Ministry of Primary and Mass Education
Director of Primary Education
People's Republic of Bangladesh

Strengthening Mathematics and Science Education in Primary Education Project Phase 3

Project Completion Report (Second Term)

July 2025

JICA INTERNATIONAL COOPERATION AGENCY

PADECO Co., Ltd.
Hiroshima University

HM
JR
25-064

Ministry of Primary and Mass Education
Director of Primary Education
People's Republic of Bangladesh

Strengthening Mathematics and Science Education in Primary Education Project Phase 3

Project Completion Report (Second Term)

July 2025

JICA INTERNATIONAL COOPERATION AGENCY

PADECO Co., Ltd.
Hiroshima University

Table of Contents

1. Project Overview 1-1
1.1 Basic Information of the Project 1-1
1.2 Project Purposes and Outputs 1-4
1.3 Inputs 1-8
1.3.1 Input by the Japanese Side 1-8
1.3.2 Input by the Government of Bangladesh 1-9

2. Project Activities 2-1
2.1 Activity Record 2-1
2.1.1 Summary of the Activity 2-1
2.1.2 Achievements of Each Activity 2-3
2.1.3 Other Activities 2-27

3. Achievement of the Project 3-1
3.1 Achievement Status of Project Purpose 3-1
3.2 Achievement Status of Output Indicators 3-3
3.3 Others 3-5

4. Project Evaluation 4-1
4.1 Considerations from the Perspective of the DAC Evaluation Criteria 4-1
4.2 Changes in Risk Factors and Measures to Mitigate Them, and Measures Taken by JICA and the Government of Bangladesh 4-4
4.2.1 Key Factors Affecting Implementation and Outcomes 4-4
4.2.2 Risk Management Assessment 4-5

5. Project Lessons Learned 5-1
5.1 Lessons Learned from Project Implementation and Management 5-1
5.1.1 Collaboration with PEDP4 5-1
5.1.2 Impact of COVID-19 5-2
5.1.3 Bangladesh Political Change (2024) 5-2
5.2 Lessons Learned for Improving Education Quality 5-3
5.2.1 Difficulty in Raising Awareness Among Stakeholders 5-3
5.2.2 Achievements and Future Challenges in Improving the Quality of Education (Lessons Learned from the Endline Survey) 5-4

6. Recommendations for the Overall Goal 6-1
6.1 Outlook for Achieving the Overall Goal 6-1
6.2 Bangladeshi Action Plan and Implementation Structure to Achieve the Overall Goal 6-2
6.3 Recommendations for Bangladesh 6-3
6.4 Monitoring Plan from Project Completion to Ex-post Evaluation 6-3

Tables

Table 1-1 Overall Goal, Project Purpose, Outputs and Indicators 1-6
Table 1-2 Project Activities 1-8
Table 1-3 Equipment List 1-9
Table 1-4 Key Stakeholders of the Project 1-9
Table 2-1 Overview of Activities 2-1
Table 2-2 Curriculum Seminar for NCTB and Textbook Writers 2-5
Table 2-3 Curriculum Seminar (20 Years' Cooperation Summary) 2-6
Table 2-4 Mathematics and Science Model Lesson Videos (Curriculum Dissemination Training Material) 2-6
Table 2-5 Curriculum Dissemination Training Implementation Status 2-7
Table 2-6 Progress of Textbook and TG Development (as of May 2025) 2-8
Table 2-7 Textbook Development Seminar for NCTB and Mathematics and science Textbook Writers 2-12
Table 2-8 Digital TG Sample List 2-16
Table 2-9 Online Access of Digital TG Sample 2-17
Table 2-10 Seminar on Revised Primary Curriculum (Mathematics and Science) for PTI 2-20
Table 2-11 Status of CPD Framework Development 2-22
Table 2-12 CPD Digital Learning Materials Overview 2-22
Table 2-13 Actions for the Dissemination of Digital Materials 2-23
Table 2-14 Results of CPD Monitoring at National and District Levels 2-25
Table 2-15 CPD Seminar 2-27
Table 2-16 Reporting Session after Returning from Training in Japan 2-28
Table 2-17 Seminar on Review of 20 Years of JICA Cooperation for Primary Education in Bangladesh and Completion of the JSP3 Project 2-29
Table 3-1 Achievement Level of Project Purpose and Each Output 3-1
Table 3-2 Achievement Status of Project Purpose 3-2
Table 3-3 Achievement Status of 1Each Indicator of Output 1 3-3
Table 3-4 Achievement Status of Each Indicator of Output 2 3-4
Table 3-5 Achievement Status of Each Indicator of Output 3 3-4
Table 3-6 Achievement Status of Each Indicator of Output 4 3-5
Table 6-1 Objectives for Each Level Listed in the PDM 6-1
Table 6-2 KPI 1, 2, 3, and 4 (NSA-Related Indicators) Listed in ASPR 2022 6-2
Table 6-3 Basic Monitoring Policy (July 2025-2030) (Draft) 6-4

Figures

Figure 1-1 PEDP4 Components/Subcomponents and Areas of Support for the Project 1-2
Figure 2-1 Model Lesson Videos 2-7
Figure 2-2 Grade 3 Mathematics Textbook Developed in Phase 3 2-13
Figure 2-3 Grade 3 Science Textbook Developed in Phase 3 2-14
Figure 2-4 Samples of Digital TGs 2-16
Figure 2-5 Math Lesson Video DVD and Flyer 2-18
Figure 2-6 Changes in the Revision of DPEd in PEDP4 2-20

Abbreviation

ADB	Asian Development Bank
ASPR	Annual Sector Performance Review
AUEO	Assistant Upazila Education Officer
BTPT	Basic Training for Primary Teacher
CAMPE	Campaign for Popular Education
CP	Couter part
CPD	Continuous Professional Development
DLI	Disbursed Linked Indicator
DPC	Development Partners' Consortium
DPE	Directorate of Primary Education
DSHE	Directorate of Secondary and Higher Education
DPEd	Diploma in Primary Education
EU	European Union
FCDO	Foreign, Commonwealth & Development Office
ICT	Information and Communication Technology
IMD	Information and Management Division
JARM	Joint Annual Review Mission
JCM	Joint Consultative Meeting
JSP3	JICA Support Program 3
KPI	Key Performance Indicator
LMS	Learning Management System
MOE	Ministry of Education
MOPME	Ministry of Primary and Mass Education
NAPE	National Academy for Primary Education
NCCC	National Curriculum Coordination Committee
NCF	National Curriculum Framework
NCTB	National Curriculum and Textbook Board
NGO	Non-Governmental Organization

NSA	National Student Assessment
PCU	Program Coordination Unit
PDM	Project Design Matrix
PEDP	Primary Education Development Program
PTI	Primary Teacher Training Institute
RD	Record of Discussion
SHED	Secondary and Higher Education Division
TC	Technical Committee
TLM	Teaching and Learning Material
UEO	Upazila Education Office
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
URC	Upazila Resource Center
USAID	United States Agency for International Development
RDPP	Revised Development Project Proforma
TED Plan	National Plan and Strategy for Primary Teacher Education and Development
WB	World Bank

1. Project Overview

1.1 Basic Information of the Project

(1) Country

People's Republic of Bangladesh

(2) Title of the Project

JICA Support Program 3 for Strengthening Mathematics and Science Education in Primary Education Project Phase 3

(3) Duration of the Project

<Plan>
April 2019 – June 2023 (the first contact term : Late February 2019－Late June 2020, the second contract term: Early July 2020－Late July 2023)

<Actual>
April 2019－June 2025 (the first contract term : Late February 2019－Early July 2020, the second contract term : Middle October 2020－Late July 2025)

(4) Background of the Project

The Government of Bangladesh implemented the subsector-wide program "First Primary Education Development Program (PEDP1)" with eight development partners from 1998 to 2003. In 2004, the "Second Primary Education Development Program (PEDP2)" (until 2011) was launched with the support of 11 development partners, and then, from 2011, the "Third Primary Education Development Program (PEDP3)" (until 2018) with the support of 10 development partners was launched to improve the quality of education, which had not been achieved sufficiently in PEDP2. However, although PEDP3 achieved remarkable results in terms of access to education, there were still issues regarding improving students' academic achievement.

In light of this background, the "Fourth Primary Education Development Program (PEDP4)" was formulated in 2018, with the continued improvement of education quality identified as a key challenge. Under the framework of PEDP4, this Project was launched as a technical cooperation project with the aim of improving students' understanding in primary mathematics and science. MOPME and the DPE served as implementing agencies. The Project was implemented in collaboration with key counterpart (CP) organizations such as DPE, NCTB, and NAPE, focusing on technology and knowledge transfer. As illustrated in Figure 1-1, the Project was positioned under "Component 1: Quality Education" of the PEDP4 framework, which represents the overarching plan.

PEDP 4 RESULTS AREAS/COMPONENTS and SUB-COMPONENTS		
1. Quality	**2. Equitable Access and Participation**	**3. Management, Governance and Finance**
1.1. *(JICA技プロ3: Output 1)* Curriculum	2.1. Needs-based Infrastructure	3.1. Data systems for decision-making
1.2. *(JICA技プロ3: Output 2)* Textbooks and teaching-learning materials	2.2. Needs-based furniture	3.2. Institutional strengthening
1.3. Teacher recruitment and deployment	2.3. Maintenance	3.3. SLIPs/UPEPs
1.4. *(JICA技プロ3: Output 3)* Teacher education	2.4. Water and sanitary hygiene	3.4. Strengthened budgets
1.5. *(JICA技プロ3: Output 4)* Continuous professional development	2.5. Out-of-school children	3.5. Procurement and financial management
1.6. *(JICA技プロ3: Output 4)* ICT in education	2.6. Special Education Needs and Disability	
1.7. Assessment and examinations	2.7. Education in emergencies	
1.8. Pre-primary education	2.8. Communication and social mobilization	

Source: Prepared by this project based on PEDP4 program documents

Figure 1-1 PEDP4 Components/Subcomponents and Areas of Support for the Project

"Component 1: Quality" of PEDP4 is structured around a clear causal chain that aims to ultimately improve learning outcomes by enhancing the quality of teaching through improved teacher competencies. Centered on the curriculum, the framework is designed to achieve its final goal through an organically linked and cyclical system encompassing textbook and teaching material development, teacher education (DPEd), and Continuous Professional Development (CPD).

