night do you like most? Share your answers with your friend. Which sky does he like most? Try if you can draw the sky of your liking. If you want, you may also cut papers and paste on a poster paper.

Physical and chemical change of matter

The state of many matters changes in a natural way, while we change the state of matter in an artificial way for our needs. There are two types of changes in matter: physical changes and chemical changes. As the very name suggests, physical change affects the physical or external properties of a matter and a chemical change affects its chemical properties. Some physical changes are two-way, such as heating an object and cooling it back to its previous state. Chemical changes are two-way in some special cases but usually they are one way.

Physical change
A physical change does not make a matter fundamentally different. For example, the process of making some fruit juice mixtures involves two external changes: the change in the shape of each fruit and the mixing of different pieces of fruit together. This is because there is no chemical change during the mixing of the ingredients in the fruit. For example, water and vitamins of fruit remain unchanged.

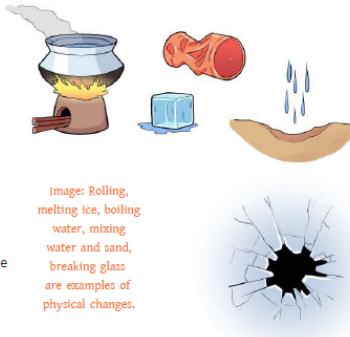


Image: Rolling, melting ice, boiling water, mixing water and sand, breaking glass are examples of physical changes.

Cutting, tearing, crushing and mixing are physical changes because they change shape but do not change the composition of materials. For example, a mixture of sugar and water creates a new matter without any chemical change.

Chemical change
As a result of chemical change, a matter is transformed into a completely new matter by changing the composition of the elements. Chemical change is also known as chemical reaction. Rotting, burning, cooking and rusting are some of the other chemical changes. Because

Figure 6-5 Exercise Book (left hand side, activity based) and Investigative (explanation based)

6.6 Number of Class Periods

School hours are consistently 40 minutes per period from primary school to higher secondary school; in a single-shift system, classes are held from 1st period to 7th period per day. The following table shows the number of classes per year from primary school to higher secondary school, but there are differences in the number of classes per year and the hours spent in each subject area. First, in terms of the number of hours of classes per year, primary school students take a total of 825 hours, while junior secondary education students take a total of 1,190 hours, a difference of more than 300 hours. Secondary education has 1,152 hours, almost the same as the junior secondary education, but the number of class hours decreases by more than 200 hours to 924 hours in the secondary education. This is due to the different timing of the completion certification examinations. Both the junior secondary education and the secondary education require a completion certificate examination (Junior Secondary Certificate Examination (JSCE) and Secondary School Certificate Examination (SSCE)), while the Higher Secondary Certificate Examination (HSCE) is administered in the 10th month of higher secondary education. Therefore, in the final year of higher secondary education, students must actually complete all subjects in one year and nine months, resulting in a smaller number of classes.

The proportion of time spent on each subject differs depending on the educational stage. For example, a comparison of the annual hours of study in primary education and the secondary education shows that the hours of study in Bangla language, mathematics, and English have decreased, while those in science, social studies, religion, physical education, and the arts have increased. Language, English, and mathematics further decrease in secondary and higher secondary education, with the exception of science courses, where no mathematics is taken in higher secondary education.

Table 6-3 Annual Number of Classes by Subject for Junior Secondary Education

Subject	Mandatory/Elective	G6	G7	G8	Total
Bangla	Mandatory	174	174	174	522
Math	Mandatory	174	174	174	522
English	Mandatory	140	140	140	420
Social Studies	Mandatory	106	106	106	318
Science	Mandatory	140	140	140	420
ICT	Mandatory	70	70	70	210
Religious and moral education	Mandatory	106	106	106	318
Physical education	Mandatory	70	70	70	210
Career education	Mandatory	70	70	70	210
Arts	Mandatory	70	70	70	210
Ethnology / agriculture / home science / Arabic/ Sanskrit/ music / dance / drama	Elective	70	70	70	210
Total		1,190	1,190	1,190	3,570

Source: NCTB

Table 6-4 Annual Number of Classes by Subject for Secondary Education

Course	Subject	G 9	G 10	Total
Common	Bangla	160	160	320
	English	160	160	320
	Math	128	128	256
	Religious and moral education	64	64	128
	ICT	64	64	128
	Career education	32	32	64
	Physical education	64	64	128
By course	Mandatory A	96	96	192
	Mandatory B	96	96	192
	Mandatory C	96	96	192
	Mandatory D	96	96	192
	Elective	96	96	192
Total		1,152	1,152	2,304

Source: NCBT

Table 6-5 Annual Number of Classes by Subject for Higher Secondary

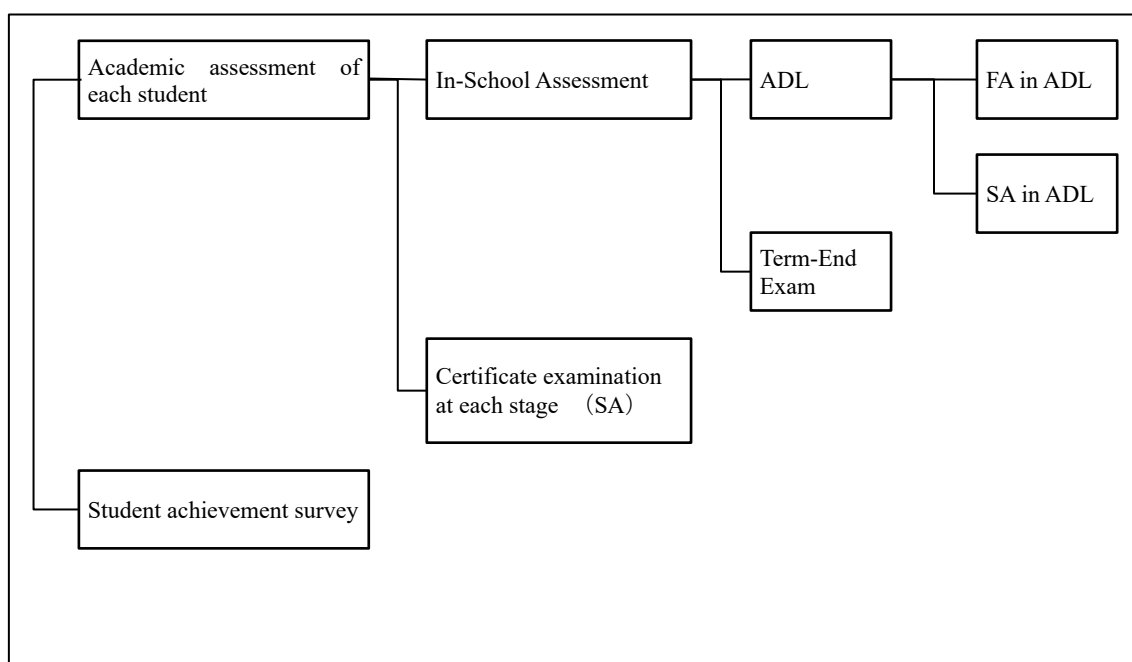
Course	Subject	G11	G 12	Total
Common	Bangla	80	80	160
	English	80	80	160
	ICT	64	64	128
By course	Mandatory A	140	140	280
	Mandatory B	140	140	280
	Mandatory C	140	140	280
	Elective 1	140	140	280
	Elective 2	140	140	280
Total		924	924	1,848

Source: NCTB

Chapter 7. Academic Assessment in Secondary Education

The academic assessment system in secondary education (general education) is in flux, as the system is currently being redesigned. Therefore, this chapter summarizes the current status and issues for each component of the latest proposed system as of June 2023.

Under the current concept, the academic assessment in secondary education (general education) is divided into two major types: academic assessment of each student and student achievement survey. The academic assessment of each student is divided into in-school assessments and a certificate examination of each stage. The certificate examinations are categorized as Summative Assessment (SA). The in-school assessments are divided into an Assessment During Learning (ADL) and a term-end exam. The term-end exam is also classified as SA. The term-end exam is given twice a year. ADL is divided into Formative Assessment (FA) and Summative Assessment (SA). The following figure explains this.



Source: Created by the Survey Team based on the interview with NCTB

Figure 7-1 Education Assessment System (Draft) in Secondary Education in Bangladesh

In this chapter, we describe the academic assessment of each student in Section 7.1 and the student achievement survey in Section 7.2.

7.1 Academic Assessment of Each Student

In this section, we will organize the overall picture of the academic assessment of each student. As academic assessment of each student is divided into in-school assessment and the certificate examinations, each will be explained.

7.1.1 In-School Assessment

In-school assessments include the ADL and the term-end exam (SA). In ADL, FA and SA are also conducted; SA in ADL refers to topic-specific or end-of-chapter examinations. This section explains the regulations and current situation in Bangladesh.

(1) Academic Assessment in Schools as Defined by the Curriculum

In the current curriculum, academic assessment is defined as the evaluation of the extent to which learners have achieved the learning outcomes defined in the curriculum. There are two main types of academic assessment methods: a) FA and b) SA. FA refers to assess learners during or after a certain part of a class, while SA refers to evaluation after a certain period or program, such as a terminal exam⁵⁷ or a JSCE/SSCE/HSCE.

The current curriculum states that in G6-G10, FA will be made on two points: a) subject knowledge and 2) affective. Of these, 20% of the points will be allocated to a) subject knowledge in terms of academic assessment. In other words, the end of year examination will be given 80% of the total points, and the FA (subject knowledge) will be given 20% of the total points. The FA for subject knowledge will be further broken down into three parts: class work (10%), homework and investigation work (5%), and class test (5%). There is no mention of a point distribution for attitude. However, after explaining that the curriculum focuses on the personal development of the learner, it is stated that participation in a variety of activities outside of class will be evaluated. For example, participation in assemblies, sports, cultural activities, study tours, religious festivals, Math Olympiad, Scouts, and environmental activities.

Assessment plan in the new Curriculum (introduced in 2023)

According to National Curriculum and Textbook Board (NCTB), the academic assessment is being considered to be based on the point distribution ratios in the following table. It is being considered that the questions for both the SA of ADL and the term-end exam will be provided by the NCTB. It is also being considered that all grades, including FA, will be based on a 3-point scale with Performance Based grading. Students will be automatically promoted to the 10th grade.

Table 7-1 Point Distribution Ratio of SA of ADL and Term-End Exam (SA)

Grade	Point Distribution Ratio	
	SA of ADL	Term-End Exam (SA)
Grade 6	60%	40%
Grade 7	60%	40%
Grade 8	60%	40%
Grade 9	50%	50%
Grade 10	50%	50%
SSC	50%	50%
HSC	30%	70%

Source: Created based on the interview with NCTB by the Survey Team

⁵⁷ Since school year is divided into two terms, there are two terminal exams per year. The second exam is the end-of-year exam.

History of Formative Assessment and Summative Assessment

The term formative assessment was first used by Scrivan, a philosopher at the University of Chicago. He called the various evaluation activities that take place during curriculum development formative evaluation, while evaluations that determine the overall desirability and adoption or non-adoption of a curriculum are called summative evaluations. In contrast, Bloom et al. argued that formative and summative evaluation should be separated not only in curriculum development but also in classroom evaluation activities. A new function, diagnostic evaluation (preliminary evaluation), was also added to the list of three main types of evaluation functions. In other words, diagnostic evaluation aims to grasp the learning process and readiness at the starting point of learning, formative evaluation aims to improve activities in the curriculum, such as students' learning, teachers' teaching methods, and curriculum, and summative evaluation aims to measure the effectiveness and efficacy of educational activities⁵⁸. Note that Japan does not generally use formative assessment in determining promotion to higher education. An example of a country/region that uses formative assessment is Queensland, Australia.

(2) The Reality of Academic Assessment at School

The implementation of FA (sometimes called Continuous Assessment in Bangladesh) was investigated by interviewing teachers twice, in November 2022 and February 2023. November 2022 was before the introduction of new curriculum and face-to-face curriculum dissemination training had not yet started even though online training through Muktopaath had started. February 2023 was after the introduction of new curriculum and textbook.

In November 2022, JICA survey team checked the implementation of FA in two schools, one was Govt. and one was non-Govt. school⁵⁹. Both schools knew that basically all schools had to follow the NCTB policy of assigning 20% of the formative assessment points to the academic evaluation, but the reality was quite different. As per this policy, Govt. schools converted quiz and homework marks to 20% and the scores of the biannual term-end examination to 80%. Non-Govt. schools, however, assigned quizzes, activities, and homework to students and teachers recorded them, but did not use them for promotion; only the results of the end-of-year examination were used to determine promotion. Supplementary classes and examinations were provided for students who failed the final examination, and almost all students were able to continue to the next grade. Class attendance is also a requirement for promotion and graduation. However, it is not a factor in the evaluation of academic achievement. The number of class attendance required for promotion and graduation is the same nationwide⁶⁰. When the awareness of FA was surveyed in a total five schools (two government, one non-government, and two autonomous schools), most teachers had never heard of the term “FA”.

In February 2023, we again interviewed teachers at six schools about their implementation of FA and found that some teachers at two schools had implemented it. Teachers in the other four schools did not know the meaning of FA and did not practice it.

(3) Grading System

Bangladesh uses the Grade Point Average (GPA) system for grading, with seven ranging grade points system from F to A+ as shown in the table below for all grades. Each student's grade at

⁵⁸ Ruita Nishimura, “Introduction of Formative Assessment for Physics in High School Curriculum” Doctorate Thesis for Tokyo Gakugei University, 2019 (Japanese only)

⁵⁹ Barishal Zilla School (govt.) and Dhaka West End High School (non-govt.)

⁶⁰ JICA (2017) “Survey report on preparatory survey on education program in Bangladesh”

each year is determined by the academic assessment. Class attendance is a requirement for promotion to the next grade but is not considered in the grading process.

Table 7-2 SSCE Grade List

Numerical Grade	Letter Grade		Grade Point
80% and above	A+	A plus	5.0
70% to less than 80%	A	A regular	4.0
60% to less than 70%	A-	A minus	3.5
50% to less than 60%	B	B	3.0
40% to less than 50%	C	C	2.0
33% to less than 40%	D	D	1.0
0% to less than 33%	F	F	0

Source: DSHE

(4) Trial Implementation Method of FA under New Curriculum

In October 2022, we visited Barishal Zilla School (a government school), which had been designated as a pilot school⁶¹ for the new curriculum. The school had been using new textbook for G6 since January 2022 and was also conducting FA. Teachers selected five students per day for FA, and the results were entered into a Google Form and submitted to NCTB. The five students selected for evaluation were frequently picked by the teacher during class to check their understanding level, and the entry into Google Form was completed during class. An example of the input items is shown in the next table. Evaluation results are entered for each student.

Table 7-3 Contents of FA in Google Form (used for the 2022 pilot)

Category	Contents
Basic information	School name, grade, attendance number, gender etc.
Mathematics (example)	Solving mathematical problems by calculation, judging measurement results accurately, being able to measure squares, etc.

Source: Translated the content of Google Form

When the survey team visited several schools in February 2023, including this school, we found that the Google Form has not been used since the introduction of the new curriculum in 2023, and the most teachers did not record evaluation results due to the lack of a recording medium. According to school, they had been informed that they would get the guideline of FA and the entry form such as Google Form by the government. However, they had not yet received it. NCTB told us that the guidelines for FA are currently under revision, with plans to revise the version developed for the 2022 pilot and distribute them to all schools. In addition, NCTB is planning to develop an application for FA in cooperation with a2i and other organizations. However, we confirmed with the NCTB in June 2023 that no points were allocated for FA.

The rubrics for academic assessment are included in the last volume of the new teacher's guide for each subject, and the NCTB is considering a three-level assessment using this rubric, including a SA; however, the explanation of the criteria and the methods of assessment are vague, and it is difficult for teachers to utilize the assessment methods using the teacher's guide alone.

7.1.2 Certificate Examination of Each Secondary Education Stage (General Education System)

The secondary certificate examinations for the completion of each stage are important for students to promote to the next education stage. Among these, the SSCE and HSCE are especially

⁶¹ According to the principal of the government school designated as the pilot school, 60 schools across the country were selected as pilot schools for the new curriculum. During the pilot period (January-December 2022), schools will receive two visits from the NCTB and two online interviews to monitor progress and challenges.

important for students to promote to tertiary education, and the cram school industry is thriving. It was learned that school teachers are also offering after-school supplementary test preparation classes (for a fee).

(1) Implementation System

The secondary certificate examinations are administered by the Boards of Intermediate and Secondary Education (BISE), which are held in nine locations throughout the country.

(2) Subjects for Examinations

The SSCE consists of a total of 12 subjects (7 required from 5 subjects, 5 elective), and HSCE consists of 13 subjects (5 required from 3 subjects and 8 elective). Examination results are expressed in terms of Grade Point Average (GPA). The following table shows the subjects taken for the SSCE and HSCE under the new curriculum.

Table 7-4 Subjects in SSCE (new curriculum)

	Science	Business	Humanity
Required subject (7 required from 5 subjects)	- Bangla (2) - English (2) - Mathematics - ICT - Religious studies (select 1 subject from Islamic studies, Hindu religion studies, Christian religion studies, Buddha religion studies)		
Elective subject (5 subject in each course)	- Physics - Biology - Chemistry - Higher Math - Social Science	- Finance and Banking - Business Entrepreneurship - Introduction of Business - Agriculture studies - Accounting - General Science	- History of Bangladesh and World Civilization - Civics and Citizenship - Economics - Agriculture studies - General Science

Source: Created by the Survey Team based on the interview with students.

Table 7-5 Subjects in HSCE (new curriculum)

	Science	Business	Humanity
Required subject (3 required from 5 subjects)	- Bangla (2) - English (2) - ICT		
Elective subject (5 subject in each course)	- Physics (2) - Biology (2) - Chemistry (2) - Higher Math (2) - Soil Science - Statistics	- Accounting - Business Organization and management - Product Management (2) - Finance, Banking and Insurance (2)	- Logic - Economics - Social Work - Geography - Islamic history & Culture - Civic & Good Governance - Sociology - History - Art & Textile - Psychology - Home Management - Home Science - Food & Nutrition - Art & Craft - Child Development - Agriculture

Source: Created by the Survey Team based on the SSCE/HSCE syllabi and interview with schools

(3) Setting of Testing Center

The exam is administered at the testing center (school) selected in each BISE jurisdiction. Students must take the test in the school division in which their school is located. Students do not take the test at their school, but at the testing site notified by BISE.

(4) Development of Question for the Examinations

Test questions will be developed by each BISE in accordance with NCTB guidelines. A test question development team of teachers and experts appointed by each BISE will be formed for the preparation. A 12-day Master Trainer Training will be conducted at the central level. This will be followed by a 3-day subject-specific training of teachers nationwide by the Master Trainers. Teachers who have received this training will work as question development teams to create questions.

(5) Issues Related to Unification of Examination Questions

Since the examinations are developed under each BISE, the difficulty level of the examinations is not exactly the same in each BISE. In the past, a nationwide unified exam was administered from 2010 to 2013 in order to standardize the difficulty level. However, there were nationwide postponements of the examinations when a leak of examination questions occurred. When examination questions are leaked, there are significant disadvantages associated with the recreation of questions. It was thought that having different examination questions for each BISE would reduce the risk of examination question leakage, and the current format has reverted to one in which each BISE conducts the examinations.

However, from the perspective of standardized the difficulty level, some have suggested that the examinations should be unified nationwide, and standardization and unification of these examinations was one of the SEDP's activity goals, but this has not been realized. Therefore, examination reform continues to be an issue for consideration.

(6) Measures for Standardization of Examination Questions

In order to standardize the difficulty level of the exam, several measures have been made.

First, in order to maintain fairness, assignments and questions from textbooks will not be used.

Second, the structure of the exam questions has been standardized. The question structure is based on the Creative Question System, which has been adopted nationwide since 2010. In this system, a real-life situation is described as a conditional statement at the beginning of the question, and questions are asked in four stages: a) Knowledge, b) Understanding, c) Application, and d) Higher-order Thinking (Analysis/Synthesis/Evaluation). Prior to the adoption of the Creative Question System, the test was based on rote memorization, but this format was changed because rote memorization is not a good way to measure academic achievement. An example of a question from the 2019 SSC Chemistry is shown to the right. The questions from a) to d) correspond to the above a) Knowledge, b) Understanding, c) Application, and d) Higher order thinking (Analysis/ Synthesis/ Evaluation).

3. In the chemistry class Musrat Begum discussed about extraction of the following ores:
- (i) Celcosite
 - (ii) Bauxite
 - (iii) Hematite
- a) What is electrode?
b) Explain the effect of temperature on the rate of reaction.
c) Explain the extraction process of the metal of ore (i).
d) The extraction process of metal of the ore of (ii) and (iii) are different. Justify.

Third, the Bangladesh Examination Development Unit (BEDU), established within the BISE (Dhaka) with the support of the Asian Development Bank and other partners, took the lead in 2013 in developing guidelines for the creation and scoring of examination questions. The BEDU also provides training to test developers, administrators, and scorers throughout the country to ensure uniformity in the quality of test questions. However, this training is not conducted for all subjects every year, but only for 2-3 subjects per year, so it is estimated that the frequency of attendance by subject is about once every 5 years.

(7) Preparation for Examinations at School Level

No special measures are provided for students who fail the secondary certificate examination. Therefore, it has become customary for schools to administer a pre-test two to three months prior to the secondary certificate examinations, and students who do not meet certain standards are not allowed to take the secondary certificate examinations. In addition, the school will make efforts to prepare for the examinations by giving supplementary classes (for a fee) to students with low scores in the pre-test, or by transferring them to a special class for students with low academic achievement.

(8) Results of SSCE and HSCE

SSCE and HSCE results are evaluated using GPA. JICA survey team conducted interviews in the four schools (Table 7-6) in Barishal and shows the results of SSCE and HSCE of their school in Table 7-7.

Table 7-6 School Environment in Barishal

No.	School name	School environment
1	Barishal Govt. model School & College	- This school is the government model school located in central city of Barishal. - This school suffers from a shortage of teachers. - Economic background of the students is relatively good.
2	Barishal Zilla School	- This school is the government school located in the central city of Barishal. - This school was selected as one of the pilot schools in 2022 for new curriculum. - Economic background of the students is relatively good.
3	Talukdarhat School & College	- This school is located in the area 1 hour drive from the central city of Barishal. - Many students come from poor families and their nutritional status is not good. (based on the interviews with teachers)
4	Karnakati Gause Rahamania High School & College	- This school is located in the area 1 hour drive from the central city of Barishal. - Many students come from poor families and their nutritional status is not good. As students get hungry, they often cannot concentrate in the classes after 2 nd period. - Guardians are not interested in education and school events

Source: Created by the Survey Team

Table 7-7 No. of Examinees, Successful Applicants (%) and GPA 5.0 Achievers (%) of SSCE/HSCE

School No.	Year	SSCE			HSCE		
		No. of Examinees	No. of Successful applicants (%)	No. of GPA 5.0 achievers (%)	No. of Examinees	No. of Successful applicants (%)	No. of GPA 5.0 achievers (%)
1	2021	232	231 (99.6%)	143 (61.9%)	326	321 (98.5%)	88 (27.4%)
	2022	258	253 (98.1%)	140 (55.3%)	348	334 (96%)	61 (18.2%)
2	2021	288	288 (100%)	368 (93.0%)	N/A	N/A	N/A
	2022	306	301 (98.4%)	209 (69.4%)	N/A	N/A	N/A
3	2022	87	80 (91.9%)	15 (18.1%)	89	80 (89.9%)	5 (6.25%)
4	2021	57	47 (82.5%)	5 (10.6%)	118	117 (99.2%)	10 (8.5%)
	2022	74	69 (93.2%)	0 (0%)	112	109 (97.3%)	5 (4.5%)

Source: Created by the Survey Team based on the interview with school.

From the interviews with schools and the results of the SSCE/HSCE, it was found that the percentage of students with GPA 5.0 among those who passed the SSCE/HSCE was higher in schools where the students' family environment was relatively better, indicating an academic achievement gap among schools.

(9) Recent Trend

Since 2015, individual entrance examinations for National Universities and its affiliation colleges have been abolished⁶² and university admission has been determined by SSCE and HSCE scores. This means that the acquisition of basic academic skills in secondary education will have a greater impact on university admission and later on in a student's career.

The following table shows the proposed changes to the secondary certificate examinations: The JSCE and the Primary Education Completion Examination (PECE) have not been administered since 2020 due to the COVID-19 outbreak. Both examinations will be discontinued with the introduction of a new curriculum starting in 2023. The SSCE and HSCE are also being considered for revision in the new curriculum. The new curriculum plans to strengthen in-school assessment and change the scope of the SSCE and HSCE examinations to cover only the content of the year in which the examinations are administered. Furthermore, the elimination of SSCE and HSCE is now under consideration.

Table 7-8 Reform Points of Secondary Certificate Examination

Examination	Present	Revision (Draft)
JSCE	Conduct at the completion of G8	Abolish
SSCE	Conduct at the completion of G10 Covered contents of G9/G10 syllabus	Implement from 2025 Conduct at the completion of G10 Covered only G10 syllabus
HSCE	Conduct at the completion of G12 Covered contents of G11/G12 syllabus	Implement from 2025 Covering area of the syllabus is not yet decided

Source: Created by the Survey Team based on interviews with NCTB

7.2 Learning Achievement Test for Secondary Education (LASI/NASS)

The Learning Assessment of Secondary Institution (LASI) was administered from 2012 to 2017 as an academic assessment and achievement test for secondary education, and from 2019 it was renamed the National Assessment of Secondary Students (NASS), and continue to be administered. This is presented in this section.

⁶² <http://bdnews24.com/bangladesh/2015/09/06/national-university-to-take-in-students-based-on-ssc-hsc-results>

(1) Actual and Planned Implementation

The LASI/NASS is a survey for policy evaluation and decision-making that has been conducted almost every two years since 2012. LASI only tested academic achievement but NASS starting in 2019, a questionnaire asking students about family structure and other questions was added for more elaborate analysis, and the name was changed accordingly.

Table 7-9 Target Grades and Implementation Timing for LASI and NASS

Academic Year	Test	Target Grade	Implementation	Remark
2012	LASI	8	July, 2012	Conducted for 9th graders with 8th grade content
2013	LASI	6, 8	December, 2013	
2015	LASI	6, 8	October, 2015	
2017	LASI	6, 8, 10	November, 2017	
2019	NASS	6, 8, 10	January to March 2020	

Source: Created by the Survey Team based on public report of LASI 2013, 2015, 2017 and NASS 2019

The implementation of the NASS in 2021 was postponed to 2022 due to the COVID-19 outbreak. However, government procedures took time, and was rescheduled.

(2) Survey Scale and School Selection

In 2012, the survey was conducted on a pilot basis, then gradually scaled up to cover all schools in the country in 2015; in 2019, the survey covered approximately 90,000 students in 1,000 schools (843 general education school and 157 madrasah education schools). The sample school was randomly selected to reflect the reality of each category (boys/girls, urban/rural, general education/madrasah education, etc.).

(3) Purpose of the Test and Summary of Results

The purpose of the test is to assess whether students have mastered the competencies defined for each grade level and to make policy recommendations on that basis. According to the latest results of the exam (administered in 2019), students improved from the previous results in all grades and subjects (Bangla, English, and mathematics)⁶³, but there were large differences in academic performance between divisions⁶⁴. In terms of gender, girls performed better in language proficiency in the higher grades, but no gender achievement gap was observed in mathematics.

(4) Implementation System and Process

Implementation will follow the following process.

1. Question development (starting in March of each year)
2. Pilot survey (for about 52-60 schools)
3. Revision and finalization of questions (by the end of October)
4. Printing
5. Implementation (October-December)
6. Data entry (about 20 days)
7. Data analysis (1 week to 10 days)

Implementation has been done by an international consulting firm with support from the Monitoring and Evaluation wing of the Directorate of Secondary and Higher Education (DSHE).

⁶³ Monitoring and Evaluation Wing (2019) NASS Public Report p.66

⁶⁴ The Rajshahi division has the best academic performance in all academic subjects, while the Sylhet division has the lowest academic performance in all subjects. (NASS 2019 Public Report p.7)

2012-2017 was awarded to the Australian ACER (Australian Council for Educational Research) of Australia for 2012-2017, and American Institutes for Research (AIR) of the United States for 2019. From the above "2. Pilot Survey" onward, the survey was conducted using a Bangladeshi local research firm under the guidance and supervision of an international consulting firm. The method of data analysis will be the same each time, but the latest version of the software used for data analysis will be used at the time of analysis.

(5) Budget

The implementation budget is supported by the World Bank, which will continue to support the project in FY2022 but has been rescheduled.

(6) Development of Questions

The survey consists of an academic test (in Bangla, English, and mathematics) and a set of questionnaires (for principals, teachers, and students). The questions for the academic test are based on the syllabus. Test preparation teams consist of NCTB subject matter experts, university faculty, in-service teachers, and DSHE Monitoring and Evaluation Wing staff for each subject area. The test development team conducts a multi-day workshop to determine the competencies to be measured. The questions on the questionnaire ask about the number of years of teaching, the type of training they have attended, the family structure of the students, the academic background of their parents, and the amount of time spent studying at home, and are analyzed for correlation with the test results.

The test questions will be in the form of three cognitive levels for each subject domain.

For the language courses (English and Bangla), the domains are Comprehension, Vocabulary, and Grammar, with questions at three cognitive levels (Locate, Interpret, and Reflect). The following table shows their structure. As shown in the table, there are nine types of questions, from type A1 to C3.

All subjects in all grades are categorized into three cognitive levels of questions: Locate / knowledge, Interpret/ Understanding, and Reflect/ Application. The Bangla and English survey items consist of Comprehension, Vocabulary, and Grammar, while Mathematics consists of Algebra, Data, Measurement, Number properties and operation, Space and Geometry. The composition varies by year and grade level. Although the composition ratio varies by year and grade level, the domains remain the same.

Table 7-10 Component of the Test (Bangla and English)

Subject	Domain	Cognitive Level		
		1. Locate	2. Interpret	3. Reflect
Bangla and English	A. Comprehension	A1	A2	A3
	B. Vocabulary	B1	B2	B3
	C. Grammar	C1	C2	C3

Source: Created by the Survey Team based on LASI 2013, 2015, 2017 Public Report and NASS 2019 Public Report

The domain of mathematics are Algebra, Data and Measurement, Number Properties and Operations, and Space and Geometry, and the three cognitive levels are Formulate, Employ, Interpret and Review.

Table 7-11 Component of the Test (Mathematics)

Subject	Domain	Cognitive Level		
		1. Formulate	2. Employ	3. Interpret & Review
Math	A. Algebra	A1	A2	A3
	B. Data	B1	B2	B3
	C. Measurement	C1	C2	C3
	D. Number properties & operations	D1	D2	D3
	E. Space and Geometry	E1	E2	E3

Source: Created by the Survey Team based on LASI 2013, 2015, 2017 Public Report and NASS 2019 Public Report

All subjects are similar in domain, although the number of cognitive level questions per domain varies depending on the year in which the survey was conducted and the grade level of the students surveyed. The question format consists of Multiple Choice and Creative, with around 80% to 90% of the questions in Bangla and English being Multiple Choice. In 2017, the percentage for Mathematics was similar to that of Languages, but in the 2019 survey, the percentage decreased to the 70% range⁶⁵.

(7) Limitations on Public Disclosure of Tests and Reports

The test results are published as a report on MOE's web page. However, the raw data, test questions, and questionnaires are not publicly available. Since the purpose of this survey is to make policy recommendations, the results of the test are also not be fed back to teachers or students. For upazilas with poor test results, workshops are held for the local education administrators, principals, and teachers to analyze the causes of the results. If clear reasons are identified, such as teacher shortages, MOE may take necessary measures such as assigning additional teachers.

Since the exam questions are not made public, it is not possible to confirm the difficulty level of the questions or the extent to which they are aligned with the curriculum. However, it is possible to compare differences between regions and over periods.

The analysis uses item response theory (IRT)⁶⁶ to minimize bias by grade and year of implementation and allow for multi-year and multi-grade comparisons. The report presents a box plot to show the score distributions and compares them using band analysis by score group. In the 2015 report shows comparisons to 2013 data, while the 2017 and 2019 reports only describe comparisons to previous results in the summary and do not use data for the detailed analysis is limited to the results for the respective years. The analysis continues from 2013 to 2019 by subject, division, urban/rural, and gender; starting in 2019, additional results were added to the analysis of the extent to which study time at home, parents' educational level, and bullying at school correlate with academic exams, as living environment and other factors. However, the report does not include the results of analysis by unit or area as categorized in the exam questions.

⁶⁵ There is no information on the ratio by question type in 2015.

⁶⁶ Item Response Theory (IRT) has become a global standard in the development and administration of various large-scale proficiency tests, such as language proficiency tests, etc. IRT uses a statistical model, called an item response model, to represent the probability that a given examinee will answer a given item (question) correctly. The IRT expresses the probability that a candidate will answer an item (question) correctly in a statistical model called an item response model. This method makes it possible to conduct a fair assessment in the sense that it is not influenced by the difficulty level of the test questions that each examinee received at the time or by the ability distribution of the examinee group as much as possible. (Form Usami et al. (2019) "Concept and Practice of Item Response Theory (IRT)")

Chapter 8. Teachers of Secondary Education

There is no doubt that the quality of teachers has a direct impact on the quality of education. There are around 300,000 secondary teachers in Bangladesh, and their capacity building is a major determinant of the quality of secondary education in Bangladesh. This chapter deals with the teacher system surrounding these teachers, except for teacher training. Teacher training is dealt with in Chapter 9, and teacher training facilities are dealt with in Chapter 11.

8.1 Laws, Regulations and Systems for Teachers

Secondary schools in Bangladesh are broadly classified into government and non-government schools as described in Section 3.5, with non-government schools being both Monthly Pay Order (MPO) accredited and non-MPO accredited. Of these, government school teachers are government servants, and therefore, the same rules and regulations, the Government Servant (Conduct) Rules 1979, are applied to them as all other government servants. On the other hand, for teachers in non-government schools, including MPO accredited and MPO non-accredited schools approved by the Board of Intermediate and Secondary Education (BISE), the following terms and conditions of service regulations prescribed by BISE are applicable for secondary teachers (G6-G10), and higher secondary teachers (G11 and G12), respectively.

- Recognized Non-Government Secondary School Teachers Terms and Conditions of Service Regulations
- Recognized Non-Government Intermediate College Teachers Terms and Conditions of Service Regulations

Based on these regulations, the positions and required qualifications of teachers in secondary (for G6-G10) and higher secondary (G11-G12) are shown in Tables 8-1 and 8-2.

Table 8-1 Positions and Required Qualifications and Experience of Non-Govt. Secondary School Teacher (G6-G10)

Post	Qualification and Experience
Headmaster	<ul style="list-style-type: none"> • Second class⁶⁷ master's degree with B. Ed. Or its equivalent degree from a recognized University and 10 years' experience in teaching or educational administration. Or • Second class bachelor's degree with Second class B. Ed. Or its equivalent degree from a recognized University and 12 years' experience in teaching or educational administration. Or • Bachelor's degree with B. Ed. Or its equivalent degree from a recognized University and 15 years' experience in teaching or educational administration.
Assistant Headmaster	<ul style="list-style-type: none"> • Second class bachelor's degree with B. Ed. Or its equivalent degree from a recognized University and 8 years' experience in teaching or educational administration. Or • Bachelor's degree with B. Ed. Or its equivalent degree from a recognized University and 12 years' experience in teaching or educational administration. • Bachelor's degree with B. Ed. Or its equivalent degree from a recognized University and 12 years' experience in teaching or educational administration.

⁶⁷ Students are divided into three classes according to the Cumulative Grade Point Average (CGPA) earned in their bachelor's and master's degrees: 1st Class (CGPA 3.00 to 4.00), 2nd Class (CGPA 2.25 to 2.99), and 3rd Class (CGPA 2.00 to 2.24). (<https://gpacalculatorbd.net/academic-grading-in-bangladesh/>)

Post	Qualification and Experience
Senior Teacher	<ul style="list-style-type: none"> Bachelor's degree with B. Ed. Or its equivalent degree from a recognized University or Kamil degree from a recognized Madrasah.
Assistant Teacher	<ul style="list-style-type: none"> Bachelor's degree from a recognized University or Fazil degree from a recognized Madrasah.
Junior Teacher	<ul style="list-style-type: none"> Higher Secondary Certificate or Secondary School Certificate from a recognized Educational Board with training from an institute recognized by the Board or Alim certificate from a recognized Madrasah.

Source: Recognized Non-Government Secondary School Teachers Terms and Conditions of Service Regulations, 1979 (Board of Intermediate and Secondary Education, Dhaka).

Table 8-2 Positions and Required Qualifications and Experience of Non-Govt. Higher Secondary School Teacher (G11-G12)

Post	Qualification and Experience
Principal	<ul style="list-style-type: none"> Second class master's degree with a second class honors degree from a recognized university and 10 years' experience in teaching or educational administration at the college level or in both.
Assistant Professor	<ul style="list-style-type: none"> Second class honors and first class master's degree or first class honors and second class Master's degree from a recognized University and 5 years' experience in teaching at the college level; or Second class honors and a second class Master's degree from recognized university and 8 years' experience in teaching at the college level; or Second class master's degree from a recognized university and 12 years' experience in teaching at the college level.
Lecturer	<ul style="list-style-type: none"> Second class master's degree from a recognized university. Persons with Honors Degree (minimum second class) will be preferred.
Demonstrator	<ul style="list-style-type: none"> Bachelor's degree in Science with relevant subjects from a recognized university
Physical Education Teacher	<ul style="list-style-type: none"> A bachelor's degree in Physical Education from a recognized university; Or Bachelor's degree from a recognized university and diploma in Physical Education from an institution recognized by the Board.

Source: Recognized Non-Government Intermediate College Teachers Terms and Conditions of Service Regulations, 1979 (Board of Intermediate and Secondary Education, Dhaka).

In addition, the Regulation stipulates the duties and responsibilities of teachers as follows.

- Teach the students in accordance with the curriculum, syllabus and timetable by means of lesson notes, group discussions, tutorial, seminar, demonstration, etc.
- Make personal contacts with the students for their individual guidance
- Assist the college authorities in conducting examination, organizing laboratories and other curricular and co-curricular activities
- Supervise Extra-curricular activities of the students of the college
- perform such other functions as may be assigned to him / her by the School Management Committee/Governing Body or the Headmaster/Principal, as the case may be, in the interest of the school/college.

Although the regulations prohibit side job except with the prior permission of the appointing authority, in practice, as noted above, many teachers are engaged in paid tutoring of students outside of school classes, which is one of the factors hindering the improvement of the quality of education in Bangladesh.

8.2 Supply and Demand Forecasting

(1) Demand Forecast

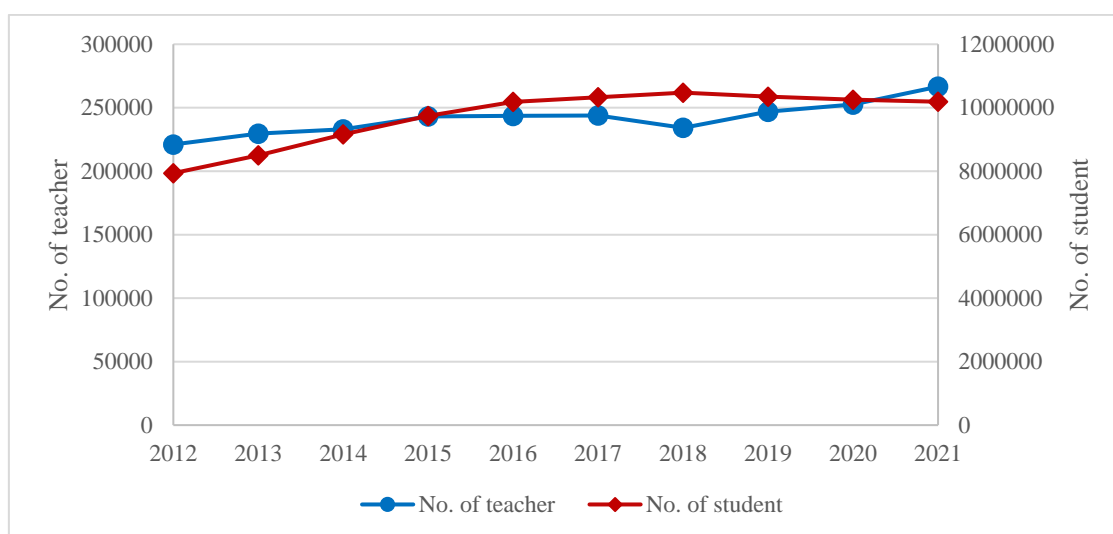
Table 8-3 below shows the number of schools, teachers, students, and Teacher Student Ratio (TSR) for the past 10 years in Bangladesh's secondary education (G6-G10), and higher secondary education (G11-G12).

Table 8-3 Number of Schools, Teachers, Students, and TSR Over the Past 10 Years

Year	Secondary Education (G6-G10)				Higher Secondary Education (G11-G12)			
	No. of Schools	No. of Teachers	No. of Students	TSR	No. of Schools	No. of Teachers	No. of Students	TSR
2012	19,208	221,043	7,937,235	36	1,936	33,843	550,579	16
2013	19,602	229,575	8,501,442	37	2,115	34,104	574,402	17
2014	19,684	232,994	9,160,365	39	2,254	37,234	590,948	16
2015	20,297	243,117	9,743,072	40	2,354	39,777	627,167	16
2016	20,449	243,553	10,184,364	42	2,419	41,335	641,234	16
2017	20,467	243,880	10,330,695	42	2,557	42,998	649,824	15
2018	20,465	234,165	10,475,100	45	2,603	42,403	741,295	17
2019	20,660	246,845	10,349,323	42	2,649	45,500	781,447	17
2020	20,849	252,505	10,252,126	41	2,778	44,270	829,750	19
2021	20,960	266,568	10,190,022	38	2,788	49,659	834,300	17

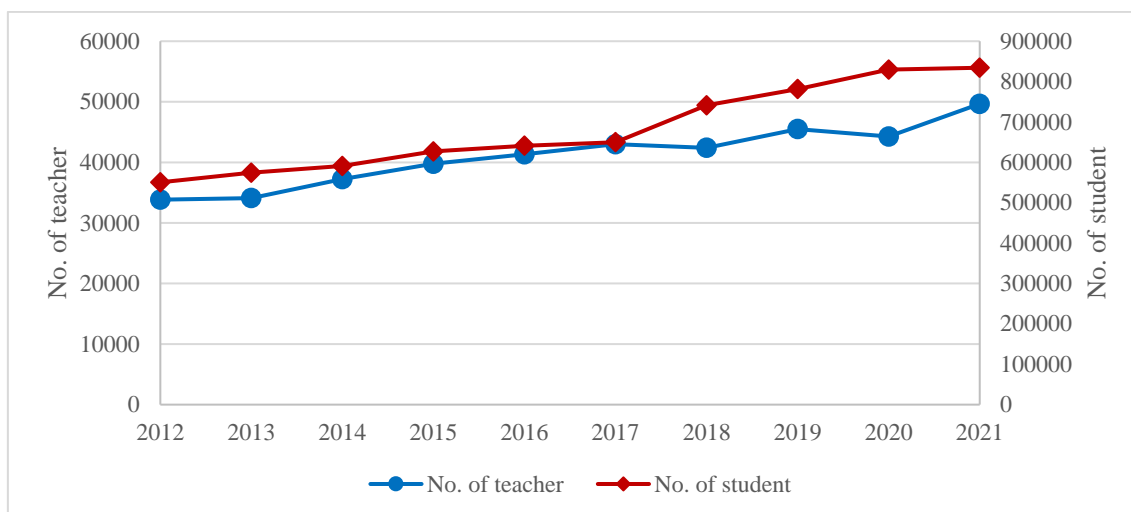
Source: Created by Survey Team based on Bangladesh Bureau of Educational Information & Statistics (BANBEIS) 2021.

Figures 8-1 and 8-2 illustrate the number of teachers and students in secondary education (G6-G10) and higher secondary education (G11-G12), respectively.



Source: Created by the Survey Team based on BANBEIS 2021.

Figure 8-1 Number of Teachers and Students in Secondary Education (G6-G10)



Source: Created by the Survey Team based on BANBEIS 2021.

Figure 8-2 Number of Teachers and Students in Higher Secondary Education (G11-G12)

The number of students in secondary education (G6-G10) has been declining since 2018, while the number of students in higher secondary education (G11-G12) has remained almost flat, with a slight increase from 2020 to 2021. The population projections by age group shown in Table 2-3 indicate that the population under 19 years old will peak and decline in the future, and the quantitative demand for teachers is expected to decrease accordingly.

However, the TSR for secondary education (G6-G10) is 38 students per teacher as of 2021, which is 8 students more than the policy target of 30 set by the National Education Policy 2010 (NEP 2010). The number of teachers needed to achieve a TSR of 30 for a student population of 10,190,022 in 2021 is 339,667, which is approximately 73,000 fewer than the 266,568 teachers needed in 2021.

(2) Supply Forecast

The following table shows the number of government and non-government schools, teachers, and students in secondary education (G6-G10) and higher secondary education (G11-G12) as of 2021. According to the statistics, 96% of secondary school teachers are non-government school teachers, who are recruited through the Non-Government Teachers' Registration and Certification Authority⁶⁸ (NTRCA), which is described below.

Table 8-4 Ratio of the Number of Government and Non-Government Schools, Teachers, and Students in Secondary Education

School Type	Secondary Education (G6-10)			Higher Secondary (G11-G12)			Total		
	No. of Schools	No. of Teachers	No. of Students	No. of Schools	No. of Teachers	No. of Students	No. of Schools	No. of Teachers	No. of Students
Govt	684	11,615	609,458	116	2,357	82,270	800	13,972	691,728
Non-Govt	20,276	254,953	9,580,564	2,672	47,302	752,030	22,948	302,255	10,332,594
Total	20,960	266,568	10,190,022	2,788	49,659	834,300	23,748	316,227	11,024,322

Source: Created by the Survey Team based on BANBEIS 2021.

Table 8-5 shows the number of successful examinees for the teacher recruitment examinations up to 2019 published by NTRCA.

⁶⁸ <http://ntrca.gov.bd/about/>

Table 8-5 NTRCA Teacher Recruitment Examination Results

Examination	Year	No. of Applicants	No. of Appeared Candidates	No. of Passed Candidates	Pass Rate
1 st Registration Exam	2005	76,185	59,000	33,788	57.30%
2 nd Registration Exam	2006	131,759	99,807	22,318	22.40%
3 rd Registration Exam	2007	113,975	83,899	16,020	19.10%
4 th Registration Exam	2008	127,074	96,027	31,093	32.40%
5 th Registration Exam	2009	141,082	102,348	39,225	38.30%
6 th Registration Exam	2010	283,314	220,517	42,641	19.30%
7 th Registration Exam	2011	321,301	259,114	57,203	22.10%
8 th Registration Exam	2012	313,145	248,001	56,046	22.60%
9 th Registration Exam	2013	314,887	242,451	75,898	31.30%
10 th Registration Exam	2014	441,979	356,962	113,297	31.70%
11 th Registration Exam	2014	441,077	357,472	51,405	14.40%
12 th Registration Exam	2015	532,522	480,670	47,039	9.80%
13 th Registration Exam	2016	602,033	527,757	17,254	3.30%
14 th Registration Exam	2017	923,554	806,650	18,312	2.30%
15 th Registration Exam	2018	876,033	740,416	11,130	1.50%
16 th Registration Exam	2019	1,176,196	959,727	18,550	1.90%
17 th Registration Exam	2020	1,172,286	-	-	-

Source: Created by the Survey Team based on NTRCA Annual Report 2021

The number of examinees has increased every year since the exam began in 2005, and 18,550 examinees passed the exam in 2019. However, the pass rate is very low at 1.9%. Although it is difficult to make a general statement because of various factors such as future population changes, the number of retiring teachers, improvement in the student dropout rate, and government budget constraints on teacher personnel costs, it would take at least four years to make up the above-mentioned teacher shortage of about 73,000 teachers, assuming that about 18,000 new teachers are hired each year.

8.3 Teachers Personnel System

(1) Recruitment

The recruitment process for secondary school teachers in Bangladesh differs for government school teachers and non-government school teachers. This section describes the recruitment process for each type of teacher. The process for non-government school teachers is also different for MPO teachers and non-MPO teachers, and the differences between the two are also described.

Government School Teachers

Government school teachers are national civil servants and are recruited through the Bangladesh Civil Service (BCS) examination conducted by the Public Service Commission (PSC). The BCS examination is held annually and consists of a written test and an interview. A total of approximately 2,000 people are hired each year, but the number of hires varies from year to year. The BCS has a total of 26 general and technical positions, of which General Education and Technical Education are education positions. Candidates must be under 30 years old and have a bachelor's degree.

Of those who have passed the BCS examination, those with the highest marks included in the number of recruits for the year (examinees who got top 2000 marks if the number of recruits is 2000) will be offered a position as BCS Cadre. Higher secondary education teachers are recruited from among the BCS Cadre (General Education).

On the other hand, those who have passed the BCS examination but are not among the top performers in the number of recruits for the year (or those who are ranked 2001 or below if the number of recruits is 2000) will be registered as those who have passed the BCS examination. For the recruitment of secondary education (G6-G10) teachers, the PSC shares the list of those who have passed the BCS examination with the Directorate of Secondary and Higher Education (DSHE), which then selects candidates from the list according to the availability of vacant posts in secondary schools nationwide. The list of teachers who have passed the BCS examination is valid for five years, but there is no guarantee that those who are not included in the number of recruits for that year will get a position as a BCS Non-Cadre.

Non-Government School Teachers

Non-government school teachers who wish to be hired as MPO teachers must meet the necessary requirements and pass the teacher recruitment examination administered by NTRCA. In addition to a bachelor's degree, a B.Ed. degree is recommended as a requirement to take the examination, but candidates may take the examination even if they have not yet earned a B.Ed. degree. The age for hiring MPO teachers is up to 35 years old. Non-MPO teachers are mostly part-time teachers and are hired through the SMC for secondary schools (G6-G10) and through the Governing Body for higher secondary schools (G11-G12). However, non-MPO teachers who are involved in public examinations such as SSCE and HSCE must be hired through NTRCA according to BISE's regulations.

For the NTRCA's teacher recruitment examination, candidates must first register online at the NTRCA website. A minimum Grade Point Average (GPA) of 2.5 is required. Candidates will be assigned a test site based on the address provided in the online registration and will be notified of their test site.

After registration, the applicant must pass all three examinations, which are conducted in the following order: (1) a preliminary examination (multiple-choice test), (2) a written examination, and (3) an oral examination⁶⁹. The following is a summary of each examination.

1. The Preliminary Examination (Multiple Choice Test) (full score of 100 marks): After applying for online registration, applicants must first take this test. 40 points or more is required to proceed to the next written examination. The multiple-choice test is the same regardless of the teaching subject, and consists of 25 questions each from the four subjects of Bangla, English, general mathematics, and general knowledge.
2. Written examination (full score of 100 marks): To be taken by those who have passed the Preliminary Examination. There are 26 subjects in the examination, and the content of the examination is determined according to the teaching subjects and grade level (G 6-G8/G 9-G10/G11-G12). Those who have met the passing level in each subject may take the next oral examination.
3. Oral Examination (full score of 20 marks): Candidates who passed the written examination will take an oral examination administered by NTRCA to determine the final successful examinees.

The examination results from 2005, when NTRCA was established, up to 2019 are shown in Table 8-5 above. Those who pass the NTRCA teacher recruitment examinations are registered as successful examinees and are assigned according to the vacancies in the teaching posts for which each school has applied to NTRCA.

⁶⁹ An oral examination was added to the existing preliminary and written examinations since 2016.

(2) Transfers

Government secondary school teachers, who are civil servants, are transferred every three years or periodically depending on the needs of the school. Appointment letters for transfers are issued by the DSHE. Non-government school teachers hired through the NTRCA examination may apply to the DSHE for transfer, but the transfers are rarely realized. Note that higher secondary education (G11-G12) teachers who are BCS Cadre are subject to transfers across ministries, while secondary education (G6-G10) teachers who are BCS Non-Cadre are limited to transfers within the Ministry of Education.