The Project, positioned within this framework, has provided subject-specific support in mathematics and science, thereby contributing to the achievement of the objectives set out in "Component 1: Quality". The areas of support for the Project are "support for the development of primary mathematics and science curriculum and teaching materials (textbooks, teachers' guides, teaching and learning materials (TLMs))" and "support for the implementation of the Diploma in Primary Education (DPEd) and CPD in mathematics and science education," with the aim of achieving the goal of improving PEDP4's "Component 1: Quality."

(5) Overall Goal and Project Purpose

<Overall Goal>
National level of academic skills and knowledge obtained in primary mathematics and science is improved.

<Project Purpose>
Children become to understand mathematics and science in primary education.

(6) Implementing Agencies

[Ministry of Primary and Mass Education (MOPME)]

- Directorate of Primary Education (DPE)
- National Academy for Primary Education (NAPE)
- Primary Teacher Training Institute (PTI)
- Upazila Resource Centers (URCs) across the country
- Upazila Education Offices (UEOs) across the country

[Ministry of Education (MOE)]

- National Curriculum and Textbook Board (NCTB)

(7) Target Area

Entirely of Bangladesh

(8) Overview of Activities in the First Term of the Project

In the first term of this project, the Project grasped the current situation and carried out a series of activities that would become the basis for each output. Due to the delay in the progress of PEDP4, some activities were postponed to the second term. In addition, due to the spread of COVID-19 in March 2020, schools and government agencies were closed in Bangladesh, making it impossible to carry out project work on-site, and activities were carried out remotely from Japan. The details are as follows.

Output 1 (Revision of Primary Mathematics and Science Curricula)

Regarding Activity 1.1, the Project provided technical assistance in analyzing the results of the study on the "Effectiveness, Situation Analysis and Needs Assessment of Current Pre-primary and Primary Curriculum of Bangladesh" and in developing the study report, which was conducted by NCTB under the framework of PEDP 4. As a result, "NCTB Study Report" was finalized in February 2020.

Regarding Activity 1.2 "Revision of the Primary Curriculum", the initial plan was to start in mid-May 2019, but the revision work started at the end of September 2019. The Project provided technical support for the revision of the primary curriculum while in collaborating with related organizations such as NCTB and the United Nations Children's Fund (UNICEF) and participating continuously in the curriculum workshop organized by NCTB.

The revision of the primary curriculum was progressing relatively smoothly, despite being significantly delayed from the schedule. However, due to the global spread of COVID-19, the Government of Bangladesh closed government offices and issued a stay-at-home order in March 2020, making it difficult for project experts to travel to the country. However, even after the government offices were closed, NCTB continued the revision work using online meetings, and the Project also provided support such as remote advice online. As a result, the final draft of the curriculum was completed in early April 2020. The revised curriculum largely reflected the recommendations in the "Analysis Report on the Current Primary Science and Mathematics Curriculum" compiled by science and mathematics education experts. The primary curriculum was scheduled to be approved by MOPME in June 2020, but it was not approved in the first term.

Output 2 (Revision of textbooks, Teacher's Guides, and TLMs)

In the first term, the Project planned to support the development of math and science textbooks for students in Grades 1 to 3. However, due to delays in the revision of the primary curriculum, the start of the development of primary textbooks was also significantly delayed. As a result, only

textbooks for Grades 1 and 2 were developed in the first term, and the development of textbooks for Grade 3 was postponed until the second term.

In the first term, support was provided for the development of mathematics textbooks and teachers' guides for Grade 1 and 2, as well as science teachers' guides for Grade 1 and 2. The Project gave NCTB subject staff concrete suggestions for development work such as identifying issues with the current textbooks and teachers' guides and points for development through the creation of textbook analysis, analysis results reports, and textbook development manuals. However, due to the impact of the global spread of COVID-19, it became difficult for Japanese experts to travel to Bangladesh, so technical support for the development of textbooks and TGs was provided through remote guidance from Japan, mainly through online meetings and email exchanges between NCTB and local staff of this project. At the end of the first term, the development of textbooks and TGs for Grade 1 and 2 was still ongoing.

Output 3 (Support for implementation of DPEd)

"Support for the implementation of DPEd" was scheduled to be completed by the end of March 2019. However, due to the delay in the start of the DPEd Effectiveness Verification Study, the planned activities could not be started. The study began in January 2020 and was scheduled to be completed in June 2020, but was suspended after the government offices were closed in March 2020 due to the spread of COVID-19.

Output 4 (Support for CPD implementation)

"Support for CPD implementation" was scheduled to be completed by the end of March 2019. However, the CP Effectiveness Verification Study was completed at the end of June 2019, three months later than originally planned, and the study report (including the CPD framework and action plan) was approved by MOPME in December 2019. In response to this, a task team was established in PEDP4, centered on the DPE Training Division, and preparation of the CPD Implementation Plan began in January 2020. In the meantime, the Project also conducted the training in Japan at Hiroshima University and a company related to an educational information and communication technology (ICT) in Miyazaki Prefecture from October 26 to November 24, 2019, and supported the participants to develop the CPD Action Plan based on the result of the training. The completion of the CPD Implementation Plan incorporating the contents of the CPD Action Plan was scheduled for May 2020. However, an additional study to create the CPD Implementation Plan was suspended after government agencies closed in March 2020 due to the spread of COVID-19.

Baseline Survey

The baseline study for the Project was planned to be conducted through a literature review based on the results of the study conducted by PEDP4, but delays in the PEDP4 study caused delays in conducting the baseline study for the Project as well. In addition, since the study by PEDP4 was qualitatively insufficient, an additional survey (midline survey) was planned to be conducted during the second term around September to October 2020 to collect the missing information[1].

1.2 Project Purposes and Outputs

The Project targeted MOPME and DPE as the CPs and aimed to achieve the goal of "improving students' understanding of primary school mathematics and science" by providing support for the

[1] Even after the commencement of the second term of the Project, the implementation of PEDP4 faced further delays due to the impact of the COVID-19 pandemic, and most of the planned activities under PEDP4 were not carried out. Consequently, when a two-year extension of PEDP4 was decided, the Project held further consultations with JICA and concluded that the Project would not conduct any additional surveys.

development of primary mathematics and science curricula and teaching materials (textbooks, teachers' guides, and TLMs) and by providing support for the implementation of DPEd and CPD for mathematics and science education.

(1) PDM Revision

In the PEDP4 mid-term review, the Government of Bangladesh and development partners evaluated the overall progress of PEDP4 and revised the Disbursed Linked Indicator (DLI). The Revised Development Project Proforma (RDPP) approved at the end of June 2022 specified a two-year extension of PEDP4, and at the 5th JSP3 Technical Committee (TC) meeting, the Director General of DPE requested an extension of JICA's support. In response to this, JICA and the Project reviewed the activities for the PEDP4 extension period, and at the 7th JSP3 TC meeting held on January 31, 2023, an agreement was reached with each relevant organization. The Record of Discussion (RD) was concluded on June 11, 2023, and the decision was made to extend the Project until June 2025[2]. In line with the revision of the RD, the Project Design Matrix (PDM) was revised, the project purposes indicators were revised, and the indicators and activities for Outputs 3 and 4 were changed (first change). The target values for the indicators of project purposes 1 and 2, and Output 3.1 were to be continuously considered, and the Project proposed the target values at the 10th JSP3 TC meeting held in August 2024. Although there were no objections from the Bangladesh side to the target values, the chairperson, the Director General of DPE, was replaced and formal approval was not obtained. Therefore, a follow-up meeting was held again in October 2024 to explain the target values to the new Director General of DPE, and formal approval was obtained (second change). The PDMs (Versions 0 to 2) are presented in Attachment 1. The background of the change in each indicator is as follows.

[Project purposes 1 and 2]
Due to delays in the revision of the primary curriculum and the subsequent development of textbooks and TGs, the revised textbooks were only being used by Grade 1 to 3 at the time of the endline study. In addition, considering that the study conducted by NCTB and DPE at the start of PEDP4 were both targeted at Grade 3 and 5, this study targeted Grade 3. Furthermore, since the impact of COVID-19 was significant during the implementation of PEDP4, the Project decided not to conduct a before-and-after comparison, but to grasp a snapshot of the academic performance level of Grade 3 students and teachers' teaching skills at the end of PEDP4 as an output of PEDP4 measures supported by the Project, and to confirm the output.

[Output 3]
Under Output 3, the Project initially aimed to support the revision of the DPEd curriculum, including institutional reforms to comprehensively improve its quality, based on the key considerations outlined in the policy document "National Plan and Strategy for Primary Teacher Education and Development (TED Plan)"[3], which had been approved by MOPME during PEDP2. However, the DPEd revision process experienced prolonged stagnation due to factors such as the COVID-19 pandemic and confusion on the Bangladeshi side regarding the direction of the curriculum revision. Furthermore, it became difficult to implement activities as originally planned, as pilot activities began without the training modules being shared by the Bangladeshi side. In response to this situation, the Project and JICA held consultations and decided to revise the

[2] On May 25, 2025, it was officially decided that PEDP4 would be further extended until June 2026. According to the notification from MOPME, the remaining 18 tasks are to be completed within the current budget during the extension period.
[3] Key issues to be addressed in the development of the DPEd curriculum included: (1) enhancing the content of the approximately six-month-long internship, (2) introducing the Lesson Study approach, and (3) strengthening the mentoring skills of primary school teachers and Assistant Upazila Education Officers (AUEOs) who supervise internship.

outputs and activities to focus on areas less affected by such constraints from the Bangladeshi side.

Specifically, instead of supporting the development of mathematics and science materials for dissemination of the revised DPEd curriculum and the development of training modules on mentoring, the Project decided to organize a seminar on the revised primary mathematics and science curriculum for PTI instructors specializing in these subjects. Accordingly, the output indicators were also revised to focus on 1) participant satisfaction with the seminar and 2) incorporation of the seminar recommendations into the DPEd curriculum and training materials. These changes were agreed upon with the Bangladeshi side at the 7th JSP3 TC meeting[4].