(3) System Pertaining to Disciplinary Punishments

Government secondary school teachers, who are civil servants, are subject to the same national civil service rules regarding disciplinary punishments as other public officials. On the other hand, for non-government secondary school teachers, the above-mentioned “Recognized Non-Government Secondary School Teachers Terms and Conditions of Service Regulations” and “Recognized Non-Government Intermediate College Teachers Terms and Conditions of Service Regulations” provide the following disciplinary rules.

- A teacher who commits a breach of the provisions of these regulations or who is guilty of negligence of duty, inefficiency or corruption or who knowingly does anything detrimental to the interest of the school or is guilty of professional misconduct shall be liable to all or any of following penalties, namely;
 - Censure;
 - withholding of increment for a specified period;
 - recovery from pay of the whole or part of any pecuniary loss caused to the school by negligence of duty;
 - removal from service; and
 - dismissal from service.
- Without prejudice to the generality of the term, “professional misconduct” includes, for the purpose of these regulations, the following acts or omission or commission, namely;
 - unpunctuality in attending classes or any other duty assigned;
 - absence from duty without permission;
 - unauthorized extension of leave;
 - any activity which may directly or indirectly influence in exciting one group of teachers or students against another group of teachers or students for political or personal gains;
 - any activity which creates indiscipline or moral repercussion among the teachers and students;
 - insubordination, alone or in combination with other, to any lawful or reasonable order of the Headmaster/Principal or, as the case may be, the School Managing Committee/Governing Body;
 - unauthorized use of school property; and
 - any other activity which is considered and specified by the Board to be prejudicial to the interest of the school/college
- The power to impose penalty upon a teacher under the Regulation shall vest in the authority competent to make appointment. Provided that the penalties of dismissal or removal from service shall not be imposed unless the proposal for such penalty is examined by the Appeal and Arbitration Committee and approved by the Board.

(4) Division of Roles

In addition to the teachers listed in Tables 8-1 and 8-2, secondary schools in Bangladesh have a large number of support staff, as listed below, who share school administrative duties.

- Demonstrator
- Laboratory Assistant
- Computer Operator
- Office Assistant
- Office Clerk
- Bus Driver
- Security Guard
- Gardener
- Cleaner

Among these, demonstrators are assigned only to higher secondary schools, and are responsible for conducting science experiments for students under the direction of teachers. In schools and colleges that have a junior secondary and secondary schools attached to a higher secondary school, demonstrators from the higher secondary school often assist in experiments in the secondary school. The laboratory assistants do not conduct the experiments, but only move the equipment to classrooms and prepare for the experiments.

8.4 Teacher Competency Assessment (Teacher Evaluation System, Teacher Monitoring System)

With regard to teachers in government secondary schools, based on the evaluation system for civil servants, the principal submits an Annual Confidential Report (ACR) to the DSHE once a year based on the performance of all teachers. The first half of the ACR is completed by the teachers themselves, and the second half is scored 1-4 points by the principal for each of the following 25 indicators. If the total score is less than 70 out of 100 points, the teacher will be below standard and may be demoted. If the principal assigns a below standard score, the teacher will be summoned and given a warning in advance. In January of each year, the results of the previous year's evaluation are submitted to the Quality Assurance Department of DSHE and approved by the Director General (DG) of DSHE by around March. Principals are also evaluated by the DG using the same form.

Table 8-6 ACR (Annual Confidential Report) Evaluation Indicators

Personal Characteristics	
1	Morality
2	Honesty
3	Sense of Discipline
4	Judgement and knowledge of dimensions
5	Personality
6	Attitude of cooperation
7	Punctuality
8	Reliability
9	Sense of responsibility
10	Interest and attention to work
11	Promptness to carry out instructions of superior authorities
12	Enthusiasm and initiative
13	Usage with service recipient
Completion of Work	
14	Professional knowledge
15	Quality of work
16	Dutifulness
17	Amount of work edited
18	Efficiency of decision making
19	Ability to implement decisions
20	Ability to supervise and manage subordinates
21	Capability to cooperate and lead in teamwork
22	Interest and skills in using e-documents and internet
23	Interest and ability in innovate work
24	Disclosure ability (writing)
25	Disclosure ability (verbal)

Source: Government of Bangladesh ACR Format 2020

<Evaluation criteria: 95-100 points: Excellent, 94-90 points: Very good, 89-80 points: Good, 79-70 points: Standard, 69 points or less: Below standard>

Non-government secondary schools do not use ACR and do not have a defined method for evaluating teacher competence. Some schools evaluate teacher performance based on the number of students who pass the Secondary School Certificate Examination (SSCE) or Higher Secondary Certificate Examination (HSCE), but many schools do not evaluate teacher performance.

Other monitoring of schools and teachers is conducted by DSHE by the following ways.

- DSHE's field staff visit schools and conduct monitoring through classroom observations based on the forms.
- Schools will self-assess through the Institutional Self-Assessment Summary (ISAS) developed by the Asian Development Bank's SESIP. All school principals complete 45 indicators online, which are collected on DSHE's server, through which DSHE monitors the status of each school.

8.5 Teachers' Ability to Conduct Classes

The survey team conducted lesson observations to measure teachers' teaching skills and analyze their support needs. Lesson observation was conducted using the lesson observation sheet (LOS) for school-based INSET, which was developed using Rubric under the JICA " Project for Strengthening the Capacity of INSET Management in Ghana (2009-2013)" (see Appendix). The observations were conducted by a Japanese expert instructing a local consultant on how to use

the tool. After the evaluation, a meeting was organized between the two to review the scores, and then the scores were finalized.

The target grades for the lesson observations were G6 in the junior secondary education before the divided into three courses (science, humanity, and business) and G9 in the secondary education after the divided into three courses. The reason why the G6 was selected as the target grade is to analyze the connection between primary education and junior secondary education. From the secondary education, the G9 was selected. Science and mathematics were selected as the target subject in consideration of continuity with JICA's existing support for primary education. Within the science and mathematics subjects, particular emphasis was placed on mathematics. This was because of the importance of mathematics as a foundation for science learning. The following table shows details of the schools and lessons in which lesson observations were conducted. In total, 20 lessons (11 in mathematics and 9 in science) were observed in 8 schools.

In the second field survey, lesson observations were carried out in G6 and 7, where the new curriculum has been introduced, in order to ascertain the actual implementation of the new curriculum, and not only were the same lesson evaluations carried out as during the first survey, but also detailed checks were made on the questions asked by teachers in order to analyze the activities and assessments in more detail.

(1) Result of Lesson Evaluation in the first survey in Bangladesh

Table 8-7 Schools and Classes where Lesson Observations Conducted

Area	School	Type	No	Subject	Grade	Topic
Dhaka	I.E.S. Uchcha Madyamic Bidyalaya	Govt (autonomous)	1	Math	6	Mode and Median
			2	Math	9	Series
			3	Science	6	Sensor organ
			4	Physics	9	Solenoid coil
	Udayan Uchcha Madhyamik Bidyalaya	Govt (autonomous)	5	Math	9	Lines in Cartesian coordinates
			6	Science	6	Sensor organ
			7	Chemistry	9	Chemical reaction and equation
			8	Physics	9	Waves and Sound
	Azimpur Government Girls School & College	Govt	9	Science	6	Plant and Animal Cell
			10	Physics	9	Light
	West End High School	Non- Govt	11	Math	6	Linear equation
			12	Chemistry	9	Determine the empirical and molecular formula using the percent compositions
	Birshreshtha Noor Mohammad Public College	Govt (autonomous)	13	Math	6	Linear equation
			14	Math	9	Trigonometry
Barishal	Barishal Govt. Zilla School	Govt	15	Math	6	LCM and HCF
			16	Physics	9	Refraction of light (Snell's law)
	Gouranadi Girls School & College	Non- Govt	17	Math	6	Algebraic expression
			18	Math	9	Partial Fraction
	Karnakati Gause Rahamania High School & College	Non- Govt	19	Math	6	Factorization, interior angles of triangle
			20	Math	9	Series

Source: Survey Team

The assessment items of the class observation tool also include an item to assess lesson plans. However, with the exception of one lesson, no teachers prepared lesson plans, so they were excluded from the assessment, and only the lessons were assessed. The following two tables show the results of the assessment using the LOS. Grades are on a 5-point scale.

Table 8-8 Evaluation Results of the Teaching Competence (Math)

Category		Lesson No.											Ave
	Observation Items	1	2	5	11	13	14	15	17	18	19	20	
Teaching Methodology and Delivery	Use of Language	3	5	4	2	2	2	4	2	2	3	3	2.9
	Use of Generic Skills	2	3	5	2	2	2	4	3	3	2	3	2.8
	Use of Chalkboard	2	2	3	2	2	1	4	2	2	2	3	2.3
	Questioning Skills	1	3	3	2	2	1	3	2	2	2	2	2.1
	Feedback to Students	2	3	3	2	2	1	4	2	2	2	3	2.4
	Use of TLMs	1	1	3	1	2	2	3	1	1	1	3	1.7
	Students' Participation	2	2	2	2	2	1	4	2	2	2	3	2.2
	Use of Teacher Learner Activities	2	3	3	2	2	1	3	2	2	2	3	2.3
Evaluation of Lesson	3	3	3	2	2	1	3	1	2	2	3	2.3	
Classroom Organization and Management	Classroom Setting	1	1	1	1	1	1	3	1	1	1	3	1.4
	Class Control	3	4	3	2	2	1	3	1	2	2	3	2.4
Average by lesson		2.0	2.7	3.0	1.8	1.9	1.3	3.5	1.7	1.9	1.9	2.9	

Source: Survey Team

Table 8-9 Evaluation Results of the Teaching Competence (Science)

Category		Lesson No.									Ave
	Observation items	3	4	6	7	8	9	10	12	16	
Teaching Methodology and Delivery	Use of Language	3	3	3	1	1	3	2	2	3	2.3
	Use of Generic Skills	3	3	3	1	1	2	2	2	2	2.1
	Use of Chalkboard	3	2	3	2	2	2	2	2	3	2.3
	Questioning Skills	2	3	3	2	2	3	2	2	3	2.4
	Feedback to Students	2	3	3	1	1	2	2	2	3	2.1
	Use of TLMs	3	3	3	2	2	3	3	1	1	2.3
	Students' Participation	3	3	3	1	1	2	2	2	2	2.1
	Use of Teacher Learner Activities	3	3	3	1	2	2	2	1	3	2.2
Evaluation of Lesson	3	3	3	1	1	3	2	1	2	2.1	
Classroom Organization and Management	Observation items	1	1	1	1	1	1	1	1	1	1.0
	Use of Language	3	3	3	1	1	3	2	1	3	2.2
Average by lesson		2.6	2.7	2.8	1.3	1.4	2.4	2.0	1.5	2.4	

Source: Survey Team

In mathematics, few classes made use of teaching and learning materials, and the score for the subsection “Use of Teaching and Learning Material (TLM)?” was 1.7, the lowest among the major categories of “Teaching Methodology and Delivery”. Even when teaching and learning materials were used, teachers just used a projector to show questions and diagrams, and few classes made effective use of them. Even in science classes, even if the content of the lesson could be implemented simple experiment, most of them were limited to verbal explanations or illustrations on the whiteboard.

The overall issues observed from the lesson observation are as follows.

- Most of the questions were simple and just asking knowledge or questions to be answered with Yes or No.
- Students often recite what they have learned, which is memorization-centered learning.
- There are no teacher's guides, and lessons are taught using only textbooks.
- In science, even if there is an equipment available for experiments, the teachers do not try to conduct experiments.

The following table shows the averages of lesson assessment and explanations for the science and mathematics lessons.

Table 8-10 Evaluation Result on Mathematics and Science Lessons

Category	Average (Max. 5 Points)	Explanation
Teaching Methodology and Delivery	2.3	Most teachers conducted teacher centered teaching and explained contents without assessing students' understanding level and students had limited opportunities to speak up. The whiteboard was not used effectively, and students did not use their notebooks for anything other than solving problems. Many of the teacher's questions were either answered with a yes or no for all students or simply recited what they had learned, and were not designed to check students' understanding or to make students think and come up with answers. The teaching materials were also limited to textbooks. Even when projectors were used in some classes, they were just projecting questions and the same content as in the textbooks, and were not effectively utilized. In only two classes, group work was conducted, and in one of those classes, the students simply solved the problems in their notebooks without any interaction with other students.
Classroom Organization and Management	1.7	In all classes, students were seated in two to three rows, side by side, facing forward. With the exception of one lesson, there was no lesson to check the students' alignment for the class, how the whiteboard looked from the students, or whether the students were participating in the class. In the boys' class, some students were sleeping, but no teacher paid attention to them.

Source: Survey Team

In order to determine what specific questions teachers were asking, whether they were able to check students' understanding, and whether they were able to ask questions that encouraged deeper understanding and thinking by students, we analyzed the questions asked in each lesson and categorized them into the following four types, which are shown in Tables 8-11 and 8-12.

- Questions that ask for prior knowledge necessary for learning the topic
- Questions that ask the knowledge learned in the lesson
- Questions that require students to engage in an activity or to think
- Questions that provide a summary or confirmation of understanding level of the lesson contents

Table 8-11 Analysis of Questions Used by Teachers in Lesson (Math)

No.	Prior Knowledge Necessary for Learning the Topic	Knowledge Learned in the Lesson	Require Students to Engage in an Activity or to Think	Summary or Confirmation of Understanding Level of the Lesson
1	No question			
2		What is arithmetic progression? How to find Nth term?		
5	Who discovered the Cartesian coordinates? Where is he from? How many types of lines?			
11			Confirm exercises and notebook.	
13	Why $\text{Sec } \theta \times \text{Cos } \theta = 1$?	Teacher only asked "Do you have any questions?" and no other question.		
14	What kind of fraction is $x=5/3$? What is name of $x+5=2$ equation?			
15	What is the tree diagram?	How can we draw a tree diagram? What are factors of 48 and 72?	Assign one student to draw tree diagram of 48 on the board and everyone checks to see if it is correct. Ask other student to draw a tree diagram of 72. Group work (teacher give different numbers to each group and ask students to draw their original tree diagram)	
17	Do you know relation between $8*x=8x$ and $8 \& x$? How to write coefficient?	Do you understand? Or repeat what the teacher said.		
18	Questions about denominators, numerators, proper fractions, improper fraction, etc.	What is partial fraction? Students repeat teacher's explanation.		
19	How do we call about digit? What is number? (No answer from students) What is the definition of an angle, triangle, or rectangle?	6 can divided by 1,2,3,6/ is there any other number? (students answered No)		
20	What is finite series? What is geometric series?		(Groupwork) if m th term of arithmetic series if n and n th term is m, find m+n th term.	

Source: Survey Team

Table 8-12 Analysis of Questions Used by Teachers in Lesson (Science)

No.	Prior Knowledge Necessary for Learning the Topic	Knowledge Learned in the Lesson	Require Students to Engage in an Activity or to Think	Summary or Confirmation of Understanding Level of the Lesson
3	Show a picture of human body parts on a projector and ask students what do you see?			
4		Under what conditions do magnets attract each other? How can we increase the amount of electricity?		
6	Have you ever heard of the term “sensory organs” before? Can anyone say what it is?	What is saliva? What is the tongue? What does the tongue do? Show a picture of the tongue and ask students at random which parts of the tongue feel bitter, sweet, etc.		
7	What is a molecular formula? Give an example.	What is the difference between an experimental formula and a molecular formula?		
8	What is a wave? Give an example.			
9	Showing pictures of trees and animals, what are these?	Give some names of animals?		
10		What is total reflection?		
12	What is the composition ratio?			
16	Showing a diagram of light refraction, what is this? What is reflection? What is refraction? Have the students repeat what the teacher has explained. How many formulas are there for refraction?	Repeat questions that make them answer what teacher have explained.	What happens to the refractive index when light travels from one medium to another?	

Source: Survey Team

What became clear from this analysis was that almost all questions asked by the teachers went so far as to directly question the content (knowledge) explained by the teachers in lesson. They were not able to ask questions that would make the students think, encourage deeper thinking or deeper understanding, or confirm the students' level of understanding.

Among these lessons, lesson number 15 received a relatively high grade of 3.5. In this class, the teacher was constantly observing the students and checking their level of understanding, and the students actively participated in group work and had lively discussions within the group. The school was a pilot school for the new curriculum to be introduced in 2023.

(2) Result of Lesson Evaluation in the second survey in Bangladesh

Table 8-13 Schools and Classes where Lesson Observations Conducted

Area	School	Type	No	Subject	Grade	Topic
Dhaka	West End High School	Non-Government	1	Math	6	Data Arrangement (Counting and Bar Graph)
			2	Science	7	Biodiversity (Chapter 1)
	Ahmed Bawany Academy School & College	Government (autonomous)	3	Science	6	Science and Technology (Chapter 1)
			4	Math	7	Exponent (Chapter 1)
	Govt. Kalachandpur High School and College	Government	5	Math	6	The Story of Two Dimensional Objects
			6	Science	6	Earth and Universe (Chapter 6)
			7	Math	7	Exponent (Chapter 1)
Barishal	Barishal Govt. Model School & College	Government	8	Math	6	The World of Integers (Pg 97 Problem 12)
			9	Math	6	The World of Integers (Pg 87)
			10	Science	7	Molecules and Atoms
	Talukdarhat School & College	Government	11	Math	6	Magic of Three Cards Pg 18
			12	Science	7	Call of Crops (Exercise Book Pg 13)
	Karnakati Gause Rahamania High School & College	Non-Government	13	Math	6	Information and Investigation Analysis (Chapter 3)
			14	Science	6	Matter and its Properties (Chapter 2)
	Barisal Zilla School	Government	15	Math	6	Number Line
16			Science	7	Call of Crops	

Source: Survey Team

Table 8-14 Evaluation Results of the Teaching Competence (Math)

Category	Observation Items	Lesson No.									Ave
		1	4	5	7	8	9	11	13	15	
Teaching Methodology and Delivery	Use of Language	2	3	2	3	3	3	3	3	3	2.8
	Use of Generic Skills	2	3	2	3	1	1	3	3	1	2.1
	Use of Chalkboard	2	2	1	3	2	3	1	3	2	2.1
	Questioning Skills	2	3	2	3	2	2	2	3	2	2.3
	Feedback to Students	2	2	2	3	2	2	2	3	2	2.2
	Use of TLMs	1	2	1	2	1	1	2	2	1	1.4
	Students' Participation	2	3	2	3	2	2	3	3	2	2.4
	Use of Teacher Learner Activities	1	2	2	3	1	2	2	2	2	1.9
Evaluation of Lesson	1	2	2	3	1	2	1	3	2	1.9	
Classroom Organization and Management	Classroom Setting	1	2	1	1	2	2	2	3	2	1.8
	Class Control	2	3	2	4	1	1	1	3	1	2.0
Average by lesson			2.5	1.7	2.8	1.6	1.9	2.0	2.8	1.8	2.1

Source: Survey Team

Table 8-15 Evaluation Results of the Teaching Competence (Science)

Category		Lesson No.							Ave
	Observation Items	2	3	6	10	12	14	16	
Teaching Methodology and Delivery	Use of Language	3	3	3	3	3	3	3	3.0
	Use of Generic Skills	3	2	3	3	3	3	2	2.7
	Use of Chalkboard	1	2	1	2	2	3	1	1.7
	Questioning Skills	3	3	2	3	3	3	2	2.7
	Feedback to Students	2	2	3	3	3	3	2	2.6
	Use of TLMs	2	2	3	1	1	3	1	1.9
	Students' Participation	3	2	3	2	3	3	2	2.6
	Use of Teacher Learner Activities	2	2	2	2	2	2	2	2.0
	Evaluation of Lesson	2	3	3	3	3	3	2	2.7
Classroom Organization and Management	Classroom Setting	3	2	1	3	1	2	2	2.0
	Class Control	3	3	3	3	3	2	1	2.6
Average by lesson			2.4	2.5	2.5	2.5	2.7	1.8	2.4

Source: Survey Team

Table 8-16 Evaluation Result on Mathematics Lessons

Category	Average (Max. 5 Points)	Explanation
Teaching Methodology and Delivery	2.1	Compared to the previous survey, in which lessons based on the curriculum (2012 edition) were observed, more teachers carried out activities based on textbooks and teacher's guides. However, there were very few opportunities for students to think by themselves and explain their ideas to other students, and teachers provided explanation. In addition, the increase in the number of activities that did not lead to the achievement of the unit objectives (activities described in the textbook) may have been a reason for the decrease in scores compared to the previous survey.
Classroom Organization and Management	1.9	Compared to the previous survey, which observed lessons based on the curriculum (2012 edition), many schools were already lined up in groups to facilitate group work. Some teachers check that students are lined up and that they can see the white board and hear teacher's voice, which suggests that the training has been effective to a certain extent.

Source: Survey Team

Table 8-17 Evaluation Result on Science Lessons

Category	Average (Max. 5 Points)	Explanation
Teaching Methodology and Delivery	2.4	Compared to the previous survey, which observed lessons based on the curriculum (2012 edition), more teachers implemented activities based on textbooks and teacher's guides. Compared to mathematics, the nature of the subject makes the activities easier and more meaningful. However, in many classes, the group activities were less significant because the teachers had already explained what the groups were going to discuss, there were no group presentations after the group activities, and the summary was also explained by the teachers.
Classroom Organization and Management	2.3	Compared to the previous survey, which observed lessons based on the curriculum (2012 edition), many schools were already lined up in groups to facilitate group work, same as mathematics lesson. Some teachers check that students are lined up and that they can see and hear teacher's explanation, which suggests that the training is effective to a certain extent.

Source : Survey Team

In the previous survey, an analysis by type of questioning was carried out, but very few of the questions that makes students think, so the details of the lessons are summarised in Table 8-18 to see whether questions that makes students think have increased in the new curriculum and what kind of activities are being carried out.

Table 8-18 Secondary School Teacher's Math Lesson

School	No	Grade	Topic	Question				Activities	Overall and others
				How many times	Yes, No	Repetition of knowledge and answer	questions makes students think		
West End High School	1	6	Data Arrange (count and bar chart)	9	2	7	0	No activity (teacher drew all bar charts and there was no opportunity for students to do it themselves)	A bar chart was developed for each student's birth month. This is all teacher-led, as there is a lot of wasted time, such as checking each person's name and then checking their name again.
Ahmed Bawany Academy School & College	4	7	Exponent	44	5	27	12	<p>Fold A4 paper to make squares and represent square numbers with them (this would be understandable if they were representing powers of two, but in the case of squared natural numbers, it was difficult to represent them on paper and did not help understanding. On the contrary, students were confused and unsure of the analogy from the origami paper).</p> <p>Write squared numbers in groups on a piece of paper (some pupils mistook 20, 50, etc. as square numbers).</p> <p>Write square numbers up to 200 in notebooks.</p>	<p>Most of the time was spent on activities to understand square number and no time to study exponents.</p> <p>The teacher complimented the students well for conducting lesson.</p> <p>Due to the teacher's poor way of introducing the lesson, many students did not understand the lesson well.</p> <p>The teacher explained about square numbers later, but it was good that the teacher checked with the students one by one about their mistakes.</p>
Govt. Kalachandpur High School and College	5	6	The Story of Two Dimensional Objects	19	5	14	0	Students cut paper to make various types of triangles (they only cut, but are not able to make use of subsequent questions about types of triangles, etc.). Although both the textbook and the teacher's guide mention cutting and making triangles, writing in the notebook is sufficient for this activity.	<p>One student cut her finger (the teacher didn't know) because she was given a razor blade to cut triangles.</p> <p>Although the teacher's intention was to promote understanding by having the students make a variety of triangles, the students did not make the necessary triangles such as right triangles, isosceles triangles and equilateral triangles, and the intended activity was not completed.</p>
	7	7	Exponent		13	24	5 (only calculation)	<p>Give each group a different problem to solve (e.g. $x^4 \div x^4$).</p> <p>Each student solves $106 \div 106$. Each student solves $625 \div 25^2$ (there is no need to rewrite 625 to 25^2 to solve this problem and it is unclear why this problem is given).</p>	<p>Students were confused because 0^0 was explained as $0^0 \div 0^0$.</p> <p>It is not good practice to write $x^7 \div x^7$ (x needs to be non-zero etc.)</p> <p>$106 \div 106$, etc. There is no need to spend one frame doing the same problem only changing the numbers (and this is not stated in the textbook).</p>

School	No	Grade	Topic	Question				Activities	Overall and others
				How many times	Yes, No	Repetition of knowledge and answer	questions makes students think		
Barishal Govt. Model School & College	8	6	The World of Integers	49	10	35	4	Exercises lesson (students solve exercises while teachers explain them)	Exercise lesson to solve questions in the textbook. The calculation of - using a number line is used throughout the textbook, although the number line is only an aid to understanding at the beginning.
	9	6	The World of Integers	115	6	108	1	Just repeating that teacher explain, guide and students answer	Almost all of the questions simply asked them to answer the written numbers or the required operations.
Taluk-darhat School & College	11	6	Magic of Three Cards Pg 18				0	An activity in which students are asked to choose three pieces of paper with different numbers on them and to subtract the three-digit numbers arranged in ascending order from the three-digit numbers arranged in descending order from the 100th place. After checking some of the answers, the teacher asked the students if they understood the magic and when they said yes, the teacher explained without asking the reason to the students. After the explanation, for some reason, one person in the group picks a number and repeats the same thing.	Instead of students finding out and explaining it, teachers have explained it to them. The point is for the students to find out for themselves why the tens place is always 9, but they are not able to do this. As this activity is not the main activity of the unit, there is no need to spend an entire class period on it.
Karnakati Gause Rahamania High School & College	13	6	Information and Investigation Analysis	45	17	28		Weigh seven pupils and find the mean from them. Have pupils stand in front of the classroom and arrange them in order of height and explain the median. Consider the median from the students' attendance numbers.	It is good to make students aware that they are dealing with number data based on the number of pupils, and to measure pupils' weights and determine averages, etc. However, the teachers explain everything, and the students are guided to the answers without having to think by themselves. In the teacher's guide, students are supposed to measure their height, but because it is difficult to do so, the teachers devised a way to measure their weight and implemented it.
Barisal Zilla School	15	6	Number Line	22	15	4	3	In groups of three, have students write a number line. Calculation of addition, subtraction, multiplication and remainder on a number line.	The teacher conducted the lesson while making sure that the students could hear teacher's voice. The number line itself has been studied in primary school, so it would have been better to start with a review. Checking each student's answers one by one. All explained by the teacher. Have one student write the answer on the whiteboard.

Table 8-19 Secondary School Teacher's Science Lesson

School	No	Grade	Topic	Question				Activities	Overall and others
				How many times	Yes, No	Repetition of knowledge and answer	questions makes students think		
West End High School	2	7	Biodiversity	44	13	30	1	Students, one pair at a time, make observations about all the living things and other things they can see outside, and come back and present what they saw. Name of living things that are close to you.	Explained by using toy animals. Conducted activities not found in the teacher's guide. It merely mentions various animals etc. and does not make the students aware of the diversity.
Ahmed Bawany Academy School & College	3	6	Science and Technology	27	14	12	1	Discuss the good and bad sides of science.	Although this lesson should have been the first lesson of the unit, some students were able to explain the meaning of science and technology. There were some vague explanations from teachers, asking for impressions of the appearance of scientists, and off-the-mark questions. Is there any point in discussing who is or is not a scientist?
Govt. Kalachandpur High School and College	6	6	Earth and Universe	30	10	19	1	The students were asked to discuss the universe (the topic was not concrete, but the students decided on their own content and discussed it. The students were divided into two groups: one to talk about the universe (although the topic was not concrete, the students decided on the content themselves and discussed it) and the other to draw a picture of the universe.	The students answered the types of colors of the fixed stars without any explanation from the teacher. In the space drawings, the students drew twinkling stars like those in the cartoons, and the drawings prepared by the teachers were also like that.
Barishal Govt. Model School & College	10	7	Molecules and Atoms	70	13	57		Answer the number of electrons and orbitals of various atoms.	Teachers explain very quickly and students almost automatically respond (recite) what is explained and what they know.
Talukdarhat School & College	12	7	Call of Crops	15	0	11	4	Write five names of trees and flowers. Ask two pupils to draw a picture of a living tree and a dead tree. Discuss the blessings of trees.	Good lesson, with the teacher asking questions to make the students think, but the lesson time was short.
Karnakati Gause Rahamania High School & College	14	6	Matter and its Properties	46	15	29	2	Discussion on the definition of matter in group (presented by each group). Weighing books, balls, etc. Measure a book with a ruler (some pupils use the ruler incorrectly) and calculate the volume.	The same questions are asked and answered by many students.
Barisal Zilla School	16	7	Call of Crops	10	1	5	4	Discuss local crops and soils. Discuss conditions for growing good crops.	Good teaching, with group discussions and presentations.

Unlike the curriculum 2012 edition lessons in the previous survey, many lessons in both mathematics and science subjects incorporated activities according to the textbooks and teacher's guides and indicated an intention to ask questions of the students. However, while there are problems with the quality of the activities described in the textbooks 2023 edition, they are teacher-led, as has been the style of teaching in the past, with teachers explaining and students following the instructions and the results being summarized by the teachers. Therefore, it cannot be said that students' independent learning has been promoted, and perhaps there has been a decline in terms of simple mathematics skills such as calculation ability, as there are more activities and fewer exercises.

It can also be seen that the majority of questions from teachers are either simple knowledge questions or repetitions of the content and answers explained by the teacher, and that the number of questions that make students think has not increased in the 2023 curriculum. In terms of activities, it can be seen that many activities are carried out after the teacher has explained the content of the activity, or are carried out in sequence while the teacher explains everything, and activities that require students to think and derive answers are not carried out. In order to improve this situation, it is necessary to describe in more detail the content of the questions to be asked of the students and how to ask them in the teachers' instruction manuals, and to provide guidance on how to ask questions in teacher training.

Other classroom trends observed were that almost all teachers went around to check each student's answers after giving them a question, and no teacher called the student to the front to explain the answer.

Chapter 9. Teacher Training in Secondary Education

Teacher training is an important part that greatly affects the quality of teachers. Generally, teacher training is broadly classified into Pre-Service Teacher Training (PRESET) to acquire the basic skills necessary to become a teacher and In-Service Teacher Training (INSET) to strengthen the skills of teachers after they become teachers. In Bangladesh, however, a bachelor's degree (in any field) is sufficient to become a teacher. In other words, it is possible to become a teacher without learning teaching-specific subjects. For this reason, the distinction between PRESET and INSET is ambiguous even within Bangladesh, and some educators are not familiar with these terms. This chapter summarizes the teacher training.

9.1 Types of Secondary Teacher Training Institutions

The five main institutions involved in teacher training in secondary education in Bangladesh are as follows.

- Teacher Training College: TTC
- Higher Secondary Teacher Training Institute: HSTTI
- National Academy for Educational Management: NAEM
- Institution of Education and Research: IER
- Bangladesh Open University: BOU

Target of each institution is shown in Table 9-1.

Table 9-1 Teacher Training Institutions for Secondary Education

Teacher Training Institution	No. of Institutions	PRESET	INSET	
		Secondary (G6-G10)	Secondary (G6-G10)	Higher Secondary (G11-G12)
TTC	Government: 14, Non-government: 90	✓	✓	
IER	4 (Dhaka, Rajshahi, Chittagong, Khulna)	✓		
BOU	Headquarter: 1, Regional Resource Center: 12, Sub-regional Center: 80	✓	✓	
HSTTI	Government: 5	-		✓
NAEM	1	-	✓	✓

Source: Created by the Survey Team

Table 9-2 shows the teacher training courses that teachers are required to take at each educational level and school type (government and non-government) in secondary schools. The B.Ed. course is a degree course to obtain a Bachelor of Education (B.Ed.), and there are two types of courses: a one-year B.Ed. (Professional) course for those who already have a bachelor's degree in some field or for in-service teachers (hereinafter referred to as "B.Ed. (Pro)") and a four-year B.Ed. (Honors) course for those who do not have a bachelor's degree (hereinafter referred to as "B.Ed. (Hons)"). B.Ed. courses are offered at TTC, IER, and BOU in Table 9-1.

Table 9-2 PRESET and INSET Courses for Each Type of Secondary School

Type of Secondary School	PRESET		INSET	
	Necessary Qualification Before Recruitment	Before Getting a Post as a Teacher After Recruitment	Within 5 Years After Getting a Post as a Teacher	Any Time After Getting a Post as a Teacher
Govt. Secondary (G6-G10)	B.Ed. (Hons)	N/A	N/A	NAEM (Headmaster, English, ICT training)
	Bachelor's degree other than B.Ed.	N/A	Mandatory to obtain B.Ed. (Pro)	NAEM (Headmaster, English, ICT training)
Non-Govt. Secondary (G6-G10)	B.Ed. (Hons)	N/A	N/A	NAEM (Headmaster, English, ICT training)
	Bachelor's degree (B.Ed. (Pro) degree is recommended for MPO teachers)	N/A	Mandatory to obtain B.Ed. (Pro) for MPO teachers	NAEM (Headmaster, English, ICT training)
Govt. Higher secondary (G11-G12)	Bachelor's degree (any field)	NAEM (Foundation Training Course)	N/A	NAEM training courses
Non-Govt. Higher secondary (G11-G12)	Bachelor's degree (any field)	N/A	N/A	HSTTI subject-based training (Mainly pedagogy), ICT training, educational admin, and management training

Source: Created by the Survey Team

The table above indicates that the minimum qualification for new teachers in Bangladesh is a bachelor's degree (in any field). Compared to Japan, where new teachers in addition to subject knowledge are required to take courses related to basic understanding of education, methods of teaching moral values and integrated learning, student guidance and educational counseling, and practical education (educational practice), Bangladesh is considered to have too much emphasis on subject knowledge.

The following is a summary of PRESET and INSET institutions in secondary education in Bangladesh as listed in Table 9-1.

(1) Teacher Training College (TTC)

There are 104 TTC's throughout Bangladesh. The number of colleges, teachers, and students as of 2021 is shown in Table 9-3. Of the 104 TTC colleges nationwide, 14 (13%) are government colleges and 90 (87%) are non-government colleges. The composition of the non-government college is similar to that of the secondary schools. There is one female government college and no female non-government colleges. The TTC mainly offers two types of B.Ed. courses: a four-year B.Ed. (Hons) course, which is a teacher training course for Higher Secondary Certificate (HSC) holders and above, and a one-year B.Ed. (Pro) course for those who already have a bachelor's degree in some field or for in-service teachers. The B.Ed. course is described in detail in Section 9.2. In addition to the B.Ed. course, many government TTCs offer a Master of Education (M.Ed.) course for those who wish to acquire a higher degree of specialization.

Table 9-3 Number of TTCs, Teachers, and Students

Item	Government	Non-Government	Total
No. of TTCs	14 (1)	90 (0)	104 (1)
No. of teachers	463 (123)	1,162 (452)	1,625 (575)
No. of students	2,976(1,463)	9,419 (4,206)	12,395 (5,669)

() indicate the number of female colleges, female teachers, and female students.

Source: Created by the Survey Team based on BANBEIS 2021.

(2) Higher Secondary Teacher Training Institute (HSTTI)

All HSTTIs are government institutes, and it was decided in 1993 to establish them in Barisal, Comilla, Khulna, Mymensingh, and Rajshahi as part of the Higher Secondary Education Project (HSEP). At the time of its establishment, there were only TTC for secondary teachers (G6-G10), so HSTTI was newly established for higher secondary teachers (G11-G12). However, due to difficulties in acquiring land for the establishment, the four HSTTIs, with the exception of HSTTI Barishal, were established on the premises of the TTC government schools in their respective divisions. The HSTTI jurisdictions in charge of the five institutes are described in Table 9-4.

Table 9-4 Jurisdiction of Each HSTTI

HSTTI	Jurisdiction
HSTTI Barisal	Barisal division
HSTTI Comilla	Chittagong division
	Sylhet division
HSTTI Khulna	Khulna division
HSTTI Mymensingh	Dhaka division
	Mymensingh division
HSTTI Rajshahi	Rajshahi division
	Rangpur division

Source: Created by the Survey Team based on the results of interviews.

HSTTI provides training mainly to higher secondary teachers in subject-based teaching methods, ICT, etc., as well as training in educational administration management to principals and vice-principals. HSTTI has been under the jurisdiction of the Directorate of Secondary and Higher Education (DSHE) since its establishment, and its training and other activities have been conducted under the recurrent budget of the Ministry of Education (MOE) (regular courses) and the development budget (including Development Partners (DP) support, irregular courses).

(3) National Academy for Educational Management (NAEM)

NAEM has been a teacher training institution for over 60 years. Currently, NAEM utilizes its onsite facilities to conduct educational management training, INSET, workshops, seminars, research, and publications. One of the most notable activities is the Foundation Training Course (FTC) for Bangladesh Civil Service (BCS) Education Cadre, which is a pre-service training course for higher secondary and tertiary education teachers before they are posted. The FTC holds four batches of courses per year, with each batch lasting three months. In addition to the FTC, NAEM offers general teacher training in education management and teaching methods, as well as English and ICT training. NAEM currently has only one institute in Dhaka, and its training capacity is insufficient in relation to the number of school teachers hired each year.

(4) Institution of Education and Research (IER)

IER was established in 1959 with the support of USAID as an educational and research institute related to the field of education at the University of Dhaka. Subsequently, IERs have been established at Rajshahi University, Chittagong University, Khulna University, and others. The IER at Dhaka University offers B.Ed. (Hons) as well as one-year M.Ed. (daytime) and two-year M.Ed. (evening) courses. As a public university and an autonomous organization, it does not follow the curricula set by other institutions, but rather educates students according to its own set of policies. Dhaka University IER has an enrollment capacity of 120 students, with a ratio of 80 in the sciences and 40 in the humanities and business.

In B.Ed. (Hons), students are required to do 6 months of teaching practice, and many are sent to affiliated schools and other secondary schools for practice. 80% of the trainers working under

NAEM are said to be from Dhaka University IER, and many of those involved in educational institutions in Bangladesh, including TTC and HSTTI, are IER graduates.

IER does not provide on-campus training for in-service secondary teachers. However, when teacher training institutions such as TTCs, HSTTIs, or secondary schools request instruction in science experiments, IER is able to dispatch teachers to provide instruction and is expected to cooperate in high-level subject-based training, etc.

(5) Bangladesh Open University (BOU)

BOU was established in 1992 as a national open (public) university to provide education to the public at large through distance learning. Distance education itself has been offered through radio broadcasting since around 1956 through BOU's predecessor institutions, and later educational programs were broadcast on TV using recorded images, etc. Currently, distance education is offered mainly through digital content via the internet, printed materials, and other media in combination with schooling. The number of enrolled students was 672,859 at the end of 2021. Since registered students can enroll for 5 years, the cumulative number of students is very large. The Open School, the public education arm, offers certificate courses such as the Secondary School Certificate (SSC), HSC, bachelor's and master's degrees, etc. regardless of age, gender, or disability.

The School of Education offers B.Ed., M.Ed., M.Phil. and Ph.D. courses through distance learning. The B.Ed. course currently has about 12,000 students enrolled, and this is because of its popularity among students in rural areas with limited commuting access and the convenience of being able to study in their free time while working and earning a degree by attending school once a week.

9.2 Structure of the B.Ed. Course (PRESET)

As mentioned in section 8.3, those with a bachelor's degree can become government secondary school teachers according to their expertise by passing the BCS examination. However, as part of the teacher training system, newly recruited secondary teachers (G6-G10) who have not yet obtained a B.Ed. degree are required to obtain the degree from a TTC or other institution within five years of being hired. For government higher secondary school teachers, it is not mandatory to obtain a B.Ed. degree, but they are required to take the NAEM's FTC after being hired.

As mentioned in Section 8.3, MPO teachers among non-government secondary school teachers (G6-G10) are recommended to have a B.Ed. degree in addition to a bachelor's degree in any field at the time of application for the NTRCA teacher recruitment examination. It is possible to take the teacher recruitment examination even if they have not obtained a B.Ed. degree, but if they are hired as a teacher, they are required to obtain a B.Ed. degree within five years of being hired, as is the case with government school teachers⁷⁰. Non-government secondary school teachers are required to attend subject-based training at HSTTI, which will be explained in the next section, but due to limited capacity of HSTTI, training has not been provided to all new teachers.

(1) Admission Requirements for B.Ed. Courses

The admission requirements for the B.Ed. (Pro) and B.Ed. (Hons) courses are as follows, both of which confer the degree of Bachelor of Education (B.Ed.) upon completion.

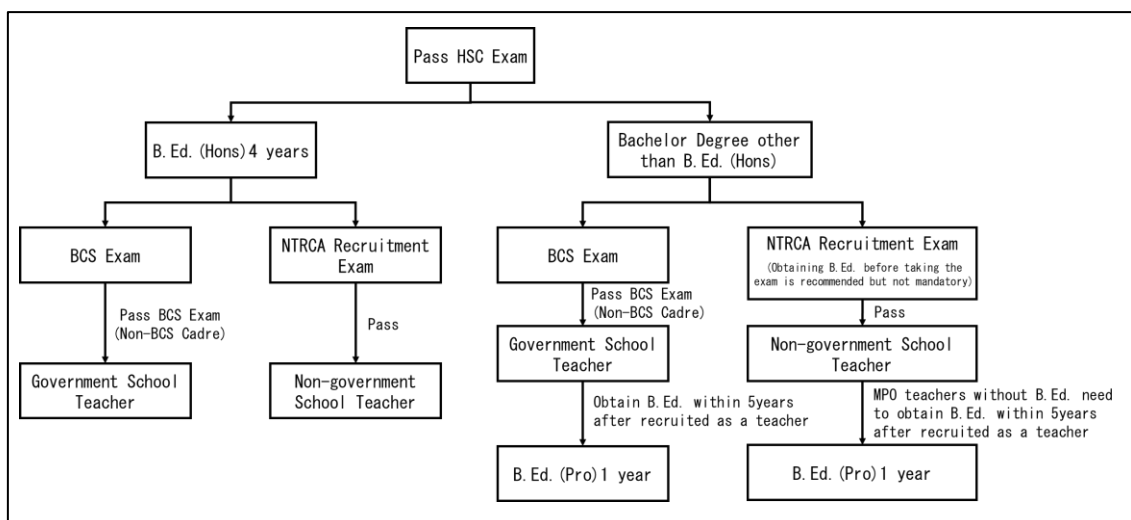
⁷⁰ Based on the MPO Policy 2021, Ministry of Education.

Table 9-5 Admission Requirements for B.Ed. Courses

B.Ed. Course Type	Study Duration	Target Students	Admission Requirement
B.Ed. (Pro)	1 year	Fresh university graduates and in-service teachers	Bachelor's degree in any field
B.Ed. (Hons)	4 years	Students without bachelor's degree	HSC holder

Source: Created by the Survey Team based on the results of interviews.

Figure 9-1 shows the structure of PRESET for secondary (G6-G10) teachers through the acquisition of the B.Ed. degree. Since the acquisition of a B.Ed. degree is not mandatory for higher secondary school teachers, there is no other teacher training mechanism other than the teacher training described below.



Source: Created by the Survey Team based on the results of interviews.

Figure 9-1 Structure of PRESET in Secondary Education (G6-G10)

(2) Scale

The main provider of B.Ed. courses is the TTC, but the same courses are also offered at IER and BOU. A comparison of these and their respective characteristics are shown in Table 9-6.

Table 9-6 Comparison of Institutions Offering B.Ed. Courses

	Government TTC	Non-Government TTC	IER	BOU
No. of institutions	14 colleges	90 colleges	At 4 universities (Dhaka, Rajshahi, Chittagong, Khulna)	1 headquarter (12 Regional centers and 80 Sub regional centers in Bangladesh)
No. of students	2976 students (including all courses)	9419 students (including all courses)	About 480 students at B.Ed. courses of Dhaka university (Example)	About 12000 students* (B.Ed. (Pro) course, 4536 students* (M.Ed. course)
Main courses	B.Ed. (Pro) B.Ed. (Hons) M.Ed.	B.Ed. (Pro)	B.Ed. (Hons) M.Ed., M.Phil. Ph.D. (Thesis)	B.Ed. (Pro) M.Ed.
Education type	Commute to school	Commute to school	Commute to school	Distance learning (commute to nearby regional center on Fridays only)
Managing authority	DSHE	Governing Body (Managed with license approval by NU)	Each university (Autonomous body)	BOU (Autonomous body)
Curriculum	Using curriculum of National University: NU	Using curriculum of National University: NU	Using each university's curriculum	Using BOU's curriculum
Completion Exam	NU's completion exam	NU's completion exam	Each university's completion exam	BOU's completion exam
Degree grant	Granted by NU	Granted by NU	Granted by each university	Granted by BOU
Faculty	Recruited from BCS Cadre (General Education) with a Master's degree and a B.Ed.	Governing Body recruits through the NU's selection committee.		

Source: Created by the Survey Team based on the results of interviews.

*BOU students may be enrolled for a maximum of five years, so the number of students indicates the total number of students enrolled, including those who enrolled five years ago.

Five government TTCs and three non-government TTCs were visited during the survey in Bangladesh by the survey team. A summary of the results of the visits is provided below.

Table 9-7 Results of Visits to Government TTCs

Item		Government TTC, Dhaka	Government TTC, Barisal	Government TTC, Rajshahi	Government TTC, Khulna	Government TTC, Mymensingh
Year of establishment		1909	1999	1955	1970	1948
Offering courses		B.Ed.(Pro) B.Ed.(Hons) M.Ed.	B.Ed.(Pro) B.Ed.(Hons)	B.Ed.(Pro) B.Ed.(Hons) M.Ed.	B.Ed.(Pro) B.Ed.(Hons) M.Ed.	B.Ed.(Pro) B.Ed.(Hons) M.Ed.
No. of teachers	Total	70	28	42	35	36
	Science teachers	17	5	11	7	11
No. of staff	Total	34	14	22	29	23
	Lab assistant	1	1	2	2	1
No. of B.Ed. (Pro) course students	No. of students/Capacity/ Percent of the intake quota	452 / 650 / 70%	86 / 350 / 25%	158 / 650 / 24%	120 / 600 / 20%	300 / 650 / 46%
No. of B.Ed. (Hons) course students	No. of students/Capacity/ Percent of the intake quota	456 / 480 / 95%	129 / 200 / 65%	188 / 200 / 94%	170 / 200 / 85%	400 / 400 / 100% (about 20% drop out before graduation)
Ratio of in-service teachers among students of B.Ed. (Pro) course		40%	30%	41%	25%	15%
Field of expertise of students of B.Ed. (Pro) course	Science/Humanity/ Business	25% / 60% / 15%	14% / 86% / 0%	37% / 50% / 13%	20% / 70% / 10%	20% / 63% / 17%
Tuition fee	B.Ed. (Pro)	4000-5000BDT per year	3565BDT	4520BDT	5000BDT	5000BDT
	B.Ed. (Hons)	Same as above	5000BDT (1st year), 4000BDT per year (after 2nd year)	4550BDT (1st year, 4000BDT per year (after 2nd year)	4600BDT per year	4000-5000BDT per year
Situation of implementation of science experiment		When the B.Ed. (Pro) curriculum was revised in 2005, the allocation of marks for science experiments was eliminated, so science experiments are rarely conducted. Even in B.Ed. (Hons), experiments are not conducted due to insufficient number of students and lack of equipment, or science experiment is conducted in classrooms without using science laboratories, where teachers only show students one-sidedly.			Very few science experiments are conducted. A very small number of active teachers conduct experiments with low-cost materials in chemistry and other areas.	Science experiments are rarely conducted because they are not part of the syllabus, but assignments are given or small groups of students use the laboratory.

Source: Created by the Survey Team based on the results of interviews.

Table 9-8 Results of Visits to Non-Government TTCs

Item		Archbishop T. A. Ganguly Teachers Training College	Adarsha Shikhhok Proshikhan College	Cox's Bazar Teacher Training College
Location		Dhaka	Rajshahi	Cox's Bazar
Year of establishment		1956	1998	1999 (Training started in 2005)
Offering course		B.Ed.(Pro)	B.Ed.(Pro)	B.Ed.(Pro)
No. of teachers	Total	10	16	11
	Part time teachers	4	4	2
No. of staff	Total	3	4	3
	Lab assistant	no lab assistant	no lab assistant	no lab assistant
No. of B.Ed. (Pro) course students (No. of students/Capacity/ Percent of the intake quota)		48 / 100 / 48%	63 / 200 / 32%	135 /135 / 100% (There were 400 applicants, about 300% of the capacity)
Ratio of in-service teachers among students of B.Ed. (Pro) course		60%	16%	80%
Field of expertise of student of B.Ed. (Pro) course (Science / Humanity / Business)		13% / 64% / 23%	16% / 84% / 0%	28% / 62% / 10%
Governing authority		Governing body: The Archbishop chairs the committee and members are selected from the principal, faculty, and parents of students. Members should include the Assistant Director level of DSHE. This governing body is the common one for all missionary TTCs in Bangladesh.	Governing body: The college proposes members to the NU, and the NU selects and approves members from among them.	Governing body: Currently 9 members (President, Principal, 3 teacher's representatives, 1 donor, 1 educational influencer, 1 DSHE representative, 1 NU representative)
Tuition fee		B.Ed. (Pro): 14,000 BDT per year for tuition and 16,000 BDT for entrance fee, exam fee, etc.	B.Ed. (Pro): 8000 BDT per year for tuition and 5000 BDT for exams x 2 semesters = 10000 BDT	B.Ed. (Pro): 12,000 BDT per year and 5000 BDT for registration fee, etc.
Financial situation		Since all educational facilities and equipment are provided by St. Joseph Higher Secondary School, TTC classes are held on weekday afternoons and Fridays when classes at the school are not in session. Due to financial difficulties, the amount of teachers salary is about half that of the TTC government college teachers.	The TTC is renting the land and building from the landowner. It also rents out its classrooms to other private schools after 2 pm. It pays rent, utilities, and personnel expenses from tuition fees and classroom rental income, but has not paid salaries to teachers since 2005.	There is no financial support from the government and the land and building are rented from one of the founders. The land and building rent is paid from tuition fees. If tuition is not sufficient, the founders donate money, and no other fundraising is done.
Situation of implementation of science experiment		When the B.Ed. (Pro) curriculum was revised in 2005, the allocation of marks for science experiments was eliminated, so science experiments have not been conducted. Teachers only show equipment in their class.		Science experiments are rarely conducted. Hands-on training with low-cost materials is sometimes conducted.

Source: Created by the Survey Team based on the results of interviews.

(3) Curriculum

All TTCs are affiliated with National University (NU), and the curriculum, syllabus, and examinations are developed by NU.

Since public universities are autonomous organizations in Bangladesh, NU, IER, and BOU each conduct their own curriculum and syllabus development and examinations. Dhaka University was the first university in Bangladesh to offer a B.Ed. course in 1994. Therefore, the B.Ed. courses of other IERs are also based on the curriculum of Dhaka University IER. Also, NU is based on the curriculum of Dhaka University IER and BOU is based on NU's curriculum. Therefore, similarities are high among those curricula.

The curriculum for NU's B.Ed. courses is up-to-date with the 2017 edition for the B.Ed. (Pro) and the 2013-2014 edition for the B.Ed. (Hons). NU's current B.Ed. (Pro) and B.Ed. (Hons.) course curriculum is shown in Tables 9-9 and 9-10. Both courses include teaching and learning skills and techniques, learning and assessment, and teaching practices, which allow teachers who graduate from TTC's B.Ed. to learn not only subject matter knowledge but also a wide range of qualities necessary for teaching.

Table 9-9 Curriculum of B.Ed. (Pro) Course

Subject Name	Credit	Weeks	Class per Week	Total No. of Class
Semester 1 (January 1 - June 30)				
Secondary Education	4	15	3	45
Teaching-Learning Skills and Techniques	4	15	3	45
Learning and Assessment	4	15	3	45
Information and Communication Technology in Education	4	15	3	45
Teaching Practice-1 (College based demonstration teaching and school based teaching practice (2+2) for 4 weeks)	6	4	12	48
Teaching Studies (Choose any two from one branch) 4 credit x 2 ✓ Humanities Group: 1) Teaching Bangla, 2) Teaching English, 3) Teaching History of Bangladesh and World Civilization, 4) Teaching Civics and Citizenship, 5) Teaching Economics, 6) Teaching Bangladesh and Global Studies, 7) Teaching Geography and Environment, 8) Teaching Advanced ICT ✓ Science Group: 1) Teaching Mathematics, 2) Teaching Physics, 3) Teaching Chemistry, 4) Teaching Biology, 5) Teaching Advanced ICT ✓ Business Studies Group: 1) Teaching Business Entrepreneurship, 2) Teaching Accounting, 3) Teaching Finance & Banking, 4) Teaching Advanced ICT	8	15	6	90
1 st semester total	30		30	318
Semester 2 (July 1 - December 31)				
Inclusive Education	4	7	6	42
Research in Education	4	7	6	42
Teaching Practice-2 (School based teaching practice (4+4) for 8 weeks)	16	7	12	84
Elective Subject (Choose any one from below) 3 credit x 1 1) Primary Education, 2) Teaching Library and information Science, 3) Teaching arts and crafts, 4) Teaching Physical Edu., Health Science and Sports, 5) Teaching Agriculture Studies, 6) Teaching Home Science, 7) Teaching Islam and Moral Edu., 8) Teaching Hindu Religion and Moral Edu., 9) Teaching Buddhist Religion and Moral Edu., 10) Teaching Christ Religion and Moral Edu.	3	7	6	42
Comprehensive Exam (Two hrs theory written exam- test on six compulsory subjects)	2			
Viva-voce exam (In presence of internal and external examiners)	1			
2 nd semester total	30		30	210

Source: Curriculum and Syllabus for Bachelor of Education (B.Ed.) One Year Bachelor of Education (B.Ed) Course effective from the Session: 2017 (NU)

Table 9-10 Curriculum of B.Ed. (Hons) Course

Semester	Subject Name	Credit	Class Hours
1st year			
1 st semester	History of the Emergence of Independent Bangladesh	4	60
	Bangla -1	4	60
	English -1	4	60
	Introduction to Education	4	60
2 nd semester	Bangla -2	4	60
	English -2	4	60
	Education in Bangladesh	4	60
	Foundations of Education	4	60
	Comprehensive Viva (Satisfactory/non-satisfactory)		
1st year total		32	480
2nd year			
3 rd semester	ICT in Education	4	60
	Educational Psychology and Guidance	4	60
	Elective Courses (Students will choose three courses from any area of the following five areas.) <ul style="list-style-type: none"> ✓ Area 1: Bangla Paper-I, English Paper-I, ICT Education Paper-I ✓ Area 2: Economics Paper-I, Political Science Paper-I, Sociology Paper-I, Geography and Environment Paper-I, History Paper-I or Islamic History and Culture Paper-I, ICT Education Paper-I ✓ Area 3: Physics Paper-I, Chemistry Paper-I, Geography and Environment Paper-I, Mathematics Paper-I, Botany Paper-I, Zoology Paper-I, Statistics Paper-I, ICT Education Paper-I ✓ Area 4: Accounting Paper-I, Management Paper-I, Marketing Paper-I, Finance and Banking Paper-I, ICT Education Paper-I ✓ Area 5: Information Science and Library Management Paper-I, Home Economics Paper-I, ICT Education Paper-I 	12	180
	Organization and Management of Educational Institutions	4	60
	Gender Education	4	60
4 th semester	Elective Courses (Students will choose three courses from any area of the same five areas as 3 rd semester)	12	180
	Comprehensive Viva (Satisfactory/non-satisfactory)		
2nd year total		40	600
3rd year			
5 th semester	Teaching Learning Methods and Strategies	4	60
	Assessment and Evaluation in Education	4	60
	Elective Courses (Students will choose three courses from any area of the same five areas as 3 rd semester)	12	180
6 th semester	Micro Teaching and Simulation	4	60
	Introduction to Curriculum	4	60
	Elective Courses (Students will choose three courses from any area of the same five areas as 3 rd semester)	12	180
	Comprehensive Viva (Satisfactory/non-satisfactory)		
3rd year total		40	600
4th year			
7 th semester	Practicum/Internship	20	
8 th semester	Introduction to Educational Research	4	60
	Environment Education	4	60
	Non-Formal and Continuing Education	4	60
	Inclusive Education	4	60
	Education and Development	4	60
4th year total		40	300

Source: Four Year (8 Semester) B.Ed. Honors Integrated Course Effective from the Session: 2013–2014 (NU)

Curriculum Revision

The NU curriculum is supposed to be revised every 3-4 years. The current curriculum is the 2017 edition for B.Ed. (Pro) and the 2013-2014 edition for B.Ed. (Hons). The revision was postponed

during the school closure period due to the COVID-19 outbreak, and the next revision process is scheduled to begin in July 2023 with the aim of incorporating the new curriculum of secondary education which was introduced in January 2024. The revision process is as follows. The revision of one course takes 4-5 months, while the revision of the curriculum for all courses takes one year.

1. Conduct workshops with IER, research institutions, in-service teachers, Bangladesh Accreditation Council, and other stakeholders to gather opinions on the existing curriculum and points that need to be changed. The first workshop will be held for all subjects, followed by subject-based workshops.
2. Based on the above proposal, 5-6 members of curriculum review committee consists of subject experts (including representatives from Dhaka University IER, Rajshahi University IER, TTC government schools and TTC non-government schools) led by the Dean curriculum of NU will meet to draft a new curriculum.
3. The drafted new curriculum will be approved by NU's Academic council. The Academic Council is chaired by the Vice Chancellor of NU and its members include NU professors, university faculty, the Board of Intermediate and Secondary Education (BISE), other research institutions, and public officials.

(4) Textbooks

For the B.Ed. (Pro) course, a common textbook developed by the Asian Development Bank's TQI-II project exists for all courses. For the B.Ed. (Hons) course, no textbook exists and each teacher prepares his/her own teaching materials.

(5) Issues

The main issues related to the B.Ed. course (PRESET) identified by the survey are as follows.

- Both government and non-government TTCs are facing a serious shortage of students in the B.Ed. (Pro) course. Many students are flocking to BOU, where they can obtain a degree by attending school only one day a week (Friday), and obtaining a degree has become the objective rather than improving their skills as teachers.
- There are fewer students in the sciences and business fields and more in the humanities, where the degree is easier to obtain.
- Science experiments have not been taught since the 2005 revision as there are no marks in the curriculum for the B.Ed. (Pro) course at NU. Also, very few laboratory equipment exists.
- Many non-government TTCs offer only B.Ed. (Pro) courses. The colleges are operated on a volunteer-like basis due to significant financial problems, such as not owning its own land or school buildings, and not being able to pay salaries to teachers and staff.

(6) Support Needs

The main support needs at the field level identified through interviews with TTCs in this survey are as follows.

- Facilities such as ICT equipment and multimedia classrooms
- Training in teaching methods using ICT equipment
- Practical training based on the new curriculum
- Training by foreign experts and subject-based training in foreign countries

9.3 Structure of INSET

The public teacher training institutions that provide INSET for secondary school teachers are NAEM and HSTTI. NAEM mainly targets government secondary school teachers and provides FTC for new higher secondary school teachers and educational administration and management training for secondary school principals. While TTCs and secondary schools also provide project-based INSET supported by MOE and DPs on an irregular basis, only NAEM and HSTTI provide regular INSET on an annual basis.

9.3.1 Existing Training Institutions

(1) NAEM

A brief overview of NAEM is provided in Section 5.2(2). Tables 9-11 and 9-12 list the teacher training courses for NAEM's secondary teachers (G6-G10) and higher secondary teachers (G11-G12) for the 2022-2023 year. NAEM's training categorizes trainees as secondary teachers (G6-G10) as the secondary level and higher secondary teachers (G11 -G16) as the college level. NAEM's English, ICT, and educational administration and management training for secondary level teachers is open to both government and non-government secondary school teachers, but only Monthly Pay Order (MPO) schools are accepted for non-government schools.

Table 9-11 NAEM's INSET Courses (Secondary Level)

No.	Course Name	Target Teachers	Duration	No. of Course per Year	No. of Participants
1	Communicative English Course [CEC (S)]	Secondary Level English Teachers	3 weeks	2 times	40 x 2=80
2	Educational Administration and Management Training Course [EAM (H)]	Heads of Secondary Level Institutions	3 weeks	4 times	40 x 4=160
3	English Language Teaching Course (ELTC)	Assistant Teachers of English at secondary Level institutions	2 weeks	20 times	40 x 20=800
4	Library Planning and Management [LPM(S)] Training Course	Librarians of Secondary level institutions	2 weeks	1 time	40 x 1=40
5	Pedagogical Training on Mathematics [PTM(S)]	Secondary level Mathematics Teachers	6 days	1 time	40 x 1=40
6	Refreshers' Course on Educational Administration and Management [REAM(H)]	Heads of Secondary level Institutions	2 weeks	1 time	40 x 1=40
7	Satellite Training Course on Teachers' Professional Development (STCTPD)	Assistant Teachers of Secondary Level Institutions	6 days	20 times	40 x 20=800
8	Training Course on ICT Application in Institutional Work [ICT (H)]	Heads of Secondary Level Institutions	5 days	3 times	30 x 3=90
9	Training Course on ICT [ICT-S]	Secondary Level Teachers	3 weeks	3 times	30 x 3=90
Total number of training participants per year					2140

Source: Created by Survey Team based on NAEM Training Calendar 2022-2023

Table 9-12 NAEM's INSET Courses (Higher Secondary Level)

No.	Course Name	Target Teachers	Duration	No. of Course per Year	No. of Participants
1	Advanced Course on Education and Management (ACEM)	Associate Professors	45 days	3 times	40 x 3=120
2	Communicative English Course [CEC (C)]	Lecturers in English	3 weeks	2 times	40 x 2=80
3	Digital Content Development [DCD (C)] Training Course	College Teachers	2 weeks	2 times	30 x 2=60
4	Educational Administration and Management Training Course ([EAM (P)])	Principals of Colleges & Sr. Madrasah	3 weeks	3 times	40 x 3=120
5	Foundation Training Course (FTC)	BCS (General Education) Cadre Officers	120 days	12 times (6 times outside NAEM)	927
6	Library Planning and Management [LPM(C)] Training Course	Librarians of college level institutions	2 weeks	1 time	40 x 1=40
7	Refreshers' Course on Educational Administration and Management [REAM(P)]	Principals of Colleges & Sr. Madrasah	2 weeks	1 time	40 x 1=40
8	Senior Staff Course on Education and Management (SCEM)	Professors and Principals	45 days	3 times	40 x 3=120
9	Training Course on ICT [ICT-C]	Lecturers of Colleges	3 weeks	1 time	30 x 1=30
Total number of training participants per year					1537

Source: Created by Survey Team based on NAEM Training Calendar 2022-2023

NAEM provides general teacher training in education management and teaching methods, as well as English and ICT. Since it is assumed that trainees have already studied the specialized content of each subject at universities and other institutions, NAEM does not train science experiments, etc., which require infrastructure development for each subject. In addition, the ratio of enrollment to intake quota for INSET at NAEM for the 2021-2022 academic year is shown in Tables 9-13 and 9-14 below.

Table 9-13 Ratio of Enrollment to Intake Quota for INSET at NAEM (Secondary Level)

No.	Course Name	Target Teachers	Plan	Actual	Ratio of Enrollment to Intake Quota
1	Communicative English Course [CEC (S)]	Secondary Level English Teachers	60	65	108%
2	Educational Administration and Management Training Course ([EAM (H)])	Heads of Secondary Level Institutions	120	160	133%
3	English Language Teaching Course (ELTC)	Assistant Teachers of English at secondary Level institutions	480	595	124%
4	Library Planning and Management [LPM(S)] Training Course	Librarians of Secondary level institutions	30	65	217%
5	Pedagogical Training on Mathematics [PTM(S)]	Secondary level Mathematics Teachers	30	0	0%
6	Refreshers' Course on Educational Administration and Management [REAM(H)]	Heads of Secondary level Institutions	30	0	0%
7	Satellite Training Course on Teachers' Professional Development (STCTPD)	Assistant Teachers of Secondary Level Institutions	480	600	125%
8	Training Course on ICT Application in Institutional Work [ICT (H)]	Heads of Secondary Level Institutions	90	98	109%
9	Training Course on ICT [ICT-S]	Secondary Level Teachers	90	101	112%
Total number of training participants per year			1410	1684	119%

Source: Created by Survey Team based on NAEM Annual Report 2021-22

Table 9-14 Ratio of Enrollment to Intake Quota for INSET at NAEM (Higher Secondary Level)

No.	Course Name	Target Teachers	Plan	Actual	Ratio of Enrollment to Intake Quota
1	Advanced Course on Education and Management (ACEM)	Associate Professors	70	80	114%
2	Communicative English Course [CEC (C)]	Lecturers in English	60	57	95%
3	Digital Content Development [DCD (C)] Training Course	College Teachers	60	66	110%
4	Educational Administration and Management Training Course ([EAM (P)])	Principals of Colleges & Sr. Madrasah	90	96	107%
5	Foundation Training Course (FTC)	BCS (General Education) Cadre Officers	1200	1140	95%
6	Library Planning and Management [LPM(C)] Training Course	Librarians of college level institutions	30	43	143%
7	Refreshers' Course on Educational Administration and Management [REAM(P)]	Principals of Colleges & Sr. Madrasah	30	0	0%
8	Senior Staff Course on Education and Management (SSCEM)	Professors and Principals	70	80	114%
9	Training Course on ICT [ICT-C]	Lecturers of Colleges	30	33	110%
Total number of training participants per year			1640	1595	97%

Source: Created by Survey Team based on NAEM Annual Report 2021-22

NAEM's INSET has a good reputation among trainees for the quality of its instructors, training facilities, and dormitories compared to HSTTI and other institutes. As a result, ratio of enrollment to intake quota is high, and there is no difficulty in recruiting participants for the training programs. The content of the training in pedagogical training on mathematics is currently being revised in line with the new NCTB curriculum, and the training is not currently being conducted.

NAEM currently has only one school in Dhaka. The biggest challenge for NAEM is the lack of training capacity relative to the number of school teachers hired each year. NAEM has been considering establishing a Regional Academy for Educational Management (RAEM) outside of Dhaka. In 2009, NAEM submitted a Development Project Proposal (DPP) to the Bangladesh government for the establishment of RAEM, but the proposal was not adopted. Currently, plans are underway to conduct a feasibility study for NAEM expansion, including the establishment of RAEM, with ADB's support.

(2) HSTTI

HSTTI has two types of training courses: regular annual training courses funded by the revenue budget of the Government of Bangladesh and irregular training courses funded by the project budget with the support of the Government of Bangladesh or the DPs. There are three types of revenue-budgeted training courses as shown in Table 9-15.

Table 9-15 Training Courses Based on HSTTI's Revenue Budget

Course Name	Target Teachers	Duration	No. of Training per Year	No. of Classes per Batch	No. of Participants per Year
Subject-based training course	Subject teachers from MPO schools and non-BCS teachers from government schools (BCS teachers are trained by NAEM)	40 days	4 times	140 (124 of which are common subject teaching methods, the rest are subject-specific training)	Maximum 40 x 2 subjects x 4=320
Computer teacher training	Open to teachers of all subjects who meet the same requirements as above.	27 days	5 times	66	Maximum 20 x 5 = 100
Educational administration and management training	Open to principals and voce principals who meet the same requirements as above	20 days	1 time	54	Maximum 30 x 1=30
Total training participants per HSTTI per year					450
Total training participants for 5 HSTTIs per year					2250

Source: Created by the Survey Team based on the results of interviews.

The results of the surveys of five HSTTIs visited in this survey are compared in Table 9-16.

Table 9-16 Results of Visits to Five HSTTIs

		HSTTI Comilla	HSTTI Barisal	HSTTI Rajshahi	HSTTI Khulna	HSTTI Mymensingh
Year of establishment		1994	1996	1993	1995	1995
No. of teachers (trainers)		9	9	8	8	6
No. of staff	Total	37	23	26	26	28
	Demonstrator	3	1	1	0	1
	Lab assistant	3	1	1	2	2
Rate of external lecturers	Subject-based training	26%	39%	31%	60%	34%
	Computer training	100%	49%	61%	80%	61%
	Educational admin training	67%	57%	57%	60%	50%
Situation of implementation of science experiment		No experiments have been conducted for the past 10 years. The laboratory is used as a storeroom and storage area for discarded PCs.	If requested by the participants, external lecturers will conduct the experiment, but it is not popular because of the lack of equipment.	Two sessions of experiments each in physics, chemistry, and biology subject-specific training, by external lecturers. Science trainees are few and experiments are rarely conducted.	Although there is a budget for science labs, the labs are not used due to the small number of trainees.	Since the current Director was appointed in 2022, it became mandatory to conduct experiments for 4 out of 160 classes for subject-specific training.
Tuition fee		No tuition fees are collected from trainees. HSTTIs are operated by government funds.				

Source: Created by the Survey Team based on the results of interviews.

HSTTI offers subject-based training, computer, and educational administration and management training. Subject-based training mainly deals with teaching methods common to all subjects, while specialized training specific to each subject is conducted by inviting outside lecturers from nearby universities and other institutions. Although it varies at each HSTTI, external lecturers are often used for computer training and educational administration and management training. Although science experiments are supposed to be conducted by external lecturers as part of subject-based training, in practice, they are rarely conducted.

HSTTI is facing challenges in recruiting trainees for subject-based training and educational administration and management training, with the exception of computer teacher training, which is popular among in-service teachers as a way to improve their skills. The participation rate and motivation of trainees are not high due to reasons such as low per diem and other allowances, lack of benefits for attending training, and poor quality of dormitories. In particular, the training in science and mathematics is difficult to secure participants due to the lack of science and mathematics teachers in secondary schools. The subject-based training is offered four times a year for two subjects with a total of eight subjects. Table 9-17 below shows the status of science and mathematics training at HSTTIs in Khulna and Mymensingh over the past five years, as well as the ratio of enrollment to intake quota.

Table 9-17 Status of Science and Math Training at HSTTI (Khulna and Mymensingh)

HSTTI	Year	Conducted training on science and math	Intake quota	No. of participants	Ratio of enrollment to intake quota
HSTTI Khulna	2023	No science and math training	-		
	2022	Biology	40	21	53%
	2021	No science and math training	-		
	2020	No science and math training	-		
	2019	Chemistry	40	21	53%
HSTTI Mymensingh	2023	Chemistry	40	22	55%
		Biology	40	19	48%
	2022	Mathematics	40	13	33%
	2021	Chemistry	40	18	45%
		Biology	40	15	38%
	2020	Physics	40	17	43%
		Biology	40	19	48%
	2019	Mathematics	40	27	68%

The number of subject-based training in science and mathematics conducted each year is about 0 to 2 out of 8, and the ratio of enrollment to intake quota is only about 50%. In order to improve the low rate, it is important to provide practical training programs based on the new curriculum of NCTB so that trainees can feel that they can improve their own skills. It is also important to diversify ways of training participation that make it easier for in-service teachers to participate, such as utilizing online training.

Table 9-18 shows the major project-budgeted training programs conducted in the past five years. In recent years, project-budgeted training has rarely been conducted. Project-budgeted teacher trainings are also conducted in TTCs and secondary schools, but these are only used as training venues.

Table 9-18 INSET Based on Project Budget for the Past 5 Years

Course Name	Project Name	Financial Source	Year of Implementation
Digital Content Development Training	Development Scheme of Government Post Graduate Colleges at District Headquarter to improve the quality of education	GoB	2022
Head of the Institute/Assistant Head of the Institute	ICT for Education in Secondary and Higher Secondary Level Project	GoB	2020
Parents and Teachers Training on Autism & Neuro-Developmental Disabilities	National Academy for Autism and Neurodevelopmental Disabilities (NAAND)	GoB	2019
Continuous Professional Development (CPD) training course for higher secondary level teachers	TQI-II	ADB	2018
Leadership training course for head teachers, superintendents and principals of secondary level institutions	TQI-II	ADB	2017
Follow-up training courses for head teachers, superintendents and principals of secondary level institutions	TQI-II	ADB	2017
In-service training courses for aspire heads of secondary level institutions	TQI-II	ADB	2017

Source: Created by the Survey Team based on the results of interviews.

Training Manual

HSTTI has three training manuals (July 2022 edition) for the pedagogy part of subject-based training, computer training, and educational administration and management training. All were prepared by the Training wing of DSHE. In addition, a training manual for the specialized part of subject-specific training was developed by the TQI-II of the Asian Development Bank for all subjects in 2016. However, its use is not mandatory, and there are HSTTIs that use the developed manuals and HSTTIs for which external instructors prepare separate materials.

Issues

The main issues related to HSTTI identified by this survey are as follows.

- Four of the five HSTTIs are built in the TTC's premise, and there are many restrictions on the use of onsite facilities such as playgrounds, etc. There is no academic collaboration with the TTC, and only on rare occasions TTC teachers are invited as outside instructors for HSTTI's subject-based training.
- The participation rate and motivation of training participants are low. Reasons for this include low daily allowances (350 BDT/day), lack of benefits for attending the training, and poor quality dormitories. (Only the ICT course is considered to improve the trainees' skills, and the participation rate and motivation of trainees are high.)
- Science experiments are supposed to be conducted by outsourcing lecturers in subject-specific sessions, but there is little experimental equipment.

Support Needs

The main support needs at the field level identified through interviews with HSTTI in this survey are as follows:


- Support for setting up an ICT lab with ICT equipment including PCs
- Training in teaching methods using ICT equipment
- Expansion of school buildings and reinforcement of infrastructure facilities such as air conditioning, electricity, etc.

(3) Summary of INSET


Table 9-19 summarizes the INSET courses' content and target teachers offered by NAEM and HSTTI.

Table 9-19 INSET Courses' Content and Target Teachers by NAEM and HSTTI

Education Stage	Position	School Type		
		Government School	Non-Government School	
			MPO	Non-MPO
Secondary (G6-G10)	Manger (Headmaster)	<ul style="list-style-type: none"> • Educational Administration and Management Training • Refreshers' Course on Educational Administration and Management • Training Course on ICT Application in Institutional Work 		
	Other teachers	<ul style="list-style-type: none"> • Communicative English Course • English Language Teaching Course • Library Planning and Management • Pedagogical Training on Mathematics • Satellite Training Course on Teachers' Professional Development • Training Course on ICT 		
Higher secondary (G11-G12)	Manager (Principal)	<ul style="list-style-type: none"> • Educational Administration and Management Training Course • Refreshers' Course on Educational Administration and Management • Senior Staff Course on Education and Management 	<ul style="list-style-type: none"> • Educational Administration and Management Training 	
	Other teachers	<ul style="list-style-type: none"> • Advanced Course on Education and Management • Communicative English Course • Digital Content Development • Foundation Training Course • Library Planning and Management Training Course • Training Course on ICT 	<ul style="list-style-type: none"> • Subject-based training • Computer teacher training 	



Training at NAEM



Training at HSTTI

Source: Created by the Survey Team

Regarding the qualitative aspect of INSET, most of the training content is related to educational administration and management, teaching methods, ICT, English, etc., and most of HSTTI's subject-based training is also training in teaching methods. Therefore, there is little training related to subject-specific specialized content. Regarding the quantitative aspect of training, Table 9-20 compares the number of teachers in the secondary education (G6-G10) and higher secondary education (G11-G12) with the number of training participants per year in NAEM and HSTTI

(total of 5 HSTTIs). This shows that the capacity of training institutions compared to the number of in-service teachers is completely insufficient, especially in secondary education (G6-G10).

Table 9-20 Total Number of Teachers and Trainees of INSET by NAEM and HSTTI

Education Stage	No. of Teachers	Total No. of Trainees at NAEM per Year	Total No. of Trainees at HSTTI per Year
Secondary education (G6-G10)	266,568	2,140	0
Higher secondary education (G11-G12)	49,659	1,537	2,250

Source: Created by the Survey Team based on BANBEIS 2021 and survey results.

9.3.2 Estimates for the Implementation of Science and Mathematics Teacher Training

This section attempts to calculate the costs and number of days required to implement additional INSET for science and mathematics teachers at existing teacher training institutions (including NAEM, HSTTI, and TTC). The approximate number of science and mathematics teachers in the secondary and higher secondary education is shown in Table 9-21 below.

Table 9-21 Number of Science and Math Teachers in the Secondary and Higher Secondary Education

	Secondary education (G6-G10)		Higher secondary education (G11-G12)		Total
	Government school	Non-government school	Government school	Non-Govt. school	
No. of teachers	11,615	254,953	2,357	47,302	316,227
Ratio of science and math teachers	16%		16%		16%
No. of science and math teachers	1,858	40,792	377	7,568	50,596
Expected INSET institution	NAEM	TTC	NAEM	HSTTI	

Source: Estimates of the ratio of science and math teachers are based on the statistics of BANBEIS 2021 for secondary education, and on the results of interviews with higher secondary colleges visited in the survey (excluding model schools in urban areas, etc., where the number of science and math teachers is significantly higher) for higher secondary education.

The number of target science and mathematics teachers for training is approximately 50,000. The assumed INSET institutions are NAEM for all government school teachers and HSTTI for Non-Govt. school teachers in higher secondary education based on Table 9-19, while it was assumed that TTC would conduct the training for Non-Govt. school teachers in secondary education. DSHE requested during this survey to give TTC the function of INSET, and the TTC visited by the survey team agreed to provide additional INSET in science and mathematics. Therefore, the estimate provided here also includes a study of the feasibility of providing INSET as an additional task at TTC. For the purpose of this estimation, the following conditions are assumed for the implementation of the science and mathematics training courses. Considering that the pedagogical training on mathematics at NAEM shown in Table 9-11 is 6 days and that the subject-specific content in the subject-based training courses at HSTTI shown in Table 9-15 is 11% (about 4.5 days) of the 40 days, the total training period including travel days is 7 days in this estimation, while the actual training period is 5 days.

Table 9-22 Conditions for INSET in Science and Mathematics

Number of days of training course	7 days (6-nights overnight stay with the actual training of 5 days)
Training hours per day	8 hours (9:00-17:00)
Actual training hours per course	40 hours (8 hours x 5 days)

Based on these conditions, it is estimated that the cost and number of days required to provide INSET to approximately 50,000 science and mathematics teachers would cost approximately BDT 750 million (approximately 945 million JPY) and take 168 days (NAEM: 98 days, TTC: 168 days, HSTTI: 133 days) for implementation. Details are provided in Attachment 1.

Chapter 10. ICT/DX and Distance Education in Secondary Education

With the rapid development of technology in recent years, the application of digital transformation (DX) in education is being undertaken worldwide to introduce new technologies into the education sector to improve the efficiency and quality of work. Similar efforts can be seen in the education sector in Bangladesh. This tendency is becoming more widespread in the COVID-19 outbreak. In the United Nations Transforming Education Summit (TES) held on September 19, 2022, the Prime Minister of Bangladesh expressed her intention to continue distance education and to establish a learning method that combines online and face-to-face modalities to recover from the learning losses caused by school closures. This shows the Bangladesh government's strong interest in the use of technology in education and in distance education.

In Bangladesh, education is conducted through the use of digital materials on a state-run TV and online platforms. In other words, the implementation of "distance education" in the Bangladeshi educational context is not necessarily limited to simultaneous interactive delivery. UNESCO (2020)⁷¹ defines "distance education" as a learning method with "the use of technology" that includes one-way education, such as television and radio, without being limited by time or distance. Based on this, this report defines "distance education" as education that is realized through the use of interactive and one-way technologies that are not limited by time or distance.

Section 10.1 presents the education policy issued by the Ministry of Education (MOE) and analyzes how ICT/DX and distance education are mentioned within the policy. Additionally, this section also summarizes the current status of Internet infrastructure and ICT-based education in Bangladesh, mentioning the main activities of a2i (aspire to innovate), a core program for digitization in Bangladesh and education and ICT-related projects being implemented by the ICT Division, and then summarizes ICT-related policy/act. Section 10.2 summarizes ICT education as a subject in G6 and 7, where the new curriculum has been introduced, based on Teachers' Guide. It also discusses ICT education in G11 and 12, albeit under the old curriculum, and refers to the IT skills and literacy that students are expected to acquire in the secondary school curriculum. Section 10.3 and 10.4 describes the current status of ICT/DX and distance education in teachers training and secondary education. To conclude first, most of the educational institutions visited in this survey have PC rooms, but distance education using these rooms has not been effectively introduced. In other words, it is difficult to say that readiness for conducting blended learning for the secondary school students has been established in these educational institutions at present. Therefore, this section analyzes the future potential of distance education based on the actual implementation of it at each school. Section 10.5 introduces the current situation of private companies, and Section 10.6 summarizes the situation of ICT/DX in the secondary education sector.

10.1 Position of ICT/DX and Distance Education in Policy

This section describes the position of ICT/DX and distance education in education policy and projects/programs. It also summarizes ICT-related policy/act. Apart from the policies mentioned in this section, other relevant policies are introduced in Section 4.2.3. This section describes ICT/DX and distance education related parts.

⁷¹ UNESCO, 2020 'Distance learning strategies in response to COVID-19 school closures'

10.1.1 Education-Related Policy

(1) Smart Bangladesh: ICT Master Plan 2041

This is the policy set forth by the ruling Awami League (AL) in its "Vision 2041," the successor to the "Digital Bangladesh" set forth in its 2008 manifesto "Vision 2021. The policy is currently being finalized by the Government of Bangladesh, and the information in this item is from the draft version.

It describes how to utilize ICT based on the four pillars of 1) Smart Citizen, 2) Smart Government, 3) Smart Society, and 4) Smart Economy, with the goal of transforming Bangladesh from a "digital" to a "smart" society. This includes the goals "all citizens will have a universal digital ID", "all citizens will be able to efficiently receive various public services", "a cashless and paperless society will be realized", and "the market size of the ICT industry will be \$50 billion" by 2041.

The "Smart Government" initiative cites the following issues in the education sector: the content of educational materials is becoming obsolete, there is a disparity in education, critical thinking and independence are lacking, and 21st century skills, such as creativity, are not being taught. It also states that the promotion of blended learning is necessary to solve these problems, and presents a roadmap for the spread of blended learning by 2041, as shown in the table below. The Kumon method of learning used in Japan is also mentioned as a good example of a learning style that adapts to the learning speed of students and supplements school education.

Table 10-1 Roadmap for the Spread of Blended Learning

Year	Goals
2025	<ul style="list-style-type: none"> • All teachers will be trained in blended learning • All curriculum will be digitized and made available • All schools will implement formative assessment
2031	<ul style="list-style-type: none"> • All students will receive blended learning • All schools will have online access to classes • All schools will have the necessary ICT equipment
2041	<ul style="list-style-type: none"> • Continue blended learning with improvements.

Source: Created by Survey Team based on Smart Bangladesh: ICT Master Plan 2041

(2) National Blended Education Master Plan 2022-2041

This plan outlines the blended learning methods and guidelines necessary to realize the goals in the education sector to be achieved by 2041 as outlined in the Second Perspective Plan of Bangladesh 2021-2041 (PP2041). In this plan, the need for distance education has been further urged by the impact of the COVID-19 outbreak, and in teaching and learning practices, the introduction of blended learning, which uses ICT in part instead of conventional face-to-face learning style, has been promoted by the Bangladesh government. Blended learning is defined as a combination of high-tech, low-tech, and no-tech, depending on the state of ICT use at each site. The Blended Education For All (BEFA) Framework, which represents the concept of blended learning, identifies the following as key points for implementation

- Preparing learners for 21st Century skills improvement
- Development of interactive digital content
- Implementation of Formative Assessment and Summative Assessment using AI tools
- Implementation of teacher capacity building training
- Development of IT infrastructure

Based on these points, blended learning that could be implemented in the secondary education subsector includes virtual classes connecting schools, flipped learning, and the use of digital

content. Development of Internet, installation of ICT equipment, establishment of digital libraries, etc., available at schools are all considered necessary.

(3) Master Plan ICT in Education 2012-2021

The "Vision 2021" manifesto issued by AL in 2008 called for Digital Bangladesh and mentioned the digitalization of the education sector and the promotion of ICT education as a subject. To achieve these goals, MOE developed "Master Plan for ICT in Education in Bangladesh (2012-2021)" with the support of UNESCO from 2012 to 2013.

The plan provides a roadmap for effective implementation of ICT equipment in secondary education. The main goal is for Bangladesh to transform into a knowledge-based society, and to achieve this goal, the following activities have been identified: equipping students with appropriate ICT skills, improving the quality of teachers and teaching materials by using ICT, and improving access to education by laying the Internet infrastructure. On the other hand, specific learning styles using ICT such as blended learning and flipped learning⁷² are not mentioned.

(4) Master Plan ICT Progress Report in 2019

This document summarizes the progress of the Vision as of 2018 established in the Master Plan ICT in Education 2012-2021 above. As of 2018, the achievements in the secondary education subsector include the following.

- Provision of digital supplementary teaching materials through the introduction of the Access to Information (A2I) program⁷³
- Improvement of teachers' digital skills
- Improvement of the learning environment by increasing the number of PC rooms

On the other hand, it is listed as challenges that the lack of ICT facilities in schools in rural areas and the fact that a system to subsidize the purchase of ICT equipment for teachers has not yet been introduced.

(5) a2i (Aspire to Innovate) Program

The abovementioned various education policies indicate a high level of interest in the digitalization of education, distance education, and ICT education as a subject. The a2i (Aspire to Innovate) program is playing a major role in these digitalization efforts in the Bangladesh education sector. a2i is a program that combines Access to Information (A2I), which started in 2007 under the Prime Minister's Office, with the ICT Department of the Ministry of Posts, Telecommunications and Information Technology (MoPTIT) and UNDP. The following is a summary of a2i's main activities in the education sector to date.

⁷² The definition of Flipped Classroom is not clearly defined in the Bangladesh Education Policy Paper. The Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) defines flipped classroom as "a form of education in which the "knowledge transfer" component, traditionally done in the classroom, is videoed and studied at home, while the "knowledge understanding" component, traditionally done at home through homework, is done in the classroom.

https://www.mext.go.jp/b_menu/shingi/chukyo/chukyo4/004/gijiroku/_icsFiles/afieldfile/2013/08/26/1338978_06.pdf

⁷³ Access to Information (A2I), which is the former version of aspire to innovate (a2i) program managed by ICT Division, was established in Digital Bangladesh.

Table 10-2 Main Activities of a2i in the Education Sector

Year	Activities	Summary
2010	Installation of Multimedia Classroom	To date, multimedia classrooms have been installed in more than 45,000 schools. This is the first major activity towards Digital Bangladesh.
2013	Teachers Portal	In order to strengthen the capacity of teachers, teachers upload their own lessons, which are then viewed by other teachers. To date, more than 700,000 teachers have registered. The Teachers Conference, which recognizes teachers who create outstanding content, was held until 2019. It is currently held at the District level.
2016	Muktopaath	This is an online learning platform. There are more than 200 learning courses available for students, teachers, parents, and the public. Dhaka University has also used the platform for student assessment and other purposes.
2018	Konnect	The target audience is mainly teenagers (young adults). Content is specialized in things that children can enjoy and learn (games, painting, etc.). It has more than 3 million users.
2018	Braille Book	This are Textbooks for the Visually Impaired.

Source: Created by Survey Team based on the a2i Journey: Making Digital Innovation Work for the Poor

(6) Education-Related Projects implemented by MoPTIT

Not only MOE, but also the Ministry of Posts, Telecommunications and Information Technology (MoPTIT) is collaborating in the realization of the national policy for the digitalization of the education sector as mentioned above. MoPTIT consists of the Posts and Telecommunications Division and the ICT Division. The Posts and Telecommunications Division is mainly in charge of hardware, such as Internet infrastructure, telephone lines, and equipment, while the ICT Division is in charge of software, such as application development and is working to create an ICT environment not only for education but for Bangladesh as a whole. The following are some of MoPTIT's projects related to the education sector.

Sheikh Russel Digital Lab⁷⁴

The Sheikh Russel Digital Lab is a government-sponsored project that aims to achieve the goals of the government's Digital Bangladesh Strategy and Sustainable Development Goals, and to improve the quality of education and the capacity of educational institutions through the use of ICT. The project aims to achieve the following specific objectives:

- Establishment of PC rooms for Educational Institutions
- Establishment of local cyber center
- Promotion of multimedia-based education
- Creation of IT-based language learning facilities
- Development of human resources with ICT skills

To date, computers have been installed in approximately 3,500 secondary schools. Additionally, through ICT training in the project, it is reported that teachers and students have improved their ICT literacy, and the quality of education using digitalization of the education sector has improved.

Establishing Digital Connectivity (EDC) Project⁷⁵

The project is supported by the Chinese government and has been implemented since 2018. It is funded 65% by the Chinese government and 35% by the Bangladeshi government, and in

⁷⁴ <http://sheikhrusseldigitallab.gov.bd/>

⁷⁵ <https://thefinancialexpress.com.bd/trade/tk-5883b-digital-connectivity-project-passes-china-evaluation-1636085078>

conjunction with the Sheikh Russel Digital Lab, its main objective is to facilitate Internet access throughout the country, including the installation of optical fiber in all educational institutions (primary to higher, madrassas, and training institutions). The goal is to complete the project by 2024.

Development of National ICT Infra-Network for Bangladesh Government Phase-III (“Info-Sarker Phase-3”)⁷⁶

The project, which ended in June 2020, was implemented by the Bangladesh Computer Council (BCC) under the ICT Division with the aim of increasing Internet penetration in Bangladesh. The project has achieved the installation of 18,791 km of fiber optical cable, Wi-Fi routers in 2,150 unions, and Virtual Private Network (VPN) connections in 997 police stations.

10.1.2 ICT-related Policy/Act ICT

In order to respond to the rapid progress of digitalization and ICT use in each sector, the Bangladesh government is also developing policies and acts related to ICT use. Main policies and acts related to ICT are mentioned below.

(1) National ICT Policy 2018

The policy is an ICT policy that was developed in the 2015 and then revised in 2018 with the aim of making Bangladesh a knowledge-based nation. The policy aims to reduce manpower and build a more efficient society by automating procedures for various public services and using Artificial Intelligence (AI). Another aim is to reduce the digital divide caused by disparities in socioeconomic status.

The use of ICT in the field of education includes the use of the latest technology at all levels of education (including special needs education), the update of curriculum to meet the employment needs in the ICT industry, the creation of environment for leading research and innovation, and the use of ICT in administration and school management.

(2) Digital Security Act 2018

The Digital Security Act 2018, enacted in 2019, articulates the organization and management structure for the Bangladesh government to enhance digital security as a nation. Under the Act, the Digital Security Agency (consisting of one director general and two directors) was established to strengthen cybersecurity and monitor cyberspace. The Agency and the National Digital Security Council, in which Prime Minister sits as a head, are to collaborate and retain the ability to take appropriate action against information in cyberspace that is deemed a threat to the nation, in the Act. Penalties and fines were also established for illegal activities in cyberspace (such as illegal access and hacking).

10.2 ICT Curriculum in Secondary Schools

In secondary education, ICT learning is a compulsory subject from G6 to G12. This section presents an overview of the new curriculum and assessment methods for G6 and G7, where the new curriculum has already been introduced. It also presents the curriculum for G11 and G12, which have not been transitioned to the new curriculum, and discusses the ICT skills and literacy that students are expected to acquire in the final year of secondary education.

⁷⁶ <https://bcc.gov.bd/site/page/9ef4c41a-0fed-4255-975a-114e976125e0/>

(1) ICT education in the New Curriculum (G6 and G7)

In the new curriculum introduced in 2023, the previous subject name "ICT" was changed to "Digital Technology". The subject's curriculum consists of two components: a digital component and a non-digital component. The non-digital component was designed to enable students to acquire the necessary ICT literacy without relying on ICT equipment, as there is still a large disparity in the availability of Internet infrastructure and ICT equipment among schools. One example of the non-digital component is the activity of creating posters pertaining to copyright and internet fraud to share and evaluate with parents and the community. Thus, Digital Technology in the new curriculum emphasizes enhancing ICT literacy through collaborative activities and real-life experiences. It also states that student learning is facilitated through a learning cycle consisting of four elements: 1) Real Experience, 2) Reflective Observation, 3) Abstract Conceptualization, and 4) Active Participation. The following two tables show the four elements, examples of G7 activities linked to the four elements, and methods for assessing student learning. According to the NCTB, teachers are in daily discussions with each other on how to assess student learning through the NCTB Facebook page.

Table 10-3 Four Elements and Examples of Activities (G7)

Goal: Gather appropriate information from various resources on the theme of "Technology and Social Issues," create and present content that presents solutions to these issues.		
Elements	Students' Activities	Teachers' Activities
Real Experience	Hear examples of how digital technology has been used to solve social issues.	Provide examples of how digital technology has been used to solve social issues.
	Group topics are set based on the theme of "Technology and Social Issues."	Present more than one topic.
Reflective Observation	Create a paper version of the questionnaire needed to find the cause of the issue and the solution.	Explain the need for the survey and the validity of the information that will be collected in the questionnaire.
	Input the created questionnaire into the school's PC.	If the school does not have or lacks a PC, substitute the student's own smartphone. If a smartphone is not available, explain how to conduct the online survey.
	As homework, collect questionnaire responses online from 20 people.	
Abstract Conceptualization	Gather information from the media (books and the Internet) as well.	Explain the types of media and how to collect information.
	Input information collected from questionnaires and media into a spreadsheet, and learn how to calculate the quadrature of information and produce percentages.	Explain how to use spreadsheets and how to integrate information.
Active Participation	Learn how to store information.	Share own experiences in storing information.
	Based on the information obtained, create digital content for the presentation in PowerPoint.	If the school does not have a PC or lacks one, consider using available devices, and presenting the information in a picture or play.
	Present the digital content of each group.	Coordinate the location and audience for the presentation.

Source: Created by Survey Team based on "Digital Technology: Teacher's Guide".

Table 10-4 Example of How to Assess (Grade 7)

No.	Topic	Competent	Partially Competent	Further improvement required
1.	The student will be able to present a extempore speech by synthesizing the appropriate information.	The student presented information and arguments based on the group's points of view during the presentation.	The student tried to present an informative speech with the help of all members of the group. However, the reasoning was inadequate.	The student did not participate actively in the group.
2.	The student will be able to identify appropriate solution any problem by gathering relevant information.	The student has found a potential solution to any of the problems by investigating relevant information as a group member.	The student is able to investigate the cause of a problem with the right information. However, the solutions were ineffective.	The student tried to find the cause and solution to the problem.
3.	The student will be able to present to give solution to the problem by using appropriate information and creative content.	Utilizing according to the availability of digital and non-digital resources, the student prepared and presented creative content that was appropriate for the audience.	Even though the content was creative, it was inappropriate for the audience.	The student failed to effectively utilize available resources in creating content.

Source: Created by Survey Team based on "Digital Technology: Teacher's Aid".

(2) ICT education in the Old Curriculum (G11 and G12)

The following table shows the items expected to be acquired and understood at the final stage of secondary school education as reference for each theme. The curriculum in the higher secondary schools requires students not only to understand and master the functions and use of ICT-related equipment, but also to acquire practical skills such as creating web pages and managing data appropriately.

Table 10-5 Theme and Items to Be Acquired

No.	Theme	Items expected to be acquired and understood (examples)
1	Understanding ICT	• Understanding of fiber optics, networking capabilities, and the cloud
2	Communication Systems and Networking	• Understanding of network peripherals such as modems, hubs, routers, etc. • Understanding of the media in which wired and wireless networks are used
3	Numbers and Digital Devices	• Implementation of the binary system • Application of variables and functions related to digital
4	Introduction to Web Design	• Creating web pages using HTML • Inserting images and using hyperlinks
5	Programming Languages	• Implementation of C language and programming
6	Database Management Systems	• Managing databases • Encrypting data

Source: Created by Survey Team based on "National Curriculum 2012".

10.3 Current Status and Potential of ICT Utilization and Distance Education in Teacher Training Institutes

As a countermeasure against the COVID-19 outbreak, educational institutions were closed, and classes were conducted online and distance education was implemented. This section examines whether each institution has the essential human resources, facilities and infrastructure, and finance to effectively implement ICT/DX and distance education, based on statistical data and the result of the 1st survey in Bangladesh. This section also reports on how distance education was implemented during the school closure period and its effectiveness.

(1) National Academy for Educational Management (NAEM)

NAEM offers short-term ICT training programs ranging from three days to three weeks to train higher secondary school teachers to be able to conduct classes with ICT and distance education. The training provides teachers with the know-how to effectively use ICT equipment to develop lessons at the schools where they work, including how to prepare teaching materials using Excel and PowerPoint.

Distance Education System

- **Human Resources:** NAEM has an ICT specialized instructor for ICT trainings. There is also a staff member who maintains and manages NAEM's facilities and equipment in general.
- **Facilities and Infrastructure:** Three ICT rooms are equipped with servers, among the two have 28 desktop PCs in each room. The video conference room has a smart TV supported by KOICA. There are no broken or unusable PCs observed. Maintenance for ICT equipment is performed as needed by the staff in charge. Internet (Wi-Fi) is available in all the premises except for some hostels, and both trainers and trainees have access to it. This allows the trainees to continue working on assignments and review after the training while accessing Wi-Fi in the hostels where they are staying.
- **Finance:** NAEM has allocated BDT 3,000,000 for ICT equipment maintenance, BDT 1,700,000 for ICT equipment purchase, and BDT 200,000 for internet connection fee for 2022/2023. Since there are many existing ICT equipment and the execution status of these allocated budget is unknown, it can be said that a considerable amount is secured when compared to the budget for ICT equipment maintenance of other educational institutions.

Distance Education Implementation Experience and Potential

NAEM switched from traditional face-to-face training to online training in response to the impact of the COVID-19 outbreak. In 2022, NAEM resumed face-to-face training, but blended training (a combination of face-to-face and online training) was used in some training programs. Specifically, in a 3-week training program for higher secondary school English teachers from government and non-government schools, the first 12 days of the training program about teaching methods and curriculum were delivered online, and the rest of the program (9 days) about discussion of lesson plans and conducting research lessons were offered face-to-face⁷⁷. The report on the training stated that the participating trainees found the training more effective and efficient than the traditional training, and that they were highly satisfied with the training. The following is a description of the blended learning training module implemented by NAEM.

⁷⁷ Report on Blended Approach, a New Dimension to Teachers' Preparation and an Innovative at NAEM Training Courses

Table 10-6 Blended Learning Module Conducted by NAEM

Module	Contents	Method / (days)
Module 1	Introduction, learning process	Online / (12 days)
Module 2	Meta-skills of language learning	
Module 3	Vocabulary and pronunciation teaching methods, communicative approach	
Module 4	Curriculum and assessment methods	
Module 5	Lesson planning, mock teaching	
Module 6	Class management, blended learning	In-person / (9 days)
Module 7	Reflection	

Source: Created by Survey Team based on Report on Blended Approach, a New Dimension to Teachers' Preparation and an Innovative at NAEM Training Courses

Currently, the online training is being delivered as an alternative material for teachers who are absent from the training. However, according to NAEM, distance education is not being actively implemented as a method of training delivery.

Thus, online-based distance education is a limited activity in NAEM. However, given the availability of ICT equipment capable of conducting blended learning, the fact that there are a certain number of personnel who can utilize such equipment, and the fact that the report concludes the effectiveness of the distance education and the willingness to continue it, it is believed that there is potential to conduct distance education at NAEM. As mentioned in the report, the availability of an Internet-enabled environment for trainees is essential for effective application of distance education.

(2) Higher Secondary Teachers Training Institute (HSTTI)

There is a total of five HSTTIs in Bangladesh. The field survey in Bangladesh covers three of these institutions, Barishal, Rajshahi, and Khulna, and one in Mymensingh, which was studied through the questionnaire. HSTTIs offer 27 days of ICT training.

Distance Education System

- **Human Resources:** Many of HSTTI's trainers have attended advanced ICT training abroad (New Zealand and Canada) and are highly ICT literate. As a prerequisite for becoming an ICT trainer at HSTTI, the government requires completion of the Digital Development and ICT courses offered on Muktopaath, an online platform developed by aspire to innovate (a2i). Teachers are eager to develop their skills. In addition, each HSTTI has an assistant programmer to maintain and manage the software and equipment. Management and repair of hardware are often outsourced.
- **Facilities and Infrastructure:** The four studied HSTTIs have two or three PC rooms with a capacity of 20 to 30 students, which were provided by the TQI-II project of ADB between 2017 and 2019. The number of PCs, failed PCs, and failure rate at each HSTTI are shown in the table below. PC failure rates vary widely among schools, but at Barishal HSTTI, the failure rate is 57%, with more than half of the PCs out of service due to failures. In each school, the equipment is maintained by Assistant Programmers (Barishal and Mymensingh) or ICT teachers (Rajshahi and Khulna), and it is unclear why Barishal HSTTI's PC failure rate is higher than the others. Due to budget constraints, it is not possible to purchase new equipment when it breaks down, and they are left unrepaired. It is assumed that similar problems will occur at other HSTTIs in future.

Table 10-7 Number of PCs Owned by HSTTI (4 Colleges)

HSTTI	No. of PC Rooms	No. of PCs	No. of Failed PCs	Failure Rate
Barishal HSTTI	3	70	40	57%
Rajshahi HSTTI	2	50	0	0%
Mymensingh HSTTI	3	59	6	10%
Khulna HSTTI	2	52	0	0%

Source: Created by the Survey Team based on interviews

Other features related to facilities were found as followed.

- Several of the general classrooms are equipped with projectors and screens, and training sessions are conducted with the projectors to visualize the main points of the lessons.
 - Internet (Wi-Fi) is available on the campus and is used by trainers and trainees.
 - The institutions face frequent power outages. There is no generator, or a generator is not in use due to high fuel prices. The usual response to power outage is to wait for resume of power distribution.
- **Finances:** HSTTI receives BDT 50,000 per year from the government. Additionally, HSTTI receives internet communication expenses, ICT equipment purchase expenses, and equipment maintenance expenses, depending on the size of each institution. Interviews in the 1st survey in Bangladesh confirmed that the allocated budget for equipment purchase is particularly small, which limits the capacity of ICT trainings because new equipment cannot be purchased even if a PC breaks down and is no longer available. A breakdown of each HSTTI's ICT-related budget is shown below.

Table 10-8 ICT-related Budget of All HSTTIs⁷⁸

HSTTI	Government Subsidies	Internet Communication Budget	ICT Equipment Purchase Budget	Equipment Maintenance Budget	ICT-related Budget (Total Amount)
Barishal HSTTI	50,000	120,000	60,000	60,000	290,000
Rajshahi HSTTI	50,000	100,000	50,000	50,000	250,000
Cumila HSTTI	50,000	80,000	40,000	50,000	220,000
Mymensingh HSTTI	50,000	110,000	60,000	60,000	280,000
Khulna HSTTI	50,000	120,000	60,000	60,000	290,000

Source: Created by the Survey Team based on interviews

Distance Education: Implementation Experience and Potential

In the early stages of the COVID-19 outbreak, HSTTI continued trainings in a way that the number of trainees were limited to 50% to maintain social distance, which allowed face-to-face training to be maintained. However, when the school was closed from March to November 2020 due to government policy, most of the trainers went to work at HSTTI and conducted online classes. Methods of online classes included use of Zoom, and upload of recorded/live classes through StreamYard, a live streaming service, on YouTube. Attendance in the online classes was low, hovering around 70~80%, but according to interviews at HSTTI, this was mainly due to the unstable Internet environment at the trainees' homes.

As of the October 2022 survey, HSTTI has discontinued online classes. Currently, HSTTI conducts face to face ICT training on how to conduct distance education and how to use online platforms such as Teachers Portal and Muktopaath, with the goal of being able to conduct classes using ICT and distance education if needed.