[Output 4]
Under Output 4, the Project initially planned to support the development of a CPD framework based on the TED Plan and the results of activities and studies related to CPD conducted during Phase 2 of the Project. However, neither the preparatory study nor the resulting framework sufficiently incorporated the Project's recommendations, and the finalized CPD framework ended up being merely a revised version of the existing training plan. In addition, due to the impact of the COVID-19 pandemic, the formulation of a concrete implementation plan by the Bangladeshi side was delayed. In response to this situation, during discussions on the potential two-year extension of the Project, the Project and JICA agreed to revise the outputs and activities. Specifically, instead of providing technical support for improving the quality of CPD activities, the Project shifted its focus to: 1) collecting case examples of lesson improvement through school-based CPD monitoring, and 2) organizing a seminar to promote quality improvement of CPD activities. Correspondingly, the output indicator was changed from the evaluation of CPD practice to the formulation of recommendations for quality improvement of CPD. These revisions were agreed upon with the Bangladeshi side at the 7th JSP3 TC meeting.

Table 1-1 Overall Goal, Project Purpose, Outputs and Indicators

Overall goal	**Objectively verifiable indicators**
National level of academic skills and knowledge obtained in primary mathematics and science is improved	Results of mathematics and science in nationally representative leaning assessment in Bangladesh (e.g. NSA) is higher than baseline
Project purpose	**Objectively verifiable indicators**
Children come to understand mathematics and science better in primary education	1. Percentage of Grade 3 students who meet or exceed national grade level standards for mathematics and science is xx percentage points higher than that of 2017/18 in 2021/22 (After the first change) Percentage of Grade 3 students who meet or exceed national grade level standards for mathematics and science is xx percentage points higher than that of 2018/19 in 2023/24. **(After the second change) The average score of Grade 3 students will be 50% or higher on the math and science achievement tests in 2024.** 2. Percentage of observed classes where teaching and learning practice is satisfactory in mathematics and science classes is xx percentage points higher than that of 2018 in 2022 (After the first change) Percentage of observed classes where teaching and learning practice is satisfactory in mathematics and science classes is xx percentage points higher than that of 2019 in 2024

[4] The 7th JSP3 Joint Technical Committee Meeting (held on January 31, 2023): JICA and DPE reached an agreement on the two-year extension of the Project and the revision of the Project Design Matrix (PDM).

	(After the second change) <u>The average score for lesson observation results of practical teaching skills in mathematics and science classes achieve 2.3 points or higher out of 5 points.</u>[5]
Outputs	**Objectively verifiable indicators**
Output 1: Measures to address the challenges in teaching and learning in primary mathematics and science are identified and responded in curriculum revision (PEDP4 Subcomponent 1.1)	1. Reports including measures to address the challenges faced in children's learning in primary mathematics and science to inform curriculum and teaching-learning materials (TLMs) revision are prepared. 2. Revised curriculum reflects the suggestions in the Reports. 3. Materials for curriculum dissemination training for mathematics and science are developed.
Output 2: The challenges in teaching and learning mathematics and science are responded in the revisions of textbook and TLMs (PEDP4 Subcomponent 1.2)	1. Revised textbook reflects the suggestions in the Reports from Output1. 2. Revised teachers' guides/editions reflect the suggestions in the Reports from Output1. 3. Other TLMs are developed and/or revised based on the suggestions in the Reports from Output 1 (to be specified during the Project).
Output 3: Teachers are trained through appropriately designed Teacher Education to respond to the challenges in teaching and learning in mathematics and science (PEDP4 Subcomponent 1.4)	1. Revised DPEd curriculum and course materials reflect the suggestions in the DPEd effectiveness study and revised primary curriculum (After the first change) <u>Seminar outputs are rated as satisfactory or above by at least xx% of the seminar participants</u>. **(After the second change) Seminar outputs are rated as satisfactory or above by at least <u>70%</u> of the seminar participants.** 2. Materials for training on the revised DPEd curriculum for mathematics and science are developed **<u>(After the first change) Revised DPEd curriculum and course materials reflect the suggestions in the DPEd effectiveness study and the seminar(s).</u>** 3. Modules for training course on mentoring DPEd trainees are developed → **Deleted**
Output 4: Teachers are continuously supported through appropriately designed CPD to respond to the challenges in teaching and learning (PEDP4 Subcomponent 1.5, 1.6)	1. CPD framework is developed. (After the first change) CPD framework is revised. 2. CPD materials are developed. 3. xx% of observed CPD training events are rated as 'satisfactory' or above **<u>(After the first change) Recommendation on improving quality of CPD are documented and shared with the stakeholders.</u>** 4. (tentative) xx% of schools implemented. → **Delete**

[5] When creating a lesson observation sheet (rubric), each level is set as below order.
1) Set Level 4 "achieving the goal" and level 2 "achieving the minimum required level.
2) Set Level 3 "achieving a level between the target level and the minimum required level, and Level 5 "achieving a level that exceeds the goal".
3) Set Level 1 "not achieving a minimum level required"
In the Project, it was expected that teachers have acquired teaching skills that are slightly above the minimum level required. Thus, the Project set the target value at "2.3".

Table 1-2 Project Activities

Activities (initially)	Activities (after change)
3.1 Provide technical inputs to the mathematics and science areas of the DPEd effectiveness study	No changes
3.2 Support revising mathematics and science curriculum and course materials of DPEd based on the results of the study in Activity 3.1 and revised primary curriculum	No changes
3.3 Support developing materials for training on the revised DPEd curriculum for PTI instructors for mathematics and science	**3.3 Conduct seminar(s) on the revised primary math and science curriculum for PTI instructors for mathematics and science**
3.4 Support the development of training modules for head teachers, local education officials, and URC instructors to strengthen their mentoring capabilities for DPEd trainees	delete
4.1 Contribute to the CPD study based on the findings from JSP2	No changes
4.2 Support developing a framework for teachers and teacher-educators CPD, including a curriculum for the different profiles of professionals and a model for School-based CPD	4.2 Support **revising** a framework for teachers and teacher-educators CPD, including a curriculum for the different profiles of professionals and a model for School- based CPD.
4.3 Support developing CPD materials including digital materials in relevant areas	No changes
4.4 Contribute to capacity building of relevant stakeholders in CPD curriculum delivery based on Activity 4.3	No changes
4.5 Provide technical support for improving the quality of CPD activities implemented under the CPD framework based on Activity 4.3	**4.5 Monitor schools implemented School-based CPD and collect examples of lesson improvement activities**
	4.6 Conduct the dissemination seminar for improving the quality of CPD activities implemented under the CPD framework based on Activity 4.3

1.3 Inputs

1.3.1 Input by the Japanese Side

(1) Amount of Input

<Planned Project Budget>
Approximately 390 million yen[6]

<Actual Project Expenditure>
Approximately 560 million yen

(2) Dispatch of experts

17 experts were involved in this project, requiring 102.02 person-months (the first contract term 33.53 person-months, the second contract term: 68.49 person-months) . Table of person-months plan and actual result is presented in Attachment 2.

[6] Planned project budget is referred to Ex-Ante Evaluation Report.
https://www2.jica.go.jp/ja/evaluation/pdf/2018_1700288_1_s.pdf

(3) Equipment, etc.

The equipment provided for the Project is shown in Table 1-3. It was provided to the CPs, DPE and NCTB, at the time of project completion. The list of property lending is presented in Attachment 3.

Table 1-3 Equipment List

Equipment	Qty
Laptops	6
Copy machines	1
Desktop PCs	1
Projectors	1
Large LCD monitors	1
External HDDs	1
Color laser printers	2
Air conditioners	1

1.3.2 Input by the Government of Bangladesh

(1) Placement of CPs

The main CPs of this project are shows in Table 1-4.

Table 1-4 Key Stakeholders of the Project

Institution	Position	Name	Period of Service
MOPME	Senior Secretary	Mr. Md. Aminul Islam Khan	Unknown
	Secretary	Mr Abu Taher Md Masud Rana	2025/1/8~unknown
	Secretary	Mr. Farid Ahmed	~present
	Additional Secretary (Development)	Mr. Md. Ruhul Amin	~ 2023/6/4
		Ms. Noorjahan Khatun	2023/6/5~present
	Joint Secretary	Mr. Md Akram-Al-Hossain	Unknown
DPE	Director General	Mr Alamgir Mohammad Monsurul Alam	Unknown
		Mr. Shah Rezwan Hayat	~2024/5/30
		Mr Md Abdus Samad	2024/6/5~2024/9/11
		Dr Md Abdul Hakim	2024/9/12~2025/2/12
		Mr Abu Noor Md. Shamsuzzaman	2025/2/24~present
	Director General (Additional Charge)	Mr. Md Muhibur Rahman, Addl. Secretary, MOPME.	Unknown
	Additional Director General (ADG), PEDP4	Mr. Md Abdul Mannan	Unknown
		Md. Ataur Rahman	Unknown
		Mr. Dilip Kumar Banik	2022/1/9~2024/1/8
		Dr Uttam Kumar Das	2024/1/8~2024/8/30
		Abu Noor Md. Shamsuzzaman	2024/9/12~2024/11/16
		Mohammad Atiqur Rahaman	2024/11/17~present
	Additional Director General (Revenue)	Mr Sohel Ahmed	Unknown