⁷⁸ All units are in Bangladeshi Taka (BDT)

As mentioned before, HSTTI has trainers with high level of ICT literacy and demand for ICT trainings is very high. Since there are only five HSTTIs in Bangladesh, there is a potential to deliver online ICT trainings in order to meet the high demand. However, they have no or too small budget to purchase new equipment, and if the PC currently in use fails, updating is difficult. Moreover, the internet environment of the trainees is an issue, so it is necessary to consider measures to ensure that the receiving locations should not limit to their homes, but rather the schools where they work that have an Internet-enabled environment.

Additional Information: About Teachers Portal and Muktopaath

Teachers Portal is an educational platform where primary and secondary teachers can create, post, and freely view digital educational content for their students, while Muktopaath is an online platform operated mainly by a2i, with the collaboration with the MOE, ICT Division, and UNDP . It is the online platform where content from other sectors (agriculture, health, ICT, etc.) can also be used. The target audience ranges from teachers and students to the general public, including not only student learning, but also skill development for employment and entrepreneurship. The similarity is that both are online platforms and can be used anywhere and at any time. The difference is that the former is targeted only at children, while the latter is targeted at children, teachers, and the general public.

(3) Teacher Training College (TTC)

There is a total of 14 Govt. TTCs. Three of these colleges, Dhaka, Barishal, Rajshahi, and Khulna were visited in the field survey, and information of the one in Mymensingh was collected through the questionnaire

Distance Education System

- **Human Resources:** TTC often does not have teachers who specializes in ICT classes as subject, so ICT classes are taught by teachers with relatively high ICT literacy. They also take training courses on ICT utilization and mental health for students through the online courses Muktopaath to develop their capacity. Many teachers are still using the online courses even after TTC reopened. Since there is no ICT engineer on staff, it was seen that teachers who are familiar with the equipment repair and maintain it to the extent possible.
- **Facilities and Infrastructure:** The four TTC have PC rooms with desktop PCs and laptops. The PCs were provided by the TQI-II project from 2010 to 2012, but due to lack of maintenance, many PCs are left broken and unusable. Table 10-9 presents the number of PCs and their failure status in the four studied TTC. The failure rate is as high as 87% at TTC Barishal, 50% at TTC Mymensingh, and 17% at TTC Dhaka, which is an obstacle to effective implementation of practical ICT related lessons. Many PCs are not connected to the Internet, which is a constraint to the effective implementation of practical ICT related lessons. On the other hand, it is assumed that the low PC failure rate is due to the fact that TTC Rajshahi and TTC Khulna have Computer Operations Supervisors who are responsible for maintaining the equipment. The availability of Internet (Wi-Fi) on campus is also limited, often resulting in both teachers and students using their own data communication.

Table 10-9 Number of PCs Owned by TTCs (5 Colleges)

TTC	No. of PC Rooms	No. of PCs	No. of Failed PCs	Failure Rate
TTC Dhaka	3	101	17	17%
TTC Barishal	1	54	47	87%
TTC Rajshahi	2	47	3	6%
TTC Mymensingh	1	30	15	50%
TTC Khulna	1	22	0	0%

Source: Created by the Survey Team based on interviews

- **Finances:** BDT 410,000 and 400,000 per year at TTC Khulna and TTC Dhaka, respectively, and BDT 150,000 and 180,000 per year at Barishal and Rajshahi, respectively, were provided by the government. In addition to the government subsidy, about BDT 50 per student per year is collected from each student to maintain the ICT equipment. As evidenced by the failure rate, the budget required to properly maintain the existing ICT equipment has not been secured.

Distance Education: Implementation Experience and Potential

The TTCs implemented distance education during the school closure due to the COVID-19 outbreak. Online classes were conducted using Zoom and Google Meet, and students participated from their homes. However, attendance rate was low, sometimes as low as 50%. Reason why students were not able to attend the classes was because they did not have their own PCs or internet access at their homes. Through the interviews, it was also found that most of the students who attended the classes used their personal phone or smart phones available at home to attend. Presumably, it was difficult to watch the classes and access course materials on such a small screen, which may have contributed to the gradual decline in attendance. Communication with students was done through Facebook Messenger. TTC Dhaka also conducted a pilot flipped learning, using a method where memory cards with the course materials were distributed to students, which is not currently being continued.

The distance education during the school closure includes the delivery of online classes, yet the unstable Internet environment at students' homes led to the decline in attendance. The results of the questionnaire and interviews with the TTCs indicated that there was no strong desire to conduct distance education, and that the more pressing issue was the maintenance of ICT equipment in the TTCs. This suggests that due to inadequate ICT equipment and Internet access, TTC has not yet fully developed classes using ICT, and the advantages of classes with ICT have not yet been fully recognized. Therefore, the potential for the expansion of distance education is not high with the existing equipment and facilities at the time.

(4) Bangladesh Open University (BOU)

BOU's School of Education offers B.Ed. (Pro) and M.Ed. degrees by distance learning. Thus, BOU offers both teacher training and an institution where in-service teachers can earn a degree while continuing to work. The field survey was conducted at the main campus in Gazipur.

Distance Education System

- **Human Resources:** Since BOU is an educational institution that mainly offers distance education, it has abundant human resources for distance education. BOU limitedly uses Learning Management System (LMS) based on Moodle and has 7 personnel dedicated to hardware maintenance and management, including LMS development and operation, and 5 network support personnel. Three engineers are also assigned to the Operation Room,

where the dedicated LMS server is located. The BOU has also partnered with three companies for server maintenance: IBM, FORTINET, and Juniper.

- **Facilities and Infrastructure:** The BOU headquarters, located in Gazipur, has two Interactive Virtual Class Rooms (IVCR), each with 25 desktop PCs for students and one for teachers. Each room is equipped with four webcams, a projector, and audio equipment. There are two IVCRs with the same configuration, one in Dhaka and the other in Mymensingh, all of which were installed in 2013 with the support of KOICA. In addition, a server for operating the LMS is located at the BOU headquarters campus. The server works fine without any problems, but it is old and needs to be replaced with a new one. The server configuration is a production server only, and no development or staging servers are in operation. Therefore, program modifications must be made directly on the production server. In addition, there is no load balancer, and the servers cannot be distributed across multiple servers, so there is a high risk of server downtime due to access congestion.

Distance Education: Implementation Experience and Potential

Since BOU is primarily a distance learning institution, distance learning is still being offered. For example, classes developed at the IVCR in Gazipur are streamed in real time via Zoom, and students can take classes from the IVCRs in Dhaka and Mymensingh branches, or from their home PCs. BOU also offers a web TV service called Open TV from 8:30 a.m. to 8:30 p.m. Filmed and edited in a TV studio on the BOU headquarters campus, Open TV is not only a one-way distance learning service that delivers recorded material, but also a live streaming service. Open TV is not only a one-way distance learning service that delivers recorded material, but also a live streaming service. In addition, approximately 3,000 students enrolled in the business school, MBA program, and Open School use BOU's dedicated LMS to register for courses and take exams on a limited basis.

Thus, BOU has more resources and experience in distance education than other educational institutions in Bangladesh. On the other hand, there are some points that need to be improved for sustainable and more effective implementation of distance education, such as: existing studio equipment is becoming obsolete; BOU's LMS does not provide audiovisual content such as digital learning materials and recorded lessons; and the server that operates the LMS and its surrounding environment are not perfect.

(5) Upazila ICT Training and Resource Centre for Education (UITRCE)

UITRCEs are teacher training facilities under the jurisdiction of BANBEIS, established with the support of the Korea EXIM Bank. In the first phase, UITRCEs were constructed and operational in 128 upazilas by 2016. Currently in phase 2, UITRCE will be constructed in 160 upazilas by the end of 2024, and then in phase 3, UITRCE will be constructed in the remaining 202 upazilas. There are four tasks assigned to UITRCEs: 1) ICT training for secondary school teachers, 2) collection of educational statistical data from secondary schools and higher education institutions, 3) ICT help desk for the general public (fee charged), and 4) coordination of secondary school student council elections in the upazilas. During the field survey, we visited the three UITRCEs listed in the table below. Personnel, equipment, and finances are described below, and all UITRCEs have similar staffing, equipment and facilities, and budgets.

Table 10-10 Visited UITRCEs

UITRCE	Upazilas	Districts
UITRCE Savar	Savar	Dhaka
UITRCE Nawabganj	Nawabganj	Dhaka
UITRCE Raipura	Raipura	Narshingdi

Source: Created by Survey Team

Distance Education System

- **Human Resources:** UITRCE has an assistant programmer as a head and a computer operator and a lab assistant each. These three belong to BANBEIS. In addition, a security guard and a cleaner are assigned to each of them. The equipment is maintained by a lab assistant. In addition, each UITRCE has 6 to 9 master trainers for ICT training who are selected from secondary schools in the Upazillas. The master trainers are secondary school teachers with strong ICT skills who are selected by the upazila Education Office and who have completed a one-month ICT training course at BANBEIS.
- **Facilities and Infrastructure:** The UITRCE has one PC classroom and a cyber center that serves as an ICT help desk for the public, with 24 and 5 PCs, respectively. The PC classrooms are equipped with whiteboards and projectors, and BANBEIS purchases new equipment in the event of PC malfunctions. At UITRCE in Savar, one of the three schools we visited, seven PCs that were provided at the time of its establishment broke down, so BANBEIS purchased new equipment. Therefore, all PCs at UITRCE are in good working order and relatively well equipped to deal with breakdowns. In addition, all PCs are connected to the Internet and Wi-Fi is available.
- **Finance:** Maintenance costs for facilities and equipment are defined in the following table. Although it cannot be said that UITRCE has sufficient funds for maintenance and management of facilities and equipment, given the fact that no PCs are out of order at any of the three facilities visited, it can be assumed that they are properly maintained by the laboratory assistants. In addition, equipment purchases are made by BANBEIS, and therefore, equipment purchase expenses are not included in the UITRCE budget. The budget for training is also set, with 1,000 BDT/day for master trainers and 316 BDT/day for teachers participating in the training, both of which include travel expenses.

Table 10-11 UITRCE's Facilities and Equipment-related Maintenance Budget

Items	Budget (BDT)
Furniture	5,000
PC	8,000
Other electronic devices and peripheral equipment	12,000

Source: Created by Survey Team based on interviews

Distance Education: Implementation Experience and Potential

UITRCE has no experience in implementing distance education. On the other hand, master trainers provide trainings for secondary school teachers to improve their ICT literacy and enable them to implement distance education. Trainings that UITRCE provides are ICT Basic Training (15 days), Interactive Online Training (6 days), and Hardware Troubleshooting Training (15 days), with teachers selected by each secondary school principal to participate as trainees. The implementation of these trainings is organized under the direction of BANBEIS and is conducted about 5 to 7 times a year.

UITRCE is responsible for a small amount of work: in addition to the above-mentioned seven short-term ICT training sessions per year, UITRCE is responsible for collecting educational statistics data for about one month from October and for coordinating student council elections for one month from January, and the ICT help desk for the public is always open. However, according to the interviews, its use is limited. These circumstances suggest that UITRCE has ample time to accept new training programs. All three sites we visited also indicated that they would like to accept more training programs and make better use of UITRCE's resources. Although UITRCE has no experience in distance learning, the potential for distance learning is considered very high, given the presence of UITRCE staff with high ICT literacy and master trainers, and the availability of necessary equipment such as PCs and Wi-Fi. However, in the UITRCE visited, there are around 1,000 secondary school teachers in Upazilla, and as of February

2023, UITRCE has not been established in all Upazillas. It should be noted that currently not all secondary school teachers in Bangladesh have equal access to UITRCE.

(6) Union Digital Center

Union Digital Centers were established in 2007 as a pilot project with 32 centers to provide rural residents, especially women, people with disabilities, and those with limited ICT literacy, with easy access to ICT equipment and private and public services. More than 4,500 centers were subsequently established in 2010 as part of the a2i program, and currently more than 8,280 digital centers have been established throughout Bangladesh. Of these, City Digital Centers (CDCs) have been established in Dhaka city, Pouroshova Digital Centers (PDCs) in the suburbs, upazila Digital Centers (UDCs) at the upazila level, and Union Digital Centers (UDC) have been established at the union level. Previously, citizens had to travel on average 30-40 km from their homes to upazila and other local government offices to receive public services, but now it is estimated that there is a digital center within 4 km from their homes on average, making it easier for citizens to get the services they need. In addition to the aforementioned objectives, the digital centers also aim to empower women. All digital centers are operated by private citizens (managers), and are a form of public-private partnership in which the government outsources part of its administrative services to the private sector for a fee, but management regulations require that the center be run by a man and a woman, thereby encouraging women to enter society. The table below shows the UDCs where field surveys were conducted.

Table 10-12 Visited UDCs

UDCs	Districts
UDC Raipura	Narshingdi
UDC Shibalaya	Dhaka
UDC Joykrishnapur	Dhaka

Source: Created by Survey Team

Distance Education System

- **Human Resources:** The managers of the digital centers are personnel who have applied for government recruitment and have been selected through documents and interviews. Thus, the digital centers are managed by personnel with a high level of ICT literacy. The managers of the three Union Digital Centers we visited had completed a diploma in IT or had attended ICT training by external organizations (UNDP or USAID). They also had knowledge of software and hardware, and handled and maintained existing equipment on their own when it malfunctioned. In addition, depending on the size of the digital center, they employed 3-8 staff with basic ICT literacy.
- **Facilities and Infrastructure:** Digital centers are often located in some of the local government offices and do not charge rent. They also have access to an Internet connection laid by the government, for which they pay BDT 850 to BDT 1,500 per month. However, in many cases, due to unstable connections, the managers themselves pay 400BDT-700BDT/month for a separate Internet contract and use that service. In addition to the existing equipment provided by the government at the time of installation, the managers also use equipment that they have purchased. The following table summarizes the existing equipment at the three digital centers we visited.

Table 10-13 Existing Equipment at the Visited Digital Centers

Name of UDC	Existing equipment
Raipura	30 desktop PCs, 7 laptops, 5 printers, 1 photocopier
Shibalaya	14 desktop PCs, 9 laptops, 2 routers, 3 printers, 1 photocopier, 1 projector, 1 laminating machine, 1 server
Joykrishnapur ^{*1}	3 desktop PCs, 2 laptops, 2 routers, 3 printers, 1 server ^{*2}

^{*1}: Existing equipment is combined with another digital center in the same union (run by the same manager).

^{*2}: Servers are located in an adjacent primary school.

Source: Created by Survey Team based on interviews.

- Finance:** Digital centers are operated as private businesses, and their source of income is from services provided for a fee. The types of services vary from digital center to digital center, but range from opening bank accounts, assisting with passport application documents, electricity bill collection, etc., with each service costing between BDT 50 and BDT 300. A 2017 survey on union digital centers conducted by a Bangladeshi think-tank reported that the average monthly turnover of 105 union digital centers was BDT 22,221. Although we were not able to obtain information on monthly turnover at the three digital centers we visited, given the fact that all of the centers provide more than 100 different services and are popular centers visited by residents from other unions and upazila, with around 100 people visiting each day, we assume that they receive more than the above average monthly turnover. In addition, since no broken and unused equipment were found, it is assumed that the centers have sufficient funds to cover its maintenance and management costs as well as to purchase equipment.

Distance Education: Implementation Experience and Potential

The digital centers are administrative service providers operated by private citizens, and while we could not confirm that they have implemented distance education, we did confirm that they have implemented trainings at two of the three digital centers we visited. For example, the digital center in Raipura provided computer training (3 months) for secondary school students before COVID-19, and teachers were taught how to create digital content and upload it to the Teachers Portal. Shibalaya Digital Center provided training about basic usage of Microsoft Word and Excel and hardware troubleshooting training. Thus, although the connection with the education sector is informal, it can be said that digital centers have played a role as a training institution. In the interviews conducted during the visit, it was noted that there would be no problem if teachers without PCs or Internet access at home visit the digital center to download and upload digital content necessary for trainings. The service fee would range between 50-100 BDT. Since the digital centers are located within 4 km from the homes of all citizens, it can be inferred that there are no major obstacles to access, but it should be noted that the size of the digital centers, the equipment installed, and the ICT skills of the managers vary from one digital center to another.

10.4 Current Status and Potential of ICT Utilization and Distance Education in Schools

During the 1st survey in Bangladesh, schools shown in Table 10-14 were visited. In terms of school facilities and subject education, the Model Schools in Barishal and Rajshahi seemed to have larger budgets and offer better education than the other schools. On the other hand, in terms of ICT and distance education, the common problems were identified, which are unstable Internet connection and insufficient number of PCs and devices. In this section, the current status of ICT utilization and distance education at schools, which can be derived from statistical information, are presented. Moreover, it describes the actual situation at the visited schools.

Table 10-14 List of Schools Surveyed in the Field

Areas	Schools
Dhaka	Azimpur Government Girls School & College
	West End School
Barishal	Barishal Government Model School
	Gouranadi Girls School & College
Rajshahi	Baya High School & College
	Rajshahi Education Board Government Model School & College
	Shahid Nader Ali Girls School & College

Source : Created by the Survey Team

(1) Human Resources

PP2041 clearly states the need for education with appropriate use of ICT equipment from primary to tertiary education in order to develop highly skilled human resources, and ICT education as a subject is defined as a compulsory subject in secondary education. However, there is a shortage of teachers specializing in ICT, and it is difficult to say that ICT class is being effectively provided in secondary education. As shown in the table below, the number of teachers in charge of ICT is extremely small, less than one per school.

Table 10-15 Number of ICT Teachers in Secondary Schools

Item	Junior Secondary School	Secondary School	Higher Secondary School
Number of schools	2,343	16,531	1,420
Number of teachers in charge of ICT	824	12,018	1,358
Number of ICT teachers per school	0.35	0.72	0.95

Source: Created by the Survey Team based on BANBEIS 2021.

Actual Situation in the Visited Schools

Many of the schools visited also do not have teachers in charge of ICT. Therefore, teachers with relatively high ICT literacy who had attended external training courses at UITRCE, TTC, and NAEM, which are under BANBEIS, were in charge of ICT-related classes. Moreover, not all the teachers have high enough ICT literacy to be able to effectively use ICT equipment and to conduct ICT-related classes, indicating that there is a huge disparity in ICT literacy among the teachers. Some schools held ICT in-house training on ad-hoc basis because of the demand from teachers who wanted to improve their own ICT literacy. However, it was found that the training was informal and short-term, lasting from one to three days. Therefore, it is difficult to say that the training effectively contributed to the improvement of teachers' ICT literacy.

(2) Facilities (Infrastructure)

The table below shows the installation rate of ICT-related infrastructure, which is essential for digitalization of the education sector. The electrification rate at junior secondary schools improved significantly from 69.0% to 90.0% over the three-year period from 2019 to 2021, so that almost all secondary schools now have access to electricity. Internet penetration is very high at 87.7% in the secondary schools and 98.5% in the higher secondary schools. It remains low at the junior secondary schools at 37.6%, but in Bangladesh, the junior secondary school and secondary schools are often located in the same facilities. Thus, it is considered that most secondary schools are equipped with Internet access. In addition, the penetration rate of multimedia classrooms equipped with projectors and PCs is over 80% at both secondary and higher secondary schools.

Table 10-16 Installation Rate of ICT-related Infrastructure

Items	Educational Level	2019	2020	2021
Electrification rate	Junior secondary school	69.0%	79.9%	90.0%
	Secondary school	94.9%	95.5%	99.5%
	Higher secondary school	99.8%	99.9%	99.9%
Internet penetration rate	Junior secondary school	35.8%	37.4%	37.6%
	Secondary school	86.1%	87.8%	87.7%
	Higher secondary school	96.8%	97.5%	98.5%
Multimedia Classroom penetration rate	Junior secondary school	20.0%	22.4%	21.9%
	Secondary school	85.6%	85.7%	84.0%
	Higher secondary school	95.9%	96.0%	94.2%

Source: Created by the Survey Team based on BANBEIS 2021.

Actual Situation in the Visited Schools

All the visited schools are electrified. Internet is also installed in many of the schools, but the number of routers is few, and the available locations within the school are limited to teacher rooms, conference rooms, etc. In many cases, Internet access is not available in general classrooms, so students can not benefit from Internet-based classes. There are only one or two multimedia classrooms in each school. In addition, the projectors in these multimedia classrooms are out of order and are not used, which contradicts the high penetration rate of ICT-related infrastructure reported by the statistical data.

(3) Equipment (PC)

Table 10-17 shows that the PC ownership rate (the percentage of schools with at least one PC) is over 90% for both secondary and higher secondary schools, and it can be said that most schools have PCs. On the other hand, the installation rate of PC classrooms where students can conduct practical PC training is low, at 36.1% in 2021. It decreased 42.3% in 2020 to 36.1% in 2021, but the reason for the decrease is unknown. According to several teachers interviewed, during the closure of schools due to the COVID-19 outbreak, there were many PCs that were not properly maintained, causing malfunctions of some PCs. This may be one of the reasons for the decrease in the PC classroom installation rate. Survey⁷⁹ on PC use in schools conducted by UNESCO and MOE in collaboration in 2019 also showed that more than 60% of all students "hardly use" or "only use for less than one hour" PCs at school, indicating that the low PC use rate among students, which had been an issue before the school closure, was accelerated by the malfunctions of PCs due to lack of maintenance during the closure.

Table 10-17 Percentage of PC Facilities and PC Classrooms Installed

Items	Educational level	2019	2020	2021
PC ownership ratio	Junior secondary school	42.3%	42.7%	43.4%
	Secondary school	92.9%	92.9%	92.7%
	Higher secondary school	99.7%	97.8%	97.8%
Percentage of PC classrooms installed	Secondary school	31.2%	42.3%	36.1%

Source: Created by the Survey Team based on BANBEIS 2021.

Actual Situation in the Visited Schools

Table 10-18 shows the number of students per PC during PC practical classes in the seven secondary schools visited. It was confirmed that due to the small number of PCs working properly, either no PC practical classes are conducted or PC practical classes are held with several students using one PC. It can be seen that the use of PCs in schools is very limited.

⁷⁹ Digital Kids Asia-Pacific Insights into Children's Digital Citizenship Country Report-2019, Bangladesh

Table 10-18 Number of Students per PC during PC Training in the Schools Surveyed

Area	School	School Type	No. of PCs Working Properly	No. of Students per PC ⁸⁰
Dhaka	Azimpur Government Girls School & College	Government	10	3
	West End School	Non-Government	17	2
Barishal	Barishal Government Model School	Government	44	2
	Gouranadi Girls School & College	Non-Government	17	2
Rajshahi	Baya High School & College	Non-Government	5	4
	Rajshahi Education Board Government Model School & College	Government	0	No practical classes
	Shahid Nader Ali Girls School & College	Non-Government	4	5

Source: Created by the Survey Team based on interviews.

Comparison with Other Countries

Table 10-19 shows the Internet penetration rate and PC room installation rate in secondary schools compared to India, Pakistan, and Myanmar, which, like Bangladesh, are classified as low- and middle-income countries. The Internet penetration rate in Bangladeshi schools is 87.7%, which is very high compared to 33.9% in India and 44% in Pakistan. Bangladesh is actively pursuing digitalization compared to other countries, as the country has made it a policy goal to install the Internet in schools. Although PC room installation rate in Bangladesh, 36.1%, follows after Pakistan, these two data suggest that the digitalization of the education sector is progressing gradually.

Table 10-19 Comparison of Internet and PC Room Installation Rates by Country

Country	Internet Penetration (2021)	PC Classroom Installation Rate (2021)
Bangladesh	87.7% (in %) (*1)	36.1% (in %)
India	33.9% (in %)	19.4% (in %) (*2)
Pakistan	44%	59%.
Myanmar	unknown	10% (%) (*3)

* Secondary school data, *2 Percentage of available desktop and laptop PCs installed, *3 2012 data

Source: Created by Survey Team based on BANBEIS2021 for Bangladesh, Unified District Information System for Education Plus (UDISE+) for India, and UNESCO UIS for Myanmar.

(4) Distance Education: Implementation Experience and Potential

Schools were closed for a year and a half as a response to the COVID-19 outbreak. During this period, MOE instructed secondary schools to assign homework to students, including online classes. According to the study on learning situation of grade 8 students mentioned in section 3.6, students who were able to complete assignments, including online classes, had a 15~20% lower learning gap than those who were not able to participate in online classes. This proves that the availability of digital equipment and Internet access, which is essential for distance education, is a strong factor in determining the extent of learning loss.

The 1st survey in Bangladesh confirmed that secondary school students had lower access to digital devices and the Internet environment compared to HSTTI trainees and TTC students. Attendance rates for online classes were also lower than at ones of HSTTI and TTC students, with some schools having attendance rates of around 30%. Due to low attendance, some schools discontinued online classes after only 4~5 months and left the students to study on their own after

⁸⁰ Represents the number of students per PC during hands-on training using a PC

that. This suggests that the loss of learning opportunities in secondary schools was more severe than in HSTTI and TTC. The method of distance learning varied from school to school. Some schools used Zoom or Facebook Live for online class delivery, while in others, teachers created teaching materials in Power Point and shared the data with students.

In the 1st survey in Bangladesh on distance education needs, the survey team found some schools interested in implementing distance education in the future due to the large number of students per teacher in face-to-face classes. However, due to the unstable Internet access among students as the receivers, the feasibility of distance education is low at this time. Before distance education can be implemented, it is also necessary to improve the ICT environment at the schools. In order to implement distance education, it is necessary to install more routers in the schools for improvement of the internet environment so that classes can be conducted using the Internet in each classroom, and to enhance the quality of PC rooms.

10.5 Status of Private Companies in Bangladesh

Although there are not many private companies engaged in E-Learning LMS-related businesses in Bangladesh, development and service operation are gradually in progress, where ICT is rapidly spreading. This section describes the results of the on-site survey conducted to confirm the status of private companies developing LMS-related businesses in Bangladesh.

10.5.1 Information on Leading Companies

(1) Brain Station 23 Co., Ltd.

The company's corporate profile is shown in the following table.

Table 10-20 Brain Station 23 Co., Ltd. Company Profile

Item	Contents
Company Name	Brain Station 23 Co., Ltd.
Establishment	Year: 2006
Number of Employees	More than 700
HP URL	https://brainstation-23.com
Contact	Tel: 02-222290728, Mob:+ 8801404055220(Reception)

Source: Prepared by the Survey Team based on interviews.

Business Overview

The company was founded in 2006 with the goal of providing IT services to foreign clients. Today, the company serves more than 1,200 clients in more than 25 countries, while also providing services to domestic clients.

Human Resources

It currently employs over 700 skilled personnel, including 600 engineers and 100 managers and marketing staff. The company is particularly focused on the development and after-sales service of LMS/E-learning systems, and has built a large team on these issues.

Facilities and Development Environment

In addition to highly qualified personnel, the company is well equipped and has its own LMS/e-learning system development and after-sales maintenance. It also has access to the National Data Center (NDC), is an official Moodle partner, and has extensive experience.

Brain Station 23 operates a variety of LMS solutions based on Moodle, as well as solutions developed from scratch, using Bootstrap and JQUERY for the front end, PHP for the back end language, and MSSQL for the database. In addition, they have developed and are operating an LMS that supports video, animated video, documents, and interactive video content.

Content is developed primarily by the client, with Brain Station 23 providing technical support. They offer a wide range of services, including business process outsourcing, software development, IT consulting, data analysis, and data entry. Their development process uses both a waterfall model and an agile development process, and they conduct their own quality control and create their own test plans, etc. to ensure quality.

(2) Riseup Labs Co., Ltd.

The company's corporate profile is shown in the following table.

Table 10-21 Riseup Labs Co., Ltd. Company Profile

Item	Contents
Company Name	Riseup Labs Co., Ltd
Establishment	Year: 2009
Number of Employees	More than 150 people
HP URL	https://riseuplabs.com
Contact	Mobile: +8801759747387, contact@riseuplabs.com

Source: Prepared by the Survey Team based on interviews.

Business Overview

An IT services and technology solutions provider with 150 engineers, E-learning platforms as well as web applications, games, apps and offshore development, currently with more than 100 clients in over 30 countries and The company currently provides services to UNICEF, UNDP, USAID, FAO, WHO, ATEC, BBC, Phi360, Axiata, Murka, Safe-Guard, Swiss Marketing Systems, and others. He has managed over 700 projects in the past 13 years and has experience working with global companies.

The company's main business is the development of e-learning platforms and content, and has developed more than 1,600 video content titles to date. As part of its business, it has developed the aforementioned Teachers Portal in collaboration with a2i, and other services related to the education sector are listed below.

- COVID-19 School Sector Response (CSSR): is an Internet-based learning video content for G1-10 (excluding G6 and 7) that digitizes primary and secondary education textbooks in Bangladesh. A total of 400 video contents have been produced. Details are as follows:
 - Client: UNICEF
 - Technology: Adobe After effect, Adobe illustrator, Adobe Photoshop, Adobe Premium Pro
 - Recording function: Audacity, Adobe Audition
- Adolescents Nutrition e-Learning Platform for UNICEF: An e-learning platform on nutrition, with content co-created by DSHE, UNICEF experts, and others for online use by parents and children.
 - Client: UNICEF
 - Front end: Vue.js, HTML5, CSS, Java Script.
 - Back end: PHP, MySQL, Laravel

(3) Shikho CO., Ltd

The company's corporate profile is shown in the following table.

Table 10-22 Shikho Co., Ltd. Company Profile

Item	Contents
Company Name	Shikho Co., Ltd.
Establishment	Year: 2019
Number of Employees	More than 250 people
HP URL	https://shikho.com
Contact	Tel:+8809638113399, Mob: + 8801404055220(Reception)

Source: Prepared by the Survey Team based on interviews.

Business Overview

Shikho's capital comes from Singapore, the United States, and Bangladesh, but its operations are entirely Bangladeshi. The company specializes in developing and creating e-learning content tailored to the Bangladeshi curriculum (G9-12) and focused on skill development, with live classes, animated videos, and problem-based learning content. Classes are both recorded and live, and in live classes, students can participate via Zoom from their own devices and ask questions via the chat function on a case-by-case basis. The company does not have an anti-fraud monitoring system in place, but since the goal is to "improve students' academic performance," the company does not focus as much on exam fraud.

Human Resources

It employs 250 full-time staff, 30-40 of whom are involved in core development. The pedagogical aspects of the content are supported by staff members who specialize in their respective subjects, and the teachers within the content are staffed by personnel with expertise in teaching methods, pedagogy, etc., but not teachers working in the schools. The maintenance of the content and online platform is handled by the development team, which includes a Facebook team and a Hotline (Call Centre) with 7~8 people. At the time of our visit, about 10 people were editing the filmed content in the editing studio.

Facilities and Development Environment

There are four filming studios, one of which is a chromakey studio (approx. 6m x 6m) where animation can be projected on the background. The other three studios are for live classes, equipped with filming cameras, smart boards, and lighting equipment.

- Front end: Sneak.js, Back end Language: Go
- Database: No SQL (MongoDB)
- Platform: Web & Android Apps
- Data Storage: Cloud Amazon Web Services (AWS)

(4) 10 Minute School Co., Ltd

The company's corporate profile is shown in the following table.

Table 10-23 10 Minute School Co., Ltd. Company Profile

Item	Contents
Company Name	10 Minute School Co., ltd
Establishment	Year: 2015
Number of Employees	140 People
HP URL	https://10minuteschool.com
Contact	Tel: +88-01706895939, Email:mukit@10minuteschool.com

Source: Prepared by the Survey Team based on interviews.

Business Overview

It is a leading online education platform provider in Bangladesh, created in 2015. Capital is raised from domestic and international sources, and in January 2022, the company raised US\$2 million in funding from investors. A pioneer in the field of online distance learning in Bangladesh, the company started producing video tutorials in math and English and now offers live classes on Facebook, YouTube, Instagram, and TikTok. It has built its own LMS platform 2019 for better lesson management and started managing paid users. It has 500,000 paid users, with an average of about 2 million people trained per day through live and in-person classes. The content offered can be broadly classified into two types: (1) academic classes that cover content for G1-12, and (2) non-academic classes that cover entrepreneurship education, career building, and preparation for entrance exams. These contents are delivered in a mixture of live and recorded formats, using animated images and other materials.

During the outbreak of the COVID-19, a training program for instructors was developed and attended by approximately 30,000 instructors, and this training content was also provided at Muktopaath. In addition, the training program has been provided to 1,300 Shekh Russele Labs in Bangladesh via USB memory stick.

Human Resources

The staff totals 140 people. There are more than 20 core developers and 15 people on the support team. The company also operates a call center, content developers, and teaching staff. The company also has its own editorial, quality control, production, and marketing teams.

Facilities and Development Environment

For content recording and preparation, the company owns its own digital studio, including a chromakey studio for animation, and all content distributed is developed and managed in-house. The company also provides all system maintenance support in-house. Details of the development platform are as follows:

- Front end: Sneak.js
- Back end: Go
- Database: Mongo DB
- Streaming Platforms: Agora
- Other: AWS hosting is available to support up to 100,000 simultaneous users. The staging server is located in the R&D LAB.

10.5.2 Other Information

(1) Studio Rental Fees

The private companies mentioned in the previous section do not provide studio rental services as a business, but as a reference, we asked Shikho about the costs associated with studio rentals, and found that studio rental costs, including materials and equipment necessary for filming, range from about BDT 360,000 to BDT 600,000 per month.

Although we did not conduct a site visit during this survey, we also obtained an estimate of studio rental and labor costs from BacBon, a Bangladeshi company that develops E-Learning materials. BacBon's studio rental cost was 144,000 BDT per month, including necessary equipment, and labor costs for content designers, photographers, video editors, etc. were 662,000 BDT per month.

(2) LMS Development Costs

There are not many private companies developing LMS in Bangladesh, but we collected information on LMS development from the companies we visited this time. In Bangladesh, Moodle-based LMS development is the mainstream, but we also collected information on new LMS development from Riseup, and Moodle-based LMS development from Brain Station 23 and BacBon. The table below summarizes information on new LMS development based on Moodle from Riseup and Moodle-based LMS development from Brain Station 23 and BacBon.

Table 10-24 LMS Development Costs

	Newly Developed Edition	Moodle-based version
Development Cost	Approx. 20 million BDT	Approx. 5 million BDT
Development Period	1 Year	4 Month
Development Engineers Structure	Front-end: 3 Back-end: 4 Project manager: 1 Server construction: 1 Others: 3	Front-end: 2 Back-end: 3 Project manager: 1 Server construction: 1 Others : 2
Personnel Expenses	About 150,000~180,000 BDT/month	About 150,000~180,000 BDT/month
Maintenance Management Fee	Approx. 100,000 BDT/month~.	Approx. 100,000 BDT/month~.

Source: Prepared by the Survey Team based on interviews.

10.6 Current Status of ICT/DX in Bangladesh

In this chapter, the status of digitalization in the education sector is examined. It is known that DX does not come suddenly but is a gradual transition⁸¹. Digitalization is classified into three phases, and DX is achieved when new value is created through digitalization, based on the achievement of the previous phases, Digitization (data conversion of information) and Digitalization (ICT of operations).

In light of this, when the current ICT/DX status in Bangladesh is examined, the digitization of statistical data and the development of digital teaching materials have been actively promoted by Digital Bangladesh, which was launched in 2008 (digitization of information). In addition, it was confirmed in the government's education policy that PC rooms and multimedia classrooms will be further developed, and Internet infrastructure will be installed in rural areas gradually due to the demand caused by the closure of educational institutions as a result of the COVID-19 outbreak. Therefore, it can be assumed that the secondary education subsector in Bangladesh is in the process of transitioning from digitization to digitalization.

NAEM and HSTTI are focusing on training on how to develop lessons using ICT. It can be inferred that the ICT literacy of secondary school teachers is improving and that they are at the stage of transitioning to digitalization in their work. Furthermore, with the establishment of UITRCE and the ICT training being offered at the upazila level, as well as the attempt to increase opportunities for teachers to improve their ICT literacy without having to go to training that involves an overnight stay at NAEM, TTC, or HSTTI, there is a strong interest by the secondary education sector in improving the ICT literacy of its teachers. It was also confirmed that a certain degree of digitalization of work was also progressing at schools, such as conducting online classes during the school closure and sharing teaching materials using Power Point through SNS such as Facebook.

⁸¹ From the Inception Report of this study

In the private sector, several companies are working to advance the digitalization of the education sector. The survey confirmed that the private sector has the resources to complete the development, production, editing, and distribution of e-learning content. In addition, there are also projects that require advanced know-how, such as the development of an LMS on their own. It can be said that the private sector is making a significant contribution to the promotion of digitalization in the education sector.

On the other hand, the receiving end such as schools has not been digitalized due to a lack of devices available to students at school and at home and weak Internet access. Furthermore, children do not receive interactive lessons using ICT equipment due to the lack of teachers with high ICT literacy in addition to the lack of ICT devices available to children at school. Similarly, the visited TTCs do not have sufficient PC rooms and lack ICT teachers, which means that effective practical classes using ICT equipment are not being implemented. If this continues, there is concern that teachers with high ICT literacy will not be trained. Smart Bangladesh: ICT Master Plan 2041 provides a roadmap for promoting ICT-based blended learning, but currently lacks the necessary ICT equipment, human resources, and other resources to make it a reality. In addition, systems, and programs to supplement the missing human resources have not yet been developed at both teacher trainings and teacher training institutions, and no specific guidelines have been provided.

Although digitalization in the education sector is considered more advanced than in neighboring countries India, Pakistan, and Myanmar, the entire secondary education subsector in Bangladesh needs to complete the transition to digitalization and make more progress in the phases. In order for the entire secondary education subsector in Bangladesh to complete the transition, there is a need to enhance student access to ICT equipment, including PCs, in secondary schools and TTCs, as targeted in the National Blended Education Master Plan 2022-2041. At the same time, teacher training is needed for TTC trainers and all secondary school teachers to improve their ICT literacy to be able to further use ICT equipment. In order to effectively improve human resources, blended learning seems appropriate. For the implementation of it, one idea is to conduct the trainings by NAEM HSTTI, UITRCE, which have the potential for distance education. Therefore, it will be necessary inputs for the promotion of digitalization in Bangladesh that ICT equipment and the Internet infrastructure in TTCs and secondary schools are installed and system to conduct online teacher trainings to enhance ICT literacy such as the development of curriculum and teaching materials are created. Furthermore, in order for these inputs to effectively contribute to the digitization of Bangladesh and ensure sustainability, the way in which data is utilized must also be considered. Not limited to the education sector, the National Smart ID is a good example of data utilization. Currently, more than 70% of Bangladeshi citizens can access various public services (e.g., passport application, bank account opening, household registration, etc.) through the National Smart ID. This data can be linked to the education sector, for example, by capturing teachers' training records and students' exam results as data and observing the correlation between teachers' training records and students' academic performance, thereby confirming the effectiveness of teacher training. Although examples of such utilization are not identified from the policy, it is worth considering as one of the components of the support.

Chapter 11. Teacher Training Facilities for Secondary Education

This chapter summarizes the current status and other aspects of the facilities of teacher training institutions that provide teacher training, as summarized in Chapter 9, for the following institutions that were visited during the field surveys in Bangladesh.

- Govt Teacher Training Colleges (TTCs)
- Non-Govt. TTCs
- Higher Secondary Teachers Training Institute (HSTTI)
- National Academy for Educational Management (NAEM)
- Institution of Education and Research (IER)
- Bangladesh Open University (BOU)

11.1 Current Status of Teacher Training Facilities

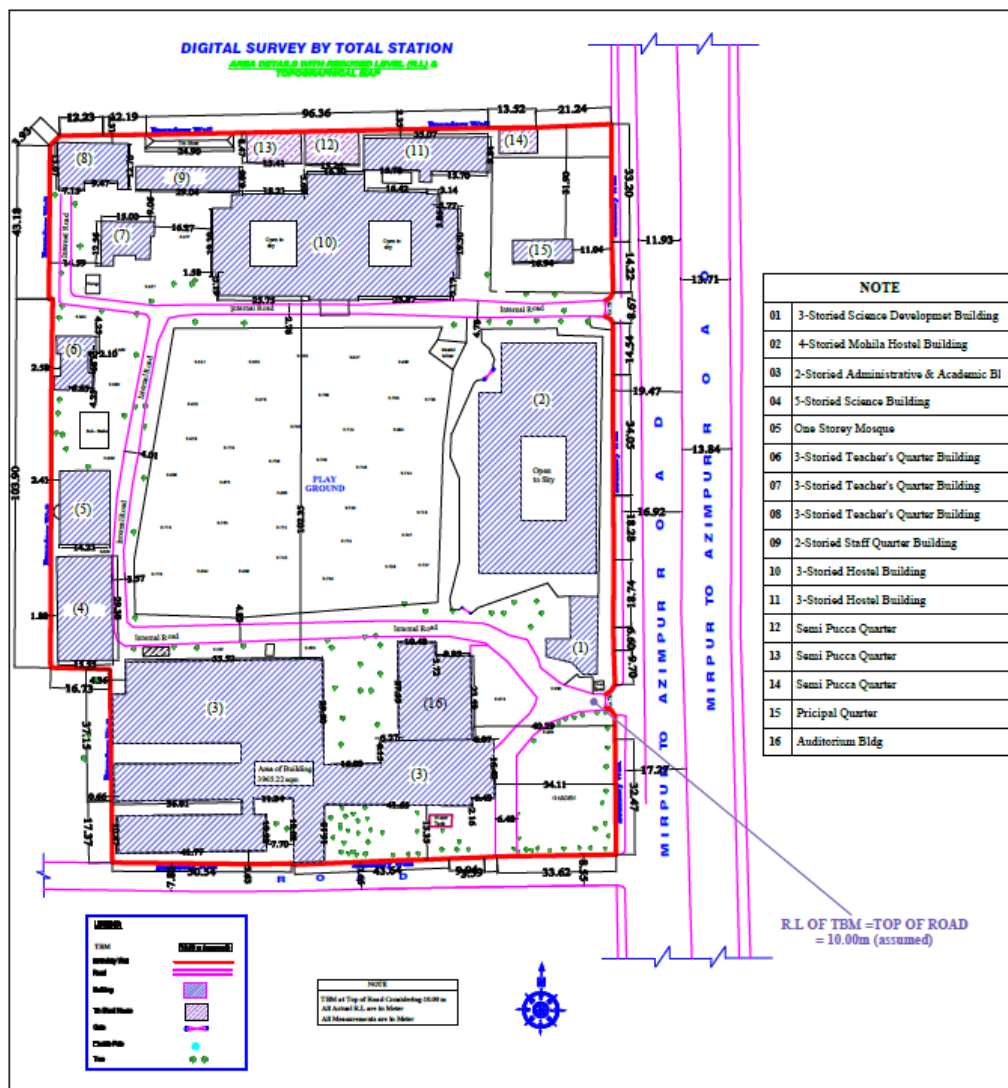
(1) TTC

The following is an overview of the facilities at Govt. and non-Govt. TTCs.

Government TTC

Most Govt. TTCs are located in urban or suburban areas and occupy relatively large areas, some with large playgrounds. The main buildings, including the administration building (principal's office, teachers' offices), academic building (classrooms, laboratories, etc.), hostels (students and trainees), and dormitories (principal, teachers, and staff) are built on the site. Most of the buildings are reinforced concrete structures. In many facilities, the administration block and the academic block are in the same building. In some of the larger facilities, the academic block is divided into several buildings. One of the Govt. TTCs is for women and none of the non-Govt. TTCs are for women. However, both men and women may attend Pre-Service Teacher Training (PRESET) courses and In-Service Teacher Training (INSET) courses conducted in government TTCs. For this reason, Govt. TTCs have hostels for men and women, or if separate hostels are not available, a women-only block is set aside in the men's hostel.

Figure 11-1 shows a site plan of Govt. TTC Dhaka. As a large institution, several academic buildings and hostel/accommodation buildings are located on the same premises.



Source: Govt. TTC Dhaka

Figure 11-1 Example of Site Plan for Govt. TTC

The age of the buildings varies from TTC to TTC, but most are old, dating from the 1950s to the 1990s. Some buildings are still in use today, although there are some buildings that need repair. Buildings built after the 2000s are generally in use without any problems. In addition, some of the older buildings, which are more than 50 years old, are highly hazardous due to concrete delamination of columns and beams, exposing reinforcing bars. In some of the TTCs located in the southern part of the city, where the land is low above sea level, the high salinity of the soil due to water logging has affected the buildings' concrete delamination and rust damage to reinforcing bars and steel window frames, all of which require early repair.

The training facilities are supplied with electricity by the regional power distribution company, but the global energy shortage has resulted in insufficient supply and rising prices, and frequent power outages have occurred due to low power generation at power plants. During the field observations, load shedding was observed almost daily, and although some TTCs have installed emergency generators, the high cost of fuel makes it difficult for them to operate for long periods of time on a limited budget.

Water supply in the facilities varies depending on the location of the TTC. TTCs in urban areas draw from the city water supply, while those located in the suburban areas draw from their own deep wells. In the case of deep wells, the source of water intake sometimes reaches 700-800 ft. deep. Although water quality is said to be safe, many academic buildings and hostels use water purification filters to provide safe drinking water. Filters for water purification are relatively expensive and are not regularly replaced due to budget constraints. Some TTCs located in the southern part of the country, near the sea, have to drill down to about 1,400 ft. below sea level to secure drinkable groundwater, and because of the high cost, they do not install their own deep wells, but purchase drinking water from nearby water suppliers.

Although drainage facilities are in place, some facilities whose sites are lower than the surface of the adjacent road are flooded during the rainy season. The local government in charge must take countermeasures, but the response seems slow.

Many of the TTCs have a security system of CCTV surveillance cameras installed at key locations on the premises, which are constantly monitored through monitors installed in the principal's office or other locations. Some facilities also assign night security guards.

Not all buildings on the TTC premises are equipped with fire alarms, hydrants, hoses, sprinklers, or other fire protection equipment.

Non-Government TTC

Non-Govt. TTCs are often established by communities, philanthropists, NGOs, religious organizations, etc., and are small in size and often do not have their own premises or buildings. For this reason, they sometimes rent a part of a building from a private real estate company or landowner as classrooms or borrow some classrooms from a nearby secondary school of the same affiliation after school hours to conduct classes.

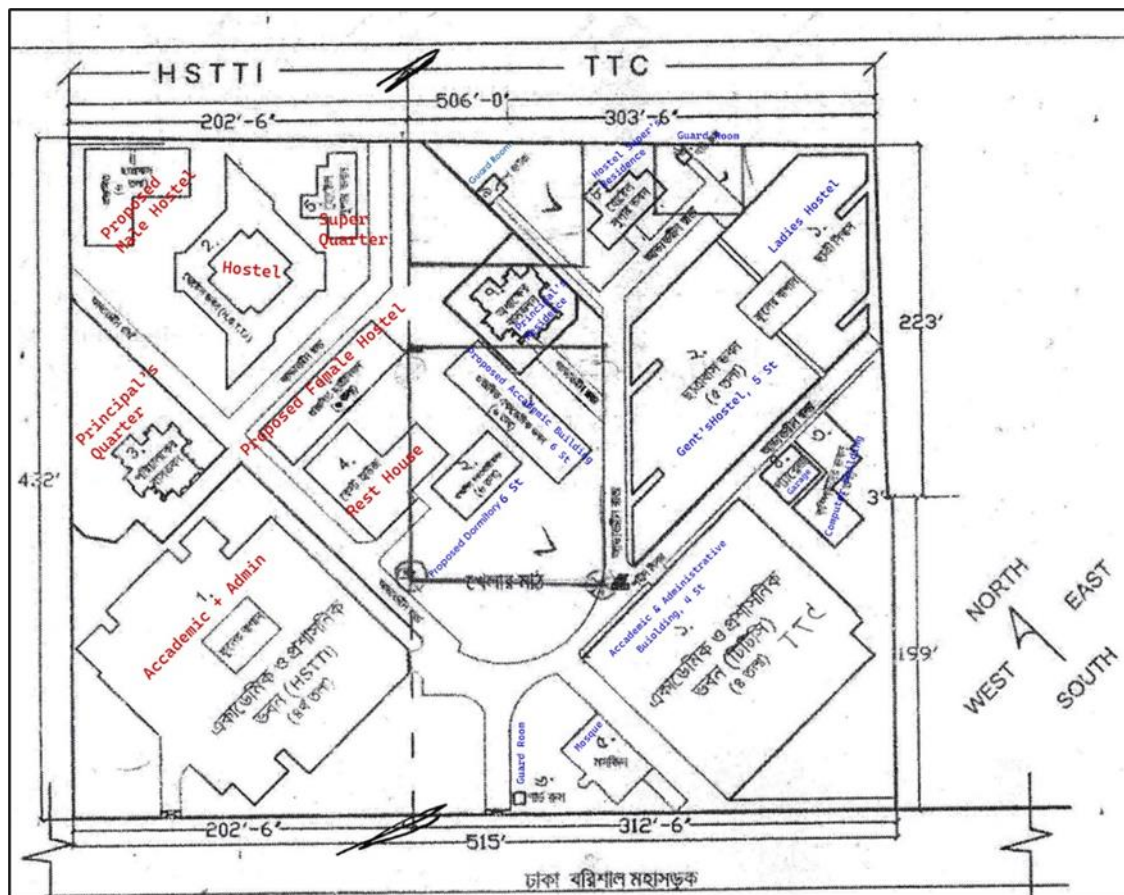
Many non-Govt. TTCs offer only B.Ed. (Pro) courses. However, the number of students enrolled is small, and many TTCs are said to be unprofitable due to their inability to secure sufficient tuition income. Except in the case of TTCs using existing secondary school buildings, rented facilities use buildings with low rents, so the buildings are old, classrooms are small, and there is no or insufficient ICT equipment or laboratory equipment. In addition, teacher retention is low due to inadequate salaries. Non-Govt. TTCs do not have hostels for trainees and require daily commuting from nearby homes. This seems to be one of the reasons why small schools have sprung up all over the country.

(2) HSTTI

The buildings of HSTTI were constructed between 1994 and 1999, but all of them were built on the site of the Govt. TTC due to difficulties in securing land for construction. HSTTI Barisal was established by sharing land with the neighboring TTC Barisal (see Figure 11-2), but the other four HSTTIs were established by renting the land from nearby TTC, and therefore, the use of the site requires the agreement of TTC, which is inconvenient for many reasons. Therefore, there is a strong desire on the part of HSTTI to have its own new campus. However, it is difficult for HSTTI to develop new facilities on its own since the training conducted at HSTTI is free of charge and there is no independent source of income.

The main building of HSTTI consists of the administration building (director's office, teachers' offices), academic building (classrooms, laboratories, etc.), trainee hostel, director's dormitory, staff dormitory, etc., and is made of reinforced concrete. The HSTTI building is relatively new compared to the Govt. TTC, and there is no urgent need for repair or renovation, but urgent repairs are needed for facilities such as HSTTI Khulna that are located in areas susceptible to salt damage.

As for utility services such as power, water supply and drainage, etc., the situation is generally the same as the TTC since HSTTI is located on the TTC site.