Institution	Position	Name	Period of Service
Program Division, DPE	Deputy Director	Mr. Md Farhad Alam	~present
Training Division, DPE	Director	Mr. Md Jobayedur Rahman	Unknown
		Dr. Uttam Kumar Das	~2023/8/2
		Ms. Shaheenur Shaheen Khan	2023/1/31~2024/6/12
		Mr Imamul Islam	2024/6/12~2025/5/19
		Mr Md. Mahbubur Rahman Billah	2025/5/19~present
	Deputy Director	Mr. Shah Sufi Mohammad Ali Reza	Unknown
		Mr. Mahbubur Rahman Billah	~2024/6/12
		Mr Abdul Alim	2024/6/12~present
Monitoring and Evaluation Division, DPE	Director	Mr. Mahesh Chandro Roy	Unknown
	Director	Mr. Md. Mizanur Rahman, NDC	Unknown
		Ms. Shaheenur Shaheen Khan	2023/1/31~2024/6/12
		Mr Md Ansaruzzaman	2024/6/12~2024/8/5
		Md. Mahbubur Rahman Billah	2024/10/7~2025/5/19
		Mr Md Emamul Islam	2025/5/19~present
	Director (Additional Charge)	Dr. Uttam Kumar Das	Unknown
		Mr Imamul Islam	2024/8/8~2024/10/6
	Deputy Director	Ms. Nilufar Yasmin	Unknown
		Mr. Mohammad Rakib Uddin	Unknown
		Ms. Rasheda Begum	~2024/10/7
		Md Mirza Hasan Khosru	2024/10/7~present
Planning and Development Division, DPE	Director	Mr. Md Badiar Rahman	Unknown
		Mr Dilip Kumr Kumar Banik	Unknown
		Mr Mizanur Rahman	Unknown
		Mr. Mohammad Mizanur Rahman	~2024/5/28
		Dr Md Ataul Gani	2024/6/19~2024/10/1
		Md Mizanul Haq	2024/10/2~2025/3/13
		Mr Mirazul Islam Ukil, ndc	2025/3/13~present
	Director (Additional Charge)	Mr. A Z M Nurul Haque	Unknown
	Deputy Director	Dr Md Nurul Amin Chowdhury	~2024/5/30
		Mr Mohammed Rakib Uddin	2024/5/30~present
Finance Division, DPE	Director	Mr. Mahesh Chandro Roy	Unknown
Information Management (IMD)Division, DPE	Director	Mr. Md Badiar Rahman	Unknown
	Director (Additional Charge)	Mr. Mohammad Mizanur Rahman	Unknown

Institution	Position	Name	Period of Service
Policy and Operation, DPE	Deputy Director	Md Mohiuddin Ahmed Talukdar	Unknown
NCTB	Chairman	Prof. Narayan Chandra Saha	Unknown
	Chairman	Prof. Md. Farhadul Islam	~2024/5/22
	Chairman (Routine Task)	Prof. Moshiuzzaman	~2024/7/9
	Chairman (Routine Task)	Prof. Mukhlesur Rahman	2024/7/10~2024/7/28
	Chairman	Prof. Md. Farhadul Islam	2024/7/29~2024/8/19
	Chairman (Routine Task)	Prof. Robiul Kabir Chowdhury	2024/8/19~2024/9/1
	Chairman	Prof Dr AKM Reazul Hassan	2024/9/1~2025/3/25
	Chairman (Additional Charge)	Prof. Robiul Kabir Chowdhury	2025/3/25~present
Primary Wing, NCTB	Member Curriculum	Prof. Dr. Reazul Hassan	~2023/7/16
		Prof. Mukhlesur Rahman	2023/7/17~2024/10/12
		Prof AFM Sarwar Jahan	2024/10/12~unknown
	Member Curriculum, (Additional Charge)	Prof. Robiul Kabir Chowdhury	2025/4/10~present
NAPE	Director General	Mr. Md. Shah Alam	~2023/1/14
		Mr Md Farid Ahmed	2024/1/14~
	Assistant Specialist	Mr. Md. Mazharul Haque	~2024/1/8
		Mahbubur Rahman	2024/7/18~present

(2) Other Matters to be Borne by the Government of Bangladesh

The project office was set up at DPE and NCTB. The office and meeting space required for operation, as well as the related equipment (desks, etc.) were provided by DPE and NCTB, respectively. In addition, the utility costs for the project office were borne by DPE and NCTB.

2. Project Activities

2.1 Activity Record

2.1.1 Summary of the Activity

Table 2-1 shows an overview of the activities. All activities related to Outputs 1 to 4 have been completed.

Table 2-1 Overview of Activities

Output 1: Measures to address the challenges in teaching and learning in primary mathematics and science are identified and responded in curriculum revision (PEDP4 Subcomponent 1.1)	
Activities	**Progress**
1.1 Provide technical inputs to the mathematics and science parts of the NCTB studies on the current status and challenges in teaching and learning to inform curriculum and TLMs revision	Completed. Provided technical support for the NCTB study on the current curriculum. "NCTB study report" was completed in February 2020.
1.2 Support revising mathematics and science curriculum based on the proposals in the Reports from Activity 1.1. (Including coordination for consistency with pre-primary)	Completed. Supported analyzing and revising of the draft of NCTB primary curriculum. The revised curriculum was approved by MOPME in March 2022.
1.3 Support developing curriculum dissemination training materials in mathematics and science in line with the revised curriculum	Completed. Developed model lesson videos for mathematics and science (5 for mathematics and 5 for science) and provided them to NCTB.
Output 2: The challenges in teaching and learning in primary mathematics and science are responded in the revisions of textbooks and teaching -learning materials (TLMs) (PEDP4 Subcomponent 1.2)	
Activities	**Progress**
2.1 Support revising G1-5 textbook in mathematics and science based on Output1 (including coordination for consistency with pre-primary)	Completed. Supported textbook development for Grades 1 to 5 through the creation of textbook samples, the creation of a textbook development manual, and participation in workshops. [Introduction status by the Government of Bangladesh] Textbooks for Grade 1: Nationwide distribution in January 2023 Textbook for Grades 2 and 3: Nationwide distribution from January 2024 Textbook for Grades 4 and 5: Not approved due to some reasons of the Government of Bangladesh. Those textbooks will be revised in 2025 and distributed nationwide from January 2026.
2.2 Support revising teachers' guides/editions for G1-5 based on Output1 (including coordination for consistency with pre-primary)	Completed. Provided support in parallel with Activity 2.1 and completed the support for developing Grade 1 to Grade 5 teachers' guides. [Introduction status by the Government of Bangladesh] Teachers' guide for Grade 1: distributed online in January 2023, distributed printed version nationwide from January 2024 Teachers' guides for Grades 2 and 3: Distributed nationwide from January 2024.

	Teachers' guides for Grades 4 and 5: Not approved due to some reasons on the Bangladesh side. It will be revised in 2025 and distributed nationwide from January 2026.
2.3 Support developing and/or revising other TLMs related to mathematics and science, as necessary, based on Output1	Completed. Developed digital teachers' guide (5 for mathematics and 5 for science). Although QR codes and URLs have not yet been added to the printed teachers' guides, they are posted on the NCTB YouTube channel. Developed a total of 344 mathematics lesson videos as part of the Bangladesh government's COVID-19 Response and Recovery Plan (Grade 1 to 5). 283 of them have been broadcast on the national channel. All videos are available on the DPE YouTube channel.
Output 3: Teachers are trained through appropriately designed Teacher Education to respond to the challenges in teaching and learning in mathematics and science (PEDP4 Subcomponent 1.4)	
Activities	**Progress**
3.1 Provide technical inputs to the mathematics and science areas of the DPEd effectiveness study	Completed. Provided technical advice on the mathematics and science section of the draft report shared by DPE. The report was finalized in April 2020.
3.2 Support revising mathematics and science curriculum and course materials of DPEd based on the results of the study in Activity 3.1 and revised primary curriculum	Completed. Although it was difficult to provide support due to the confusion surrounding the revision of the DPEd, the Project continued to gather information and Japanese experts participated in the Revised DPEd (BTPT) re-revision workshop in February 2025. The Project provided advice through discussions with the mathematics and science teams.
3.3 Conduct seminar(s) on the revised primary math and science curriculum for PTI instructors for mathematics and science	Completed. Conducted a seminar at Dhaka PTI in October 2024 for education officials from NAPE, NCTB, DPE, MOPME and PTIs.
Output 4: Teachers are continuously supported through appropriately designed Continuous Professional Development (CPD) to respond to the challenges in teaching and learning (PEDP4 Subcomponents 1.5 and 1.6)	
Activities	**Progress**
4.1 Contribute to the CPD study based on the findings from JSP2	Completed. Provided advice on study design and analysis for the CPD effectiveness verification study.
4.2 Support developing a framework for teachers and teacher-educators CPD, including a curriculum for the different profiles of professionals and a model for School-based CPD	Completed. Completed the support of CPD framework development in the first term. However, there were issues with the quality of the reports and the revision content, and related plans were suspended due to COVID-19 and changes to DLIs. The Project changed its policy and decided to indirectly provide support for improving the quality of CPD through the development and introduction of digital materials.
4.3 Support developing CPD materials including digital materials in relevant areas (*)	Completed. Developed animation videos, new instructional videos, and model lesson videos (Activity 1.3)

	and supported DPE in distributing and promoting them nationwide.
4.4 Contribute to capacity building of relevant stakeholders in CPD curriculum delivery based on Activity 4.3	Completed. Submitted "Recommendation for Revision of Subject-based Training manual in Math & Science" to DPE and proposed how to introduce CPD digital materials in May 2023. Participated in the Science subject-based training manual development workshop held in May 2024, introduced CPD digital materials, and proposed how to introduce them.
4.5 Monitor schools implemented School-based CPD and collect examples of lesson improvement activities	Completed Conducted CPD monitoring at the central, local, and school levels to understand the current status and issues of improving lessons. Conducted analysis about the utilization status of training and materials to identify barriers and submitted recommendations to improve CPD to DPE.
4.6 Conduct the dissemination seminar for improving the quality of CPD activities implemented under the CPD framework based on Activity 4.3	Completed. Conducted the seminar for education officials from DPE, NCTB, NAPE, PTIs, URCs, UEOs, principals, and mathematics and science teachers at Dhaka PTI in April 2025.

2.1.2 Achievements of Each Activity

(1) Activities related to Output 1

1.1 Provide technical inputs to the mathematics and science parts of the NCTB studies on the current status and challenges in teaching and learning to inform curriculum and TLMs revision

In the first term, the Project provided technical support for the analysis of the results for the survey on the current curriculum conducted by NCTB under the framework of PEDP4 and for the compilation of the "NCTB study report", which was completed in February 2020.

1.2 Support revising mathematics and science curriculum based on the proposals in the Reports from Activity 1.1. (Including coordination for consistency with pre-primary)

[Curriculum revision support]
It was expected that the revised draft primary mathematics and science curriculum would be completed in April 2020, and the process of finalization and approval would proceed. In parallel, it was also expected that other activities linked to PEDP4 would be conducted such as the development of textbooks and teachers' guides and teacher training.