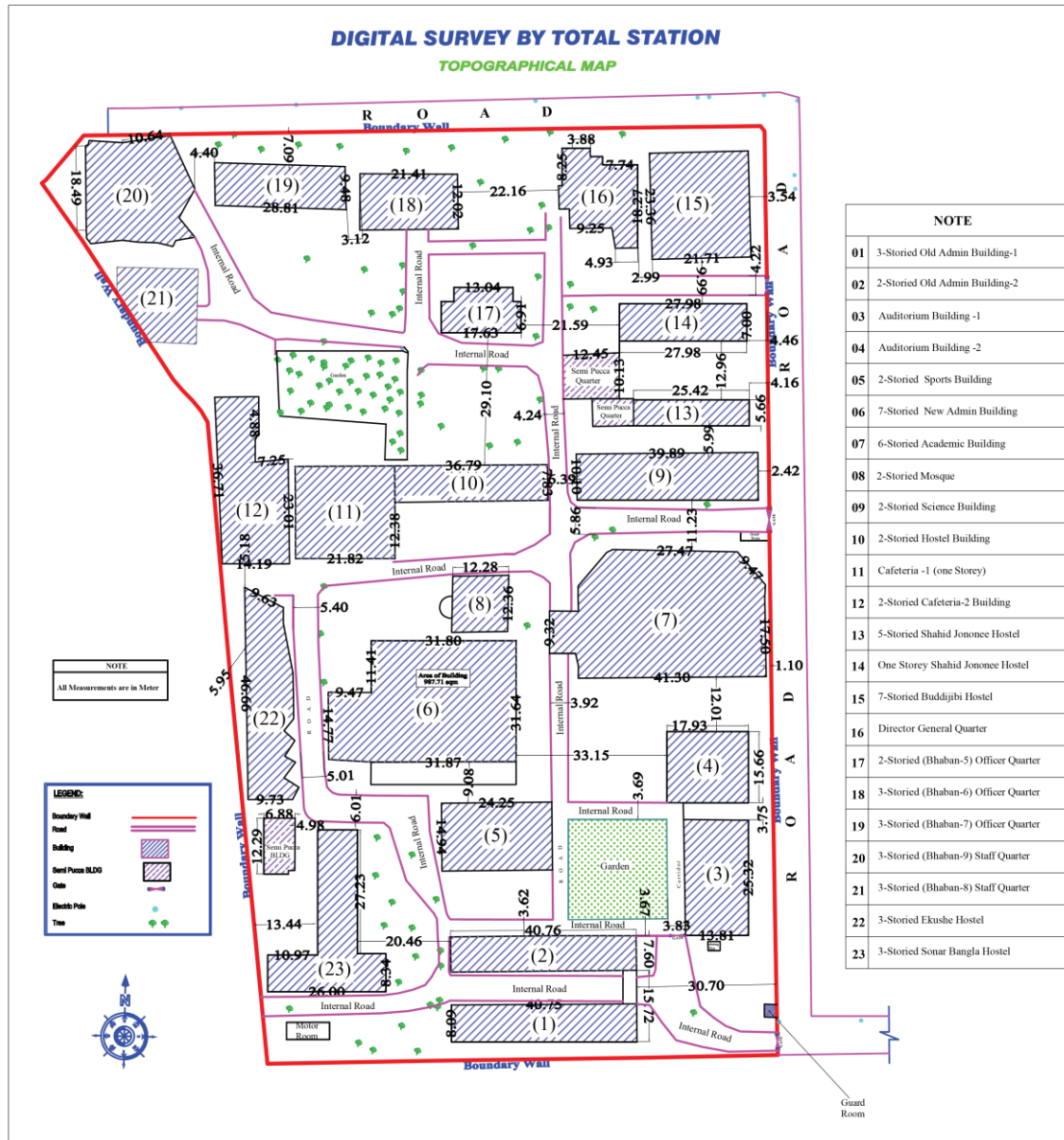


Source: HSTTI Barisal/TTC Barisal

Figure 11-2 Example of HSTTI/TTC Site Usage

(3) NAEM

The NAEM campus contains 18 buildings constructed between 1959 and 2011. The administration building was originally planned to be a 10-story building, but as of 2010, the completed 7 floors were first put into use. Construction is currently underway to add the remaining 8-10 floors.



Source: NAEM

Figure 11-3 NAEM Site Plan

The specifics of the buildings on the NAEM site are shown in the table below.

Table 11-1 NAEM Existing Building Details

Serial No.	Name of Building	Established Year	Storied	No. of Rooms	Remarks
1	Administration Building	2010	10		8 to 10 stories are under construction
2	Academic Building	2003	6	50	4 full interior class rooms for FTC
3	Science Building	1988	2	8	3 full interior class rooms for FTC
4	Old Administration Building	1985	3	15	8 rooms are unused
5	Store and Medical unit	1963	2	8	1 doctor's room, 4 medical units, 3 others
6	Gymnasium	1959	2	2	Sports room and gymnasium
7	2 Auditoriums	1963 - 1988	3	8	No.1 - 60 seated small Auditorium. No.2 - 250 seated Auditorium
8	Sonar Bangla: hostel for men	1960 - 1983	3	47	94 beds
9	Muktiudda- hostel for men	1960	3	30	60 beds
10	Shahid Buddijiby- hostel for men	2011	12	152	304 beds
11	Shahid Jonony- hostel for women	1963	5	28	56 beds
12	Amor Akushay- hostel for women	1983	3	21	63 beds
13	DG's Residence	2005	2	1	Only for DG
14	5 No. Officer's Quarter	1986	2	2	For 2 families
15	6 No. Officer's Quarter	1960	3	6	For 6 families
16	7 No. Officer's Quarter	1961	2	4	For 4 families
17	8 No. Staff Quarter	2005	3	12	For 12 families
18	9 No. Staff Quarter	2005	3	12	For 12 families

Source: NAEM

NAEM has more than 50 rooms of various sizes used as training rooms, which are generally new and equipped with a sufficient number of desks and chairs. The larger rooms (with a capacity of 80 students) are used as multimedia classrooms and conference rooms, and are equipped with various ICT equipment, etc. There are three ICT classrooms in the Auditorium building, which are equipped with PCs, servers, smart boards, projectors, etc., and some are air-conditioned.

As for electricity, the NAEM campus has a 1,500-kW substation that provides all the power for the campus. There is a 500-kW generator as an emergency power source, but it is currently out of order.

The telecommunications facilities include broadband Internet access and an open Wi-Fi system from Bangladesh Telecommunications Company Limited (BTCL), as well as telephone, PABX, and other facilities.

Water supply is provided to the NAEM campus through four Water and Sewerage Authority (WASA) water connections, one main reserve tank, six medium reserve tanks, and 76 overhead tanks, which supply all buildings on the campus. There are nine water supply pumps: five 10hp, one 5.5hp, and three 2hp pumps. Drinking water is supplied after passing through a water purification filter. However, the water supply pipes themselves are aging and need to be replaced. In addition, the main pump house needs to be constructed.

There are three sewer connections and approximately 2,000 ft. of sewer network on the premises, but no problems have been encountered.

NAEM's security system includes six full-time security guards and 12 other security personnel employed as security staff. In addition, CCTV surveillance cameras are installed in the main buildings on the premises to monitor the movement of people on the premises.

NAEM has a maintenance system in place for facilities and equipment, and the Assist. Director of Common Services is responsible for facility usage and maintenance management.

The NAEM headquarters, which is located in the education district of Dhaka City, plays a central role as an INSET facility, as far as its activities and facilities and equipment are concerned. However, with the capacity of NAEM to provide training to a maximum of 3,000 teachers per year, it would take a long period of time to provide training opportunities to all in-service teachers nationwide. Therefore, methods such as the establishment of NAEM regional institutes and cascading training are being considered to ensure efficient training. In addition, the hostel for female trainees at NAEM is old and has a small capacity, so a plan to build a new hostel for female trainees is under consideration.

(4) IER

For the training of science teachers in the B.Ed. (Hons) course of IER at Dhaka University, science and mathematics laboratories (physics, chemistry, biology, mathematics, etc.) are provided in the IER facilities for this course. The science and mathematics trainings are based on a curriculum developed by the IER faculty. In the case of the physics laboratory, the professor in charge of physics is accompanied by two to three lab assistants, who use measuring instruments and experiment kits purchased by the university or developed by themselves to demonstrate or conduct practical training for about 30 students in each class.

Although IER does not provide in-service teacher training on its own, it is possible to send IER teachers to other training facilities such as NAEM, which could be used as an external resource.

(5) BOU

BOU does not offer classes, experiments, or practical training at its headquarters campus. There is no affiliated school. BOU students are allowed to use all government facilities, including secondary schools and universities, and most services are provided through part-time contracts with local teachers, etc. BOU students usually study through self-study materials (print and digital data) and online video programs sent by the university. The program also includes face-to-face tutorials at the nearest Regional Resource Center (RC, 12 locations) or Sub-regional Resource Center (SC, 80 locations) on weekends to deepen understanding of the subject. In addition, twice a month, on the second and fourth Fridays, students can take online courses taught by university professors and other lecturers at a well-equipped RC or SC. The RC or SC has its own building in the region or is operated by renting a classroom at a TTC or government school in the region.

The BOU headquarters in Gazipur has the Media Center, which is equipped with filming, editing, and communication equipment used in the production of digital educational materials. In 1997, a studio for educational program production was built with the support of ADB, and studio shooting equipment, lighting equipment, sound equipment, editing equipment (video and audio), and post-production equipment were installed. At that time, equipment was installed for editing in analog format, but currently BOU is producing digital content using a PC and editing software that it purchased on its own.

The archive⁸² in the Media Center contains about 1,300 educational programs produced at BOU, mostly in the old U-matic, Beta, and DV-Cam formats (videotapes). In addition, the Japanese

⁸² A reference room where video and audio program software is stored on tapes, disks, and other media.

government has provided video materials for TV broadcasts and audio materials for radio broadcasts through grant aid, which are also stored in the archive.

In the past, educational programs produced at the Media Center were broadcast by the state-run Bangladesh Television (BTV) and radio stations, but this is no longer the case. Instead, digital content produced at the Media Center is broadcast on the web-based "Open TV" for 12 hours a day, every weekday from 8:30 to 20:30. Programs are available both interactive via online and one-way via video.

BOU also has a database called Open Educational Resources (OER), where audiovisual and printed materials are digitized and made available online to anyone. Data has been stored on the university's own servers, but the university has recently begun using Google Cloud Service and is gradually moving to the Cloud. The digitization of data is progressing, and video materials are available on a platform called BOUTube. The e-learning Center has also developed and is operating its own learning management system (BOU LMS).

BOU's resources such as digital teaching materials, platforms, RC/SC facilities, and support teachers are expected to be widely used in in-service teacher training conducted at NAEM, TTC, and HSTTI. However, the existing equipment at the Media Center for the production of teaching materials is generally old, especially the analog-based equipment, which has become obsolete and is not in use. In order to promote the production of digital educational materials in line with the government's Digital Bangladesh policy, the equipment needs to be updated.

11.2 Status of Equipment, Facilities, Furniture, etc.

The following is an overview of the classrooms, equipment, facilities, furniture, etc. at the TTCs and HSTTIs where INSET is provided.

(1) Status of Classrooms

The classrooms located in the academic buildings vary somewhat from training facility to training facility but are generally organized as follows.

- (i) General classrooms: black/white boards, student desks and chairs, teacher desks and chairs, ceiling fans, ceiling and wall lighting (fluorescent/LED lights), curtains (some without).
- (ii) Multimedia classroom: In addition to above (i), projector, screen, microphone, amplifier, speakers, large monitor (or smart board), etc.
- (iii) Computer lab (PC room): In addition to above (i) and (ii), air conditioner, server, PCs, emergency power supply (UPS), router, switching hub, etc.
- (iv) Science laboratory: Depending on the size of the school, there are patterns such as only one room (shared physics/chemistry/biology), two rooms (shared physics/chemistry and biology), or three rooms (physics, chemistry, and biology). In addition to the same facilities as in (i), the rooms have group lab benches, shelves for storing equipment and chemicals, and so on. Most of the preparation rooms attached to the laboratories are used only for random storage of the equipment.

All of the training facilities have an adequate amount of furniture in the classrooms and laboratories, but some of the furniture that was installed when the facilities were first constructed were outdated and may be considered unsafe for students and trainees to use as they are.

(2) Status of Experimental and Practical Equipment

There is no standard list of equipment that should be provided in secondary schools and teacher training facilities. In general, ICT equipment in classrooms is used as needed with respect to common subjects and compulsory subjects in the social sciences. For the compulsory natural science courses (physics, chemistry, biology, mathematics, etc.) at the secondary education and higher secondary education, equipment and teaching materials are located in the laboratories used for the respective courses, although they are few in number. In addition, according to the stage of secondary education, there are classes for required subjects such as physical education, career education, art, and elective subjects such as agriculture, home science, and music at the junior secondary level. There are required subjects such as career education, health and physical education, and elective subjects such as agriculture and home science at the secondary education level. At the higher secondary education, there are elective subjects such as agriculture and basic engineering offered. However, none of the equipment for these subjects was located at the TTC, HSTTI, or secondary schools as far as the survey team observed. Although MOE's policy is to focus on practice-based learning, in reality, the classes seem to be conducted mainly through classroom lectures due to the lack of equipment at the educational facilities.

While the curriculum and syllabus stipulate course content for each subject, there are no specific descriptions of what equipment should be used for science experiments, etc., and teachers in charge apply for procurement of equipment that they consider essential for their experiments, taking into consideration the budget allocation for the facility as a whole. MOE has procured science experiment equipment with a development budget supported by Development Partners (DP) such as the Asian Development Bank and distributed it to some educational institutions. However, even in those cases, the procurement was done on a budget basis, and it seems that there is no consideration for consistency with the current curriculum, and, as a result, there is little variety and stock of equipment.

In the case of TTC, depending on the size of the facility, it can procure the necessary equipment at its own discretion with a budget allocated by MOE up to 1 million BDT per year. However, the number of equipment items is limited to 10. If there is a shortage of equipment, the teacher in charge prepares a list of items to be procured and makes a request to the TTC, which is then approved by the TTC's Procurement Committee.

(3) Status of ICT Equipment

The installation and utilization of ICT equipment is a priority for all institutions. In particular, there has been a history of ICT equipment installation in educational institutions across the country, partly due to policy support from Digital Bangladesh, etc. In TTC and HSTTI, ICT equipment is a mix of those procured from past government budgets and those procured through DP support, but the PCs are old in terms of hardware, and in some places, unsupported operating systems and CRT monitors are still in use. Especially in the case of those using the intranet, there are some cases where the old equipment is either used or left in a state of disrepair due to the fact that no specialists are assigned to change the equipment settings and it is difficult to secure a budget to replace the equipment. In addition, the durable service life of ICT equipment is generally short; for example, in Japan, it is about 5 years, but at the TTCs and HSTTIs visited by the survey team, equipment that was already 10 years old is still in place, which suggests the need to establish a continuous MOE support system for equipment procurement.

(4) Challenges and Responses

Challenges related to equipment include: insufficient competence of teachers in charge of experiments and practical training; lack of maintenance systems (rules, organization, personnel); small budgets for repair, replacement, and replenishment; lack of evaluation points for

experiments in the current curriculum; lack of student interest in science experiments particularly in rural educational facilities; and the current curriculum with no evaluation of experiments. On the other hand, it is expected that science experiments will become compulsory in the new curriculum after July 2023 and will account for a half of grading points. In order to provide practical subject-specific training, the need to renovate and expand laboratories and procure laboratory equipment may increase in the future. In response to this trend, it will be necessary in the near future to plan for the expansion of facilities and equipment, and to establish rules for the sustainable and effective use of equipment.

11.3 Support Needs

The support needs expressed by the Govt. TTCs and HSTTIs in relation to facilities and equipment varied according to the size and current status of each facility, but the overall summary is generally as follows.

- Enhancement of ICT equipment
 - Conversion of general classrooms to multimedia classrooms: installation of projectors, screens, microphones, amplifiers, speakers, large monitors, etc.
 - Provision and enhancement of PC classroom equipment: desktop PCs, laptop PCs, servers, network management equipment, routers, smart boards, projectors, backup power supply (UPS), air conditioning, etc.
 - Improvement of Internet connection environment
- Improvement of training facilities and laboratory equipment
 - Renovation of classrooms and laboratories
 - Renewal and enhancement of science experiment equipment (physics, chemistry, biology, etc.)
 - Renewal of deteriorated desks, chairs, etc.
 - Establishment of new hostels (for women)
- Improvement of learning support facilities
 - Language Lab: LL learning devices and learning software package
 - Digital Library: Creating digital databases
 - Means of transportation for teachers and staff: vehicles
- Installation of supporting equipment
 - Power outage countermeasure: Emergency generator
 - Water supply facilities: Rooftop water storage tank, distillation equipment
 - Safety facilities: fire alarms, emergency exits, etc.
 - Security measures: Surveillance camera system

The above is based on the responses to the questionnaires submitted by each facility and the results of on-site discussions and includes items that are already in place at some facilities and are not needed.

11.4 Role of the Department in Charge of Educational Infrastructure Facilities

(1) Construction of Educational Facilities

The Education Engineering Department (EED) is a part of SHED and has a total of 3,821 staff (including part-time staff), 266 at the headquarters in Dhaka and 3,555 at the regional offices and is assigned to the following tasks.

- Planning, designing, monitoring, and implementation supervision for new construction projects of school buildings and other facilities for educational institutions at the secondary level and above.
- Construction, reconstruction, repair, renovation, and furnishing of buildings for schools, colleges, madrasahs, technical institutes, etc.
- Implementation of MOE development projects and programs.
- Implementation of special projects of MOE and other related agencies on turnkey basis.

The scope of EED work for educational facility development projects is as follows.

- Buildings (construction, repair, etc.)
- Facilities (wiring, piping, etc. inside the building)
- Furniture (procurement and installation)

EED basically performs work related to government schools but may also assist non-Govt. schools in some areas, such as bid (tender) evaluation. In principle, the procurement of equipment used for education and training, such as science laboratory equipment and ICT equipment, is outside the scope of the EED.

(2) Standard Design for Secondary Schools

EED is currently in charge of a government-funded development project called "Development of Secondary School Construction (DSSC)" for the construction of secondary school facilities. The project plans to construct 3,000 secondary schools nationwide, and the standard design of facilities developed by the EED has been adopted. While building sizes may vary according to the size of the school and building exteriors may vary according to regional characteristics, classrooms and other building interiors are designed in a uniform manner. In accordance with the Bangladesh National Building Code 2020 (BNBC 2020), the building has been designed to be accessible to people with disabilities, including ramps at the building entrances.

These are the design standards for school facilities, and TTCs and HSTTIIs are not subject to these standards. In addition, if a DP-supported project includes the construction of a school facility, it is not necessarily required to follow this design, but it is necessary to follow the standard design for basic factors such as classroom size, floor height, window placement, etc.

In addition, educational facilities to be built in the urban areas of the divisional centers and district capitals are required to expand vertically in order to reduce the site area, and a regulation has recently been established that requires them to be designed to be six stories or taller. Accordingly, the price of construction in urban areas is on the rise.

(3) Maintenance of Educational Facilities

Facility maintenance for government educational institutions above secondary school level, including TTCs and HSTTIIs, is managed by EED's 65 District Offices nationwide. Each District Office is staffed by an Executive Engineer, three Assistant Engineers, etc. EED conducts an annual assessment of the educational facilities under its jurisdiction and reports the results to the Directorate of Secondary and Higher Education (DSHE). DSHE prioritizes each facility and applies to MOE for maintenance services. The applications are reviewed and settled by an inter-ministerial committee including MOE and other relevant ministries and agencies, and then put into action.

Most educational institutions do not have a dedicated department in charge of maintenance, such as a facilities department or engineering department, but have a system in which maintenance needs are identified by various committees organized by teachers and staff of the institution, and

the director or principal of the institution requests the regional office to conduct an assessment. However, due to the large number of facilities and the fact that many of the buildings are old, it takes a great deal of time before work is actually performed, especially in cases where large-scale repair work is required. In selecting facilities in need of repair, the year of establishment of the facility, the number of students, the natural environment of the location, and other conditions are prioritized, and the work is to be carried out in order.

11.5 Development Project Implementation Process

(1) Application for Development Project Proposal (DPP)

Development projects related to secondary schools, and teacher training facilities such as TTCs and HSTTIIs are managed by DSHE from planning to implementation. Procurement of facilities and equipment is managed by the Implementation Monitoring and Evaluation Division (IMED) under the Ministry of Planning in accordance with the Public Procurement Rules 2008 (PPR 2008). The DSHE will follow the tender procedures established by the Central Procurement Technical Unit (CPTU), a public procurement management body under the IMED, in accordance with the PPR 2008. During the implementation of the project, DSHE appoints an expert selected from within or outside the MOE as the Project Director to oversee the entire project. The project director is positioned as a consultant (engineer) to the DSHE. The application procedures for development projects in the education sector are as follows.

For Domestic Projects

1. The application, review, and approval of development projects are all done through a document called the DPP. The educational institution applies to the DSHE for a project based on its needs, and the DSHE compiles the Preliminary DPP (or DPP (proforma)), which is then forwarded to MOE for review. At the request of DSHE, EED will support the design and cost estimation of the buildings and facilities of the project during this preparatory stage.
2. After the Preliminary DPP is approved by MOE, it will be submitted to the Dept. of Socio-economic Infrastructure of the Planning Commission for review. After approval by the Planning Commission, DSHE will prepare the Main DPP for this application, which will be approved by MOE and submitted to the Planning Commission for formal application.
3. The official approval of the DPP by the government is made by the Project Evaluation Committee, which approves or disapproves the project after several rounds of review. For projects with a cost of BDT 500 million or more, a third-party F/S is required, and finally, approval by the Executive Committee of the National Economic Council (ECNEC) is required to finalize the application process of the project.

For DP Supported Projects

The Economic Relations Division (ERD) of the Ministry of Finance is the contact point for the Bangladesh government for DP-supported projects, and DPs are required to contact the ERD at the start of the project application process.

Generally, a consultant selected by the DP side performs the F/S (design, project cost estimation, etc.), based on which the DSHE side prepares the DPP, and the project is approved following the same procedures as for domestic projects.

In the case of projects supported by the DP, it is possible to proceed with the DP's own tender procedures if they do not conflict with the provisions of the PPR 2008 and are competitively bid. With regard to public procurement by the Government of Bangladesh, the system has been

reviewed and revised in the past under the auspices of the World Bank, and therefore, the system is either in accordance with the rules common to multilateral development banks or in compliance with the International Federation of Consulting Engineers (FIDIC). Therefore, it is possible for DP to adopt its own bidding system as long as it follows these common rules. In addition, DP-supported projects do not have to be comprehensive projects (wholistic projects), and any scheme is acceptable, i.e., infrastructure facility construction, equipment procurement, technical cooperation, etc., either alone or in combination.

(2) Criteria for DPP Review

DPPs are reviewed in terms of both design and project cost estimation. Taking the case of an infrastructure facility project as an example, the criteria for review is whether or not the content follows the guidelines below.

- **Design:** The design shall comply with the BNBC 2020 as stipulated by the Public Works Dept. (PWD) of the Ministry of Public Works.
- **Project Cost:** The cost of materials and labor specified in Works Schedule 2022, also established by PWD, must be adopted at a rate within the standard unit price. This standard is subject to revision every 2-3 years.

If the above criteria are not met, the DPP may be rejected. However, even if the unit cost of the project cost estimate is above the standard value, if the offered technical specifications exceed the original requirement of the tender, the project cost with the unit cost above the standard value may be approved based on the concept of quality priority.

(3) Procurement Process

Procurement of construction works for educational facilities is carried out mainly through open tendering method or limited tendering method in accordance with the government's public procurement procedures. The EED has a list of contractors registered through a qualification process named as Enlisted Company List, which is classified according to the size of the company as follows (effective from June 2022).

- **Grade A1:** Available to participate in contracts of 30 million BDT or more; requires a minimum of 10 years of experience.
- **Grade A2:** Available to participate in contracts up to BDT 30 million. No track record or experience is required.

There are a total of 29,080 companies registered in A1 and A2.

Tender documents to be distributed to bidders will be standard tender documents prepared by the CPTU, and responsive bids will be accepted through the web-based e-GP (e-Government Procurement) system. After the bids are received, EED will provide assistance in the review and evaluation from both technical and financial aspect of submitted bids, and the Tender Evaluation Committee will select the successful bidders.

Note that if a building construction project includes equipment procurement component, equipment suppliers other than contractors may participate in the same bidding process. In the case of equipment procurement alone, except in the case of special equipment or emergency procurement, equipment suppliers are usually selected through open competitive tendering.

11.6 Opinions of Contractors and Suppliers

(1) Construction Contractors

The survey team exchanged opinions with A1 grade construction contractors in order to gather information that would be helpful, such as issues related to construction projects being implemented. Both of the two contractors interviewed have experience working as subcontractors for major Japanese general contractors on infrastructure development projects such as roads and bridges using ODA loans. One of the two companies has experience in school facility construction projects funded by the Ministry of Education, and is currently engaged in the construction of three Technical Schools & Colleges. The challenges of the construction project in Bangladesh as conceived by this contractor were as follows.

- Land acquisition may not proceed as originally planned, resulting in construction schedule delays.
- Problems arise due to natural conditions, such as flooding during the rainy season.
- Imported materials soared in price due to exchange rate fluctuations, and the cost of transporting construction materials (marine transportation) also rose, resulting in lower profit.

(2) Equipment Suppliers

Dozens of offices and warehouses of scientific equipment dealers are located in the Tikatuli area in the southern part of Dhaka City. Among them, the survey team randomly selected three companies who deal with the scientific equipment for information gathering. Each company has a small showroom and office and a warehouse in a separate location, and employs less than 10 people, including two or three technical staff. The technical staff provides operational guidance when equipment is delivered and performs maintenance work.

These dealers run the business both for industries (factories) and educational and research institutions, but most of the work is for factories that place repeated orders. These dealers have few track records of supply to secondary educational institutions. The reasons for this are that tenders are not held frequently and that it takes too much time and effort to gather information on equipment from a wide range of fields, requiring contact with many overseas manufacturers and others. In addition, many of the manufacturers of the products handled are from China, India, etc., but there are problems in terms of quality and product assurance. European, U.S., and Japanese products are considered to be of good quality but expensive, making it difficult to win a bid in a price-competitive tendering process. Such circumstances are thought to be behind the fact that equipment remains out of order and unused in school science laboratories.

These dealers also handle parts for the equipment and will repair it, but in general, if parts cannot be procured domestically, repairs will not be possible and the equipment itself will have to be replaced. From the perspective of the equipment suppliers, they believe that secondary school science teachers have a low reputation, and many of them do not want to conduct experiments. Therefore, training for teachers is important, and training on how to operate the equipment, routine inspections and maintenance is essential.

11.7 Teacher Training Facility Development Plan

With regard to teacher training facilities, the inputs shown in Table 11-2 were planned at the time the SEDP was developed. However, none of them materialized. Also, as far as the survey team was able to ascertain during the 1st survey in Bangladesh, no progress was made in the construction of new facilities. In SEDP, the DP was not directly involved in the facility

construction component, which was to be carried out under the management of the Bangladesh government side.

Table 11-2 SEDP Input Plan for Teacher Training Facilities

Type	SEDP Input Plan
TTC	TTC upgraded to Teacher Education College. Established 5 new government schools. Upgraded 14 existing government schools to Centers of Excellence.
HSTTI	Improvement of facilities in 5 existing government schools. Establishment of 14 new schools.
NAEM	Establishment of new hostel for women and rearrangement of the organization.
IER	None.
BOU	None.

Source: Prepared by the Survey Team

The institutions that provide INSET in Bangladesh are NAEM, HSTTI, and TTC. NAEM is mainly for government higher secondary school teachers, HSTTI is mainly for non-Govt. higher secondary school teachers, and TTC is mainly for junior secondary and secondary school teachers in project-based and non-regular training courses. The DSHE/MOE has long been discussing the establishment of a national training structure and facilities, with NAEM at the top of the list. According to the DPP prepared to date, the plan includes the following.

(1) Plan to Establish Regional Academy for Educational Management (RAEM)

In 2007, NAEM made a plan to establish RAEM as a regional branch institution in five locations in the country and submitted a DPP for this to MOE, but all five locations were not approved and the plan was changed to establish RAEM in two locations, Chittagong and Rajshahi. The DPP, revised in 2009, was planned to include the construction of an administration building (5 stories), an academic building (5 stories), hostels (5 stories each for men and women), and dormitories for director and teachers (4 stories), as well as procurement and installation of various facilities, furniture, and equipment (mainly ICT equipment) at a cost of BDT 240 million per institution. The DPP was not approved by the IMED/MOP. Although the reason for the disapproval is unclear, the plan for the development of facilities nationwide, with NAEM at the top of the list, has been under consideration since then.

(2) NAEM Restructuring Plan

In August 2022, NAEM applied for a project called "Developing Master Plan for NAEM's Organizational and Physical Infrastructure and Setting up Training Management System" as part of the SEDP schemes. The project cost is BDT 184.1 million, assuming that the SEDP will be extended until the end of December 2023. The project includes the establishment of a master plan and support structure for NAEM activities, which includes the hiring of a consultant (additional work gratuity for NAEM staff, 114 man-months), the expansion of a computer lab and procurement of equipment (PC hardware, training management software, etc.), and a design study for the improvement of aging hostels for women. This is a plan to restructure NAEM as a Center of Excellence for teacher training in the secondary education subsector, with the main focus on reorganizing and strengthening the functions of the NAEM headquarters. If this plan is approved and implemented, a national training structure will be established with NAEM at its apex. It is assumed that the outline of the facility development will be revealed by the end of 2023.

The DSHE is considering the establishment of a cascade training system in which the NAEM headquarters in Dhaka City would be the center, RAEMs would be established in eight administrative divisions across the country, training of trainers (ToT) would be conducted at the NAEM to nurture master trainers, and master trainers would conduct in-service teacher training for secondary school teachers in their respective RAEMs. However, if it is difficult to establish

new RAEMs due to budgetary and personnel constraints, an alternative plan seems to include the conversion of existing 5 HSTTIs into RAEMs, or the use of these existing facilities by giving INSET functions to selected Govt. TTCs.

In addition, in order to expand NAEM's training functions, subject-specific training courses, which NAEM has not offered until now, are under consideration. In particular, NAEM is in the process of formulating a plan to establish a subject-specific training course in science and mathematics to develop human resources in the field of science and technology, which has become increasingly important in recent years.

(3) NAEM Training Room Renovation Plan

At the end of 2022, MOE directed that the remaining funds from the College Education Development Project (CEDP) be used to renovate three existing training rooms at NAEM. The remaining CEDP funds will be used to paint the walls of three classrooms, install glass doors, blinds, acoustic panels, false ceilings, and ceiling lighting fixtures, with the finished product expected to be at the level of the Interactive Virtual Classroom (IVCR) at BOU Gazipur. Depending on the size and condition of the existing training rooms, the renovation cost per room is estimated to be around 450,000 BDT (equivalent to approximately 600,000 yen). The details of this plan have not yet been approved as of February 2023.

(4) Reference Estimate of Construction Costs by EED

A reference estimate of the outline project cost for the construction of the in-service teacher training facility was obtained from EED at the time of the site survey in February 2023. The information described in this item was not prepared as a specific DPP, but was provided by EED as reference information. The subject facility consists of an education and administration building (10 floors), a hostel for men (5 floors), and a hostel for women (5 floors), including various facilities, furniture, and equipment, and is based on the design and costing data for the construction of a secondary school for which EED was responsible. The educational and administrative building has a construction area of 715 m² per floor, and the main rooms are: 1 principal's office, 1 vice-principal's office, 2 teachers' offices, 20 general classrooms, 10 multimedia classrooms, 3 ICT labs, 4 science labs, 1 large conference room, and 1 library. The total construction cost of the facility is approximately BDT 609 million (equivalent to approximately JPY790 million), with the construction cost based on the PWD's prescribed unit price for building standards (June 2022) and the furniture procurement price based on the Bangladesh Forest Industries Development Corporation's (BFIDC) prescribed unit price for furniture (2020-2021). The equipment procurement price was estimated using the prevailing market price (2022). The approximate project cost is shown in Table 11-3.

Table 11-3 Approximate Project Cost for Construction of Teacher Training Facility (for Reference)

Sl. No.	Description of Work	Contents	Quantity	Unit	Amount (BDT in Lakh)	Remarks
1	10-STORIED ACADEMIC-CUM-ADMINISTRATIVE BUILDING WITH 10-STORIED FOUNDATION	Soil inspection, pile driving, exterior and foundation work, superstructure construction, electricity, water supply and drainage, elevator, generator, fire protection equipment, lighting, air conditioning, lightning arrester, etc.	7248.00	Sqm	3545.75	*1
2	5-STORIED 100 BED BOY'S HOSTEL BUILDING WITH 5-STORIED FOUNDATION	Soil testing, pile driving, exterior construction, foundation work, superstructure construction, electricity, water supply and drainage, gas piping, fire protection equipment, lightning arresters, walls, etc.	2335.00	Sqm	1132.46	*1
3	5-STORIED 50 BED GIRL'S HOSTEL BUILDING WITH 5-STORIED FOUNDATION	Soil testing, pile driving, exterior, foundation work, superstructure construction, electricity, water supply and drainage, gas piping, fire protection equipment, lightning arresters, fences, etc.	1271.00	Sqm	625.79	*1
4	SUPPLY OF FURNITURE FOR ACADEMIC-CUM-ADMINISTRATIVE BUILDING	Various desks and chairs (for office use and meetings), reception sets, file cabinets, aluminum lids, wooden shelves, black/white boards, laboratory tables, stools, library reading desks, book shelves, etc.	1	Lot	230.53	*2
5	SUPPLY OF FURNITURE FOR 100 BED BOY'S HOSTEL BUILDING	Various desks and chairs, file cabinets, almirah, wooden shelves, beds, mattresses, dining tables, kitchen utensils, entertainment equipment, etc.	1	Lot	86.61	*2
6	SUPPLY OF FURNITURE FOR 50 BED GIRL'S HOSTEL BUILDING	Various desks and chairs, file cabinets, almirah, wooden shelves, beds, mattresses, dining tables, kitchen utensils, recreation equipment, etc.	1	Lot	45.76	*2
7	SUPPLY OF ICT EQUIPMENT FOR ICT LAB	Projector, screen, large monitor, microphone, speakers, various computers, UPS, router, scanner, printer, switching hub, server, etc.	1	Lot	408.75	*3
8	SUPPLY OF EQUIPMENT FOR 3 SCIENCE LABORATORY	Laboratory equipment for physics, chemistry, biology, etc.	1	Lot	15.00	*3
Total =					6090.65	

*1 PWD Rate Schedule June' 2022

*2 BFIDC Rate Schedule 2020-2021

*3 Market Rate 2022

Source: EED data

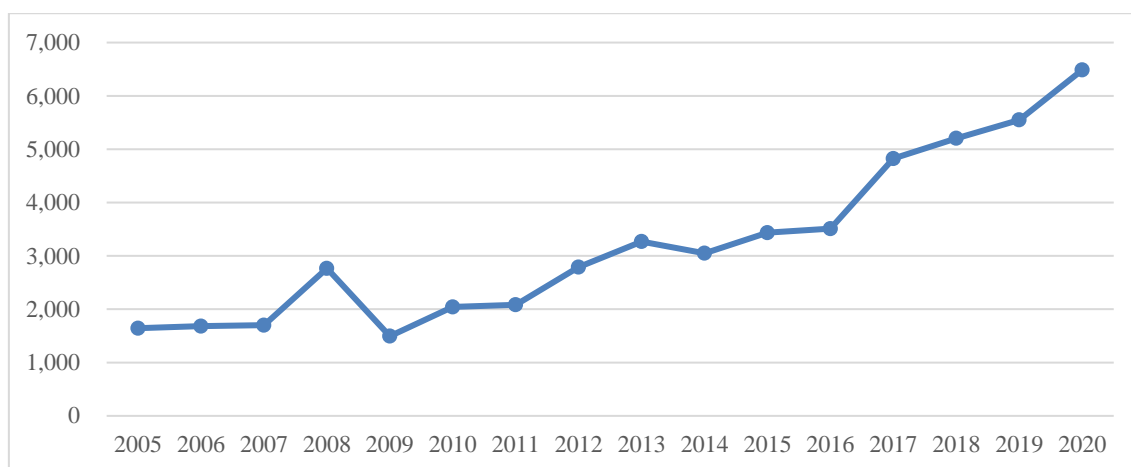
Chapter 12. Development Partner Support for Secondary Education

It is important to understand and analyze the support provided by other Development Partners (DPs) in order to consider the areas and methods of support provided by Japan. This chapter summarizes the support provided by other DPs.

12.1 Trends in Support of the Education Sector

This section attempts to analyze aid trends to Bangladesh using data from OECD.Stat. Since the OECD.Stat data distributes the amount of aid to the secondary education subsector in the areas of lower secondary education, higher secondary education, educational administration, and educational facilities and training, the analysis in this section does not include aid trends to the secondary education subsector but only on the education sector analysis.

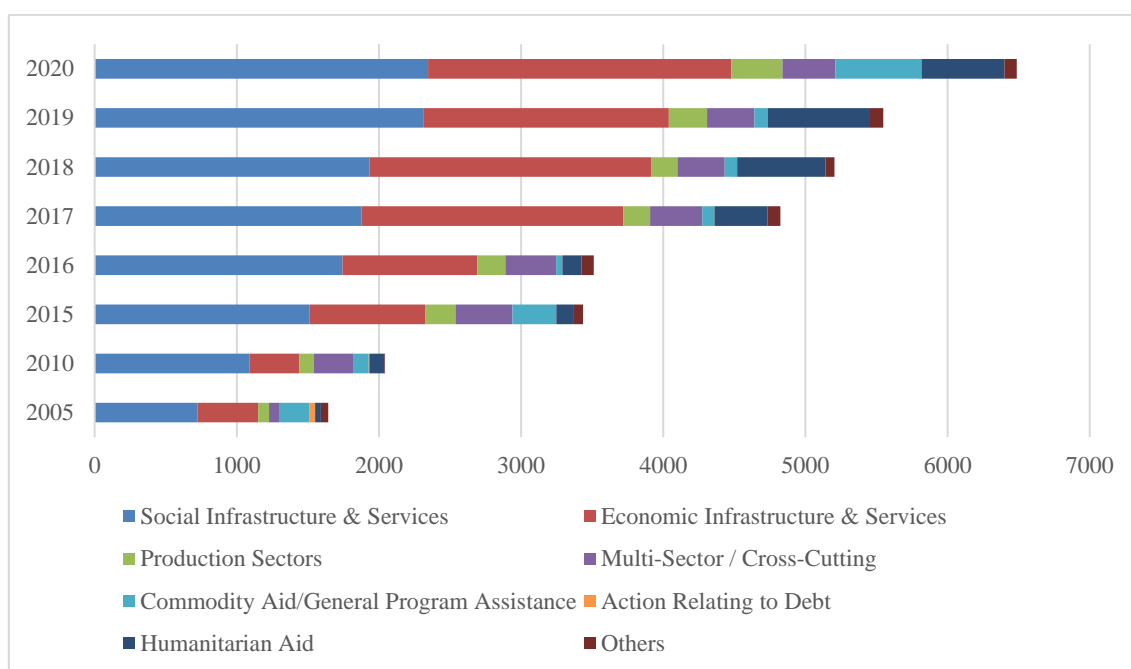
The figure below shows the trend of total ODA assistance to Bangladesh, which remained flat from 2005 to 2011, increasing only 1.3 times from US\$1,643 million (2005) to US\$2,083 million (2011). During this period, the amount of assistance to developing countries covered by ODA as a whole increased 1.2-fold, from \$134,862 million (2005) to \$156,299 million (2011), and the increase in assistance to the country of Bangladesh was almost the same as that to other countries. However, during the 10 years from 2011, the amount of assistance to Bangladesh increased significantly, from US\$2,083 million (2011) to US\$6,486 million (2020), a 3.1-fold increase. During this period, the amount of assistance to developing countries covered by ODA as a whole increased only 1.5-fold, from \$156,299 million (2011) to \$239,809 million (2020), and the increase in assistance to Bangladesh stands out in comparison to other countries.



Source: Prepared by the Survey Team based on <https://stats.oecd.org/Index.aspx?datasetcode=CRS1>

Figure 12-1 Total Amount of ODA Assistance to the Country of Bangladesh (in Millions of Dollars)

The next figure shows the change in the amount of support by sector. In all years, support for social infrastructure and services ranked first, followed by support for economic infrastructure and services, which shrank in 2010 but has gradually returned to normal.



Source: Prepared by the Survey Team based on <https://stats.oecd.org/Index.aspx?datasetcode=CRS1>

Figure 12-2 Trends in the Amount of Assistance by Sector (in Millions of Dollars)

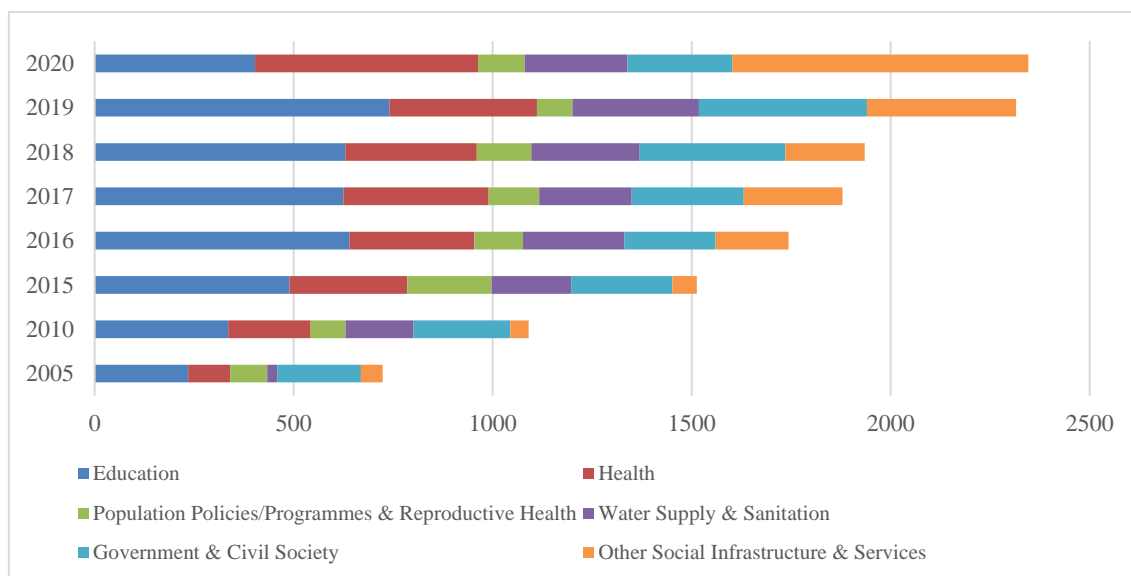
The following table shows the top 10 largest donors by DP for the past five years. The World Bank and Japan stand out with 29.1% and 26.9% of the total, respectively, with both countries accounting for 56%. The top 10 countries and institutions account for 87.2% of total support.

Table 12-1 Amount and Percentage of Support by DP Over the Past 5 Years

Order	Country / Institution	Support by Year (\$ million)					5 Years	
		2016	2017	2018	2019	2020	Amount (\$Millions)	Percentage (%)
1	World Bank	1,094	1,402	1,577	1,844	1,537	7,454	29.1%
2	Japan	587	1,516	1,362	1,293	2,131	6,890	26.9%
3	Asian Development Bank	413	381	494	406	724	2,418	9.5%
4	United States	274	295	337	414	313	1,633	6.4%
5	United Kingdom	234	248	265	355	261	1,364	5.3%
6	EU Institutions	126	150	168	166	279	890	3.5%
7	Germany	71	94	119	138	171	594	2.3%
8	Global Alliance for Vaccines and Immunization [GAVI]	82	81	62	95	84	404	1.6%
9	Korea	33	39	73	109	113	367	1.4%
10	Canada	49	39	88	81	69	326	1.3%

Source: Prepared by the Survey Team based on <https://stats.oecd.org/Index.aspx?datasetcode=CRS1>

The figure below shows the change in support by sector within social infrastructure services. Social infrastructure as a whole has increased approximately 1.5-fold every five years from \$724 million (2005), \$1090 million (2010), \$1513 million [2015], and \$2346 million (2020). Within social infrastructure, the education sector has always been the number one sector supported, accounting for 30-37%, except in 2020.



Source: Prepared by the Survey Team based on <https://stats.oecd.org/Index.aspx?datasetcode=CRS1>

Figure 12-3 Trends in Sectoral Support within Social Infrastructure and Services (in Millions of Dollars)

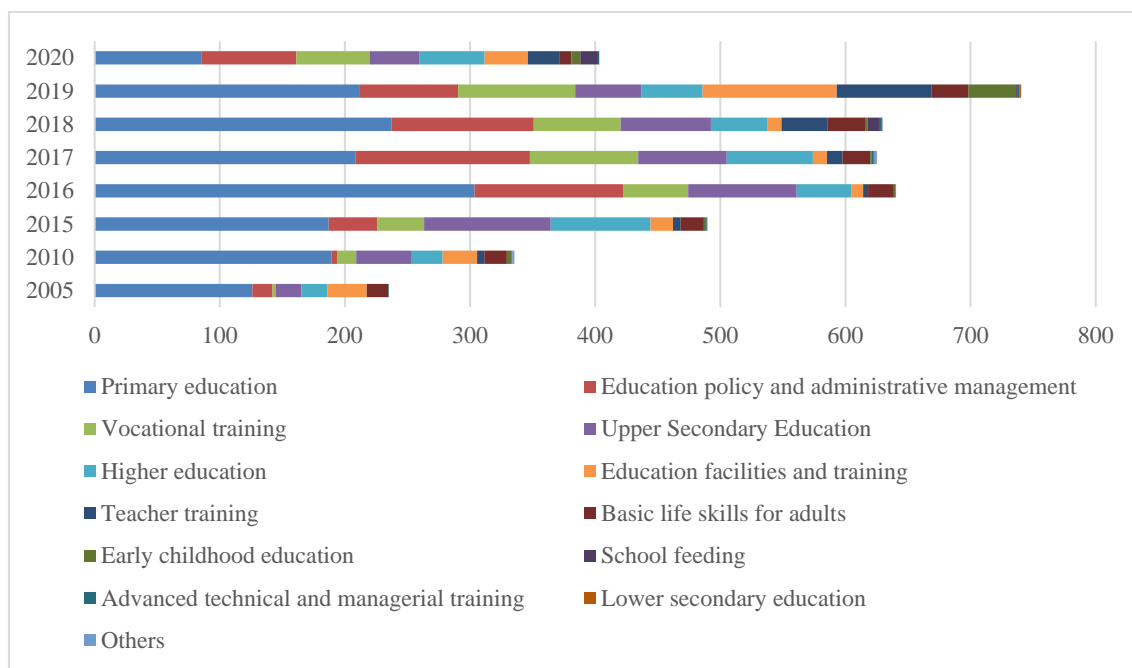
The table below lists the top 10 DPs in terms of the amount of support provided to the education sector over the past five years and how that amount has changed. The World Bank and the Asian Development Bank account for 44.3% and 23.2% of the total, respectively, with both banks alone accounting for 67.5%. Japan ranks ninth. The top 10 countries and institutions account for 96.9% of the total.

Table 12-2 Amount and Percentage of Support to the Education Sector by DP Over the Past 5 Years

Order	Country / Institution	Support by Year (\$ million)					5 Years	
		2016	2017	2018	2019	2020	Amount (\$Millions)	Percentage (%)
1	World Bank	241.8	303.0	335.4	362.9	103.2	1346.3	44.3%
2	Asian Development Bank	126.7	132.2	130.2	201.0	113.8	703.9	23.2%
3	United Kingdom	127.3	65.7	41.5	39.4	19.7	293.7	9.7%
4	EU Institutions	42.7	41.3	32.0	6.7	66.2	188.8	6.2%
5	Germany	21.7	23.2	25.0	41.4	41.6	152.8	5.0%
6	United States	16.2	17.3	16.3	4.5	13.5	67.8	2.2%
7	Canada	18.0	7.4	19.2	7.8	5.8	58.0	1.9%
8	Australia	22.2	6.8	9.6	10.4	8.9	57.9	1.9%
9	Japan	7.6	13.5	3.5	10.9	6.0	41.6	1.4%
10	Islamic Development Bank	27.7	6.3	34.0	1.1%

Source: Prepared by the Survey Team based on <https://stats.oecd.org/Index.aspx?datasetcode=CRS1>

The figure below shows the change in the amount of support by sector within the education sector. The figures have been adjusted so that the subsectors with the highest total amounts for the most recent five years (2016-2020) are on the left. Primary education has maintained the largest amount of aid since 2005. However, in 2005 and 2010, it had a share of more than 50% within the education sector, but by 2017, the share was 33.3%, and by 2020, the share has decreased to 21%. After primary education, the next largest sectors are education policy and administrative management, vocational training, upper secondary education, higher education, education facilities and training, and teacher training.



Source: Prepared by the Survey Team based on <https://stats.oecd.org/Index.aspx?datasetcode=CRS1>

Figure 12-4 Trends in the Amount of Support by Area within the Education Sector (in Millions of Dollars)

12.2 Donor Coordination

A number of DPs have been supporting Bangladesh for many years, and there is an aid coordination mechanism between the government and DPs. The government of Bangladesh and 18 DPs including JICA signed the Joint Cooperation Strategy 2010-2015 as a framework for implementing the “Paris Declaration on Aid Effectiveness⁸³” and “Accra Agenda for Action⁸⁴”. The Government of Bangladesh also developed "Aid Management in Bangladesh: A Review of Policies and Procedures" in 2011. As a successor document to the Joint Cooperation Strategy, the National Policy on Development Cooperation, drafted by the Government of Bangladesh, has been shared with DP multiple times since 2016, but no agreement has been reached.

For aid coordination, the Economic Relations Division (ERD) of the Ministry of Finance has a permanent unit to improve aid effectiveness and efficiency. One of the unit's tasks was to hold an annual Bangladesh Development Forum, a high-level meeting to discuss development. However, the Forum has not been held since 2020.

Under the Local Consultative Group (LCG), which is the coordination forum between the DP and the Government of Bangladesh, there are sectoral groups, and the Education Local Consultative

⁸³ While international development goals such as the Millennium Development Goals (MDGs) have been shared and various efforts have been made under the coordination of aid from the countries concerned, it has become essential to improve the quality of aid as well as to increase the amount of aid in order to achieve these goals. The Paris Declaration is a compilation of the efforts of both donor and recipient countries to improve the quality of aid and maximize the effectiveness of aid. The Paris Declaration was adopted at the Second High-Level Forum on Aid Effectiveness held in Paris in March 2005. The Paris Declaration is based on the following principles. 1) The five principles for improving aid effectiveness are: OWNERSHIP, ALIGNMENT with local system, HARMONIZATION to avoid duplication, MANAGING FOR RESULT, MUTUAL ACCOUNTABILITY; 2) 56 action items to specifically implement the Principles and improve the effectiveness of assistance, and 3) 12 monitoring indicators.

⁸⁴ Adopted in 2008, it complements the Paris Declaration and describes the determination to further improve aid effectiveness and the priority actions to be taken by 2010.

Group (ELCG) is the group for the education sector. The ELCG is co-chaired by the Undersecretary of the Ministry of Primary and Mass Education (MOPME) and the DP, who serves a two-year term. The ELCG meets monthly. The ELCG includes school education, tertiary education, and non-formal education, while technical education is included in the “Skill Development, Youth, Migration and ICT” working groups.

In the secondary education subsector, apart from the ELCG, there is also a consortium involving only the four DPs involved in the SEDP (World Bank, Asian Development Bank, UNICEF, and UNESCO). There is no other consortium for aid coordination in secondary education. The consortium rotates the Chair and Co-Chair annually. Only the Asian Development Bank and the World Bank, which are the largest donors, rotate Chairs. The SEDP was launched in October 2018 and had regular coordination meetings prior to the COVID-19 outbreak, but after the outbreak there were no more regular meetings and each institution participated in emails and relevant meetings only when needed.

12.3 SWAp in the Primary Education Subsector

The primary education sub-sector in Bangladesh is actively utilizing the Sector Wide Approach (SWAp), in which a number of DPs collaborate. After independence, many DPs provided project-based assistance in the primary education subsector, but the Primary Education Development Program (PEDP), which adopted the SWAp approach in pursuit of efficiency and effectiveness, was launched in 1997. 8 DPs in the PEDP were loosely coordinated. The PEDP is designed to Individual multiple projects were implemented under 10 goals, such as increasing enrollment and completion rates and strengthening monitoring. Specifically, these projects included the construction of primary schools, the Upazila Resource Center (URC), and other facilities, training of teachers and administrators, development of teaching materials, and establishment of an information management system. However, since these activities were conducted within the framework of individual project implementation, it was difficult to achieve sustainable organizational strengthening and results for the primary education sector as a whole.