However, since April 2020, the finalization of the revised curriculum has been delayed for a long time. The main reason for this is the significant delay in the development of the National Curriculum Framework for K-12[7] (NCF), which the NCTB was working on under the direction of the Prime Minister's Office. The reason for the significant delay in the development of the NCF is thought to be the complexity of the NCTB's organizational structure. The NCTB is an institution under MOE, which is responsible for secondary education. However, the revision of the curriculum is handled by the Secondary Wing and Primary Wing within the NCTB so two different education-related ministries, MOE, which is responsible for secondary education, and MOPME, which is responsible for primary education, have to be involved. As a result, the NCTB's organization has a so-called "twisted structure" in which the jurisdictions of the two

[7] K-12 refers to kindergarten through Grade 12.

ministries intersect. These structural problems, differences in the perceptions of the two ministries regarding NCF development, and disagreements in curriculum revision policies between the Secondary Wing and the Primary Wing, likely contributed to significant delays in the development of the NCF. In addition, the development of the NCF was not carried out within the framework of PEDP4 but was carried out under the direction of the Prime Minister's Office with the support of UNICEF. The fact that NCTB was so dependent on UNICEF and Non-Governmental Organizations (NGOs) is also believed to be one of the reasons for the delays in the development of the NCF.

Development of the NCF began in September 2019, the draft was completed in August 2021 and submitted to the National Curriculum Coordination Committee (NCCC) in September 2021. Meanwhile, MOPME and other relevant ministries and agencies took seriously the delay in finalizing the revised curriculum and the associated delays in PEDP4 activities and instructed NCTB to finalize the revised curriculum as soon as possible regardless of the progress of NCF development. In response to this instruction, NCTB reviewed its plans for curriculum revision and textbook and teachers' guide development, formulated a revised NCTB Action Plan, and carried out work toward finalizing the curriculum.

Project Responses and Results

Even under these difficult circumstances, the Project supported the finalization of the curriculum through the following activities:

- **Analyzing the revised primary science curriculum (draft version) and compiling recommendations, and preparing a revised curriculum**
  - ✓ To further improve the quality of the curriculum and to support the NCTB in finalizing the curriculum promptly, the revised primary science curriculum (draft version) was analyzed, and the results of the analysis were compiled as recommendations for future curriculum revision.
  - ✓ Based on the recommendations from the analysis, the revised primary science curriculum (draft version) was revised by the Project. The draft version of revised curriculum was shared with NCTB and the curriculum developers, and it was confirmed that the curriculum would be finalized based on the revised version.
- **Collecting the latest information on curriculum revisions**
  - ✓ Although it was difficult for Japanese experts to travel to the site due to the spread of COVID-19, the Project maintained continuous communication with NCTB through local staff and made efforts to grasp the latest trends while collecting necessary materials and information related to curriculum revision, such as the revised NCTB Action Plan and curriculum revision plans.
- **Information gathering regarding NCF development**
  - ✓ NCF development was not an initiative implemented within the PEDP4 framework, so the Project did not actively or directly get involved in it. However, by attending meetings hosted by UNICEF and interviewing relevant parties, the Project was able to gather information on the progress of NCF development and the NCTB Action Plan.

As a result of the above support, the final version of the revised curriculum was completed in March 2022, and after confirmation by the NCCC held on March 23, 2022, it was approved by MOPME on the condition that it would be revised again after the pilot activities. With this approval, the project's support for the revision of the primary mathematics and science curriculum for Grades 1 to 5 was completed. The revised primary mathematics and science curriculum are presented in Attachments 4-1 to 4-4.

Remaining issues
Pilot activities were condition for approval of the revised curriculum. The NCTB Action Plan, revised again in January 2025, clearly states that pilot activities and refinement work would be carried out for the primary curriculum from Grades 1 to 3 by June 2025. However, as of May 2025, no pilot activities have been carried out. At NCTB, the implementing agency, frequent changes in the position of Chairman, who serves as a head of the organization, resulted in intermittent periods of vacancy. As a result, the necessary approvals for conducting pilot activities could not be obtained in a timely manner, which is considered one of the factors that hindered progress. Close monitoring will be required on whether NCTB will be able to implement pilot activities as planned by the end of PEDP4 in June 2026.

In addition, ensuring alignment with the NCF remains on hold. In the revised NCTB Action Plan (dated November 21, 2023), the NCTB established a work plan to ensure alignment between the NCF and the primary curriculum. However, the work was put on hold because DPE was not aware of this matter. The revised NCTB Action Plan (dated February 25, 2024) also includes plans to ensure alignment with the NCF but, as of May 2025, no activities have been implemented.

[Curriculum-related seminars]
Two curriculum-related seminars were held with Professor Baba and Professor Shimizu from Hiroshima University and Professor Ninomiya from Saitama University as lecturers. The March 2024 seminar was held as a follow-up for participants of the second training in Japan, and the three professors provided practical and theoretical knowledge and skills for future improvements in mathematics and science education. In the March 2025 seminar, with the Project due to end in June, participants looked back on 20 years of efforts to improve the primary mathematics and science curriculum and exchanged opinions on the outlook for the future curriculum in Bangladesh.

Table 2-2 Curriculum Seminar for NCTB and Textbook Writers

Science and Mathematics Teaching/Learning in Primary Education in Bangladesh		
Purpose	To strengthen the new ideas that the participants learned in Japan as a follow-up to the training in Japan.	
Date	March 13, 2024, 9:00-13:00	
Place	NCTB Conference Room	
Presentation	Mathematical Inquiry for Future Primary Schools in Bangladesh	Professor Baba, Hiroshima University
	Development of Scientific Skills in Japanese Science and Mathematics Curriculum	Professor Shimizu, Hiroshima University
	Basic Structure of Assessment in School Education	Professor Ninomiya, Saitama University
Participants	Approximately 30 people from NCTB, textbook writers, members from the Project., etc.	

Table 2-3 Curriculum Seminar (20 Years' Cooperation Summary)

Review of the Bangladesh Primary Mathematics and Science Curriculum in the last 20 years and its Future Development		
Purpose	Using the three-tiered curriculum framework, to identify current gaps in the Bangladesh primary mathematics and science curriculum and discuss solutions to fill the gaps.	
Date	March 10, 2025, 9:30-13:30	
Place	NCTB Auditorium	
Presentation	Reflecting Twenty Years for Bridging the Gap Between Intended, Implemented and Attained Curriculum	Professor Baba, Hiroshima University
	Inquiry-Based Science Education in Primary Schools: A Japanese Perspective	Professor Shimizu, Hiroshima University
	Assessing Mathematical Competency: Bridging the Gap Between Attained and Implemented Curriculum	Professor Ninomiya, Saitama University
	"The Evolution of the Primary Mathematics and Science Curriculum in Bangladesh: Achievements and Challenges"	Member Primary, NCTB
	Teacher Training for Effective Mathematics and Science Instruction: Current Practices and Future Directions"	Director, DPE Training Division
Participants	Approximately 70 participants from MOPME, NCTB, DPE, NAPE, PTI superintendents and instructors, primary school head teachers, development partners, etc.	

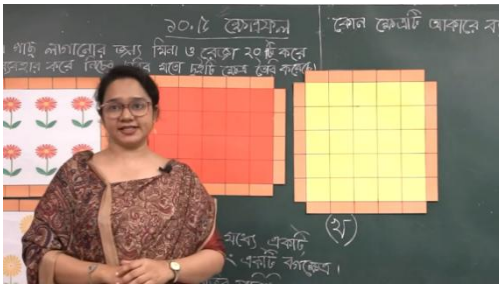
1.3 Support curriculum developing dissemination training materials in mathematics and science in line with the revised curriculum

[Development of training materials for disseminating curriculum]
The implementation plan for the curriculum dissemination training was scheduled to be announced in January 2022, but due to delays in the finalization and approval of the revised primary curriculum, the implementation of the curriculum dissemination training was also delayed.

In parallel with supporting the revision of the primary school curriculum, the Project supported the development of 10 model lesson videos (five for mathematics and five for science) as materials for curriculum dissemination training and provided them to NCTB in March 2022. The model lesson videos are video materials in the form of lessons stimulated with actual teachers and students and clearly explain the revised points of the new curriculum, specific teaching methods based on the revised points, how to conduct student-centered lessons using learning materials, and methods of formative assessment within the class. The model lesson videos have been uploaded to NCTB's official YouTube channel. The digital material list and digital material content list including the model lesson videos are presented in Attachments 5-1 to 5-2.

Table 2-4 Mathematics and Science Model Lesson Videos (Curriculum Dissemination Training Material)

Subject	Publishing location
Mathematics (1 for each grade (1 to 5))	Model Lesson – Mathematics (National Curriculum and Textbook Board) https://www.youtube.com/playlist?list=PLSZv6mVuNumXxTg8pJwP09dJaDD-7UkvM
Science (1 for each grade (1 to 5))	Model Lesson – Science (National Curriculum and Textbook Board) https://www.youtube.com/playlist?list=PLSZv6mVuNumXsMsAsAbZ_t6PWQOmT4lAz



Mathematics Model Lesson



Science Model Lesson

Figure 2-1 Model Lesson Videos

In addition, NCTB held a curriculum dissemination training materials development workshop with assistance from the European Union (EU) in September 2022 to advance the creation of online training materials. Local consultants and Japanese experts from the Project participated in the workshop and provided advice on issues with the materials that NCTB was developing and how to address them, as well as points to note when developing the objectives and content of training.

Issues regarding disseminating the curriculum

NCTB was originally scheduled to conduct the training of trainer by December 2022 but, due to delays in curriculum revisions and development of training materials, it was implemented from January 2023. The curriculum dissemination training was conducted in two stages: core trainer / key trainer / master trainer training implemented with the NCTB budget, and training for district-level education officers and teachers implemented with the DPE Training Division budget, and it was conducted both online and in-person.

Table 2-5 Curriculum Dissemination Training Implementation Status

Training	Responsible organization	Number of participants completed	Training implementation period
Core Trainer Training (face to face)	NCTB	50 people	January 2023
Key Trainer Training (face to face)	NCTB	200 people	January 2023
Master Trainer Training (face-to-face)	NCTB	600 people	March 2023
Teacher training (online)	NCTB	Approximately 300,000 primary school teachers nationwide	February to July 2023
Training for Education Officers	DPE	unknown	unknown
Teacher training (face-to-face, 3 days)	DPE	Approximately 300,000 primary school teachers nationwide	September 2023 - February 2024

Model lesson videos developed by the Project were utilized for the training of trainers. However, the face-to-face teacher training did not incorporate the model lesson videos into the training manuals, and the fact that the materials were not utilized remained an issue for the Project. Therefore, in Output 4, efforts were made to ensure that the materials are utilized in CPD training and lesson improvement activities at schools (see Activity 4-3). In addition, the training conducted this time was only for Grade 1, and no training was conducted on the curriculum and textbook for Grades 2 to 5, which is likely affecting the implementation of the curriculum at schools.

(2) Activities related to Output 2

2.1 Support revising G1-5 textbook in mathematics and science based on Output1 (including coordination for consistency with pre-primary)

The development and distribution status of textbooks and teachers' guide for each grade is Table 2-6. Textbooks are presented in Attachments 6-1 to 6-10 and teachers' guides are presented in Attachments 7-1 to 7-6[8].

Table 2-6 Progress of Textbook and TG Development (as of May 2025)

Grade	Progress
Grade 1	• Textbooks: Distributed to primary schools nationwide from January 2023. • Teachers' guides: Posted on the NCTB website from January 2023, and the printed versions were distributed nationwide from January 2024.
Grades 2 and 3	• Textbooks: Distributed to primary schools nationwide from January 2024. • Teachers' guides: Distributed to primary schools nationwide from June 2024.
Grades 4 and 5	• Textbooks: Support from the Project has been completed, and the final drafts were completed in August 2024. However, they were not approved by NCCC due to quality issues. Thus, the current textbooks (2012 curriculum version) are being used in 2025 academic year. • Teachers' guides: Support from the Project has been completed, and the final drafts were completed in August 2024. The teachers' guides are on hold for the time being as the textbooks have not yet been approved. The current teachers' guides are being used in the 2025 academic year.

Details of the activities are provided below.

[Development of Grade 1 Textbook and Teacher's Guide]
Work on the mathematics and science textbooks and teachers' guides for Grades 1 to 3, which were scheduled to be completed in the first term, was temporarily halted due to COVID-19 infections among NCTB staff and textbook writers, and due to the NCTB being busy with developing the NCF.

The Project took advantage of this period of interruption to implement the following activities to ensure smooth implementation of support after the resumption of textbook and teachers' guide development.

- Creating sample mathematics textbooks for Grades 1 and 2
- Creating sample science teachers' guides for Grades 1 and 2

The samples of textbooks and teachers' guides were provided to NCTB. Based on those samples, the mathematics and science experts in the Project and the writers of the textbook and teachers' guide were expected to work together to develop the textbooks and teachers' guides more efficiently.

As of January 2022, the revised primary curriculum on which the textbooks and teachers' guides would be based had not yet been approved. Therefore, it was not possible to officially begin developing the textbooks and teachers' guides. However, in consideration of PEDP4 and the remaining project period, the Project worked closely with NCTB to revise the mathematics and science textbooks and teachers' guides. Their final drafts for Grades 1 to 2 were almost complete,

[8] Textbooks: The approved textbooks for Grades 1 to 3 in mathematics and Grade 3 in science (in Bangla and English translation) are attached. In addition, the draft textbooks for Grades 4 and 5 in mathematics (in Bangla), revised under the caretaker government and pending official approval, are also included. The science textbooks for Grades 4 and 5 have not yet been completed.
Teacher's Guides: The approved teacher's guides for Grades 1 to 3 in both mathematics and science (in Bangla) are attached. The teacher's guides for Grades 4 and 5 have not yet been completed.

and the Project was planning to begin work on developing the textbook and teachers' guide for Grades 3 and beyond.

In March 2022, following the approval of the revised primary curriculum, textbook and teachers' guide development officially resumed. In mid-April 2022, an orientation workshop for textbook and teachers' guide development was held under the leadership of NCTB for textbook writers of all subjects, and the development of Grade 1 textbooks and teachers' guides was carried out at a rapid pace. Japanese experts also participated in the workshop, providing technical advice to NCTB staff and textbook writers on the development of textbooks and teachers' guides. Several textbook and teachers' guide development workshops were held thereafter, and the development work progressed diligently.

Along the way, issues arose, particularly regarding illustrations, such as inconsistency in style (for example, some illustrations were cartoon-like and others realistic), and inconsistency with the learning content (for example, illustrations that were not related to the learning contents). However, the final versions of the Grade 1 textbooks and teachers' guides were completed in August 2022. In mid-October 2022, both the textbooks and teachers' guides were approved by NCCC, on the condition that the illustrations be revised based on the results of the pilot activity. The new Grade 1 textbooks and teachers' guides have been used in primary schools nationwide since January 2023.

Challenges faced in developing the Grade 1 textbooks and Teacher's Guides and their solutions:

In completing the new Grade 1 textbooks and teachers' guides, the Project faced the following challenges:

◆ Printing and Distribution of new Grade 1 textbooks and Teacher's Guides

Due to the recent rise in prices and the resulting restrictions on imports, it has become difficult to obtain good quality paper and ink. As a result, only textbooks were printed and distributed, and the teachers' guides were not printed or distributed but only posted on the NCTB website. For Grades 1 and 2, there are no textbooks for subjects other than Bengali, English, and mathematics, so the teachers' guide was the only TLM. Therefore, printing the teachers' guides and distributing it to teachers was very important to ensure the quality of classes. In light of this situation, NCTB has issued a letter to the Director of DPE requesting the printing and distribution of the teachers' guide, and the Project also made a request to the government at the 6th JSP TC meeting (held on December 19, 2022), but the teachers' guide was not printed as a result, so the Project continued to lobby the government to print and distribute the teachers' guide. As a result, a Grade 1 TG was printed and distributed to primary schools across the country in January 2024.

◆ Quality of new Grade 1 mathematics and science textbooks and Teacher's Guides

Because of the COVID-19 pandemic, it was difficult for Japanese experts to visit Bangladesh, and textbook and teachers' guide development workshops were suddenly held, postponed, and canceled, which made it difficult to adjust the experts' travel schedules. Therefore, through the Project's local staff, suggestions for improvement on the drafts prepared by textbook writers, as well as drafts developed by the Project itself, were shared and explained to NCTB and the textbook writers. However, in mathematics, it was difficult to fully reflect the opinions of experts in the new textbook and teachers' guide, resulting in insufficient quality. Possible reasons for not being able to fully reflect the opinions of experts include: 1) the opinions of Japanese experts were accepted and tried to be reflected, but the textbook writers did not have the ability to reflect them in the textbook, 2) textbook writers had difficulty understanding the input provided by the Japanese expert, and 3) some writers appeared to lack the willingness to accept suggestions from the Japanese experts, possibly due to a strong sense of professional pride.

[Development of textbook and Teacher's Guides for Grades 2 and 3]
The Grades 2 and 3 textbook was finalized in September 2023 and was used in primary schools nationwide from January 2024. The teachers' guide was originally scheduled to be completed in September 2023 but was completed in June 2024. As mentioned in Output 1, this delay was due to confusion caused by NCTB instructing the writers to suddenly change the structure, content, and assessment methods of the teachers' guide when finalizing it to ensure consistency between NCF and the revised primary curriculum.

When the new teachers' guide for Grade 1 was completed in 2023, it was not printed and distributed but was only posted on the NCTB website. However, in June 2024, the new TGs for Grades 2 and 3 were printed and distributed to primary schools across the country.

Supporting the development of textbooks and Teacher's Guides for Grades 2 and 3
As mentioned in [Development of Grade 1 Textbook and teachers' guide], issues arose regarding the quality of the textbook. Therefore, in providing support for the development of textbooks and teachers' guide for Grades 2 and 3, the Project implemented the following support in accordance with measures formulated based on the issues and reflections from the development of textbook for Grade 1.

◆ Creating manuals and samples for developing textbooks and Teacher's Guides
The Project created a manual and sample for developing textbooks and teachers' guides as reference materials for the development of textbooks and teachers' guides and provided them to NCTB and textbook writers because NCTB and textbook writers lack knowledge and experience in textbook development.

NCTB is a government agency responsible for curriculum revision and textbook development, but most of the staff involved in the previous textbook development had been transferred, and the current staff had no experience in textbook development. In addition, textbook writers are invited from outside the organization, making it difficult to accumulate knowledge on textbook development. Furthermore, in Bangladesh, there is no system in place to ensure that the same textbook writers are engaged throughout Grades 1 to 5. As a result, different writers are likely to be appointed for each grade, requiring NCTB to provide repeated guidance on the fundamental concepts and methods of textbook development each time. Furthermore, workshops hosted by NCTB are held on an irregular basis, making it difficult for Japanese experts to participate in them at the right time, and direct technical support from Japanese experts is not possible. Considering these circumstances, the Project provided a textbook development manual (Attachment 8) and samples and created a support system that would enable NCTB and textbook writers to develop high-quality textbooks.

The manual and samples provided by the Project were used in the development of textbooks. Specifically, at the textbook development kick-off meeting, local staff of the Project used the textbook development manual to explain basic knowledge related to textbook development, as well as development methods and procedures, and supported the development of textbook and TG while promoting the textbook writers' understanding of textbook and teachers' guide development. In addition, NCTB staff instructed the textbook writers to develop textbooks while referring to the manual and samples developed by the Project. As far as observing the textbook (final drafts) developed by the textbook writers, the textbook was developed according to the format described in the manual, and some of the samples were used, so it is believed that the manuals and samples are functioning effectively in the development of textbooks and teachers' guides.

◆ Establish a system to participate in the Textbook and Teacher's Guides development workshops

As the workshops organized by NCTB were often held or changed suddenly, there were few opportunities for Japanese experts to participate, and it was difficult to provide direct support. Therefore, the Project established a system to provide technical guidance as below.

1) Improving the capabilities of local staff of the Project
Specifically, the Project aimed to improve the capabilities of local staff and established an implementation system that would allow them to play a central role in textbook development. When the Project received information about the workshop, the Project prepared for the workshop by reviewing the textbook and teachers' guide development manual together with local staff and mutually confirming important points and development procedures for textbooks and teachers' guides. During the workshop, local staff explained the manual and samples as they proceeded with textbook development.

2) Remote technical support
As it was difficult to participate in on-site textbook development workshops, the Project also provided technical support remotely. The Japanese experts checked the progress of the workshops through online meetings and emails and provided feedback through local staff as necessary.