Therefore, the successor program, PEDP2 (with a budget of approximately US\$1.1 billion), focused on donor coordination. PEDP2, supported by 11 DPs, has four components: (1) quality improvement through organizational development and capacity building, (2) quality improvement within schools and classrooms, (3) quality improvement through facility development, and (4) improved access to education for the poor and vulnerable in society. Fourteen Key Performance Indicators (KPIs) were established as indicators to measure outcomes. While there are many items that have been accomplished as a result of PEDP2, the most notable are the hiring of approximately 45,000 new teachers and the construction of approximately 30,000 new classrooms. As indicated by the fact that the enrollment rate reached 93.9% in 2009, PEDP2 is considered to have contributed to improving the situation on the quantitative side. On the other hand, the completion rate remained low at 54.9% as of 2009, while the retention rate for first and second graders remained almost unchanged at over 11%, and deteriorated to over 15% for third and fourth graders. Internal efficiency, or the number of years required to graduate from primary school, remained at over 8 years with little improvement. In the National Learning Assessment conducted in 2008, only 3.22% of 5th grade students in math, 2.38% in science, and 2.24% in English fully achieved the achievement goals (all items) in each subject area, all low percentages. Thus, while PEDP2 showed a remarkable improvement in enrollment, the results in terms of qualitative indicators were poor.

Since PEDP3 (2011-2018), results-based-management (RBM) has been introduced, with Disbursement Linked Indicators (DLIs) clarifying the extent to which results are expected to be achieved in each area each year.

PEDP3 (2011-2018) is characterized by the introduction of results-based-management (RBM) and the use of Disbursement Linked Indicators (DLIs) to clarify the level of expected achievement in each area each year. It also adopts the Treasury model, in which funds are channeled directly to the Ministry of Finance and Bangladesh's budget execution procedures are utilized. Japan provided 2.5 billion yen to the Ministry of Finance over a five-year period under the "sector grant". PEDP3 has a much larger budget than PEDP2, with a total budget of approximately \$8.3 billion. Of this amount, approximately \$1 billion comes from the nine DPs, including JICA, which represents about 13% of the total. PEDP 3 focuses on achieving outputs in 4 result areas: (i) improved teaching and learning for all; (ii) reduced disparities; (iii) decentralized and effective organization, and (iv) improved planning and management, and various initiatives are being developed under each component. In addition to financial support, JICA and several other DPs provided technical assistance. Examples include DFID's English in Action (EIA) project, support for revision of English, Bangla, and social studies textbooks, UNICEF's pilot implementation of the Each Child Learns (ECL) methodology, and support for communication strategy formulation and DPed development. The World Bank provided technical assistance for the implementation of the National Student Assessment (NSA), which was funded by AusAID.

PEDP4 (2018-2024) targets primary school under the jurisdiction of the Directorate of Primary Education (DPE) and address three priority areas: 1) quality, 2) equitable access and participation, and 3) management, governance, and financing, with the goal of "quality education to all children from pre-primary to grade 5 through an efficient, inclusive, and equitable education system". The five-year budget for PEDP4 is US\$14,603.6 million. Of this amount, the Government of Bangladesh contributes US\$13,228.1 million (90.6%). The remainder was provided by the respective DPs. Of this amount, \$700 million is a loan from the World Bank, \$500 million is a loan from the Asian Development Bank, \$175 million is a grant from the EU and \$23.75 million is a grant from JICA⁸⁵.

The percentage of grant aid from PEDP to PEDP4 has gradually decreased and the percentage of loans has increased. The Bangladesh government's contribution share in PEDP4 is as high as about 90%, and government ownership is high. In other words, there are situations where it is difficult for a single DP to negotiate with the Bangladesh government on its own due to its low contribution ratio, hence multiple DPs form a consortium to jointly negotiate with the Bangladesh government.

12.4 SWAp in the Secondary Education Subsector

SWAp implementation in the secondary education subsector has lagged behind primary education, with the Secondary Education Sector Roadmap adopted in 2012 and the Asian Development Bank's Secondary Education Sector Investment Program (SESIP) was launched in 2014. Centered on the SESIP, the Secondary Education Development Program (SEDP), the first SWAp in secondary education, was launched from 2018 to 2023. The Asian Development Bank, the World Bank, UNICEF, and UNESCO participated in the SEDP. The SEDP adopted the Treasury model, with the World Bank and the Asian Development Bank providing loans and technical assistance, and UNICEF and UNESCO acting as parallel funding donors under the SEDP with individual PDMs.

(1) Budget for SEDP

The budget for the SEDP is approximately \$2,000 million⁸⁶. The breakdown is shown in the table below. The World Bank provides funds through the Transforming Secondary Education for

⁸⁵ Amounts were taken from ADB's Web at <https://www.adb.org/projects/50192-002/main> (October 12, 2022)

⁸⁶ 220,480,000,000 JPY at the exchange rate of December 31, 2018.

Results Operation (TSERO), and the Asian Development Bank provides funds through the Secondary Education Sector Investment Program (SESIP).

Table 12-3 Budget Planning for SEDP

Contributor	Amount and Modalities
World Bank: Transforming Secondary Education for Results Operation (TSERO) 2017-2022	510 million \$ (loan) 10 million \$ (grant)
Asian Development Bank: Secondary Education Sector Investment Program (SESIP) Tranche 3	225 million \$ (loans)
Government of Bangladesh	1,255 million \$
Total	2,000 million \$

Source: Prepared by the Survey Team based on multiple documents and interviews with the World Bank, Asian Development Bank, SEDP Program Document, etc.

(2) SEDP Program Structure and Progress

The SEDP focuses on the implementation of reforms in the secondary education portion of the National Education Policy 2010 (NEP 2010). In order to materialize NEP 2010, a Secondary Education Sector Roadmap was developed in 2012 and organized into three outcome areas: a) improving the quality and relevance of secondary education; b) improving access and retention; and c) strengthening governance, management, and planning. Sub Result Areas (SRAs) were also established under each outcome. On this basis, the SEDP established the following result area and SRAs.

Table 12-4 Result Area and SRA of SEDP

Results Area	SRA
Results Area 1: Enhanced quality and relevance of secondary education	1.1 Improved quality and relevance of curriculum 1.2 Strengthened teacher quality 1.3 Improved teaching-learning in English, Mathematics, Science subjects, and ICT 1.4 Strengthened reading habit and reading skills among secondary level students 1.5 Improved classroom assessment procedures and national learning assessment and examinations 1.6 Enhanced use of ICT for Pedagogy 1.7 Improved labor market relevance
Results Area 2: Improved access and retention	2.1 School infrastructure improved 2.2 Access and retention improved 2.3 Enhanced cycle completion for girls
Results Area 3: Strengthened governance, management and planning	3.1 Strengthened decentralized education management 3.2 Strengthened education information management 3.3 Improved teacher management & accountability 3.4 Improved School Management and Accountability 3.5 Strengthened Sector Planning, Management, and Coordination 3.6 Strengthened Monitoring & Evaluation System

Source: Prepared by the Survey Team based on the SEDP Program Document

The SEDP Result Framework is designed to ensure that the SRA achieves specific results in each year.

The World Bank and Asian Development Bank provide this support through loans. The loan uses a Disbursement-linked indicators (DLI) approach, which focuses on results rather than inputs. 8 DLIs were set up for the 3 results areas of the SEDP.

Table 12-5 SEDP Results Areas and DLI

Results Area	DLIs
Results Area 1: Enhanced quality and relevance of secondary education	<ul style="list-style-type: none"> • DLI 1: Effective and relevant curriculum in place • DLI 2: Assessment and examination system reforms implemented to improve teaching learning • DLI 3: Improved teaching/learning in Bangla, English, Mathematics and Science • DLI 4: Improved teacher management and accountability • DLI 5: Improved school management and accountability
Results Area 2: Improved access and retention	<ul style="list-style-type: none"> • DLI 6: Improved grade retention and cycle completion
Results Area 3: Strengthened governance, management and planning	<ul style="list-style-type: none"> • DLI 7: Institutional capacity strengthened • DLI 8: Enhanced fiduciary management and Data Systems

Source: SEDP Program Document

Each DLI was set with a Disbursed Linked Result (DLR) that triggered the loan transfer. The following table shows the DLI Matrix, the originally scheduled timing of each DLR. There were 35 DLRs.

Table 12-6 DL Matrix

DLI	Year 1	Year2	Year3	Year45	Year	Number
DLI 1	DLR1.1	DLR1.2	DLR1.3	DLR1.4		4
DLI 2		DLR2.1	DLR2.2		DLR2.3 DLR2.4	4
DLI 3		DLR3.1	DLR3.2	DLR3.3	DLR3.4 DLR3.5	5
DLI 4		DLR4.1 DLR4.2	DLR4.3	DLR4.4	DLR4.5	5
DLI 5		DLR5.1		DLR5.2		2
DLI 6	DLR6.1 DLR6.2	DLR6.3	DLR6.4	DLR6.5	DLR6.6	6
DLI 7	DLR7.1	DLR7.2	DLR7.3	DLR7.4		4
DLI 8:	DLR8.1 DLR8.2	DLR8.3	DLR8.4	DLR8.5		5
Total	6	9	7	7	6	35

Source: Prepared by the Survey Team based on the SEDP Program Document

Two examples of DLRs are shown below. (All DLI Matrixes are shown in Attachment 2)

- DLR 2.2 DSHE causes the NASS 2019 to be carried out on nationally representative sample in grades 8 and 10 (English, Math, Bangla) and publishes the findings
- DLR 2.3 DSHE causes the NASS 2021 and standardized exams results to be analyzed, disseminated and feedback into system improvement

Thus, the DLR indicates specific results to be achieved, and funds are disbursed as these results are achieved. Logically, the status of DLR achievement should be the same throughout the SEDP, but the World Bank and the Asian Development Bank differ in the timing of DLR achievement and fund disbursement. In the Asian Development Bank, funds will be disbursed after the DLR is completed, while in the World Bank, funds will be disbursed before the DLR is completed. Therefore, in the interviews as of October 2022, the Asian Development Bank determined that 15 DLR had been achieved, while the World Bank determined that 24 DLR had been achieved.

The progress of each DLI also differs. In the World Bank's judgment, DLI 7 achieved all DLRs. Those that achieved most DLRs are DLIs 3, 4, and 8; DLRs 1, 2, and 5 are delayed, and no information is available for DLI 6.

It should be noted that none of the DLIs/DLRs are related to facility construction. From interviews with the Asian Development Bank and the World Bank, we have learned that they are careful not to include facility construction in their loan requirements because of various uncertainties, such as difficulties in acquiring land for the facility.

(3) Operation of SEDP

The operation of the SEDP faced difficulties due to a number of factors. One of them was the adoption of a single budget. In Bangladesh, traditionally, when a DP project is approved, the government prepares a Development Project Proposal (DPP), which is scrutinized and approved by the Planning Commission. The DPP is supposed to adopt the Dual budget. The Dual budget consists of the development budget monitored by the Planning commission and the revenue budget monitored by the Ministry of Finance, hence the name Dual budget. In contrast, the single budget consists only of the revenue budget monitored by the Ministry of Finance. Under the Dual budget, development budgets that need to be continued after the project is completed must be financed by the revenue budget.

At the time of preparation of the Program Document for the SEDP, the salaries of 2,000 employees (mainly at the field level) of the core departments of the SEDP, including the DSHE, National Curriculum and Textbook Board (NCTB), and NAEM, were development budget of SESIP and other projects. Under these circumstances, Single budget was introduced with the start of SEDP, but because Single budget was a new approach, there were no necessary guidelines for spending, which caused confusion. The Ministry of Education (MOE) prepared the revenue budget, which was sometimes not approved even within the MOE; the MOE submitted the budget to the Ministry of Finance, which sometimes did not approve it. In addition, the Minister of Education was replaced in January 2019 after the approval of the SEDP, and the ownership within the MOE dropped, which also led to a decline in momentum to overcome the above issues. The combination of these circumstances, coupled with a lack of coordination among the DPs, made the SEDP difficult to administer. (On the other hand, UNICEF and UNESCO, which provided only TA, were not affected by this.)

(4) Extension of SEDP Implementation Period

Due to the difficulties in the management of the SEDP, there was little momentum within MOE to continue the SWAp after the SEDP, and the Government of Bangladesh decided in October 2022 not to conduct the second phase of the SEDP, i.e., not to continue the SWAp. However, in early February 2023, it was decided to extend the current SEDP itself for two years, until June 2025. Although many activities have not been implemented to date, the main aim of the extended period will be to continue the activities that are being implemented, rather than to initiate these yet-to-be-started activities. Particular emphasis is placed on the Harmonized Scholarship Program (HSP) under Result Area 2 "Improved Access and Retention" and teacher training under Result Area 1 "Enhanced quality and relevance of secondary education." The extension of the SEDP is only for the government program, and neither the World Bank nor the Asian Development Bank will extend the SEDP support projects.

12.5 Trends in Support by DPs after SEDP

Although the SEDP will be extended, the Bangladesh government has decided to request individual projects from DPs. Therefore, the DSHE has already requested the World Bank and the Asian Development Bank to support projects under the conventional individual assistance

approach, which is not a SWAp. The World Bank is moving particularly quickly. The United States Agency for International Development (USAID), which has not participated in the SEDP, is also planning to start providing assistance to the secondary education subsector, which will be introduced in this section.

World Bank

The World Bank is independently preparing a new project, Learning Acceleration in Secondary Education (LAISE), to be launched in July 2023, following the SEDP, which is scheduled to end in June 2023, in consultation with MOE. The project has a budget of \$2,475 million⁸⁷, of which \$700 million⁸⁸ will come from the World Bank (the remainder from the Government of Bangladesh). The details are subject to change, but the Program Information Document (PID) for this project, which is currently available to the public, is structured as follows:

- **Result Area 1:** Student support for improved learning and retention
 - Assess student learning levels and group students according to ability for instruction. Developing the foundations of the curriculum for this purpose and providing additional classes for students who are behind in their studies.
 - ICT for learning recovery
 - Scholarships through the Harmonized Stipend Program (HSP) developed by the SEDP
 - Technical education support at the secondary level (support for technical education institutions in rural areas, scholarships, etc.)
- **Result Area 2:** Improved teacher effectiveness
 - Scale up teacher training (improve pedagogy, subject content, and mindset) and online training. Expansion of the use of Muktopaath, a teacher portal and online learning platform.
 - Mainstreaming formative assessments and teaching at the students' level.
 - Improvement of teacher management (appropriate evaluation of classroom practice teaching and attitude improvement).
- **Result Area 3:** Improved secondary systems
 - Curriculum revision and digitization. Use of classroom-based diagnostic and formative assessments. Ongoing implementation of national assessments; standardization of Secondary School Certificate Examination (SSCE) and Higher Secondary Certificate Examination (HSCE).
 - Strengthening data management, monitoring and evaluation capacity

As mentioned above, the details of the program had been determined at the PID, but at the time of the interview conducted on February 26, 2023, this program content was in the process of being reconsidered. Although the details had not yet been revealed, the SSCE/HSCE standardization was to be removed from LAISE.

Asian Development Bank

The TA to design support for the next project has been approved for September 2022, but the TA will be implemented after the end date of the SEDP has been determined. The government of Bangladesh has requested the implementation of a new project (Next generation education program) starting in 2023, but the timing of TA implementation has not yet been determined. The details of the support are yet to be determined.

⁸⁷ Approximately 364.6 billion yen at the exchange rate on November 3, 2022 (147.317 yen to the dollar)

⁸⁸ Approximately 103.1 billion yen at the exchange rate on November 3, 2022 (147.317 yen to the dollar)

UNESCO

UNESCO will continue its cooperation with DSHE, BANBEIS and NAEM. Areas of cooperation include education for global citizenship and sustainable development, educational ICT and blended education, and support for educational data management. The main points are summarized below.

- **Teacher Policy/Strategy:** Since there is no teacher policy/strategy in Bangladesh and therefore support by DPs is disjointed, UNESCO is proposing to the Government of Bangladesh to create a strategy towards a comprehensive teacher system, including CPD. The plan is to conduct a review of existing interventions and policies on education this year, and through the review, summarize the strengths, weaknesses, opportunities, and challenges related to teachers and make recommendations to the Bangladesh government on a teacher strategy.
- **Teacher Training:** UNESCO is encouraging the Bangladesh government to include GCED (Global Citizenship Education Development) and ESG (Education for sustainable development) in the new curriculum. Both are related to SDG 4.1. The English version of the new curriculum mentions GCED; an agreement was sent to NAEM to include GCED in the curriculum manuals for all teacher training courses. UNESCO's intervention goes as far as integrating the GCED concept into NAEM's training programs, but does not include how NAEM will train teachers.
- **Formative Assessment (FA):** an agreement will be signed with DSHE to develop a guidebook for teachers on FA in relation to COVID-19 Recovery of Learning Losses; approval has been received from SHED for the composition of the FA committee; A one-week workshop will be held in May 2023 to assess FA needs and jointly develop the guidebook, with participation from DSHE, NCTB, BEDU, NAEM, DPE, primary and secondary teachers, and Education Officers.
- **ICT competency framework:** an agreement on an ICT competency framework for secondary teacher training, adapting UNESCO's global framework to the Bangladeshi context, has been sent to NAEM.
- **Support for STEM and Gender:** a genderless STEM education survey will be conducted to understand the complex gender situation in Bangladesh.
- **About Education Data Management:** UNESCO Institute for Statistics (UIS) has been providing education data to all sectors in Bangladesh through technical assistance (TA) to BANBEIS, DPE and BBS (Bangladesh Bureau of Statistics).

UNICEF

UNICEF will continue its support to secondary education, and its cooperation with NCTB on curriculum revision will continue until 2026. UNICEF does not provide subject-specific support, but rather assists in improving the curriculum and textbook development process and formulating strategies, as NCTB has a policy of not accepting support from International Consultants for curriculum and textbook development. In principle, UNICEF support is provided through the National Consultant. UNICEF will support the implementation of mental health and online education. UNICEF will work with NAEM to revise the Continuous Professional Development (CPD) framework for the NAEM scope, develop a teacher capacity framework, and incorporate the new curriculum into teacher training.

United States Agency for International Development (USAID)

USAID is planning to implement a five-year project, Higher Secondary Education Activity (HSEA), from June 2023 to May 2028, targeting teacher training for higher secondary education. The project outline will be as follows:

- Project Title: Higher Secondary Education Activity (HSEA)
- Goal: Quality of teaching for Bangladeshi students in Higher Secondary Education (grades 11 and 12) improved nationwide.
- Target: Targeting teachers in Higher Secondary Education (G 11 and 12), HSTTI (all 5 institutions) and NAEM.
- Budget: Approximately \$40 million (all funds to be provided by USAID)
- Form: Technical Assistant project (consultant contract)
- Project Components: 1) Teachers' instructional and management skills enhanced, 2) Teacher training materials developed and provided, 3) Improving leadership and supervision capacity of principals and education officers

12.6 Individual Support by DPs

This section lists projects and programs that should be understood when considering the direction of Japanese assistance to the secondary education subsector in Bangladesh.

12.6.1 Assistance Related to SEDP

This section summarizes DP-supported project programs related to the SEDP.

(1) Asian Development Bank: Development of an Implementation Strategy of the National Education Policy for Secondary Education Sector Project

This TA assisted the Government of Bangladesh in formulating an implementation strategy for NEP2010. The TA analyzed the NEP2010 and analyzed the feasibility of reform implementation from institutional and technical perspectives, its sequencing, financing, monitoring methods, etc., and developed a SWAp appropriate for secondary education. As a result, the adoption of the SWAp for secondary education was approved and a Secondary Education Sector Roadmap (2013-2023) for SWAp implementation was developed.

- Implementation Period: 2011-2013
- Budget and modalities: Total \$690,000 (\$600,000 from Asian Development Bank (TA) and \$90,000 from the Government of Bangladesh)

(2) Asian Development Bank: Secondary Education Sector Investment Program (SESIP)⁸⁹

SESIP is a program to support the implementation of the Secondary Education Sector Roadmap (2013-2023), which was implemented in three tranches under Asian Development Bank's Multitranche Financing Facility (MFF).

- Implementation Period: 2013-(Active)
- Budget and Modalities: as shown in the following table

⁸⁹ SESIP is the successor to SESDP, described below, and was called SESDP II (Second Secondary Education Sector Development Project) at the start of the TA (2012-2014, ADB: \$775,000) in preparation for the start of SESIP. The name SESIP is used here for consistency.

Table 12-7 SESIP Budget

Institutions	Tranche 1	Tranche 2	Tranche 3
Asian Development Bank (Loan)	90	185	225
World Bank (Loan)	100	265	500
World Bank (Grant)			20
KOICA (Grant)	3.5		
Korea Eximbank (Loan)	39	76.02	
Government of Bangladesh	1631		1251.9
Sub-total	1863.5	526.02	1996.9

Source: Asian Development Bank

Tranches 1 through 3 use a common matrix with the SEDP DLI matrix presented in the previous section. Tranches 1 and 2 have an implementation period of 2014-2017, tranche 3 has an implementation period of 2018-2023. Tranche 3 corresponds to SEDP support. The budget disbursement rates for tranches 1 and 2 are both 100%, while the budget disbursement rate for tranche 3 has not yet reached 50%. Key progress to tranche 3 is as follows.

- **Harmonized Stipend Program (HSP):** The program was approved by SHED in January 2019; beginning in January 2020, all scholarship programs were consolidated into the HSP; the HSP is open to all students in grades 6-12, including madrasah, regardless of residence, ethnicity, gender, special needs status, etc.
- **Renovation of School Buildings:** 100 targeted schools (general education and madrasah education) have been selected and renovated. MOE policy guidelines on minimum standards for school buildings to improve the learning environment and gender responsiveness were developed.
- **Decentralization:** Management of Monthly Pay Order (MPO) was decentralized from DSHE to BISE in 9 divisions starting June 2015.
- **Education Management Information System (EMIS):** policy guidelines were developed to strengthen capacity and approved by DSHE in April 2019.
- **Curriculum:** SHED approved the National Curriculum Policy Framework (NCPF) in 2017; the NCPF was designed to ensure that the curriculum addresses the skills required by society. The curriculum review was completed in September 2019 and the NCTB is in the process of developing a new curriculum in line with the NCPF guidelines.
- **Curriculum Implementation Plan (CIP):** The CIP was developed and approved in 2014 to ensure that the curriculum is implemented in the classroom. The CIP includes teacher training in five key subjects to ensure effective implementation of the curriculum in the classroom.
- **Teacher Training:** Teacher training to effectively implement the curriculum in the classroom using Teachers Curriculum Guides (TCGs) began in June 2017; implemented for over 60,000
- **Teacher Deployment:** Secondary Teacher Development Strategy (STDS) approved by SHED in December 2019. It includes proposals for the assignment of subject-based teachers.
- **Provision of Goods to Schools:** 10,000 schools (7,163 schools and 2,837 madrasahs) for science lab equipment, 29,826 schools (20,035 schools and 9,791 madrasahs) for teaching materials, etc.

(3) World Bank: Transforming Secondary Education for Results Operation (TSERO)

TSERO supports SEDP with Program-for-Results (PforR).

- Implementation Period: 2017-Active

- Budget and Modalities: Total: \$2017 million (\$510 million loan and \$10 million Grant from the World Bank and \$1,497 million from the Government of Bangladesh)

The Project Development Objective(s) (PDO) is rated "Satisfactory" as of December 2021 and the Overall Implementation Progress (IP) is rated "Moderately Satisfactory" Despite the delay in launching the SEDP, the program has achieved the following since its inception:

- Significant progress was made in providing stipend: in the 2019/20 academic year, about 2.6 million beneficiaries (900,000 boys and 1.7 million girls) received stipend and tuition fee, and in the 2020/21 academic year, about 5.1 million beneficiaries (1.8 million boys and 3.3 million girls) through HSP received stipend and tuition fee through the HSP.
- The National Assessment of Secondary Students (NASS) 2019 was conducted in 1,000 institutions in 86 upazilas for grades 6, 8, and 10; areas of improved student learning were observed from 2017.

(4) UNICEF

UNICEF has worked with DSHE and NCTB since 2004 to provide technical assistance for mainstreaming Life Skills Based Education (LSBE) in secondary education; in 2012-13, life skills were integrated into the secondary school curriculum from grades 6 to 10. In 2013-2014, UNICEF trained more than 500 master trainers and 29,000 teachers at the Teacher Training College (TTC).

UNICEF has its own PDM within the SEDP framework and provides technical assistance, the cost of which is not included in the SEDP program.

The implementation period and the budget are as follows.

- Implementation Period: 2017-Active
- Budget: Total amount: \$9.5 million

(5) UNESCO

UNESCO provides technical assistance in the following three areas within the framework of the SEDP, the cost of which is not included in the SEDP program.

- Capacity building for education: review policies and plans to strengthen national capacity to effectively manage the education system and properly diagnose and track progress toward education development goals, including SDG 4
- ICT in Education (in collaboration with DSHE and ICT division): provide basic information for policy decisions aimed at digital citizenship education, together with ICT master plan review
- Mainstreaming SDG 4.7 (including global citizenship education and education for sustainable development) in curriculum frameworks (in collaboration with NCTB and universities)

The implementation period and the budget are as follows.

- Implementation Period: 2017-Active
- Budget: Total amount \$1.77million

12.6.2 Assistance Before the Start of SEDP and Outside of SEDP

(1) Asian Development Bank: Secondary Education Sector Development Program

The objective is to contribute to poverty reduction by improving the quality of and access to secondary education. The main components are as follows.

- Improve accountability and transparency in secondary education management: Promote decentralization of school management, establish a Monitoring and Quality Assurance system, and implement functional differentiation
- Improving the quality of education: improving curriculum, reforming national examinations, and strengthening student assessment
- Improving equity in access to secondary education: improving school facilities in substandard areas, providing scholarships to students from poor families

The implementation period and the budget and modality are as follows.

- Implementation Period: 2006-2015
- Budget and Modalities: 143.33 million (\$115 million (loan) from Asian Development Bank and the rest from the Government of Bangladesh)

(2) Asian Development Bank: Teaching Quality Improvement in Secondary Education Project (TQI)

TQI consists of TQI-I and TQI-II, with TA and Loan combined in each phase.

Table 12-8 Phases of TQI

No.	Phase	Implementation Period	Budget and Modalities
1	TQI-I Preparation	2002-2005	Total amount: \$600,000 • Asian Development Bank: \$600,000(TA)
2	TQI-I	2007-2014	Total amount: \$143.33million • CIDA \$18.00million (Grant)(Bilateral) • Asian Development Bank: \$68.90million (Loan) • Government of Bangladesh: \$21.70 million
3	TQI-II Preparation	2010-2012	Total amount: \$500,000 • Asian Development Bank : \$500,000 (TA)
4	TQI-II	2012-2019	Total amount: \$143.33million • Asian Development Bank: \$115million (loan) • Government of Bangladesh: \$28.33million

A summary of Nos. 1 through 4 in the table above follows.

No.1: TQI-I Preparation

It is a preparatory phase TA for TQI-I. The TA will consist of the following two components for grades 6-12

- **Sub-sector Analysis:** analysis of existing policies, strategies and programs related to teacher training and identification of funding gaps in teacher training. Analysis of issues related to quality management at the national and local levels and assessment of the need for pre-service teacher training and in-service teacher training by exploring the potential of both traditional face-to-face instruction and multimedia/distance learning methods.
- **Project Preparation**

No.2: TQI-I

In order to improve the quality of secondary education, the following will be implemented for all teachers (Grades 6 to 10), including madrasah, in government and non-government educational institutions

- Organizational Development and Capacity Building
- Renovation and upgrading of teacher training facilities: Teacher Training Colleges (TTC), Secondary Education Science Development Centers (SESDC), HSTTI, Madrasha Teacher Training Institutions (MTTI)
- Establish in-service teacher training network
- Strengthen teacher training through: accreditation of teacher training, initial training for new teachers, in-service teacher training and CPD training, Training of Trainers (ToT), creation and distribution of teacher training materials, and establishment of an Innovation and Development Fund.
- To improve equity of access and community involvement, 1) improve teaching and learning for children from disadvantaged backgrounds, 2) increase the percentage of female teachers, 3) increase social awareness of teachers to improve teacher quality

No.3: TQI-II Preparation

Consistent with NEP 2010, the TA conducted the design of TQI-II. The deliverable is a report that includes an overview of the secondary teacher training sector and the design of the TQI-II.

No.4: TQI-II

Designed as a centerpiece to support the NEP 2010 reforms, the TQI-II has the following features to improve teacher quality:

- Establish a partnership between the university and TTC to enhance teachers' subject knowledge and teaching methods
- Transform one TTC school into a center for English language education
- Introduced competencies for teachers and principals, and institutionalized the monitoring of teachers' classroom performance by the principals.
- Piloting computer-assisted learning to support large-scale government investment to enhance teaching and learning using computers and multimedia
- Providing incentives to strengthen inclusive education
- Strengthening teaching and learning and equity through enhanced use of the Innovation and Development Fund.

(3) World Bank: Secondary Education Quality and Access Enhancement Project (SEQAEP) 2008-2017

SEQAEP aimed to improve the quality of secondary education and conducted the following four activities in 121 upazilas.

- Improved monitoring of quality and standards of education
- Improving equity and access by providing scholarships to children from low-income families
- Strengthening the MOE's central and local administrative structure
- Establish effective monitoring and evaluation system

The implementation period and the budget and modality are as follows.

- Implementation Period: 2008-2017
- Budget and modalities: Total: \$435.7 million (\$395.7 million (loan) from the World Bank, with the Government of Bangladesh contributing the remainder)

(4) United Nations Population Fund (UNFPA) Generation Breakthrough (GB) Project

The project contributes to the prevention of Gender Based Violence (GBV) and the reduction of child marriage and other forms of gender-based violence by targeting youth aged 10-19 years, with activities aimed at helping them grow into responsible, non-violent, healthy and happy adults with gender-equal attitudes and practices as future (sexual) partners, fathers, mothers and caregivers.

Phase 1 (Dutch funded) runs from 2014-2020 and Phase 2 (Canadian funded) from 2019-2022. Each phase was a pilot-based activity, with MOE as a counterpart and multiple projects involving NGOs and other organizations. As a specific example, the Gender Equity Movement in Schools (GEMS) Curriculum adapted and introduced the Gender Equity Movement in Schools (GEMS) curriculum to target schools. GEMS is a two-year gender equality and violence prevention curriculum for youth ages 12-14.

Chapter 13. Challenges in Secondary Education and Suggestions for Its Future Improvements

This chapter summarizes the challenges of secondary education in Bangladesh and proposes the appropriateness of support by the Japan International Cooperation Agency (JICA), areas that should be targeted, and methods of support.

13.1 Summary of Secondary Education Challenges

In compulsory primary education, the Net Enrollment Ratio (NER) reached 97.4% (2021), the retention rate was as low as 0.9% (2021), and the Primary Education Certificate Examination (PECE) pass rate was as high as 95.5% (2018). The cycle dropout rate (dropout rate after 5 years of primary education) is as high as 14.2% (2021), and the National Student Assessment (NSA) indicates that the majority of G3 and G5 are not achieving the required level in Bangla and mathematics, so while quality remains issues, some progress has been made in primary education. However, there are still many challenges in secondary education.

The survey team categorized the challenges of secondary education into the following four types, three of which are educational quality issues.

- Low student achievement and difficulties in understanding student achievement: The pass rate of Certificate Examination for each secondary education stage is high. In FY2021, the pass rates for the Higher Secondary Certificate Examination (HSCE) and Secondary School Certificate Examination (SSCE) were 95.57% and 94.08%, respectively. However, a high pass rate does not indicate a high level of academic achievement. The pass rate for the Primary Education Completion Examination (PECE), which is taken prior to entering secondary education, is high at 95.5% (2018), but since a 33% correct answer is required to pass, it is thought that some students who have not mastered what they should have learned in primary education are entering secondary education. This can be inferred from the fact that in the National Student Assessment (NSA) 2017 results, there are 16% of students with substandard academic performance in 5 years of Bangla and 26% in 5 years of math. In secondary education, there is no exam comparable to the NSA, but the National Assessment of Secondary Students (NASS)⁹⁰ is conducted. However, while the NASS is useful for identifying regional differences and year-to-year improvements, it is inadequate for analyzing the extent to which students understand the curriculum, making it difficult to ascertain student achievement.
- Curriculum, textbooks, and Educational Assessment system still under development: The Government of Bangladesh believes that the cause of low student achievement is rote learning, which is prevalent in Bangladesh. Therefore, the new curriculum and textbooks, which will be gradually introduced from FY2023, change the learning method to Experiential Learning Approach (ELA)⁹¹ so that students can acquire competencies that will enable them to play an active role in society after graduation. As a result, issues in the 2012 curriculum and textbooks (e.g., lack of coverage in mathematics, and vice versa in science, with too much detail. Also, assessments/ activities are not specifically described) have been improved. The textbooks are now easier to understand and contain many examples of activities. However, it is activity-heavy and contains many unnecessary activities. In addition, although the curriculum and the Educational

⁹⁰ The NASS will be implemented starting in 2019; prior to that, the Learning Assessment of Secondary Institutions (LASI) was in place.

⁹¹ ELA is an approach that emphasizes that students learn by experience. Activities in ELA are carefully selected to provide students with opportunities to practice and deepen their creative skills on their own and to learn from their mistakes. Teachers will actively ask students questions in order to play a role in promoting student motivation.

Assessment system should be developed at the same time, the curriculum is developed first, and the implementation method of the Educational Assessment system has not been determined. The government's policy is to use in-school assessment for the allocation of points for promotion and advancement to higher education. This is not a problem for advancement within the same school, but if this is used for advancement to higher education stage, this requires the introduction of moderation to ensure that there are no significant discrepancies in performance among evaluators. Moderation in educational evaluation refers to the process by which evaluation results and opinions are coordinated and consistent to ensure fairness and reliability in the evaluation process. Specifically, it is the clarification of evaluation criteria and the various activities necessary to ensure the fair application of those criteria. Although the NCTB has developed evaluation criteria, clarification of evaluation criteria alone is not sufficient when multiple evaluators are involved. There is no guarantee that all evaluators understand the evaluation criteria in the same way, and it is not always possible to evaluate using the evaluation criteria appropriately. Therefore, it is necessary to have multiple evaluators evaluate the same sample of schools within a school or in a group of schools within a region to ensure homogeneity in the interpretation and application of the evaluation criteria, and to reconcile their understanding of the criteria. In Bangladesh, the development of evaluation standards has not yet been started, and it is expected that there will be difficulties in developing a system to ensure fairness in Bangladesh. Therefore, it is necessary to re-formulate a strategy for an educational evaluation system that can be implemented in Bangladesh.

- Quantitative and Qualitative Challenges for Teachers: The Teacher Student Ratio (TSR) for secondary schools (G6-G10) is 38 (2021), falling short of the National Education Policy 2010 (NEP 2010) policy target of 30. In addition, since there is no Continuous Professional Development (CPD) mechanism, teachers do not have a guidepost for when and to what extent they should acquire the necessary skills. Without such a mechanism, even if the teacher training function is strengthened, there is a risk that teachers will not be incentivized to take the training and will not be able to attract participants. In addition, although the new curriculum is designed to shift from rote learning to ELA, teachers who have earned their degrees through rote learning will not be able to change their teaching methods to ELA on their own. Therefore, adequate teacher training is necessary, but teacher training has many challenges in terms of both quality and quantity. In terms of quantity, as shown in Table 9-20, the number of teachers who can be trained per year is about 6,000 for a total of about 320,000 teachers in secondary education, which means that it would take 53 years just to provide training once for all teachers. In terms of the quality of teacher training, current teacher training mainly focuses on teaching methods, ICT, English, and administrative training for principals, with no specialized training in other subject areas. Therefore, there is a lack of experience in conducting courses on ELA.
- Access and internal efficiency: NER is 70.3% (2021) for secondary education (G6-G10) and 40.5% for higher secondary, worse than primary. The cycle dropout rate is 35.7% (2021) for secondary (G6-G10: 5 years) and 21.1% (2021) for higher secondary (2 years), with grade level averages of about 7% and 10%, respectively, indicating low internal efficiency. To solve this problem, the Perspective Plan of Bangladesh 2021-2041 (PP2041) sets a target of zero dropout rate in primary and secondary education by 2031.
- ICT in schools is still developing: ICT may be used to solve problems more efficiently than conventional methods; Digital Bangladesh, launched in 2008, is actively digitizing statistical data and developing digital teaching materials. In addition, due to the demand resulting from the closure of educational institutions due to COVID-19, there is great potential for the use of ICT through the phased development of ICT and multimedia classrooms and the installation of Internet infrastructure in rural areas. On the other hand, the lack of devices available to students at school and home and weak Internet access

have prevented digitization at the receiving end schools. There is also a shortage of ICT literate teachers.

13.2 Needs for Support

The Directorate of Secondary and Higher Education (DSHE) requested support for four areas: 1) teacher training, 2) teacher training facilities, 3) blended learning, which is a combination of face-to-face classes and distance learning, and 4) assessment of students' academic achievement. The first request for teacher training covered in-service training (INSET), and included support for the establishment of an INSET system, as there are many problems with this system. The second request, teacher training facilities, is a request for the establishment or expansion of new facilities to improve the quantitative issues of teacher training. For example, the establishment of a Regional Academy for Educational Management (RAEM), the renovation of existing Teacher Training Colleges (TTC) to have INSET functions, and the establishment of a Higher Secondary Teachers Training Institute (HSTTI). Regarding 3) blended learning, DSHE requested the use of blended learning in INSET. No concrete proposal on how to utilize blended learning was presented. With regard to the improvement of the assessment of students' academic achievement in (4), the NCTB requested support for the introduction of formative assessment, since it aims to change the current system that emphasizes summative assessment and introduce formative assessment as well in the new curriculum.

The National Curriculum and Textbook Board (NCTB) requested support for capacity building of NCTB staff to contribute to 1) overall reform of the evaluation system and 2) development of digital teaching materials in line with the new textbooks and new teacher's guide.

The Board of Intermediate and Secondary Education (BISE) requested technical assistance for scale score methodology⁹² and online marking.

The support needs expressed by the Govt. TTC and HSTTIs varied according to the size and current status of each institution, but included: 1) facilities (e.g. ICT equipment, training facilities, laboratory equipment, renovation of classrooms and laboratories, new hostels (for girls), creation of a digital library database and 2) capacity development (e.g. training in teaching methods using ICT equipment, practical training based on the new curriculum and training by foreign experts and subject-based training abroad).

13.3 Support of Other DPs

Although the SEDP was extended, no successor SWAp to the SEDP was formed, and each DP will provide assistance in individual projects.

The World Bank and the Asian Development Bank are the largest in terms of the scale of support, but both banks have once drafted their areas of support, but as of February 2023, they are in the process of reconsidering their areas of support. However, based on the areas of assistance provided to date and the PIDs currently available, the World Bank is likely to provide scholarships through the Harmonized Stipend Program, continued support for the National Assessment of

⁹² Raw score is used to score a traditional test; Raw Score is the number of points actually earned on the test and is calculated based on the number of correct answers and the scoring system. For example, if 7 questions are answered correctly in a 10-question test, the raw score is 7 points. The scale score, on the other hand, is a converted score based on certain criteria and is used to compare the difficulty of the test and the performance of other reference groups. For example, even in a test where a raw score of 60 is considered a passing score, if the test difficulty differs for each session, the test taker will have an advantage or disadvantage depending on the difficulty level. In such cases, scale score is used to reduce the advantage or disadvantage due to difficulty by converting the score to a score expressed in a range of 0 to 100, for example, based on the test taker's performance.

Secondary Students (NASS), and expansion of teacher training programs (improvement of pedagogy, subject content, and approach), etc.

UNESCO will target DSHE, BANBEIS, and NAEM for global citizenship education, educational ICT and blended education, educational data management, formative assessment (FA) guidebooks for teachers, and STEM and gender support.

UNICEF will work with NCTB to continue curriculum revision through 2026 and support NAEM and the revision of the Continuous Professional Development (CPD) Framework, among others.

The United States Agency for International Development (USAID) will target teacher training in higher secondary education, primarily in management-related enhancements outside of academic subjects.

13.4 Relevance of JICA's Support to the Secondary Education Sub-Sector

This section examines the possibility of JICA assistance to the secondary education subsector, based on JICA's assistance policy and other factors.

From the Perspective of Consistent Strengthening of the Education Sector as a Whole

Japan's Country Development Cooperation Policy for the People's Republic of Bangladesh (2018) sets "Accelerating sustainable and equitable economic growth toward becoming a middle-income country and out of poverty" as its major goal. The two priority areas (medium-term goals) are 1) Accelerating economic growth for the benefit of all people toward becoming a middle-income country and 2) Overcoming social vulnerabilities, the latter of which covers "poverty, hunger, education, health, gender, water and sanitation," and includes education. With regard to education, the program "will contribute to improving the quality of primary education, as well as to improving technical education and promoting research and development in the fields of science and technology." and there is no mention of secondary education. However, in the course of implementing cooperation in technical education, it was confirmed that the basic academic skills and specialized knowledge of polytechnic students were not at the level required by industry. Therefore, it is considered necessary to raise the level of basic academic skills in secondary education (general education curriculum), which connects primary education and technical education, i.e., "consistent enhancement of the entire education sector" is considered necessary. Therefore, support for "consistent enhancement of the entire education sector" will be highly appropriate if it is provided by taking advantage of Japan's strengths.

Perspectives on the Alignment of JICA's Education Sector Focus Areas with the Challenges of Secondary Education in Bangladesh

JICA has set up the "JICA Global Agenda" with 20 strategies from the four perspectives of Prosperity, People, Peace, and Planet, under the mission of realizing "human security" and "quality growth. Education is one of these strategies. In the Global Agenda (Education), four clusters of support have been set up in order to support the country by taking advantage of Japan's strengths. Of these, three clusters apply to basic education: **"Improvement of learning through the development of textbooks and teaching materials,"** "Improvement of education through community collaboration," and "Improvement of education so that no one is left behind."

The issues in the secondary education subsector, as summarized in section 13.1, are wide-ranging and include rote learning, teachers, curriculum, textbooks, teaching materials, and Educational Assessment systems, but most of them are related to the quality of education. Among the above three clusters, "Improvement of learning through the development of textbooks and teaching

materials " is concerned with improving the quality of the learning process and learning outcomes, i.e., improving the quality of education. Therefore, it would be highly appropriate to provide JICA's support for issues in the secondary education subsector in Bangladesh within the "Improvement of learning through the development of textbooks and teaching materials" cluster, including "Science and Mathematics" and ELA, which are Japan's strengths.

From the Perspective of Aid Efficiency and Strengthening Connectivity at Each Level of Education

Since 2004, Japan has been contributing to the improvement of the quality of education in the primary education sub-sector through technical cooperation projects such as the "Project for Strengthening Primary Teacher Training on Science and Mathematics," dispatching individual experts as "primary education advisors," and providing financial assistance through grants. As a result of the long-term cooperation, the NER in primary education improved from 87% (2005) to 97.4% (2021), and the completion rate from 53% (2005) to 83% (2020). In order for the results of this assistance to contribute to sustainable economic growth and other development, it is necessary from the perspective of aid efficiency to ensure the same level of educational quality in subsequent secondary education.

Another issue in technical education is the lack of "practical skills" demanded by industry due to the theory-oriented learning for exam preparation for the purpose of obtaining a degree. Therefore, if a system to acquire practical skills in secondary education is strengthened, it will directly contribute to strengthening practical skills through experiments and practical training in subsequent technical education. JICA has launched the Project for Improvement of Technical Education for Industrial Human Resources Development in 2019 to improve the quality of education at polytechnics. Therefore, it is expected to increase the effectiveness of assistance to the technical education sub-sector by raising the level of basic academic skills, especially in science and mathematics subjects, in secondary education, which connects primary education and technical education.

Tertiary education (general education) has not been a target of JICA support to date. However, it is expected that by providing consistent support for secondary education so that the effects of support for primary education can be utilized, the learning effects of Tertiary education, which is the exit route to the industrial sector, can be enhanced.

As described above, within the scope of JICA's cluster "**Improvement of learning through the development of textbooks and teaching materials**," which contributes to improving the quality of education, there is a high degree of appropriateness in providing assistance in areas where Japan can utilize its strengths to solve problems in secondary education in Bangladesh.

The "Improvement of Learning through the Development of Textbooks and Teaching Materials" cluster has as its direct goal the improvement of children's basic learning ability. To this end, while focusing on the development of textbooks and teaching materials as an area of support, it also includes the professional development of teachers as learning supporters. The professional development of teachers includes enabling them to implement support based on the evaluation of children's learning, which corresponds to formative evaluation. Among the issues identified in Section 13.1, "curriculum, textbooks, and educational assessment system still under development" and "quantitative and qualitative challenges for teachers" are consistent with this. The central issue for Bangladesh in "Improvement of Learning through the Development of Textbooks and Teaching Materials" is the educational assessment system, but support for the educational assessment system could also be a target because curriculum/textbooks and educational assessment systems are a pair.

13.5 Recommendations on How to Support through JICA's Cluster "Improvement of Learning through the Development of Textbooks and Teaching Materials"

Although the survey team concluded in the previous section that JICA's support in the secondary education subsector is justified, the survey team suggests that JICA start with small-scale projects in order to provide assistance in the secondary education subsector. JICA has abundant experience in the primary education subsector since 2004 and experience in technical cooperation projects since 2019. However, there is little experience in supporting the secondary education subsector. For this reason, we propose to start with small-scale training programs in Japan to expand the human network, and then consider implementing technical cooperation projects as full-scale assistance. We propose the following phased support.

- 1) Training in Japan on integrated development of education systems
- 2) Technical Cooperation Project contributing to "improvement of learning"
- 3) Technical Cooperation Project for Learning and Evaluation

In this section, the survey team proposes detailed plans for these three types of support..

13.5.1 Training in Japan on Integrated Development of Educational System

The new curriculum and textbooks that use the ELA were introduced in the G6 in 2023. In response, the NCTB plans to design an ELA-compliant educational assessment strategy by December 2024. The purpose of the training in Japan is to develop the human resources necessary for this implementation.

The training program in Japan will provide information on entire education system including educational assessment system and other relevant information. Japan has a system design that integrates educational goals, curriculum, and educational evaluation system, and has strength in overall system design. By explaining the background of Japan's choice of the current educational evaluation system in the explanation of the overall system, participants will be able to refer to and optimize the Japanese system rather than using it as is. In addition, some areas have been experimenting with in-school moderation in recent years. This will provide an opportunity to learn about the overall picture of these systems, their backgrounds, and how new systems are being tried and introduced.

Training Objectives

To develop capacity for designing and implementing an educational system in the secondary education sub-sector in Bangladesh.

When to Be Implemented

Approximately December 2023 - July 2024 (Early implementation is preferred.)

Draft Curriculum

This training is proposed as a response to Bangladesh's need for capacity building in educational assessment systems, but the design and implementation of educational assessment systems also requires an understanding of items related to curriculum, textbooks, teacher training, schools, etc. This is because educational assessment systems are paired with curriculum and textbooks, and how educational assessment systems are used in the field is also important.

Table 13-1 Draft Curriculum for Training in Japan

Item	Description	Destination (Draft)
Overview	Overview of the Japanese education system (curriculum, textbooks, educational assessment, teachers, teacher training)	Ministry of Education, Culture, Sports, Science and Technology (MEXT)
Curriculum	Japanese curriculum revision system and policies, and the role of each relevant organization	MEXT, National Institute for Educational Policy Research (NIER)
Curriculum	Teacher training on curriculum revision	National Institute for School Teachers and Staff Development (NITS)
Textbooks	Japanese school textbook system (textbook approval process, textbook adoption procedures, textbook sharing channels)	MEXT, Japan Textbook Research Center
Textbooks	Roles and responsibilities of editors in the development of textbooks and teacher's guide; editing and editing techniques that are easy for students to understand; understanding the typesetting, typesetting, printing, and binding processes necessary for editing; understanding and trying out textbook composition plans and templates; handling learning assessment in textbooks and teacher's guide	Textbook companies
Curriculum and textbook	Curriculum and textbook development support to developing countries based on Japan's experience	Hiroshima Univ.
Educational Assessment System	History of Japan's educational assessment system and comparison with other countries	Kyoto Univ. etc
	How to implement the Common University Entrance Test and how to improve the test	National Center for University Entrance Examination, etc
	How the exam is graded	National Center for University Entrance Examination, Private companies providing testing, etc.
Teacher Training	The system and training content of in-service teacher training, and the promotion of practical implementation at school sites	Board of Education
Teacher Training	Same as above, training on learning evaluation	NITS
Schools	Actual conditions of educational assessment at school sites (junior high schools)	Junior High School
	Actual conditions of educational assessment at school sites (high schools)	High School

Source: The Survey Team

The background behind the selection of the proposed sites to be visited is as follows.

- National Institute for Educational Policy Research (NIER): The NIER conducts research necessary for formulating educational policy. It also conducts research necessary for the revision of the Courses of Study and case studies of other countries.
- National Institute for School Teachers and Staff Development (NITS): NITS provides training for teachers and staff who play a central role in their respective areas, and also offers various training programs, including online training, for the introduction of the revised Courses of Study.

- Japan Textbook Research Center: The Center conducts a wide range of research related to textbooks and has a detailed understanding of textbook development, certification systems, and content.
- Hiroshima University: The university has experience in conducting training programs in Japan for Bangladesh and Zambia. It is ideal for participants who have learned about the Japanese experience in other destinations to learn how to adapt it to their own countries.
- Kyoto University: The Curriculum & Instruction and Developmental Science Course of the Graduate School of Education conducts research on a wide range of topics, including educational objectives and goals, curriculum, teaching materials, and educational evaluation in elementary and secondary education. The department is able to assign personnel with appropriate knowledge of educational evaluation.

Main Relevant Organization for the Training (Draft)

The areas of training are educational assessment systems, curriculum, textbooks, teacher training, and schools, and candidates for participation in the training should be selected from main relevant organizations in these areas.

Table 13-2 Main Relevant Organization for the Training Program in Japan

Area	Main Relevant Organization
Educational Assessment System	NCTB, BISE
Curriculum	NCTB
Textbooks	NCTB
Teacher Training	DSHE, TTC, NAEM, HSTTI
Schools	DSHE

Source: The Survey Team

Activities for the Formation of the Next Project

It is expected that the experience gained from the training in Japan will be used to form the technical cooperation projects described in the next section. Since the DP and others are in active discussions with the MOE in anticipation of the termination of the SEDP, the MOE requested areas of support change frequently. In addition, the design of the educational assessment system has not yet been fixed. Therefore, it is proposed that a meeting be held after the training in Japan to form a dialogue on both the Bangladeshi and JICA sides to speed up the necessary project formation based on the latest situation in Bangladesh.

13.5.2 Technical Cooperation Project Contributing to "Improvement of Learning"

The new textbooks and teacher's guide are much improved from the 2012 edition, with greater clarity and a wealth of examples of activities, but they are also more activity-oriented and include many unnecessary activities that are not necessary to achieve the learning goals, so continued improvement is needed. In addition, teachers do not have experience in ELA practice, and they face challenges, especially in asking questions to students. Although the content of the questions is included in the textbook and teacher's guide, teachers do not pause appropriately before presenting their answers, and instead present their answers immediately after the question is asked, thus depriving students of the opportunity to think for themselves. Another issue to be addressed in the future is to strengthen the skills of teachers who prepare the end-of-term and end-of-year examinations necessary for the school's summative assessment. Thus, even after human resource development through training in Japan, many issues need to be resolved in order to improve children's learning, and ongoing support through technical cooperation projects and other means is essential for this purpose.

Since the implementation of technical cooperation projects is expected to take place several years from now, the current issues may not necessarily be the focus of support, but here we focus on digital teaching materials that contribute to "strengthening the capacity of teachers who have no experience in ELA," which is one of the issues currently being considered. The digital materials themselves are intended for students. As students practice ELA, they will fill in the gaps in the teachers' explanations, and teachers will also learn appropriate questioning techniques from this material.

(1) Overview

- Objective: To improve the competencies of students in secondary schools (G6-G12) by supporting the introduction of ELA.
- JICA Scheme: Technical Cooperation Project
- Duration: 4 years
- Start from: 2025
- Target: Focus on science and mathematics subjects in secondary schools (G6-G12).

(2) Project Stakeholders

The following table lists the main implementing agencies envisioned for this project.