◆ Exchange of agreement regarding textbook development policy

In the minutes signed by DPE and JICA at the JSP3 TC meeting in January 2023, both parties agreed that Japanese experts would be given the opportunity to commit to the textbook development process. To materialize this, the Project developed a document summarizing the project's efforts, implementation policy, support methods, and workflow related to textbook development and submitted it to NCTB. This document was agreed upon by both NCTB and the Project, and it was confirmed that mathematics and science textbooks would be jointly developed based on the contents of the document. Consent for JICA's textbook development support in mathematics and science is presented in Attachment 9.

◆ Support system for developing textbook and Teacher's Guides

The mathematics and science textbooks for Grades 2 and 3 were developed based on the textbook and teachers' guide development manual and samples developed by the Project. However, while NCTB and the textbook writers expressed the opinion that "it is important to refer to the samples created by the Japanese side", they also expressed their intention to show autonomy, saying, "because these are Bangladeshi textbooks, we want to develop them with our own hands".

It was important to respect the motivation and initiative of the Bangladeshi side and to support an environment in which they could take the lead in developing textbooks. However, because NCTB and textbook writers lacked experience in textbook development, there was concern that the quality of the textbooks would be lower than that of the textbooks developed by Japanese experts in the previous phase. In the midst of this dilemma, a pressing challenge emerged: determining the appropriate balance between providing support and respecting local decision-making processes.

Through collaboration between the Project's experts and the textbook writers, the importance of the Project's core approach—problem-solving and activity-based learning—was explained to the Bangladeshi side during the textbook development process[9]. As a result, mutual understanding and agreement were reached regarding this approach. Based on this agreement, it was decided

[9] The contribution of the Project's local consultant, who was directly involved in textbook development as one of the textbook writers and persistently engaged in persuading NCTB and other textbook writers, was highly significant.

that the textbooks would be developed under the leadership of the Bangladeshi side, following the direction of creating problem-solving oriented textbooks by writing in accordance with the sample templates provided by the Project. In addition, to ensure quality, the Project's experts reviewed and commented on the drafts created by the Bangladeshi side, and the Bangladeshi side revised the content based on those comments.

Through this process, textbooks developed incorporated "problem solving and activity-based learning" approach" proposed by the Project. It can be said that the Project was successful in ensuring quality while respecting the initiative of the Bangladeshi side.

◆ Textbook development seminar

Ahead of the full-scale start of textbook development for Grade 3, a textbook development seminar was held on March 13, 2023, by Professor Baba (mathematics education expert) and Professor Kinya Shimizu (science education expert) of Hiroshima University for NCTB and mathematics and science textbook writers. The seminar focused on the themes of "Textbook Development" and "Assessment". Professors discussed how to develop textbooks that enable learner-centered lessons and assessments at the school level, while citing specific examples of mathematics and science education, such as Japan's experience, cases from other countries, and international trends. In addition, as part of the awareness-raising activities for textbook writers, participants were encouraged to use the textbook development manual created by the Project to advance textbook development. Through this seminar, NCTB and textbook writers had a great opportunity to deepen their understanding of the basic concepts of textbook development and learning assessment.

Table 2-7 Textbook Development Seminar for NCTB and Mathematics and science Textbook Writers

Textbook Development and Assessment for Mathematics and Science Education in Primary Education of Bangladesh	
Purpose	To enhance understanding of textbook writers and other stakeholders on mathematics and science textbook development and assessment in Bangladesh by highlighting the experiences of Japan and other countries, as well as international trends and challenges in textbook development and assessment.
Date	March 13, 2023, 9:00-15:00
Place	Hotel Tropical Daisy Dhaka
Presentation	Session 1: Textbook Development Session 2: Formative Assessment (Mathematics: Professor Baba, Hiroshima University / Science: Professor Shimizu, Hiroshima University)
Participants	Approximately 55 people including NCTB, mathematics and science textbook writers, JICA, and the project members

Examples of improvements in the new textbook for Grades 2 and 3:

Through the assistance described above, the Project worked to support the development of textbooks and teachers' guides. As a result, the following improvements were observed in the new textbooks:

[Examples of improvements to mathematics textbook]

- Adopting a design that promotes problem-solving learning
- Introduction of learning through key questions
- Learning activities and discussions based on key questions
- Practice exercises to reinforce what students have learned

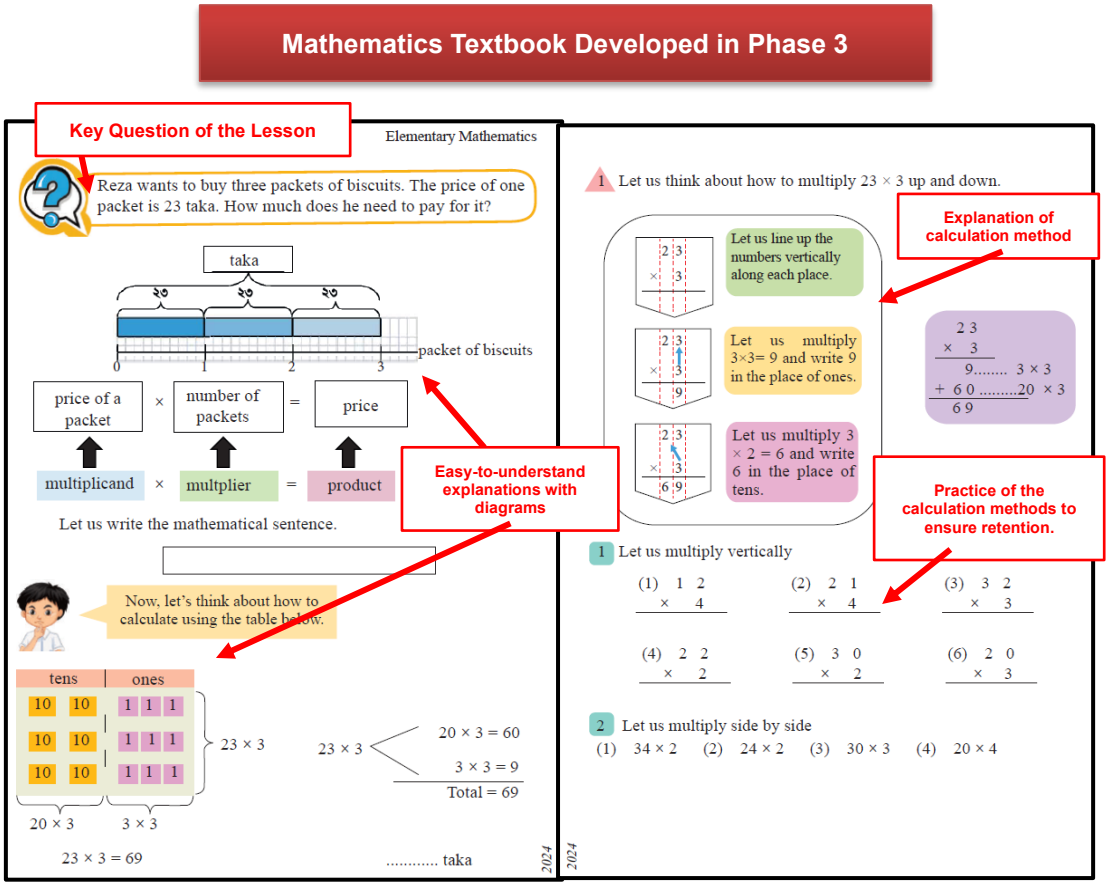


Figure 2-2 Grade 3 Mathematics Textbook Developed in Phase 3

[Examples of improvements in science textbook]
- A layout that follows the steps of the scientific method
- Introduction of characters
- Presentation of students' learning activities in each lesson
- Promotion of discussion among students

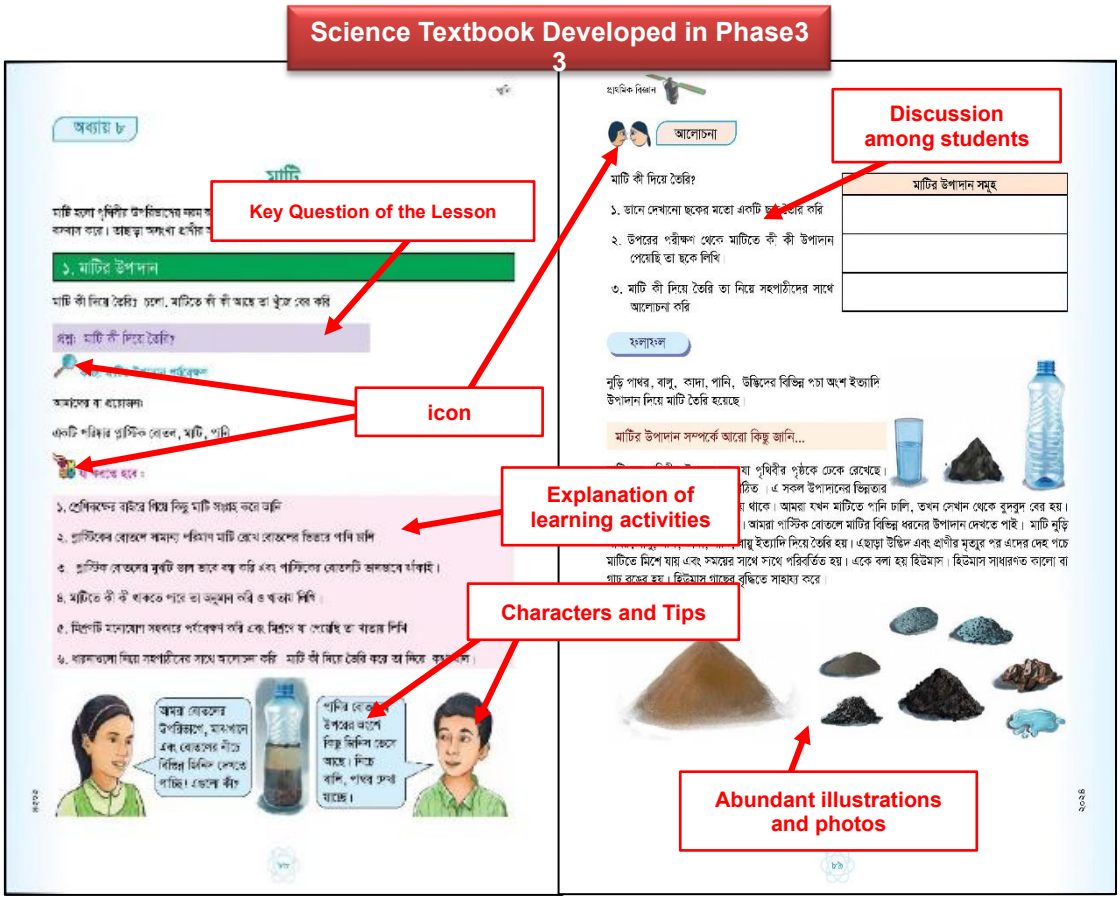


Figure 2-3 Grade 3 Science Textbook Developed in Phase 3

<u>Remaining challenges in new textbooks for Grade 2 and Grade 3</u>

◆ Contents of the new textbook

NCTB decided not to introduce "exercises" at the end of each chapter in the new textbook, except for mathematics. The reason behind this was that the Government of Bangladesh had decided to shift the method of evaluating students from "summative assessment" to "formative assessment". However, even with formative assessment, it is necessary to confirm the students' understanding. When the Project asked NCTB what measures they would take, they replied that they would develop study worksheets or workbooks separate from the textbook and distribute them to students. However, in the end, "exercises" were introduced at the end of each chapter. It is unclear whether NCTB will develop study worksheets or workbooks in the future.