**Table 13-3 Main Implementing Institution
(Project Contributing to "Improvement of Learning")**

Institutions	Role
NCTB	Develop digital teaching materials
DSHE	Responsible for teacher training (curriculum, implementation, etc.) and dissemination of digital teaching materials at school sites
NAEM, HSTTI, TTC, etc	Cooperate with DSHE to provide teacher training (curriculum, implementation, etc.)
School/College	School teachers take training courses at TTC/HSTTI and implement the training content at their own schools.

Source: The Survey Team

(3) Components

- Component 1: Development of digital teaching materials: The component consists of 1) analysis of the new curriculum and textbooks, 2) development of digital teaching materials for students, and 3) development of teaching materials for teachers. The NCTB will be responsible for the development, and JICA experts will specifically support the capacity building of NCTB staff.
- Component 2: Teacher Training: The component consists of 1) training curriculum development led by DSHE, 2) development of training materials (excluding those developed under Component 1), 3) training for teachers at teacher training institutions (TTC, HSTTI, NAEM, etc.), and 4) training from teachers at teacher training institutions to in-service teachers.
- Component 3 Monitoring: School monitoring will be conducted by the District Education Office and Upazilla Education Office. For this purpose, training will be provided for the personnel in charge of these offices.

(4) Issues Noticed During the Review of the Project Proposal

When considering the implementation of this project, there was concern about the effectiveness of this support, which is provided without support for improvements to the curriculum and textbooks, in supporting ELA implementation. The team's partial analysis of the curriculum and textbooks confirmed that many of them were more effective in improving student competencies

than the 2012 version, but also identified several ineffective activities. It was thought that if JICA only support the development of digital teaching materials and teacher training materials while leaving some parts of the base curriculum and textbooks ineffective for ELA implementation, the survey team could not fully judge the effectiveness of our support for ELA implementation, which is supposed to improve student competencies.

13.5.3 Technical Cooperation Project for Learning and Assessment

As mentioned above, the current speed of transformation in Bangladesh is rapid, and even if we present the details of the proposed project now, the situation is expected to change significantly in a year's time. Therefore, this section presents a rough draft based on the current situation, but assumes that it will be reconsidered after the training in Japan.

In this draft technical cooperation project, we will keep in mind the implementation of simultaneous development of educational objectives, curriculum, and educational evaluation system, similar to the education system in Japan.

In Bangladesh, despite the introduction of new textbooks and a new system based on a new curriculum starting in 2023, an educational assessment system has not yet been designed and developed. In order to promote the design and development of this system, human resource development through training in Japan as described in Section 13.5.1 will be conducted. Curriculum and educational assessment systems should be developed simultaneously. In Japan, the Courses of Study are revised approximately every 10 years. Preparation for these revisions is done well in advance. For example, the most recent revision is scheduled to be introduced in kindergarten in FY2018 and in elementary school in FY2020. Preparation for this (discussions at the Central Council for Education) began in FY2014, or four years before the introduction of the curriculum for kindergarten and six years before the introduction of the curriculum for elementary school. This kind of well-prepared, well-informed introduction reduces confusion at the field level. Learning about this kind of planning in human resource development can be applied to the next revision in Bangladesh: If the next revision after the introduction in FY2023 is set for 2033, preparation would begin from 2027 to 2029 if it is started 4 to 6 years in advance, as in Japan. In Bangladesh, modifications will be made two to three years after the introduction of the curriculum. At this time, there will be opportunities to align the curriculum, textbooks, and educational assessment system. This technical cooperation project will support the improvement of learning and assessment by taking advantage of these opportunities.

(1) Outline

- Project Objective: By supporting the integrated reform of the curriculum, textbooks, and educational assessment system, the competencies of students in Bangladesh's first to second semester secondary schools will be improved.
- JICA scheme: Technical cooperation project
- Duration: 4 years
- Start from: 2025 onwards
- Target: Focus on science and mathematics courses in secondary schools (G6-G12).

(2) Project Stakeholders

The following table shows the main implementing agencies envisaged for the project.

Table 13-4 Main Implementing Institution (Project for Learning and Assessment)

Institutions	Role
NCTB	Design and develop curriculum, textbooks, and educational assessment systems
DSHE	Responsible for teacher training and dissemination of the curriculum, textbooks, and educational assessment system in schools
NAEM, HSTTI, TTC, etc.	Responsible for teacher training (curriculum, implementation, etc.) in cooperation with DSHE
School/College	School teachers take training courses at TTC and implement the training contents in their own schools.

Source: The Survey Team

(3) Components

- **Component 1: Human Resource Development for the Development of Curriculum, Textbooks, and Educational Evaluation System:** This component consists of 1) analysis of curriculum, textbooks, and educational assessment system, 2) design and development of curriculum, textbooks, and educational assessment system, 3) development of teaching materials for teachers, and 4) development of various guidelines for educational assessment. The development will be undertaken by NCTB, and JICA experts will provide particular support to strengthen the capacity of NCTB staff.
- **Component 2: Teacher Training:** This component consists of 1) development of training curriculum led by DSHE, 2) development of training materials (excluding those developed under Component 1), 3) training for teachers at teacher training institutions (TTC, HSTTI, NAEM, etc.), and 4) training for in-service teachers from teachers at teacher training institutions.
- **Component 3 Monitoring:** School monitoring will be conducted by the district education office and Upazilla education office. For this purpose, training will be provided for the personnel in charge of these offices.

(4) Issues Noticed During the Review of the Project Proposal

In considering the implementation of this project, several issues were of concern. In particular, the Bangladeshi government policy on the design of the educational assessment system is still in flux: the 2012 curriculum and the 2023 curriculum include formative assessment as part of the grade, but in interviews with the NCTB as of June 2023, it was stated that formative assessment is not included in the grade (and Chapter 7 is written based on this). Although the policy for the acquisition of student competencies is consistent, it must be said that the educational assessment system for this purpose is still in the process of policy development.

It is difficult to implement the proposed technical cooperation project in such an undefined situation, and in conclusion, it is necessary to first establish the direction of the educational assessment system in order to consider its implementation. In addition, since the design of the assessment system will have a great impact on the students' advancement to higher education, careful consideration of the details of the support is necessary.

13.6 Conclusion

As of June 2023, the education sector in Bangladesh is in the re-formation phase after the SEDP and is changing rapidly. Therefore, it is necessary for JICA to continue to maintain a network with DSHE and NCTB, the main institutions in the Bangladeshi secondary education sub-sector, in order to respond to the Bangladeshi side's requests in a timely and accurate manner. This can be achieved through active engagement, such as holding meetings before and after training programs in Japan.

Attachments

Attachment 1

List of Interviewees

Organization	Name	Position
a2i	Ashoke Biswas	Capacity Development Coordinator
a2i	Dr. Dewan Muhammad Humayun Kabir	Project Director
a2i	Md. Tanvir Quader	Senior Software Engineer
a2i	Mehdi Hassan	National Consultant, e-Learning
BANBEIS	Habi Bus Rahman	Assistant Director
BANBEIS	K.M Hasanullah Mahmud	System Analyst
BANBEIS	Md. Kayser Rahman	Director
BANBEIS	Md. Meranur Rahaman	System Analyst
BANBEIS	Md. Muhibur Rahman	Director General
DSHE, Monitoring wing	Ms. Lilun Nahar	Assistant Director
DSHE, Monitoring wing	Prf. Md. Amir Hossain	Director
DSHE, Planning & Development Wing	Aniqa Raisa Chowdhury	Deputy Director
DSHE, Planning & Development Wing	Asim Kumar Barman	Assistant Director
DSHE, Planning & Development Wing	Aysha Siddika Moushumi	Research Officer
DSHE, Planning & Development Wing	Dr. AQM Shafiul Azam	Director
DSHE, Planning & Development Wing	Dr. Khandaker Muzahidul Haq	Project Director, Fostering Opportunities of Science Education in Public Colleges Project (FPSEP)
DSHE, Planning & Development Wing	Prof. Dr. Md. Ashfaqus Saleheen	Project Director, Development of Selected Non-Govt. Colleges along with ICT Facilities for Improving Quality of Education Project,
DSHE, Planning & Development Wing	S M Shafiul Alam	Assistant Director
DSHE, Planning & Development Wing	Syed Mahfooz Ali	Scheme Director
EED	Delwar Hossain Mojumder	Chief Engineer
EED	Md. Rafikul Islam	Executive Engr (Civil), EED
EED	Samir Kumar Rajak Das	Superintending Engr, EED
MoP (ERD)	AKM Shohel	Joint Secretary
MoP (ERD)	Sharifa Haque	Deputy Secretary
NAEM	Abu Hena Mashukur Rahman	Assistant Director (Common Service)
NAEM	AKM Shah Alam	Programmer
NAEM	Dr. Md. Safayet Alam	Assistant Director
NAEM	Jahangir Kabir	Assistant Director
NAEM	Md. Shahiduzzaman	Deputy Director (Training)
NAEM	Prof. Dr. Md. Nizamul Karim	Director General
NAEM	Syed Ahsan Habib	Deputy Director (Admin & Finance)
NCTB	Dr. Md. Iqbal Hossain	Curriculum Specialist, NCTB/ Associate Professor (Chemistry)
NCTB	Dr. Md. Iqbal Hyder	Specialist/Associate Professor (Chemistry), Specialist
NCTB	Md. Ikaramuzzaman Khan	Curriculum Specialist, SESIP, NCTB

Organization	Name	Position
NCTB	Md. Mukles Ur Rahman	Senior Specialist
NCTB	Mr. S.M. Delwar Hossain	Deputy Secretary
NCTB	Ms. Moss. Nazma Akther	Secretary
NCTB	Murshid Aktar	Research Officer, life and livelihood
NCTB	Prof. Lutfur Rahman	Member Text (curriculum specialist), NCTB
NCTB	Prof. Md Farhadul Isam	Chairman
NCTB	Prof. Md. Moshuazzaman	Member Curriculum Secondary
NTRCA	ASM Zakir Hossain	Joint Secretary
NTRCA	Asst. Prof. Sarmin Sultana	Assistant Director
NTRCA	Md. Obaidur Rahman	Secretary
NTRCA	Prof. Dilshad Chowdhury	Deputy Director
SHED	Dr. Md. Amzad Hossain	Additional Secretary
SHED	Md. Belayet Hossain Talukder	Additional Secretary (Development)
SHED	Mohammad Zahurul Islam	J.S
SHED	Mollah Mizanur Rahman	J.S
SHED	Saroj Kumar Nath	J.S
BEDU	Ahmad Obaidus Sattar Bhuiya	Specialist, Exam & Evaluation
BEDU	Prof. Robiul Kabir Chowdhury	Senior Specialist, Exam & Evaluation
BEDU	Prof. Shamim Aktar	Specialist, Exam & Evaluation
BISE Dhaka	Prof. Tapan Kumar Sarker	Chairman
BISE Rajshahi	Md. Humayun Kabir	Secretary
Dhaka DEO	Md. Abdul Mazid	District Education Officer
Dhaka DEO	Md. Nur-e-Alam Siddique	Assistant Programmer
Barishal Upazila Seconadry Education Office	Bithika Sarker	Upazila Secondary Education Officer
Barishal Upazila Seconadry Education Office	Suchitra Biswas	Upazila Academic Supervisor
Upazila Secondary Education Office (USEO), Narsingdi Sadar, Narsingdi district, Dhaka Division	Md. Abdul Kalam Azad	
UDC Joykrishnapur	Dipankar Debnath	Entrepreneur
UDC Raipur	Mr. Abdul Mannan Rana	Entrepreneur
UDC Shibalaya	Syed Enayet Karim	Entrepreneur
UITRCE, Nawabgonj, Dhaka	Syed Rashidul Imam	Asst. Programmar
UITRCE, Raipura, Narshingdi	Saifa Khanom Liza	Asst. Programmar
UITRCE, Savar, Dhaka	HM Omar Faruque	Asst. Programmar
HSTTI Barishal	A T M Mozibul Haque	Deputy Director
HSTTI Barishal	Chitta Halder	Assistant Progammer
HSTTI Barishal	Md. Mahabub Ali	Assist. Professor
HSTTI Barishal	Dr. Md. Forkan Miah	Associate Professor
HSTTI Barishal	Ali Nur Mahmud	Associate Professor
HSTTI Barishal	Md. Joynul abedin	Administrative Office
HSTTI Barishal	Professor Sushil Baran Howladar	Director (Incharge)/Addl. Director
HSTTI Cumilla	Mohammad Abul Kalam Nuruddin	Deputy Director
HSTTI Cumilla	Prof. Dr. Md. Mehadi Hasan	Additional Director
HSTTI Cumilla	Prof. Rehana Yasmin	Director

Organization	Name	Position
HSTTI Cumilla	Associate Prof. Md. Kamrozzaman	Deputy Director
HSTTI Khulna	Muhammad Ali	Assistant Director
HSTTI Mymensingh	Prof. Md. Kabir-Ul Hasan	Director
HSTTI Rajshahi	Md. Wali Ullah Bhuiyan	Assistant Programmer
HSTTI Rajshahi	Mst. Nasima Khatoon	Associate Professor
Adarsho Teachers Training College, Rajshahi	Bahatul Abka	Principal
Adarsho Teachers Training College, Rajshahi	Md. Mohiuddin	Asst. Professor
Barishal TTC	Md. Abdur Rahman	Associate Professor (Science)
Barishal TTC	Md. Aftab Uddin Mia	Principal
Barishal TTC	Mohammad Abdul Karim Khan	Assistant Professor
Barishal TTC	Rizwanul Haque	Assistant Professor
Barishal TTC	Suman Kumar Biswas	Assistant Professor
Dhaka TTC	Abdallah Abu Tarek	Associate Professor
Dhaka TTC	Dr. Ranjit Podder	Associate Prof. of English
Dhaka TTC	Joydip Dey	Assistant Professor
Dhaka TTC	Malay Kumar Saha	Lecturer
Dhaka TTC	Mirza Mohammad Didarul Anam	Assistant Professor
Dhaka TTC	Nafisa Begum	Lecturer
Dhaka TTC	Prof. Md. Gulam Faruque	Principal
Dhaka TTC	Sheikh Shahbaz Riad	Associate Professor
Dhaka TTC	Tohmina Sahmir	Associate Professor
Khulna TTC	Md. Anisur Rahman	Associate Professor
TTC Cumilla	Abdul Alek	Assistant Professor
TTC Cumilla	Prof. Rezia Sultana	Principal
TTC Cumilla	Quazi Mahabub Hasan	Associate Professor
TTC Mymensingh	Prof. Dr. Md. Zainal Abedin Khan	Principal
TTC Rajshahi	Md. Alamgir Hossain	Associate Professor, Accounting
TTC Rajshahi	Md. Aftab Uddin Mia	Principal
TTC Rajshahi	Md. Monirul Islam	Assistant Professor, Education
TTC Rajshahi	Md. Shahin Molla	Assistant Professor
TTC Rajshahi	Montosh Kumar Mondol	Lecturer
Archobship T A Ganguly TTC	Afrina Rahman	Lecturer
Archobship T A Ganguly TTC	Molli Gertrude Costa, csc	Principal
Archobship T A Ganguly TTC	Sumon Podder	Lecturer
Bangladesh Open University	Dr. Mizan Rahman	Open School
Bangladesh Open University	Md. Masum Billah	ICT Head
Bangladesh Open University	Prof. Sabina Yeasmin (PhD)	Dean, Open School,
Bangladesh Open University	Prof. Sufia Begum	Dean, School of Education
Bangladesh Open University	Sharif Md. Shahabuddin	Joint Director (Media), Media Division
Dhaka Polytechnic Institute	Md. Siddiqur Rahman	Chief Instructor, Mechanical Technology
Dhaka Polytechnic Institute	Nargis Sultana	Workshop Super, Electrical Technology
Dhaka Polytechnic Institute	Nurul Absar Chowdhury	Chief Instructor, Electronics Technology
Dhaka University	Dr. Mahabub Alam Bhuiyan	Associate Professor, Department of Physics

Organization	Name	Position
Dhaka University	Dr. Mainul Hossain	Assistant Professor, Department of Electrical and Electronic Engineering
Dhaka University	Dr. Md Mehedi Hasan	Lecturer, Department of Robotics and Mechatronics Engineering
Dhaka University	Dr. Md. Ahsan Habib	Associate Professor, Department of Electrical and Electronic Engineering
IER, Dhaka University	Dr. Md. Abdus Salam	Prof, IER, DU
IER, Dhaka University	Dr. Md. Serajul Islam	Prof, IER, DU
IER, Dhaka University	Professor Dr. Abdul Halim	Director, IER, DU
IER, Dhaka University		
National University	Badruzzaman	Controller of Examinations
National University	Engr. Suman Chackrabartty	Director (Planning & Development)
National University	Jayanta Bhattacharjee	Director (Additional Charge)
National University	Md. Nazrul Islam	Deputy-Registrar
National University	Molla Mahfuz Al-Hossain	Registrar
National University	Prof. Abdus Salam Howlader	Treasurer
National University	Prof. Dr. Md. Mashiur Rahman	Vice Chancellor
National University	Prof. Dr. Nizamuddin Ahmed	Pro Vice Chancellor
National University	Prof. Md. Moniruzzaman Shahin	"Director (Additional Responsibility),
Bongabondhu Muktijhuddo Bangladesh Research Institute"		
National University	Prof. Mohammed Bin Kashem	Dean, (In-Charge), Center for Post Graduate Studies, Training and Research
North South University	Dr. Mamun Molla	Professor, Department of Mathematics and Physics
North South University	Dr. Mohammad Sahadet Hossain	Professor and Chairman, Department of Mathematics and Physics
North South University	Dr. Rajesh Palit	Professor & Chair, Department of Electrical and Computer Engineering
Ahmed Bawany Academy School & College	Md. Mosharof Hossain Munshi Mukul	Head Teacher
Ahmed Bawany Academy School & College	Md. Mostafezur Rahman	Teacher (Science)
Ahmed Bawany Academy School & College	Md. Mostafijur Rahman Sumon	Teacher (Math)
Azimpur Govt. Girls' School and College	Gautam Pal	Assistant Teacher
Azimpur Govt. Girls' School and College	Kauser Hossain	ICT Teacher (Temporary)
Azimpur Govt. Girls' School and College	Md. Abtabuzzaman Sarker	Assistant Teacher
Azimpur Govt. Girls' School and College	Md. Golam Kabir	Assistant Teacher
Azimpur Govt. Girls' School and College	Prof. Geetanjali Barua	Principal

Organization	Name	Position
Azimpur Govt. Girls' School and College	Yeasmin Akhtar	Teacher (Science)
Barishal Govt. Model School & College (Pub)	Dr. Md. Ehtesham Ul Hoque	Principal
Barishal Govt. Model School & College (Pub)	Himan Chandra Datta	Teacher (Science)
Barishal Govt. Model School & College (Pub)	K.M. Maharuj Islam Trishan	Teacher (Math)
Barishal Govt. Model School & College (Pub)	Masud Karim	Senior Lecturer
Barishal Govt. Model School & College (Pub)	Md. Bayazidur Rahman	Teacher (Math)
Barishal Govt. Model School & College (Pub)	Md. Moniruzzaman	Accountant
Barishal Govt. Model School & College (Pub)	Md. Serajul Islam	Lecturer
Barishal Govt. Zillah School	Khandaker Fazle Gofran	Assistant Head Teacher
Barishal Govt. Zillah School	Md. Humayun Kabir	Teacher (Math)
Barishal Govt. Zillah School	Md. Zakir Hossen Khan	Teacher (Science)
Barishal Govt. Zillah School	Mr. Dulal Chandra Banik	G9 Physics
Barishal Govt. Zillah School	Mr. Muhammad Nurul Islam	Head Teacher
Baya School and College	Md. Afsar Ali	Principal
Baya School and College	Md. Anowarul Islam	Lecturer, ICT
Baya School and College	Mosharraf Hossain	Assistant Headmaster
Baya School and College	Samrat	Lecturer, English
Birshrestha Noor Mohammad Public College	Dr. Md. Mizanur Rahaman	Principal
Birshrestha Noor Mohammad Public College	Md. Kamrul Hassan	Teacher
Birshrestha Noor Mohammad Public College	Mr. Khan Sirajul Munim	Teacher
Gouranadi Girls School & College	Mir Abdul Ahsan	Principle
Gouranadi Girls School & College	Mr. Habibur Rahman	G9 Higher Math
Gouranadi Girls School & College	Mr. Tapan Datta	G6 Math
Gouranadi Girls School & College (Pri)	Azmir Nahar	Assistant Teacher
Gouranadi Girls School & College (Pri)	Md. Arafat Rahman Palash	Lecturer
Gouranadi Girls School & College (Pri)	Mir Abdul Ahsan	Principal
Gouranadi Girls School & College (Pri)	Ratna Hena	Lecturer
Govt. Mohammadpur Model School & College	Lt Col Kamal Akbar, afwc, psc, Inf	Principal
I.E.S. Uchcha Madyamic Bidyalaya(Pri) 2	Mr. Monzurul Haque	Principle
Kalachandpur High School and College	Md. Abdul Hakim	Teacher (Science)
Kalachandpur High School and College	Md. Razibul Hasan	Teacher (Math)

Organization	Name	Position
Kalachandpur High School and College	Md.Faizul Islam Bhuiyan	Teacher (Math)
Kalachandpur High School and College	Professor Dr. Md. Arifur Rahman	Head Master
Karnakati Gause Rahamania High School & College	Mr. Afzal Hossain	Teacher
Karnakati Gause Rahamania High School & College	Mr. Hossain Md Irshad	Principle
Karnakati Gause Rahamania High School & College	Mr. Karthik Baishnab	Teacher
Rajshahi Education Board Model School & College	Abdul Wadud	Lecturer
Rajshahi Education Board Model School & College	Ajit Kumar Sarkar	Lecturer, Statistics & ICT
Rajshahi Education Board Model School & College	Meher Sardar	Lecturer (Acting Principal)
Shahid Nader Ali Girls School and College	Md. Abdul Momin	Lecturer, ICT
Shahid Nader Ali Girls School and College	Md. Jahangir Alom	Assistant Teacher, ICT
Talukdarhat School & College (Barishal)	Bijoy Krishna Ghosh	Teacher (Science)
Talukdarhat School & College (Barishal)	Md. Anwar Hossain	Teacher (Math)
Talukdarhat School & College (Barishal)	Md. Hanif Mollik	Principal
Udayan Uchcha Madhyamik Bidyalaya(Pri) 1	Ms. Jahura Gegum	Principle
West End High School	Jannatul Ferdos	Assistant Head Teacher (Morning)
West End High School	Md. Humayun Kabir	Headmaster (in charge)
West End High School	Md. Julfiker Ali	Teacher (Math)
West End High School	Md. Monir Hossain	Assistant Teacher (in charge)
West End High School	Md. Nahm Uddin	Senior Teacher
West End High School	Nasrin Yesmin	Teacher (Science)
A.Rahman Scientific Co	Md. Sofeullah Sayed	Proprietor
Al-Noor Scientific Co	Md. Saiful Alom Shohag	Proprietor
Lab Asia Scientific Co	SM Oliullah Ahid	Managing Director
Smart Technology (BD) Ltd.	Mafujur Rahman Patwary	Director
Computer Equipment Supplier	Mr. Mahfuzur Rahman	Director, Smart Tech
Khan & Sons (Bangladesh) Ltd.	Engr. Taslim Uddin Mahamood	Executive Director
Khan & Sons (Bangladesh) Ltd.	Md. Mujibur Rahman Khan	Managing Director
Pearl Construction Ltd.	Md. Maqbul Hussain	Managing Director
10 Minutes School	Abdullah Abyad Raied	CTO
10 Minutes School	Avipsu Arko	Lead Content (Non-Academic)
10 Minutes School	Shazzad Hossain Mukit	General Manager Research & Analytics
Brain Station 23	Ahnaz	Moodle Developer Lead
Brain Station 23	Risul Kabir	CEO
Brain Station 23	Touhidul Islam	L&D manager
Riseup Lab	Arafat Shovon	Sr. Executive, Department Manager
Riseup Lab	Ershadul Hoque	Founder & CEO

Organization	Name	Position
Riseup Lab	KH. Md. Hamim Zakaria	Sr. Business Department Manager
Riseup Lab	Lutfullahil Mahdee	Business Department Manager
Riseup Lab	Naim Uddin Rahat	Business Department Manager
Shikho	Ishman Ahmed Chowdhury	Chief of Staff
Shikho	Saeif Ahmed Pulok	Deputy Manager, Production
Shikho	Taief Shahad	Product Manager
Asian Development Bank	Asako Maruyama	Senior Education Specialist
UNESCO	Huhua Fan	Chief of Education
UNESCO	Mahfuza Rahman	Program Officer for Education
UNFPA	Dr. ILIZA Azyei	Unit Chief, Adolescents and Youth
UNFPA	Dr. Muhammad Munir Hussain	National Program Officer, Adolescent & Youth
Unicef	Iqbal Hussain	Education Manager
USAID	Dipti Das	Education Program Coordinator
World Bank	Golam Faruque Khan	
World Bank	Mehedi Mashrur Khan Soikat	
World Bank	T.M. Asaduzzaman	Senior Education Specialist
JICA	Ms. Yukiko OKUGAWA	Educational Advisor

Attachment 2

Simulation of the Cost and Number of Days required for INSET in Science and Mathematics

Attachment 2: Simulation of the Cost and Number of Days required for INSET in Science and Mathematics

	NAEM	TTC	HSTTI	Remarks
(1) Target number of trainees	2,236	40,792	7,568	From Table 9-21
(2) Number of trainees per trainer	40	40	40	From interview
(3) Number of training courses to be conducted	56	1,020	189	(1) divided by (2)
(4) Total hours of training courses to be conducted	2,240	40,800	7,560	(3) x 40 hours
(5) Unit price of honorarium for trainer (BDT per hour)	3,000	1,333	1,600	From interview (NAEM: 6,000BDT for 2 hours, TTC: 2,000BDT for 1.5 hours, HSTTI: 2000BDT for 75 minutes)
(6) Total price of honorarium for trainer (BDT)	6,720,000	54,386,400	12,096,000	(4) x (5)
(7) Unit price of daily allowance and food for trainee (BDT per day)	1,100	1,700	350	From interview
(8) Total price of daily allowance and food for trainee (BDT)	17,217,200	485,424,800	18,541,600	(1) x (7) x 7 days
(9) Unit price of accommodation for trainee (BDT per night)	300	200	30	From interview
(10) Total price of accommodation for trainee (BDT per night)	4,024,800	48,950,400	1,362,240	(1) x (9) x 6 nights
(11) Unit price of transportation for trainee (BDT round trip from home to training venue)	2,000	2,000	2,000	From interview (the price differs depending on the distance between trainee's home and the training venue)
(12) Total price of transportation for trainee (BDT)	4,472,000	81,584,000	15,136,000	(1) x (11)
Total training costs for each training institute (BDT)	32,434,000	670,345,600	47,135,840	(6) + (8) + (10) + (12)
Total training costs (BDT)			749,915,440	
(13) Number of training courses per institute that can be offered simultaneously at each training institute	4	3	2	From interview (The number of courses that can be implemented by each institute is estimated based on the number of trainers, number of available classrooms, and extra capacity of the hostel if INSET is added to the regular educational activities of each institute. Number of participants per course is assumed to be 40).
(14) Number of institutes in the country for each training institute (For TTC, only government TTC is included)	1	14	5	NAEM: 1, Govt. TTC: 14, HSTTI: 5
(15) Number of training courses that can be offered simultaneously at each training institute	4	42	10	(13) x (14)
(16) Number of training cycles to be conducted at each training institute	14	24	19	(3) divided by (15)
Number of days required to conduct training	98	168	133	(16) x 7 days

Attachment 3

DLI MATRIX of SEDP

DLI	Disbursement Linked Results				
	Year 1	Year 2	Year 3	Year 4	Year 5
1. Effective and relevant curriculum is in place	DLR 1.1 MOE has approved NCPF for grades from pre-primary to 12 th grade	DLR 1.2 NCTB has been strengthened with: (i) 80% of staffing positions filled with appropriate qualifications and specialization, (ii) NCTB organogram approved, and (iii) implementation plan with the revised NCTB structure approved.	DLR 1.3 National Curriculum Coordination Committee (“NCCC”) of MOE has approved the revised national curriculum for grades 6-12 developed based on the NCPF	DLR 1.4 E-learning and digital universal content of curriculum available at all Institutions	
2. Assessment and examination system reforms implemented to improve teaching learning		DLR 2.1 At least 20% of Institutions carry out Institution-based diagnostic assessments of students entering Grade 6 to gauge their readiness for secondary education	DLR 2.2 DSHE causes the NASS 2019 to be carried out on nationally representative sample in grades 8 and 10 (English, Math, Bangla) and publishes the findings		DLR 2.3 DSHE causes the NASS 2021 and standardized exams results to be analyzed, disseminated and feedback into system improvement DLR 2.4 All examination boards implement standardized SSC and HSC examinations
3. Improved teaching-learning in Bangla, English, Mathematics and Science		DLR 3.1 DSHE causes deployment of additional qualified and trained subject-teachers in English, Math and Science in 4,000 targeted Institutions	DLR 3.2 Practical Science teaching implemented in 15,000 Institutions	DLR 3.3 Average reading proficiency score among Grade 10 students has improved by at least 10% over the score in NASS 2017	DLR 3.4 Learning levels of Grade 10 students in English and Mathematics has improved by at least 5% over the levels in NASS 2017 DLR 3.5 At least 20% of secondary Institutions practice practical science teaching

DLI	Disbursement Linked Results				
	Year 1	Year 2	Year 3	Year 4	Year 5
4. Improved teacher management and accountability		<p>DLR 4.1 Incentive scheme for teachers in geographically disadvantaged areas implemented in at least 10,000 Institutions</p> <p>DLR 4.2 At least 1,500 Institutions have piloted the teachers time-spent-teaching (TST) monitoring system</p>	DLR 4.3 MOE has approved the MPO rationalization plan and updated the MPO implementation guidelines	DLR 4.4 50% of Institutions have TST monitoring system in place	DLR 4.5 Teacher (re) deployment payment fully compliant with MPO rationalization plan and updated guidelines
5. Improved school management and accountability		DLR 5.1 Performance-Based Grants for Institutions meeting minimum accountability requirements and achieving performance indicators released to at least 5,000 Institutions		DLR 5.2 Performance-Based Grants for Institutions meeting minimum accountability requirements and achieving performance indicators released to at least 7,500 Institutions	
6. Improved grade retention and cycle completion	<p>DLR 6.1 MOE has approved the Adolescent Girls' Program (AGP) (that includes among others separate girls toilets, counseling/awareness) including action plan</p> <p>DLR 6.2 MOE has approved the harmonized stipend program</p>	DLR 6.3 Nation-wide roll-out of implementation of harmonized stipends program for grades 6-12	DLR 6.4 AGP implemented in all Institutions in two selected Divisions	DLR 6.5 Grade 10 retention rate (of those started grade 6) of AGP beneficiaries reaches 68 percent	DLR 6.6 Grade 10 retention rate (of those started grade 6) of stipends beneficiaries reaches 70 percent
7. Institutional Capacity Strengthened	DLR 7.1 MOE's secondary education budget FY18/19 allocation is consistent with SEDP program expenditure framework	DLR 7.2 MOF and MOE release the fund for FY 18/19 inclusive of advance by the beginning of each quarter based on the AOP allocation	DLR 7.3 The percentage of standalone projects has reduced by 30% in relation to the existing ones in June 30, 2017.	DLR 7.4 MOF and MOE release the fund for FY 20/21 inclusive of advance by the beginning of each quarter based on the AOP allocation	

DLI	Disbursement Linked Results				
	Year 1	Year 2	Year 3	Year 4	Year 5
8. Enhanced fiduciary management and data systems	<p>DLR 8.1 Enhanced fiduciary system is in place, (including qualified and adequate FM & Procurement staff at P&F wing and at least 60% of goods & works packages included in the Annual Procurement Plan processed through e-GP portal)</p> <p>DLR 8.2 Enhanced EMIS system, including School Grant Management System (GMS), MPO management and M&E reporting, established</p>	<p>DLR 8.3 Agreed actions by MOE and DPs (e.g. regularization of P&F Wing in DSHE) included in the updated PFM action plan based on the recommendations of previous year periodic fiduciary review are implemented</p>	<p>DLR 8.4 Agreed actions by MOE and DPs (e.g. Roll-out of IBAS++ nationally to all DDOs & 100% non-ICB contracts initiated and completed through e-GP) included in the updated PFM action plan implemented</p>	<p>DLR 8.5 Enhanced EMIS system including School grant management system (GMS), MPO management and M&E reporting is fully operational</p>	

Attachment 4

Inception Report Briefing Slides

Data Collection Survey on Secondary Education Sector

-Inception Report Briefing-

21 August 2022

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

PADECO Co., Ltd.
IC Net Limited
INTEM Consulting, Inc.

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Our Team

• 3 companies JV

- PADECO Co., Ltd.:
 - ▣ Contributing to the Primary Education TA Project since 2004
- IC Net Limited
 - ▣ Contributing to the Technical Education TA Project since 2019
- INTEM Consulting, Inc.
 - ▣ Contributing to the Grant Aid Project for Technical Education since 2020

Name	Responsibility	Firms
NAGUMO Tatsuya (Mr.)	Team Leader	PADECO
MORI Yusuke (Mr.)	Deputy Team Leader/ Teacher Training	IC NET
OHARA Kenji (Mr.)	Science and Math Education	PADECO
MUTO Koeri (Ms.)	ICT utilization and distance education1	INTEM
KATO Ippei (Mr.)	ICT utilization and distance education2	INTEM
Anjan Das (Mr.)	ICT utilization and distance education3	IC NET
SHIGA Wataru (Mr.)	Teacher Training Facilities	INTEM
AKASAKI (OHASHI) Yuki (Ms.)	Achievement and assessment 1	PADECO
Tanaka Kaori (Ms.)	Achievement and assessment 2	PADECO

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Self-introduction



- Name: Tatsuya NAGUMO (Meng, PMP)
- Personal Profile:
 - ▣ has been an educational consultant for 18 years.
 - ▣ strong in Asia to the African region.
 - ▣ encompasses all subsectors (from ECE to university, including TVET /CBT).
- Experience in Bangladesh
 - ▣ 2004-2005: TA project for primary education subsector.
 - ▣ 2016: JICA survey “Survey for Education Sector” (deputy TL).

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Self-introduction



- Name: Yusuke MORI (MEng)
- Personal Profile:
 - ▣ experiences as an engineer, NGO’s director, associate professor at Japanese university, and international development consultant (present).
 - ▣ strong in Bangladesh, Middle East, and African region.
 - ▣ work closely with DTE for JICA’s project for technical education improvement.
- Experience in Bangladesh
 - ▣ 2019-2022 (ongoing): JICA “Project for Improvement of Technical Education for Industrial Human Resources Development”
 - ▣ 2020-2022: JICA “Preparatory Survey for the Project for Modernization of Polytechnic Institutes”

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1.1 Background of the Survey

- JICA's cooperation in the education sector
 - Primary education since 2004(greatly improved).
 - technical education since 2019 (and found that the basic academic skills of students at polytechnic institutes are not enough).
- Necessary to raise the basic academic skills in secondary education(general course), so as to improve the current situation of polytechnic institute and provide seamless support from primary education through technical education.
- JICA has not provided support for secondary education subsector.
- With a view to JICA supporting secondary education (general course) in the future, it is necessary to
 - know the current status, challenges and support needs.
 - analyze information of DPs which will help optimize Japanese assistance methods.

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1.2 Purpose of the Survey

- This survey will confirm and analyze
 - ✓ the current situation and issues,
 - ✓ trends in other DPs, and
 - ✓ the support needs of the Government of Bangladesh
- in the secondary education subsector
- in order to consider the future direction of JICA's cooperation in the secondary education subsector (general education courses) and specific candidate projects.

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1.3 Target areas, counterparts, and scope of work

1. Target Areas: All of Bangladesh

2. Counterparts

• The key stakeholders of this survey are as follows

- i. Policy Agency: Secondary and Higher Education Division (SHED)
- ii. Implementing agency: Directorate of Secondary and Higher Education (DSHE)

*The DSHE is assumed to be the party with whom the JICA survey team will hold practical discussions on cooperation policies and new cooperation candidates.

3. Scope of Works: targets mainly secondary education (general courses)

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1.4 Implementation Policies

1. Refer to JICA survey “Survey for Education Sector (2017)”

2. Analysis of support provided by other DPs: not only analysis of SEDPs, but also outside of SEDPs

3. Ensure coordination and consistency with JICA's existing related projects.

4. ICT-related surveys will examine the potential for Digitalization.

There is a model that divides the path toward DX into three stages.

- ▣ The 1st stage (digitization): the conversion of analog information into data (e.g., textbooks into PDF).
- ▣ The 2nd stage (digitalization) : the ICTization of work (e.g., digital submission of assignments in online classes), assuming that the first stage has already been completed.
- ▣ The 3rd stage (digital transformation): involves value creation and restructuring that significantly transforms existing operations (e.g., education regardless of location and age).

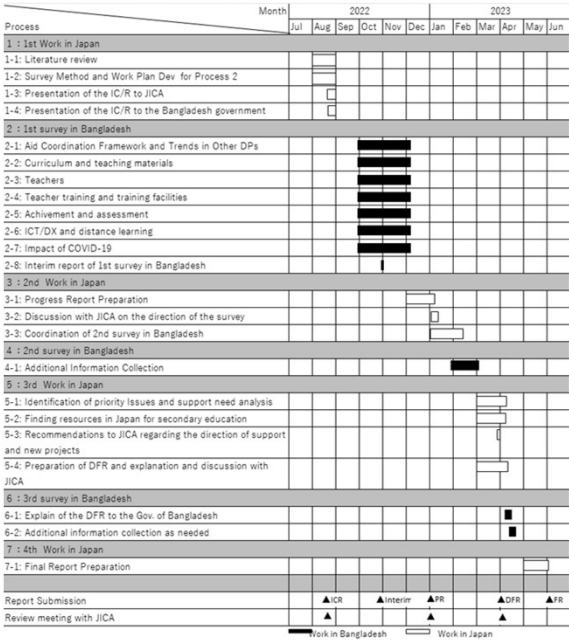
5. Effective use of local resources

6. Make communication effectively

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2. Survey Content and Methodology

Process	Schedule	Bangladesh/ Japan
Process1	Jul – Sep 2022	1st Work in Japan
Process2	Sep – Nov 2022	1st survey in Bangladesh
Process3	Dec 2022 – Jan 2023	2nd Work in Japan
Process4	Jan -Feb 2023	2nd survey in Bangladesh
Process5	Feb – Apr 2023	3rd Work in Japan
Process6	Apr 2023	3rd survey in Bangladesh
Process7	Apr – May 2023	4th Work in Japan



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Process 1: 1st Work in Japan

1. Literature review
2. Survey Method and Work Plan Dev for Process 2
3. Development and Presentation of the IC/R to JICA and DSHE

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Process 2: 1st survey in Bangladesh (Oct 2022)

1. Aid Coordination Framework and Trends in Other DPs
2. Analysis of the current status, challenges, and future plans for the secondary education subsector
 - ✓Curriculum and teaching materials
 - ✓Teachers
 - ✓Teacher training and training facilities
 - ✓Achievement and assessment
 - ✓ICT/DX and distance learning
3. Impact of COVID-19
4. Interim report of 1st survey in Bangladesh to JICA

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Lesson observations to measure teachers' teaching skills

- The survey team will conduct lesson observations to measure teachers' teaching skills and analyze their support needs.
- Lesson observation will be conducted using the lesson observation sheet (LOS) for school-based INSET (see figure below), which was developed using Rubric under the JICA Project in Ghana.
- The survey team will supervise the local consultants, and the local consultants will conduct the observations using the LOS.

GES Nationwide INSET Programme - SBI/CBI Lesson Observation Sheet					
Date:	Time:	School:	Activity Type:	<input type="checkbox"/> Demonstration Lesson <input type="checkbox"/> Peer Teaching <input type="checkbox"/> TLM Preparation & Usage	
Observer:	Class:	Topic/Sub-Topic:			
Demonstrator:	Subject:	Objective:			
<p>Instruction: This Lesson Observation Sheet is designed to help teachers identify ways to improve their teaching skills through assessment of 15 items.</p> <p>- Each observation item has performance indicators arranged from the lowest to the highest level.</p> <p>- Always start from the statement in "(1) Poor" for each item. If the lesson meets the statement, move to the statement of the next level, and keep going.</p> <p>- If the lesson does not meet the statement of a certain level, for example "(4) Good", the level of lesson is assessed as "(3) Satisfactory".</p> <p>- For each observation item, tick (✓) the box with the performance indicator which appropriately describes the teacher's level of performance.</p> <p>- The one using this sheet is expected to advise the demonstrator / teacher on how he / she can step up to the next level in post-delivery session.</p>					
Observation Items	(1) Poor	(2) Needs Improvement	(3) Satisfactory	(4) Good	(5) Excellent
I. Instruction Planning Skills (Assessment of Lesson Plan)					
1. Objectives	Teacher states objectives which are irrelevant to topics / sub-topics.	Teacher states objectives which are relevant to topics / sub-topics, but in general and abstract terms	Teacher states clear and appropriate SMART objectives, but not related to evaluations which are stated in lesson plan	Teacher states clear and appropriate SMART objectives which are closely related to evaluations stated in lesson plan and (LTA/TLA)	Teacher states clear and SMART objectives which include at least 2 specific dimensions in the syllabus, (knowledge, understanding, application, process skills and LTA/TLA)
2. Core points	Teacher states core points which are irrelevant to topics / sub-topics.	Teacher states core points which are relevant to topics / sub-topics, but not related to main skills and/or concepts to be learnt	Teacher states core points which are related to main skills and concepts to be learnt	Teacher states core points which are closely related to lesson objectives.	Teacher states core points which clarify main skills / concepts related to pupils' readiness / daily life.
3. Teacher Learner Activities (TLA)	Teacher provides activities that are not related to core points / objectives.	Teacher provides activities that are related to core points / objectives, but these are not helpful for pupils to understand new concepts.	Teacher provides activities which are relevant to core points / objectives and help pupils to understand new concepts.	Teacher provides activities that encourage pupils to reflect their readiness, existing knowledge and concepts.	Teacher provides activities that encourage pupils to apply new knowledge / concepts for their daily life.
4. Use of Teaching Learning Materials (TLM)	Teacher does not state TLMs.	Teacher states TLMs, but not relevant to lesson objectives.	Teacher states TLMs which are relevant to lesson objectives.	Teacher states TLMs which are included in suitable development stages of lesson.	Teacher states appropriate TLMs which are related to previous lesson / topic / stage and pupils' readiness.
II. Teaching Methodology and Delivery					
5. Use of Language	Teacher does not use language appropriate to the level of averaged pupils, but not in clear and audible voice.	Teacher uses language appropriate to the level of averaged pupils, but not in clear and audible voice.	Teacher uses language appropriate to the level of averaged pupils clearly and audibly.	Teacher uses suitable level of language for different levels of pupils.	Teacher selects and/or adjusts appropriate level of language in accordance with the understandings of each pupil.
6. Use of Generic Skills	Teacher does not make use of generic skills.	Teacher makes use of generic skills that are not related to pupils' learning activities and lesson objectives.	Teacher makes use of generic skills related to pupils' learning activities and lesson objectives.	Teacher puts pupils' knowledge of generic skills into practice appropriately.	Teacher encourages pupils to acquire the generic skills, and pupils can solve problems with generic skills by themselves.

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Process 3: 2nd Work in Japan

- Progress Report Preparation
- Discussion with JICA on the direction of the Process 4(2nd survey in Bangladesh) and its preparation

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Process 4: 2nd survey in Bangladesh (Jan-Feb 2023)

- Additional Information Collection

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Process 5: 3rd Work in Japan

- Identification of priority Issues and support need analysis
- Finding resources in Japan for secondary education
- Recommendations to JICA regarding the direction of support and new projects
- Preparation of DFR and explanation and discussion with JICA

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Process 6: 3rd survey in Bangladesh (Apr 2023)

- Explain of the DFR to the Gov. of Bangladesh
- Additional information collection as needed

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Process 7: 4th Work in Japan

- Final Report Preparation

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Deliverable

No.	Deliverable	Expected submission date
1	Inception Report (IC/R)	August 2022
2	Interim Report Materials	November 2022
3	Progress Report (PR)	December 2022
4	Draft Final Report (DFR)	March 2023
5	Final Report (F/R) (+Digital image collection)	May 2023

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Appendix: Items to be confirmed, discussed, or requested at the time of IC/R explanation

- (1) Identification of Cooperation Needs
- (2) Progress of SEDP
- (3) Request for Materials
- (4) Selection of Schools for Site Visit
- (5) Request for Selection of Contact Person
- (6) Major DPs

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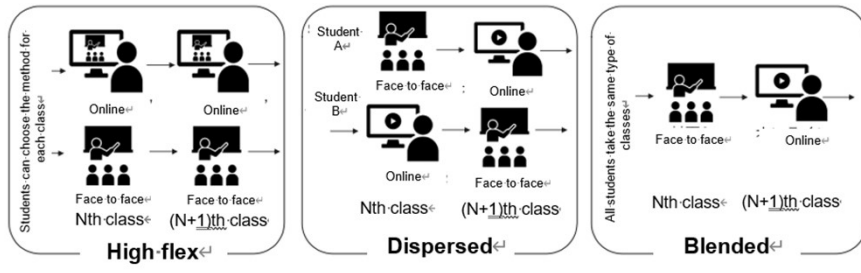
(1) Identification of Cooperation Needs

- JICA has received requests for the table below.
- The JICA survey team needs to review these requests.

Need	Points that need to be confirmed
1. Improvement of teacher training	PRESET or INSET? Is the target the entire training or just a portion of the training, e.g. structure, materials, etc.?
2. Establishment of new teacher training facilities	The survey team understands that a significant number of facility improvements were planned to be made by the SEDP. Was there a shortfall? If insufficient, why?
3. Combined face-to-face teaching and distance learning (blended learning)	Is the target group secondary schools or teacher training college? What are the reasons for selecting the blended type among the three types of combined face-to-face and distance learning? Is it correct to consider the blended type as a flipped classroom?
4. Improvement of student achievement assessment	The survey team understands that JSC, SSC, and HSC are subject to improvement under the SEDP. On the other hand, we have been informed by local sources in Bangladesh that JSC and SSC are likely to be discontinued in the future. Therefore, it is necessary to confirm which assessments are targeted.

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- Detail of the third point:
- ✓ The blended type:
 - ❑ Teachers choose whether to teach face-to-face or online depending on the content of the class,
 - ❑ but face-to-face classes are not effective as a countermeasure against COVID-19 because all students gather in the same classroom)
- ✓ high-flex and dispersed types are preferable for countermeasures against COVID-19.
- The blended model cannot be used as a countermeasure to the insufficient classrooms.
- So, the survey team believes that this refers to flipped classroom teaching at TTC.
- The survey team also infers at this point that the purpose of the program is to improve the level of teachers by implementing it in TTC, as it is still considered difficult to implement the program in general secondary schools.



Source: TAGUCHI Mana (2020) "What are the hybrid classes?"

Figure 1 Three Type of Hybrid Type Teaching

(2) Progress of SEDP

- Request to provide SEDP midterm review and other documents showing progress

(3) Request for Materials

A) **Secondary Schools**

- i. Documents related to establishment criteria and certification of secondary schools, etc.
 - Secondary School Quality Standards (SSQS)
 - MPO guidelines, MPO implementation guidelines etc
 - School Grant guidelines
 - School Management Committee (SMC) and Madrasah Management Committee (MMC) policy
 - Instructor / Trainer policy & guidelines developed for Centers of Excellence
 - national auditing standards
 - Continuous Assessment (CA) policy (2006)
- ii. Documentation on monitoring and evaluation systems for secondary schools

B) **ICT**

- ICT-related documents related to secondary education
 - National ICT Master Plan policy

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(3) Request for Materials

C) **Curriculum, Textbooks & Materials**

- i. Documents related to curriculum, teaching materials, etc.
 - National Curriculum Policy Framework (NCPF)
 - NCTB Act 2018

D) **Related to Practice Plan**

- Practical Science Teaching program
- (hands-on) Pre-vocational program
- ICT for Pedagogy program

E) **Students Assessment**

- The latest edition of the NASS
- Laws, policies, systems, and guidelines pertaining to the testing mechanism

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(3) Request for Materials

f) Facilities and Equipment

- i. Facility siting standards and guidelines, standard design/master plan (building, equipment, furniture).
 - National Education Institution Construction Policy Guidelines (NEICPG)
 - the Guidelines for Minimum Construction Standards
 - a data-driven National Infrastructure Development Plan
- Properties Management Information System
- Various regulations related to environmental and social considerations
- List of standard equipment (equipment for experiments and practical lesson by subject, ICT equipment, etc.)
- Procurement
 - ✓ Procurement procedures for secondary education related facilities and equipment
 - ✓ Procedures for new construction/extension/renovation of facilities (design, bidding, contracting, construction supervision)
 - ✓ Procurement procedures for various equipment, furniture, etc. (design, bidding, contracting, procurement supervision)
 - ✓ Procurement procedures for experimental and practical training equipment, ICT equipment, etc. (design, bidding, contracting, procurement supervision)
 - ✓ Regulations on bidding qualification requirements
- Availability of legal structure of current systems and procedures for equipment repair
 - National Education Institution Construction Policy Guidelines (NEICPG)

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(4) Selection of Schools for Site Visit

- The first survey in Bangladesh (Oct 2022) is scheduled to visit teacher training colleges and secondary schools
- The survey team requests DSHE to advise on and select the institutions to be visited.
- In addition, the survey team also request the DSHE to issue a letter of notification or other information from the DSHE to the selected institutions to cooperate with the survey.

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(4) Selection of Schools for Site Visit -Secondary Schools-

Level	Purpose and Number of Schools	
	Lesson observation of science and math classes	ICT Survey
Class 6-8	4 schools (include private and public, rural and urban)	Total 3 schools 2 schools in Dhaka ➤ 1 school with electricity and internet ➤ 1 school without electricity and internet 1 school in rural area (candidate: Chittagong) ➤ 1 school with electricity and no internet
Class 9-10	4 schools (include private and public, rural and urban)	
Class 11-12	4 schools (include private and public, rural and urban)	Total 3 schools 2 schools in Dhaka ➤ 1 school with electricity and internet ➤ 1 school without electricity and internet 1 school in rural area (candidate: Chittagong) with electricity/no internet
Total	12 schools	6 schools

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(4) Selection of Schools for Site Visit -Teacher Training College-

Type	Purpose and Number of Colleges	
	Lesson observation of science and math classes	Facility and ICT Survey
Teachers Training College (TTC) / Teacher Education College (TEC)	2 colleges (1 private and 1 public college each)	3 public colleges (1 Dhaka, 1 Chittagong, 1 Girls college in Mymensingh) 3 private colleges (1 Dhaka, 1 Cox's Bazar, 1 college in Mymensingh)
Higher Secondary Teacher Training Institute (HSTTI)	2 colleges (1 private and 1 public college each)	2 colleges (Chittagong, Mymensingh)
Total	4 colleges	8 colleges

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(4) Selection of Schools for Site Visit -Teacher Training College-

Facility Survey Target

Institutions	Candidate for survey
NAEM	1 place
Institute of Education and Research (IER)	1 Dhaka University
Bangladesh Open University (BOU)	1 headquarters and 1 Regional Resource Center (Chittagong or Mymensingh)

Distance Education Survey Target

Institutions	Selection Criteria	Number for survey
Bangladesh Open University (BOU)	Electricity and Internet available (Core Schools)	1 school (headquarters)
The Union Digital Center (UDC)	Electricity and internet available (core and receiving schools)	2 centers in local

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(5) Request for Selection of Contact Person

- Request to select a contact person in each of the following areas with whom the survey team members can consult closely.
 1. Teacher training (including PRESET and INSET)
 2. Facilities and equipment
 3. Academic achievement and assessment
 4. ICT and distance learning
 5. DPs
 6. School Establishment
 7. Board of Education

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(6) Major DPs

- Request a list of key development partners for cooperation in the secondary education subsector

DPs	Major area for cooperation	Contact person

Attachment 5

**Minutes of the 1st Meeting
between the DSHE and JICA Survey Team
on the Inception Report Briefing**

The Government of the Peoples Republic of Bangladesh
Directorate of Secondary and Higher Education
Planning & Development Wing
<http://www.dshe.gov.bd/>

Memo No:

Date: 21 August 2022

Minutes of the 1st Meeting between the Directorate of Secondary and Higher Education (DSHE) and JICA Survey Team on the Inception Report Briefing

Chairperson : Prof. Dr. A Q M Shafiul Azam, Director (Planning & Development (P&D))
Date and Time : 21 August 2022, 3:00 PM – 6:00 PM
Place : Room No. 601, Fifth Floor, DSHE Building 1st Block, 16 Abdul Gani Road, Dhaka 1000
Participants : Annexure - A
Meeting Agenda: 1) Briefing Inception Report of the Survey

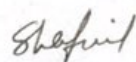
The Chair, Prof. Dr. A Q M Shafiul Azam, Director (P&D), DSHE, welcomed the participants of the Meeting on the Inception Report Briefing by the JICA Survey Team. After welcoming the participants of the Meeting, Mr. FUJII, Deputy Director of South Asia Division 4, JICA Tokyo HQ, explained the purpose of this survey: "JICA has been supporting primary education subsector for many years since 2004 and has started supporting technical education since 2019 too. Although primary education had improved significantly, it was found that the basic academic skills and specialized knowledge of students at polytechnic institutes had not reached the level required by the employer. It is considered necessary to raise the level of basic academic skills centering on science and mathematics subjects in secondary education (general education), which connects primary education and technical education. However, JICA has not yet supported secondary education, there is a need to broadly know this subsector.

The survey team then gave a presentation titled Inception Report Briefing. There was a lively discussion during the presentation, the main points of which are listed below.

1) About SEDP

The Survey team said: By analyzing both Development Partners (DPs) who are inside the Secondary Education Development Program (SEDP) and those who support from the outside, the survey team can examine JICA's support methods. Methods of support include whether to provide support from within the Sector Wide Approach (SWAp) or from the outside. Therefore, we would like to know more about SEDP.

DSHE responded as follows: SEDP will end in June 2023, but unfortunately SWAp did not work well. There may be a next phase, but it will be in a different form. The main players, the World Bank (WB) and the Asian Development Bank (ADB), are also considering other programs. The reason why SWAp did not work well was the lack of a mechanism to implement a single budget program. Pilots should have been conducted on a small scale to start something new.



The survey team asked a list of DPs outside of SWAp.

DSHE responded: UNFPA is implementing a "Generation Breakthrough" TA project aimed at skills development. More DPs have recently expressed interest in Secondary Education; USAID is interested in Higher Secondary and has just completed a study for a Situation Analysis, but has not yet decided what to support. EU, DFID, and KOICA have expressed interest in secondary education and have approached DSHE.

2) about ICT/DX

The survey team explained: DX does not happen suddenly, but proceeds in three stages. First stage (digitization) is being done in abundance in Bangladesh. Therefore, we plan to focus on the potential of second stage (digitalization).

DSHE asked if the survey team look at only second stage.

The survey team added the following: the survey team will first check the current status of first stage (digitization)¹, and if it is ready, will examine the feasibility of second stage (digitalization)², and then third stage (digital transformation)³ will be considered. In any case, which stage will be targeted will be discussed again based on the results of the field survey.

The survey team asked the DSHE to confirm the content of "blended learning" that JICA had received from the DSHE.

DSHE responded that "blended learning" in Bangladesh is the concept of using all means, including face-to-face, online, high-tech and low-tech, depending on the situation. DSHE also requested the survey team to visit Teacher Training College (TTC), National Academy for Educational Management (NAEM), and other institutions to see how training institutions can be utilized for Blended Learning.

3) About New Curriculum

DSHE stated that JICA's support for the curriculum is not necessary for the time being, as the new curriculum for secondary education will be introduced sequentially starting with new books for Grade 6 & 7 in January 2023, Grade 8 in 2024, Grade 9 & 10 in 2025, Grade 11 in 2026 and Grade 12 in 2027. National Curriculum and Textbook Board (NCTB) will disseminate the training program.

¹ The conversion of analog information into data (e.g., textbooks into PDF)

² The ICTization of work (e.g., digital submission of assignments in online classes), assuming that the first stage has already been completed.

³ Based on the assumption that the first two stages have already been completed, and involves value creation and restructuring that significantly transforms existing operations (e.g., education regardless of location and age).



4) About Teacher Training

The survey team requested DSHE to confirm the content of two requests for teacher training, which were among the four requests JICA received from DSHE. The survey team also inquired about the support provided by the SEDP to the public TTC for the construction and repair of facilities.

DSHE explained as follows: There are 5 Higher Secondary Teacher Training Institute (HSTTI) and 14 public TTCs. SEDP planned to establish 14 new HSTTIs and 5 new public TTCs. Currently, there are 64 administrative districts, but 19 districts under the former classification. The plan was to place one TTC/HSTTI in each of these 19 districts to attract students from nearby areas. Unfortunately, however, the SEDP has not been able to establish any. The way we see them is also changing. TTC is a degree-awarding institution, not a training institution. The students are also intended to obtain a degree, not all of them to become teachers. In addition, the number of students has not reached the capacity of the TTC and there are vacancies.

On the other hand, in-service teacher training (INSET) is highly needed. There is only one training institute for in-service teachers, HSTTI; there is no training institute for class 6-10 in-service teachers; NAEM provides training for secondary school headteachers, but only some are trained because there are many headteachers in the country; there is a misunderstanding that NCTB also provides training, but NCTB does not provide training. The NCTB only provides training for master trainers to disseminate the curriculum. DSHE is considering adding 9 Regional Academies to NAEM and also adding HSTTI. Alternatively, the current 14 public TTCs could be increased to 19 TTCs, which could be used as training institutions beside degree awarding institutions. Therefore, the current target is to establish 14 HSTTIs, 9 NAEM Regional Academies, and 5 new TTCs. Once this is accomplished, a minimum level of teacher training will be possible.

DSHE continued: This is not to say that support for TTC is unnecessary. We do not intend to increase the number of degree-awarding institutions, but we would welcome JICA's support if TTC could be redesigned as a teacher training institute. There are no concrete plans at this time to redesign TTCs into teacher training institutions

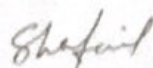
5) about improvement of student achievement assessment

The survey team requested to know more about the improvement of student achievement assessment, which is one of the requests JICA received from DSHE.

DSHE responded as follows: Junior Secondary Certificate (JSC) exam will be discontinued, but Secondary School Certificate (SSC) exam and Higher Secondary Certificate (HSC) exam will continue. Currently, students are assessed only by summative assessment, but we would like to introduce formative assessment and periodic examinations on campus.

6) Provision of materials

The survey team requested the provision of materials necessary to proceed with the survey.



DSHE responded that the ICT Master Plan for Education is being revised but a draft version can be shared. Many of the documents requested by the survey team were prepared in ADB's Secondary Education Sector Investment Program (SESIP). The necessary materials will be provided.

7) About schools to be visited for the survey

The survey team requested DSHE's advice on the selection of schools to visit for the survey. The team also informed DSHE that the four schools each of Class 6-8, Class 9-10, and Class 11-12 to be visited in the survey could be the same schools, and that the schools to be visited should be average schools, not good or bad schools.

JICA informed DSHE that JICA's priority for assistance is Cox's Bazar and that is because JICA is considering collaboration with other JICA projects such as Matarbari at Cox's Bazar district.

DSHE advised that there are schools without internet, but not without electricity. If the survey team wants to see the reality of Bangladesh as a whole, the survey team may visit either Rangpur or Khulna/Barishal because the drought area in the north and riverine coastal areas in the south are problematic areas. Private HSTTI does not exist. A survey to the TTC would be a good idea to conduct, as an actual visit to the TTC might give new ideas such as using it for in-service teacher training.

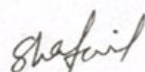
DSHE also described a private Secondary School in Bangladesh as follows: Public and private schools are the same in five respects: 1) teachers' salaries are mostly paid by the government, 2) school buildings are constructed by the government, 3) students receive free textbooks from the government, 4) students receive government scholarships, and 5) teachers receive government training. The differences are that in public schools, teachers are employed directly by the government, and in private schools, the schools pay a portion of the teachers' salaries and spend the earnings from students for their own purposes.

The survey team requested to see both private and public schools to confirm the above-mentioned differences, and DSHE agreed to this request.

8. Discussion on other items to be requested to DSHE

DSHE will consider focal persons for each survey item;

Workspace cannot be provided to the survey team, but the team may use the desk in Mr. Shafiul Alam's (AD-1 AQAU, P&D, DSHE) room no. 624 when needed.



Agreed items:


- ✓ Inception Report accepted by DSHE
- ✓ Permission to visit the required sites. The site of the survey will be selected in close consultation with the DSHE.
- ✓ Mr. Alam is confirmed as the Focal Person, and other focal members will be selected later.
- ✓ DSHE will provide the necessary documents.

Attachment:

- a) List of Participants
- b) Inception Report
- c) Inception Report Briefing.

南雲 達也

Mr. Tatsuya NAGUMO
Team Leader
JICA Survey Team



Prof. Dr. A Q M Shafiu Azam
Director
Planning & Development (P&D)
SA DSHE

Distribution (not according to the seniority):

1. Director General, DSHE, Bangladesh, Dhaka
2. Chief Representative, JICA Bangladesh, (Attention: Senior Representative)
3. Team Leader, JICA Survey Team
4. Office Copy.

Shafiu

Annex - 'A'



Government of the People's Republic of Bangladesh
Planning & Development Wing
Directorate of Secondary and Higher Education
Bangladesh, Dhaka
www.dshe.gov.bd



Attendance sheet

Meeting on Inception visit of JICA data collection survey mission on secondary education of Bangladesh.

Date : 21.08.2022
Time : 3:00 pm
Venue : Room #601, Director (Planning & Development)
Chairperson : Prof Dr. AQM Shafiul Azam, Director (P & D), DSHE

Sl.no.	Name & Designation	Organization	Mobile no. & Email	Signature
01	Dr. AQM Shafiul Azam Director, P&D	DSHE		
02	ANIQA RAISA CHY. DD (P&D)	DSHE		
03	Tatsuya NAGUMO (Team Leader)	JICA SURVEY Team		
04	Yusuke Maki (Deputy Team Leader)	JICA Survey Team		
05	Sara Watanabe Representative	JICA		
06	Chinatsu Iha Representative	JICA		
07	Alimul Hasan Program Officer	JICA		
08	Biswajit Das Secretary	JICA Survey Team		
09	Toruaki Fujii Deputy Director	JICA HQ		
10	Rukhsana Kana Research officer	DSHE		
11	S M Shafiul Alam Asst. Director P&D	DSHE		
12	Mst. Aysha Siddika Research officer	DSHE		

Note: The mobile no. and email addresses of the participants were omitted to protect personal information.

Attachment 6

Draft Final Report Briefing Slides

**DATA COLLECTION SURVEY ON SECONDARY EDUCATION SECTOR
-DRAFT FINAL REPORT BRIEFING-**



- 6 June 2023
- JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

PADECO Co., Ltd.
IC Net Limited
INTEM Consulting, Inc.

SURVEY TEAM

- A) 3 companies JV
 - PADECO Co., Ltd.:
 - IC Net Limited
 - INTEM Consulting, Inc.
- B) Local Consultant
 - BacBon Limited

Name	Responsibility	Firms
NAGUMO Tatsuya (Mr.)	Team Leader	PADECO
MORI Yusuke (Mr.)	Deputy Team Leader/Teacher Training	IC NET
OHARA Kenji (Mr.)	Science and Math Education	PADECO
MUTO Saeri (Ms.)	ICT utilization and distance education ¹	INTEM
KATO Ippei (Mr.)	ICT utilization and distance education ²	INTEM
Anjan Das (Mr.)	ICT utilization and distance education ³	IC NET
SHIGA Wataru (Mr.)	Teacher Training Facilities	INTEM
AKASAKI (OHASHI) Yuki (Ms.)	Achievement and assessment ¹	PADECO
TANAKA Kaori (Ms.)	Achievement and assessment ²	PADECO
Arif Ullah Khan (Mr.)	Senior Researcher and Education Expert	BacBon
Muhammad Aminur Rahman (Mr.)	Senior Researcher and Field Expert	BacBon

SELF-INTRODUCTION



- A) Name: Tatsuya NAGUMO (MEng, PMP)
- B) Personal Profile:
 - ✓ has been an educational consultant for 18 years.
 - ✓ strong in Asia to the African region.
 - ✓ encompasses all subsectors (from ECE to university, including TVET /CBT).
- C) Experience in Bangladesh
 - ✓ 2004-2005: TA project for primary education subsector.
 - ✓ 2016: JICA survey "Survey for Education Sector" (deputy TL).

BACKGROUND OF THE SURVEY

- A) JICA's cooperation in the education sector
 1. Primary education since 2004.
 2. Technical education (polytechnic) since 2019.
- B) The basic academic skills of polytechnic students are not sufficient; JICA considered it necessary to raise the basic academic skills in secondary education (general education courses).
- C) JICA has not provided support for secondary education subsector.
- D) With a view to JICA supporting secondary education (general education course) in the future, it is necessary to
 1. know the current status, challenges and support needs.
 2. analyze information of DPs.

FRAMEWORK OF THE SURVEY

- A) Purpose of the survey is to confirm and analyze
 - ✓the current situation and issues,
 - ✓trends in other DPs, and
 - ✓the support needs of the Government of Bangladesh
- B) Scope: General Education (G6-G12)
- C) Survey Area: Curriculum and Teaching and Learning Materials, Academic Assessment, Teachers, Teacher Training, Teacher Training Facilities, ICT/DX and Distance Education, Development Partner Support, etc.
- D) Survey Schedule: Aug 2022-June 2023

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INSTITUTIONS VISITED/INTERVIEWED –(1/2)

- | | |
|---|--|
| <ul style="list-style-type: none"> A) SHED and its Subordinate Organizations: SHED, DSHE, NCTB, BANBEIS, EED, NTRCA B) Local Administration <ul style="list-style-type: none"> 1. District Education Office x1 (Dhaka) 2. Upazila Secondary Education Office (USEO) x2 (Narsingdi Sadar, Barishal) C) BISE(Dhaka, Rajshahi) and BEDU D) Teacher Training Institutions: <ul style="list-style-type: none"> 1. NAEM 2. HSTTI x5 3. Govt. TTC x6: Dhaka, Barisal, Rajshahi, Khulna, Mymensingh, Comilla 4. Non-Govt. TTC x4: Archbishop T. A. Ganguly (Dhaka), Rajshahi, Khulna, Cox's Bazar 5. BOU 6. IER of Dhaka Univ. | <ul style="list-style-type: none"> E) A2i F) Upazila ICT Training and Resource Centre for Education (UITRCE)x2: Savar, Raipur G) Union Digital Centre (UDC) x3: Shibalaya, Joykrishnapur, Raipur H) Private ICT Company x4 (Brain Station 23 Co.,Ltd, Riseup Labs Co.,Ltd., Shikho Co.,Ltd., 10 Minute School Co.,Ltd..) I) DPs (World Bank, ADB, Unicef, Unesco, USAID, UNFPA) |
|---|--|

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INSTITUTIONS VISITED/INTERVIEWED –(2/2)

J) School and Colleges x16:

▣Dhaka:

- 1. Azimpur Govt. Girls School & College,
- 2. West End High School,
- 3. Dhaka Udayan Higher Secondary School,
- 4. Dhaka I.E.S Uchcha Madyamic Bidyalaya School & College,
- 5. Birshrestha Noor Mohammad Public College,
- 6. Ahmed Bawany Academy School & College,
- 7. Kalachandpur High School and College,
- 8. Govt. Mohammadpur Model School & College

▣Barishal:

- 1. Barishal Govt. Model School & College,
- 2. Gouranadi Girls School & College,
- 3. Talukdarhat School & College,
- 4. Barishal Govt. Zillah School,
- 5. Karnakati Gause Rahamania High School & College

▣Rajshahi :

- 1. Rajshahi Baya School & College,
- 2. Rajshahi Education Board Model School & College,
- 3. Rajshahi Shahid Nader Ali Girls School & College

K) Univ: Dhaka Univ. National University, BOU, North South Univ, Dhaka Polytechnic Institute

SUPPORT NEEDS –(1/2)

▣DSHE

- 1. **Teacher training** (in-service training : INSET), incl. support for the establishment of an INSET system.
- 2. **Teacher Training Facilities:** the establishment or expansion of new facilities to improve the quantitative issues of teacher training: i.e., the establishment of a Regional Academy for Educational Management (RAEM), the Govt. TTC / HSTTI.
- 3. Use of **blended learning** in INSET, which is a combination of face-to-face classes and distance learning: blended learning
- 4. Assessment of Students' Academic achievement.

SUPPORT NEEDS –(2/2)

□NCTB

1. **Capacity building** of NCTB staff to contribute to overall reform of the **assessment system** and
2. Development of digital teaching materials in line with the new textbooks and new teacher's guide.

□The Govt. TTC and HSTTIs

1. Equipment and Facilities:
 - A) ICT equipment;
 - B) Training facilities and laboratory equipment;
 - C) Renovation of classrooms and laboratories;
 - D) New hostels (for girls);
 - E) Creation of a digital library database;
2. Capacity Building:
 - A) Training in teaching methods using ICT equipment;
 - B) Practical training based on the new curriculum;
 - C) training by foreign experts and subject-based training abroad.

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CHALLENGES IDENTIFIED BY THE SURVEY TEAM

- A) Low Student Achievement and Difficulties in Understanding Student Achievement
- B) Curriculum, Textbooks, and Educational Assessment System Still under Development
- C) Quantitative and Qualitative Issues for Teachers, Teacher Training, and Teacher Training Facilities
- D) Room for Improvement in Access and Internal Efficiency
- E) ICT in schools is still developing

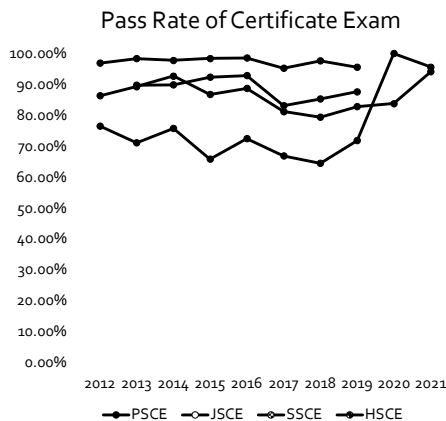
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CHALLENGES:

A) LOW STUDENT ACHIEVEMENT AND DIFFICULTIES IN UNDERSTANDING STUDENT ACHIEVEMENT

- A) The pass rate of Certificate Exam is high:
 - ✓HSCE 95.57% (2021)
 - ✓SSCE 94.08% (2021)
- B) A high pass rate does not mean secondary students have high academic achievement :
 - ✓Inferences from low achievement in primary education. (PECE pass rate is high at 95.5% (2018), but with a 33% correct answer rate.)
- C) The National Assessment of Secondary Students (NASS) :
 1. is useful for identifying regional and year-to-year gap.
 2. but difficult for analyzing if students understand the curriculum



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CHALLENGES:

B) CURRICULUM, TEXTBOOKS, AND EDUCATIONAL ASSESSMENT SYSTEM STILL UNDER DEVELOPMENT-(1/2)

- A) To improve academic achievement, the new curriculum/textbooks adopt the **Experiential Learning Approach (ELA)**.
- B) Compared to the 2012 edition, the new curriculum/ textbooks are much **improved** and easier to understand.
- C) Issue:
 1. activity-heavy and contains many unnecessary activities,
 2. the educational evaluation system is not developed yet. (the curriculum and educational evaluation system should be developed at the same time).

Lesson -1,2: Description of A Plant Cell
 Body of all organisms is composed of one or more cells. A typical plant cell comprises of two parts – cell wall and protoplasm.
Cell wall: In plant cells there is a hard and thick non-living wall, which is called cell wall. It is composed of cellulose. Animal cells do not have this wall. It is covered with a thin membrane, called plasma membrane. The main function of cell wall is to protect the living parts of the cell and delimiting the boundary of the cell.
Protoplasm: Protoplasm is a colorless, jelly like sticky and granular living substance. Signs of life are emerged due to various molecules within the protoplasm. It is composed of various organic and inorganic substances. The water constitutes the 80-90% of the Protoplasm.
Cytoplasm: Jelly like substance outside the nucleus is termed as cytoplasm. Living structures inside cytoplasm that take part in various physiological activities of the cell are called cytoplasmic organelles. In a typical cell normally the following organelles are found –
 1. Plasmaid 2. Mitochondria 3. Organel body 4. Endoplasmic Reticulum
 5. Ribosome 6. Lysosome and 7. Centriole.

Science (2012)
 large number of characters

Science
 What are the questions that arise in your mind as you look up at the night's sky? Write down here. Once the task is complete, check answers to which of them you could find out.
Science One
 Let's start with looking overhead at the sky. What do we find in the sky? Quickly fill in the list below:
 What are there in the daytime sky? What are there in the nighttime sky?
 Is the colour of the sky at dawn and afternoon same? What about the colour of evening sky? Does the sky change its colour as many times as it does in the morning, noon and afternoon? Which sky of a specific hour of day or night do you like most? Share your answers with your friend. Which sky does the like most? Try if you can draw the sky of your liking. If you want, you may also cut papers and paste on a poster paper.

Science (2023)
 Lots of activity.

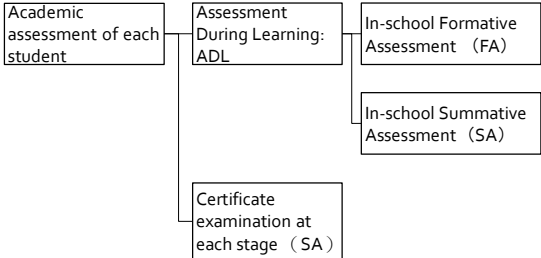
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CHALLENGES:

B) CURRICULUM, TEXTBOOKS, AND EDUCATIONAL ASSESSMENT SYSTEM STILL UNDER DEVELOPMENT-(2/2)

- A) Draft Educational Assessment System: **Formative Assessment (FA)** used to distribute points for promotion, advancement to higher education, etc.
- B) **Moderation** process is necessary to ensure fairness.
 1. Evaluation criteria (NCTB developed)
 2. Activities necessary for fair application of the criteria: as an example, activities to homogenize the understanding of the criteria by having several evaluators assess the same sample within a school or group of schools. (undeveloped)
- C) Most of teachers do not know FA. (by interview)
 1. A detailed plan that includes informing teachers, students, parents, etc. is necessary.
 2. Teacher training is needed.
- D) The survey team identified a need for support in developing a strategy for an educational assessment system.



CHALLENGES:

C) QUANTITATIVE AND QUALITATIVE ISSUES FOR TEACHERS, TEACHER TRAINING, AND TEACHER TRAINING FACILITIES -(1/4)

1. Quantitative challenge : The Teacher Student Ratio (TSR) for secondary schools (G6-G10) is 38 (2021), falling short of the National Education Policy 2010’s target of TSR 30.
2. Qualitative challenge: The survey team observed teachers face significant challenges in their skills to teach students to think for themselves.

CHALLENGES:

C) QUANTITATIVE AND QUALITATIVE ISSUES FOR TEACHERS, TEACHER TRAINING, AND TEACHER TRAINING FACILITIES -(2/4)

Findings from the survey team’s lesson observations (Math and Science)

- A) Issues in classes using 2012 textbook: few opportunities for students to think.
 1. Lecture-based.
 2. A few activities are conducted in class, but teacher-led.
- B) Good points observed in classes using 2023 textbook: Many activities
 1. Many activities are described in the textbooks, and teachers make use of them.
 2. The teacher's intention to ask questions of the students is evident.
- C) Common issues in classes using 2012 /2023 textbooks: **few opportunities for students to think for themselves.**
 1. Activities are teacher-driven.
 2. Insufficient questioning skills by teachers: most of questions are
 - a. simple knowledge questions or
 - b. repetition of what the teacher has explained.
- D) Proposed Improvement plan: Provide teachers with guidance on what questions to ask students and how to ask those questions in the following ways
 1. Detailed description in the teacher’s guide
 2. Instruction during **teacher training**,
 3. Use of video teaching materials.

CHALLENGES:

C) QUANTITATIVE AND QUALITATIVE ISSUES FOR TEACHERS, TEACHER TRAINING, AND TEACHER TRAINING FACILITIES -(3/4)

- A) Quantitative challenge: Small capacity of teacher training facilities to conduct training (number of people that can be accommodated is limited)
 1. The total number of teachers in secondary education is approximately 320,000.
 2. Approximately 6,000 teachers can be trained per year
 3. It would take 53 years to conduct training once for all teachers.
- B) Qualitative challenge:
 1. Lack of experience of training on Experiential Learning Approach (ELA) and Subject: currently focus on pedagogy, ICT, English, and management for principals.
 2. No Continuous Professional Development (CPD) mechanism.
 - Teachers do not have a roadmap of when and what kind of competences they should acquire.
 - Even if teacher training is strengthened, there is a risk that teachers will not attend because of no incentive to take the training.

CHALLENGES:

C) QUANTITATIVE AND QUALITATIVE ISSUES FOR TEACHERS, TEACHER TRAINING, AND TEACHER TRAINING FACILITIES -(4/4)

Existing facilities also have many challenges



Beams in the Corridor of the Education Building
Govt. TTC Rajshahi



Almost unused science lab.
HSTTI Barisal



Dormitories that are rundown and do not attract students
Govt. TTC Barisal

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CHALLENGES:

D) ROOM FOR IMPROVEMENT IN ACCESS AND INTERNAL EFFICIENCY

- A) There is room for improvement in NER
 - ✓ 70.3% in secondary (G6-G10) (2021)
 - ✓ 40.5% in higher secondary (2021)
- B) High cycle dropout rate and poor internal efficiency.
 - ✓ 35.7% (2021) for secondary (G6-G10: 5 years)
 - ✓ 21.1% (2021) for secondary (G11-G12: 2 years)
 - The Perspective Plan of Bangladesh 2021-2041 (PP2041) sets a target of zero dropout rate in primary and secondary education by 2031.

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CHALLENGES: E) ICT IN SCHOOLS IS STILL DEVELOPING

- A) Advantages of using ICT: Potential to solve problems more efficiently than conventional methods
- B) Progress in ICT:
 1. Digital Bangladesh, launched in 2008, has led to the active digitization of statistical data and the development of digital teaching materials.
 2. Due to the demand from the closure of educational institutions due to COVID-19, PC and multimedia classrooms are being built and Internet infrastructure is being installed in rural areas in phases.
- C) Weaknesses:
 1. Lack of devices available to students at school and home
 2. Weak Internet access at a school
 3. Lack of ICT literate teachers

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RECOMMENDATIONS FOR SOLVING CHALLENGES (PRIORITY AREAS)

Challenges

A) Low Student Achievement and Difficulties in Understanding Student Achievement

B) Curriculum, Textbooks, and Educational Assessment System Still under Development

C) Quantitative and Qualitative Issues for Teachers, Teacher Training, and Teacher Training Facilities

D) Room for Improvement in Access and Internal Efficiency

E) ICT in schools is still developing

Proposed Priority Areas

Less Priority

Conducting tests that can measure student achievement

Develop a comprehensive curriculum, textbooks, and educational assessment system to ensure a workable and balanced institutional design

CPD development and training of teachers accordingly
Development and implementation of teacher training curriculum for ELA

Improved quality of education leads to improved internal efficiency

Recommendation to use deployed MultiMedia Classrooms (MMC) to improve the quality of education (e.g., digital materials) rather than implementing distance education using devices for students.

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SUPPORT OF OTHER DPS

- A) SEDP: To be extended, but no SWAp after SEDP. Each DP will provide support through individual projects.
- B) WB and ADB: The scale of support is large.
 - ✓ Both drafted their support areas once, but as of Feb 2023, they are in the process of reconsidering the support areas.
 - ✓ WB: From the past support areas and PID, WB is likely to provide support on the Harmonized Stipend Program, the National Assessment of Secondary Students (NASS), scaling up of teacher training (pedagogy, subject content, and approach), etc.
- C) UNESCO
 - ✓ With DSHE, BANBEIS, and NAEM.
 - ✓ Global citizenship education, educational ICT and blended education, educational data management, guidebook for teachers on formative assessment (FA), STEM and gender support, etc.
- D) UNICEF:
 - ✓ With NCTB on curriculum/textbook revision through 2026 and educational assessment system
 - ✓ With NAEM: CPD framework development
- E) USAID: teacher training in higher secondary. Management-related reinforcement

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RELEVANCE OF JICA'S SUPPORT TO THE SECONDARY EDUCATION SUB-SECTOR

- A) **JICA Global Agenda (Education)**: JICA has four priority areas (clusters) in the education sector where Japan can leverage its strength.
 1. **Education Quality**: "Improvement of learning through the development of textbooks and teaching materials"
 2. **School Management Committee**
 3. **School Enrolment**
 4. **Cluster for Strengthening Core Universities**
- B) The adequacy of JICA's support:
 - The Education Quality Cluster has a high affinity for secondary education challenges.
 - Utilizing this cluster and including Japan's strengths in math/science and ELA would increase the relevance of JICA's support.

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DRAFT PROJECT PROPOSAL DISCUSSED WITH DSHE/NCTB DURING THE STUDY

A) Background of Project Proposal

1. The new ELA-based curriculum and textbooks are being introduced in 2023.
2. However, teachers do not have questioning skills appropriate for ELA.
3. **Digital teaching materials** can contribute to "strengthening the capacity of teachers who cannot do ELA.

B) Overview of the Project

1. Objective: To improve the competencies of students in secondary schools (G6-G12) by supporting the introduction of ELA.
2. Target: Focus on science and math subjects in secondary schools (G6-G12).
3. Activities: 1) Development of digital teaching materials; 2) teacher training on digital teaching materials., etc.

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RECOMMENDATIONS OF THE SURVEY TEAM ON JICA'S CLUSTER-BASED ASSISTANCE

Status of consideration for support

1. JICA has little experience in supporting the secondary education in Bangladesh
 - ✓ abundant experience in the primary education since 2004
 - ✓ experience in technical education since 2019
2. It is proposed to start from Training Course in Japan based on integrated development of educational system in order to create a chance of discussion with Japanese side as well as internal for the future cooperation plan.

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PROPOSED TRAINING PROGRAM IN JAPAN –(1/4)

- BACKGROUND OF TRAINING PROPOSAL -

1. NCTB plans to complete by Dec 2024 a strategy for an educational assessment system compatible with the new ELA-based curriculum /textbooks.
2. Training will support the development of the human resources needed to develop this strategy.
3. Japan does not assign points of FA for entrance exam. (difference from what Bangladesh is aiming for), but has strengths in overall system design and planning: the system is designed by integrating educational objectives, curriculum, and assessment system.
4. By learning about the overall system and the background behind Japan's choice, participants can optimize the system for Bangladesh.

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PROPOSED TRAINING PROGRAM IN JAPAN –(2/4)

-OVERVIEW OF THE TRAINING-

1. Objectives: To develop capacity for designing and implementing an educational system including assessment in the secondary education sub-sector in Bangladesh.
2. When to be implemented: December 2023 - August 2024 (TBD)
3. Period: 2 weeks (TBD)
4. Expected actions after the training: Action by both Bangladesh and JICA to deepen the discussion to improve the quality of education by using experience of the training.

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PROPOSED TRAINING PROGRAM IN JAPAN –(3/4)
-DRAFT CURRICULUM-

Item	Contents	Place to visit
Overview	Overview of the Japanese education	MEXT
Curriculum	Curriculum revision system and policies, and the role of each relevant organization	MEXT, NIER
	Teacher training on curriculum revision	NITS
Textbooks	Textbook system (approval process, textbook adoption procedures etc)	MEXT, Japan Textbook Research Center
	Roles of editors in textbooks development; editing techniques that are easy for students to understand, etc	Textbook companies
Curriculum / textbook	Curriculum/textbook development support to developing countries based on Japan's experience	Hiroshima Univ.
Educational Assessment System	History of Japan's educational assessment system and comparison with other countries	Kyoto Univ. etc
	How to implement the Common University Entrance Test and how to improve the test	National Center for Univ. Entrance Exam, etc
Teacher Training	The system and training content of in-service teacher training, and the promotion of practical implementation at school sites	Board of Education
	Same as above, training on learning evaluation	NITS
Schools	Actual conditions of educational assessment at school sites	Junior High School and High School

MEXT: Ministry of Education, Culture, Sports, Science and Technology, NIER: National Institute for Educational Policy Research
 NITS: National Institute for School Teachers and Staff Development

PROPOSED TRAINING PROGRAM IN JAPAN –(4/4)
-MAIN RELEVANT ORGANIZATION-

Potential Area	Main Relevant Organization
Educational Assessment System	NCTB、BISE
Curriculum	NCTB
Textbooks	NCTB
Teacher Training	DSHE、TTC、NAEM、HSTTI
Schools	DSHE

RECOMMENDATIONS OF THE SURVEY TEAM ON JICA'S CLUSTER-BASED ASSISTANCE

Status of consideration for support

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THANK YOU FOR YOUR COOPERATION IN THE SURVEY.

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Attachment 7

Memo on the Workshop for the Presentation of the DFR

The Government of the Peoples Republic of Bangladesh
Directorate of Secondary and Higher Education
Planning & Development Wing
<http://www.dshe.gov.bd/>

Memo No:
2023

Date:6 June

**Memo on the Workshop for the Presentation of the Draft Final Report of the JICA
Secondary Education Survey Team**

Chairperson : Prof. Nehal Ahmed, Director General, DSHE
Date and Time : 6 June 2023, 4:00 PM – 6:30 PM
Place : Crystal Ballroom, InterContinental Dhaka, an IHG Hotel
Participants : Annexure - A
Meeting Agenda: 1) Briefing Draft Final Report of the Survey

1. Workshop Overview (Prof. Dr. AQM Shafiul Azam, DSHE)
 - We started our discussion with JICA in 2022. The 1st survey was conducted in September-November 2022, 2nd survey went on in January-February 2023, and 3rd survey is being conducted in June 2023.
 - During this period, the JICA survey team visited SHED, DSHE, NCTB, NAEM, BANBEIS, EED, NTRCA, NU, BoU, TTTC, HSTTI, Schools & Colleges in different divisions, etc. to find out the actual needs in the secondary education. From those surveys, we will see the areas which need interventions and develop further programs.
 - Today, all the sectoral heads are here and I am sure through upcoming discussion we can identify areas of interest.
2. Speech (Mr. Takashi Komori, JICA Bangladesh Office)
 - JICA has been supporting primary education in Bangladesh in the past 20 years in science and math and witnessed a remarkable improvement in the primary education sector, but secondary education needs improvement.
 - To address the issue of secondary education, JICA started this survey last August for the past 11 months.
 - Today, we will share our DFR which summarizes the current situation of secondary education. After receiving the feedback today, JICA will plan to compile the final report filled with valuable opinions and it will be a valuable resource for JICA when considering future cooperation in secondary education in Bangladesh.
3. Presentation by JICA Survey Team on “Report on Survey Results based on Draft Final Report”
 - Mr. Tatsuya Nagumo, Team Leader of the JICA Survey Team, made the presentation

by using the presentation slides.

4. Discussion on the Survey Results

(Prof. Gitanjali Barua, Azimpur Government Girls School, and College)

- When the survey team visited my school, I proposed that Japanese teachers and educational workers should come to Bangladesh to see the present situation of the schools, but there is no such program in the report.

(Ms. Chinatsu Iha, JICA Bangladesh Office)

- We can probably send volunteers to the schools. The JICA volunteer was stopped in 2016, but we are trying to resume dispatching volunteers including secondary schools. Lots of relevant agencies are interested in volunteer. There is also a program to send teachers to other countries, but seats are very limited.

(Prof. Robiul Kabir Chowdhury, BEDU)

- The new curriculum is introduced in Bangladesh. In the curriculum, emphasis is put on continuous assessment. Real-time assessment needs valid and reliable data. The concern of the education board is to get valid and reliable data for continuous assessment. In the presentation, there are 2 slides regarding support needs, but the needs of the education board are not included. I think the capacity development of the board is important for collecting valid and reliable data.

(Prof. Md. Shahedul Khabir Chowdhury, DSHE)

- JICA has been working in primary education for nearly 20 years. What is the outcome and contribution of the program? Students are coming from primary to secondary schools with low competency. JICA needs to explain what positive impact JICA has made on primary education.
- You have given suggestions and recommendations in the presentation. Under what assumption you made the suggestion? Is capacity building possible with our existing structure?

(Ms. Chinatsu Iha, JICA Bangladesh Office)

- It's a long process to improve education, I would say we've been trying very hard to change education and contribute to the improvement of curriculum and textbooks. If you compare the textbooks from 10 years ago, it's very different. We are hoping to see students' competency will improve soon.

(Prof. Dr. AQM Shafiul Azam, DSHE)

- JICA is especially contributing to the curriculum area. Regarding the change of curriculum, the same changes are made for primary and secondary such as introducing ELA and FA. When we work on curriculum issues, we can utilize examples of primary education in implementing new curriculum.

(Mr. Murshid Aktar, NCTB)

- JICA has been working for NCTB for 8-10 years, not 20 years to support the curriculum and textbooks. Based on that, substantial change was made in science and math textbooks. The challenge of quality education is not only based on curriculum and textbook, but implementation is the major part to achieve quality. After developing the new curriculum, there was no dissemination training in the primary sector. So, the new curriculum and textbook were not attained by children.

- The presentation said FA is linked with the point for promotion, but we didn't say FA is linked with the point. Only SA in ADL is linked with the next level. FA's part is to ensure the learning of the students. I request you to clarify this part.
- For training program in Japan, the needs of the training for different agencies are different. So, I propose to make a tailor-made curriculum for each agency.

(Mr. Tatsuya Nagumo, JICA Survey Team)

- We will see you tomorrow; so that we can clarify the details of FA.
- For the training curriculum, since the training period is only 2 weeks, we'd like you to know the whole picture of education design in Japan. The feature of the Japanese education system is integration, and we need all the participants to understand the integrated part. If there is another opportunity, we will customize the training.

(Mr. Joydip Dey, Dhaka TTC)

- In slide 12, there is a description, "activity-heavy and contains many unnecessary activities". How did you measure this?
- In slide 13, the survey team found the need for developing a strategy for the educational assessment system. Currently, NCTB is developing this and what is your intervention in this area?
- Regarding teacher training, how do you develop the teachers' questioning skills?
- What is the strategy of your CPD plan?
- Japan is good at values and moral education, so you can accommodate values and moral education strategy in addition to science and math.

(Mr. Tatsuya Nagumo, JICA Survey Team)

- We have observed some unnecessary activities during the lesson observation and the details are written in chapter 6 of the report.
- Regarding the assessment, we will visit and discuss it with NCTB again.
- The main part of the questioning skill challenge is that teachers don't know how to make pauses to keep students' time. Teacher training and video are good for training. Teachers' guide cannot show how to pause.

(Prof. Ahmad Obaidus Sattar Bhuiya, BEDU)

- Regarding the description "activity-heavy and contains many unnecessary activities" in slide 12, since our new curriculum is already introduced, if you say anything like this, you need evidence to back up this comment on your report. If you cannot back up this type of comment, it would be better to drop the comment.
- Regarding the video training materials, the new curriculum is completely activity based. In an activity-based curriculum, I am not sure how video materials can improve the situation. If you include it in the report, you have to explain it.
- Regarding questioning skills, if you go through the new curriculum, it is completely defined in the teachers' guide. In the teachers' guide, everything is predefined. Every question and activity is defined in the teachers' guide, so there is a misunderstanding about the new curriculum. If you mention the questioning skill, you need a deep understanding of the new curriculum.
- Regarding the training program, Bangladesh is in the transition period of introducing ELA. The training should focus on how to introduce and implement ELA rather than exposing the education system in Japan.

(Ms. Shamima Siddiky, UNICEF)

- UNICEF is also working with DSHE, providing technical support for the development of teaching and monitoring systems, online psychological training, and so on. UNICEF will also support the popularization of the new curriculum. It would be good if you considered reflecting this in the report.
- When JICA is going to work on digital materials for science and math with NCTB, it would be good if UNICEF, JICA, NCTB, and other agencies can sit together and have technical discussions for good collaboration.

(Prof. Dr. AQM Shafiul Azam, DSHE)

- UNICEF is working to develop an assessment system. If JICA is going for the same area, there must be coordination to avoid overlap.

(Prof. Dr. Md. Nizamul Karim, NAEM)

- Now there are more than 20,000 secondary schools and more than 3,000 higher secondary schools in the country. Only NAEM is not enough for teacher training.
- A permanent institutional approach to teacher training is necessary.
- I believe JICA will help with teacher training activities.

(Ms. Shereen Akther, UNESCO)

- For challenges, it is mentioned that teacher training has risks because of no incentive to take the training. When I interviewed teachers, they mentioned other reasons such as support mechanisms, working conditions, etc.

(Prof. Md. Mukles Ur Rahman, NCTB)

- You are focusing on teaching and learning materials and teacher training. I'm curious to know how students are accepting the new curriculum at the classroom level. Do you have any idea or experience with classroom-level activities of the new curriculum? If you have, please mention it. Please observe the classroom situation.

(Prof. Robiul Kabir Chowdhury, BEDU)

- Our new curriculum has been already rolled out this year. Under the situation, teacher training is good but other issues should be addressed. The teaching and learning system is changed but our teachers learned through the traditional system. How can we change their mindset? If we try to implement this new curriculum, we must redesign the teacher training curriculum and teaching and learning approach. Our teacher training curriculum, B.Ed., M.Ed., and other courses should be redesigned in line with our new curriculum framework as well as the new teaching and learning approach.

(Mr. Murshid Aktar, NCTB)

- To implement a new curriculum, one of the most important things is learning involvement, for example, a sitting arrangement for experience share approach. There is no evaluation of the classroom involvement in the report. Some material support is required to implement the new curriculum. If you include information on what type of support schools will require, it will be good.

(Prof. Dr. AQM Shafiul Azam, DSHE)

- There are so many areas of challenge. Out of those we can identify one critical area

that JICA can address.

(Ms. Afia Sultana, UNICEF)

- Slide 13 said most of the teachers didn't know about FA through the interview. The interview was held last March, but training for teachers on assessment was conducted by NCTB last May. If you go back again after 1 month, you will find the answers to be different. So, I will request you to go back again.

(Mr. Joydip Dey, Dhaka TTC)

- The new curriculum has just been introduced and this is not a time to tell anything about the curriculum. You need to be patient to observe the new curriculum.

(Mr. S M Shafiul Alam, DSHE)

- Did you think about how to integrate SSC and HSC exams into this new curriculum in a couple of years?

5. Special guests' comments

(Prof. Md. Farhadul Islam, NCTB)

- Thank you JICA for having done such a great job. The presentation is okay, but we have some issues to overcome in the meantime. If we need the support of JICA at the secondary level, I think firstly we need to identify primary needs.

(Prof. Dr. Md. Nizamul Karim, NAEM)

- NAEM is not only a teacher training institution for the secondary level. There are 14 TTC under DSHE and if they provide regular teacher training, the training can cover many teachers within a short time.
- NAEM also needs organizational reform, infrastructural development, and faculty development.
- NAEM is now working with ADB for training need assessment, and feasibility study for future needs. We start this journey this month and hope it will end in September this year. UNESCO also supports NAEM to revise the training curriculum regarding global citizenship education and ICT competency framework. UNICEF also supports us to revise teachers training curriculum based on competency. The training curriculum needs to be updated based on the new curriculum.
- I firmly believe JICA will announce support for NAEM.

(Mr. Saroj Kumar Nath, SHED)

- In Table 8-5 (the result of the NTRCA teacher recruiting exam) in the DFR, there are several successful examinees. I think this is not successful examinees, but vacant posts.
- Thank you for your good observation of the textbook of 2012 and 2023. Regarding the proposed training program in Japan, number of teachers is 401,800 in the country. We need much more training here in Bangladesh. I request you to make some arrangements such as infrastructure development so that the training capacity will be much more developed in the program continuously.

6. Speech by Chief Guest (Mr. Md. Belayet Hossain Talukdar, SHED)

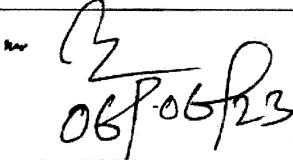
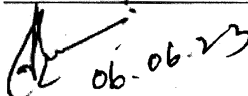

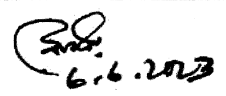
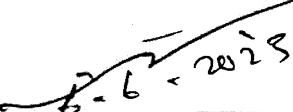
- Japan developed its nation through education, so we appreciate it if Japan will support secondary education in Bangladesh. I request JICA and Japan to practice and think over how the education package in Japan can be used in Bangladesh.
 - We must maintain the friendship seriously for a continuous relationship.
 - JICA has presented a nice presentation today and we should go through the study report and try to discover our objective which will be sustainable for us.
7. Speech by Chairperson (Prof. Nehal Ahmed, DSHE)
- Teachers in Bangladesh are not trained enough, not equipped enough, not paid enough, but this is the reality. We expect teachers to give nice classes, but they are not given sufficient training. As in the presentation, it takes 53 years to give training to all the teachers. It is an absurd situation. Our new curriculum was introduced with a new style which is totally activity based. We provided 5-6 days of training, but it is not enough. The new curriculum was introduced by NCTB and DSHE has to implement it. The education board also needs to be trained because a new examination will start in 2 years. The new curriculum was already given but our TTC and HSTTI are still using the previous curriculum and syllabus. No teachers go over and get the training opportunity there.
 - JICA is supporting many infrastructure projects, but if there is any scope of JICA to support secondary education, I would request you think about the establishment of education academia where teachers can do so many activities like research and so on. If it would be possible, it will give us tremendous outcomes for teachers in Bangladesh. The priority is teacher training, but it'd be helpful if JICA would think over the education academia.

Attachment:

- a) List of Participants
- b) Draft Final Report Briefing

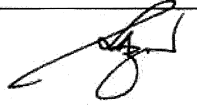
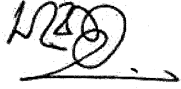

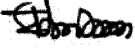
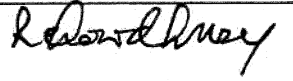
JICA Survey Team
Workshop on Final Draft Report presentation on secondary
education of Bangladesh by the Japan International Cooperation Agency (JICA) survey team.
Venue: Hotel Intercontinental (Crystal Ballroom), Dhaka
Date: 06 June, 2023 (Tuesday)
Time: 03:00 PM to 06:00 PM

Attendance Sheet

Sl. No.	Name	Designation & Organization	Contract No.	Email address	Signature
1.	Mr. Md. Belayet Hossain Talukdar	Additional Secretary (Development) Secondary and Higher Education Division, Ministry of Education			 06/06/23
2.	Professor Nehal Ahmed	Director General, DSHE			 06-06-23
3.	Professor Dr. Md. Nizamul Karim	Director General, National Academy for Educational Management (NAEM)			 06.6.2023
4.	Professor Md. Farhadul Islam	Chairman, National Curriculum and Textbook Board (NCTB), Dhaka			 6.6.2023
5.	Professor Tapan Kumar Sarkar	Chairman, Board of Intermediate and Secondary Education (BISE), Dhaka			
6.	Professor Md. Shahedul Khabir Chowdhury	Director (College & Administration Wing), DSHE			 6-6-2023
7.	Professor Mohammad Belal Hossain	Director (Secondary Wing), DSHE			



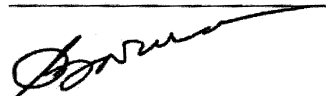

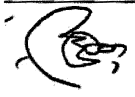

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Sl. No.	Name	Designation & Organization	Contract No.	Email address	Signature
8.	Professor Dr. AQM Shafiul Azam	Director, Planning and Development Wing, DSHE			
9.	Mr. Saroj Kumar Nath	Joint Secretary (Dev-2) Secondary and Higher Education Division, Ministry of Education			
10.	Professor Md. Moshuazzaman	Member Curriculum Secondary, NCTB			
11.	Professor Lutfur Rahman	Member Text, NCTB			
12.	Professor Azad Chowdhury	Secretary, BISE, Dhaka			
13.	Professor Mohammed Bin Kashem	Dean, Center for Post-Graduate Studies, Training and Research, National University			
14.	Professor Robiul Kabir Chowdhury	(Senior Specialist), Bangladesh Examination Development Unit (BEDU)			

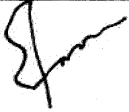





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Sl. No.	Name	Designation & Organization	Contract No.	Email address	Signature
15.	Professor Ahmad Obaidus Sattar Bhuiya	Specialist, Exam & Evaluation, BEDU			
16.	Professor Md. Gulam Faruque	Principal, Dhaka TTC			
17.	Professor Gitanjali Barua	Principal, Azimpur Government Girls School and College, Dhaka			
18.	Professor Dr. Tahsina Akter	Director, Training & Implementation Division, NAEM			
19.	^{Muklesur} Professor Md. Mukles-ur Rahman	Senior Specialist, NCTB			
20.	Mr. Md. Kayser Rahman	Director, BANBEIS			 06/06/23
21.	Engr. Samir Kumar Rajak Das	Superintendent Engineer, EED			

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Sl. No.	Name	Designation & Organization	Contract No.	Email address	Signature
22.	Mr. Murshid Aktar	Associate Professor Economics, Research Officer, NCTB			
23.	Mr. Badruzzaman	Controller of Examinations, National University			
24.	S M Shafiul Alam	Assistant Director (AQAU) Planning & Development Wing Directorate of Secondary and Higher Education			
25.	Mst. Aysha Siddika Moushumi	Research Officer, AQAU, P&D Wing, DSHE			 06-06-23
26.	Mr. Joydip Dey	Assistant professor, Dhaka TTC			 06/06/23
27.	Mr. Humayun Kabir	Head Teacher, West End High School, Dhaka			 06/06/23
28.	Ms Shereen Akther,	UNESCO			

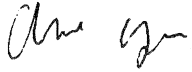


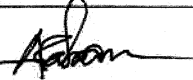

JICA Survey Team
Workshop on Final Draft Report presentation on secondary
education of Bangladesh by the Japan International Cooperation Agency (JICA) survey team.
Venue: Hotel Intercontinental (Crystal Ballroom), Dhaka
Date: 06 June, 2023 (Tuesday)
Time: 03:00 PM to 06:00 PM

Attendance Sheet

Sl. No.	Name	Designation & Organization	Contract No.	Email address	Signature
29.	Dipti Das,	Education Program Coordinator <i>Advisor</i> Coordinator, USAID			<i>Dipti</i>
30.	Mr. KOMORI Takashi	Senior Representative, JICA Bangladesh Office			<i>Komori</i>
31.	Ms. IHA Chinatsu	Representative, JICA Bangladesh Office			<i>IHA</i>
32.	Mr. Alimul Hasan	JICA Bangladesh Office			<i>Alimul Hasan</i>
33.	Ms. OKUGAWA Yukiko	JICA Expert			<i>Okugawa</i>
34.	Shamima Siddiky	UNICEF <i>Education Specialist</i>			<i>Shamima</i>
35.	Afia Sultana	UNICEF			<i>Afia Sultana</i>

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Sl. No.	Name	Designation & Organization	Contract No.	Email address	Signature
36.	Asako Maruyama	ADB			
37.	Tatsuya NAGUMO	Team Leader, JICA Survey Team			
38.	MORI Yusuke.	Deputy Team Leader, JICA Survey Team			
39.	Arif Ullah Khan	Expert, JICA Survey Team			
40.	Aminur Rahman	Expert, JICA Survey Team			
41.	Biswajit Das	Senior Secretary, JICA Survey Team			

Note: The contact no. and email addresses of the participants were omitted to protect personal information.