[Development of textbooks and Teacher's Guides for Grades 4 and 5]

Development of textbooks and teachers' guides for Grades 4 and 5 began in April 2024. At the "G4 & G5 Textbook & teachers' guide writers' orientation" held by NCTB in April 2024, local staff from the Project participated and shared the textbook development manual and textbook samples with textbook writers. However, at the textbook development workshop held by NCTB

in May 2024, NCTB instructed textbook writers of all subjects to develop Grade 4 and Grade 5 textbooks based on experiential learning model[10], which is the textbook format used in lower secondary education. Until then, mathematics and science textbooks had been developed using a problem-solving approach with the support of JICA. Although the structure (format) and policy of the textbook were changed suddenly, NCTB did not provide explanation to the writers regarding the specific writing method and format. After that, NCTB provided the writers with the new format, but there was still no explanation regarding the specific writing method.

Due to the opposition from the mathematics textbook writers affiliated with Dahak University for changing the approach, the experiential learning model was not adopted, and the traditional problem-solving approach was maintained. On the other hand, in the case of science textbooks, there was a significant confusion among the textbook writers concerning the development methods, leading to a lack of consistency in the textbooks.

Japanese experts also participated in the textbook and teachers' guide development workshops and repeatedly negotiated with NCTB to revert to the problem-solving oriented format. However, NCTB remained firm in its position and did not accept the proposal. Under these circumstances, the final drafts of the Grade 4 and 5 textbooks and teachers' guides were completed in August 2024.

Current status of and future plans for Grades 4 and 5 textbooks and Teacher's Guides

The Grades 4 and 5 textbooks and teachers' guides have been finalized, and the Project's support for developing the textbook and teachers' guide have been completed. However, in science textbooks, a structural inconsistency has emerged across grade level: while the Grade 3 textbooks adopt a problem-solving approach, the Grade 4 and 5 textbooks employ the experiential learning model. This has resulted in a misalignment in both textbook structure (format) and pedagogical approach across the grades.

Meanwhile, from August 2024, under the transitional government, all newly developed Grade 4 and Grade 5 textbooks across subjects were subjected to a comprehensive review. As a result, the developed textbooks and teachers' guides have been suspended for the time being, and it was decided that the current textbook (2012 curriculum version) would continue to be used from January 2025.

The transitional government then instructed NCTB to revise the textbooks and teachers' guides for Grades 4 and 5. In response to this instruction, NCTB revised the NCTB Action Plan and planned a major revision in 2025. The policy for textbook revision is to revise textbooks for Grades 4 and 5 while following the structure (format) and educational approach (problem-solving) of textbooks for Grades 1 to 3[11].

From May 2025, workshops for revision of textbooks and teachers' guides commenced. For mathematics, the draft textbooks for Grade 4 and 5 have been completed, continuing the use of the problem-solving approach. In contrast, as of July 2025, the revision of science textbooks is still ongoing[12]. According to NCTB, the plan is to complete all revisions to the Grades 4 and 5 textbooks and teachers' guides by July 2025, and to start using them in primary schools nationwide from January 2026. As the end of PEDP4 has been extended by one year from June

[10] Experiential learning is a theory proposed by American educational theorist David A. Kolb, which describes the process by which individuals learn from actual experience. This theory consists of four processes: "concrete experience," "reflection," "conceptualization," and "practice." It is said that by repeating these cycles, experience can be transformed into wisdom and people can learn better.

[11] Based on an interview with the Director General of NCTB in January 2025.

[12] According to local staff, the Grade 4 science textbook is being revised based on the problem-solving approach; however, the revision policy for the Grade 5 textbook remains unclear at this point.

2025 to June 2026, it is expected that the textbooks and teachers' guides for Grades 1 to 5 will all be completed within the PEDP4 period.

2.2 Support revising teachers' guides/editions for G1-5 based on Output 1 (including coordination for consistency with pre-primary)

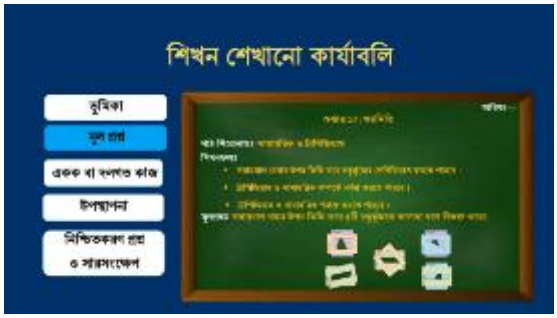
Development of the teachers' guide for Grades 1 to 5 carried out in parallel with the development of textbooks, the contents of 2-2 are also listed in 2-1.

2.3 Support developing and/or revising other TLMs related to mathematics and science, as necessary, based on Output 1

[Support for the development of digital teachers' guide (TG)]
NCTB requested support in the development of digital TGs to be used as materials for curriculum dissemination training and as reference material for teachers when preparing lessons. In response to the request, the Project developed a total of 10 sample digital TGs for mathematics and science, five for mathematics and five for science, and provided them to NCTB. Each developed sample is about five minutes long and consists of a unit perspective, teaching material perspective, learning objectives, lesson development (introduction, learning activities, summary), and evaluation methods, with detailed explanations provided by narration. Depending on the learning content, explanatory animations of about 30 seconds and videos of observations and experiments are introduced, making the content easy for teachers to use and understand.

Table 2-8 Digital TG Sample List

Subject	Grade	Title
Mathematics	Grade 1	Chapter 12. Addition: "12.2 Addition"
	Grade 2	Chapter 5. Multiplication: "5.1 Concept of multiplication"
	Grade 4	Chapter 12. Collection and Arrangement of Data: "12.2 Bar Diagram"
	Grade 5	Chapter 10. Geometry: "10.2 Parallelograms and Trapezium
	Grade 5	Chapter 11. Measurement: "11.5 Area of Parallelograms
Science	Grade 3	Chapter 6. Air: "1. Air around us"
	Grade 4	Chapter 5. Healthy Lifestyle: "1. Our Healthy Lifestyle"
	Grade 4	Chapter 8. The Universe: "2. The Solar System"
	Grade 5	Chapter 4. Air: "1. Air in Daily Life"
	Grade 5	Chapter 5. Energy and Matter: "1. Energy (1) Energy around us"



A scene from Mathematics
(Grade 5, Chapter 10, Geometry)

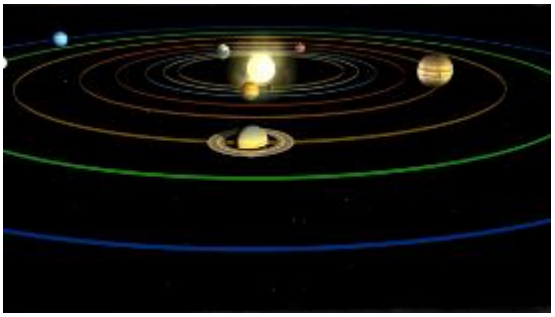

A scene from Science
(Grade 4 Chapter 8, The Universe)

Figure 2-4 Samples of Digital TGs

The digital TGs could be accessed by placing a QR code or a web URL on the printed version of the TGs so that teachers could easily refer to it as needed. However, as of May 2025, this has not adopted. Frequent changes in the NCTB Chairman and the Head of Primary Wing (so-called

Member Primary), as well as repeated revisions to the TG format, are considered to have made it difficult to respond effectively to the situation. The developed digital TGs are posted on the NCTB official YouTube channel.

Table 2-9 Online Access of Digital TG Sample

Subject	Online Access
Mathematics	https://www.youtube.com/playlist?list=PLSZv6mVuNumXYMrOI5ahiu7h3DKdFqXwI
Science	https://www.youtube.com/playlist?list=PLSZv6mVuNumU5zr7rqJiS72vVw-cKE8mL

In the future, NCTB plans to develop digital TGs for other subjects based on these samples. However, due to the need to revise the printed TGs in line with textbook modifications, the development of digital TGs for other subjects appears to be facing considerable delays. Close monitoring will be necessary to follow up on NCTB's future direction and revision schedule.

[Development of mathematics lesson video]
Based on the Bangladesh government's COVID-19 Response and Recovery Plan, which was formulated in response to the closure of schools due to the spread of COVID-19 around for two years from March 16, 2020, the Project provided support for the creation of mathematics lesson videos (Grade 1 to 5) for television broadcasting.

The Project participated in meetings with expert groups and TCs made up of local stakeholders and produced video materials in close collaboration with DPE.

- **Creating lesson plans and reviewing PowerPoint presentations (used for writing on the board and as teaching materials)**
  - ✓ Creating lesson plans based on the Recovery Lesson Plan[13]
  - ✓ Checking PowerPoint
  - ✓ Translation work
- **Presence and advice during filming and editing**
  - ✓ Checking of the filming and editing process by the local staff in charge of mathematics lesson video through visits to the film studio designated by DPE, and provision of advice as necessary.
- **Process management and quality control for the creation of mathematics lesson video materials**
  - ✓ Preparation of lesson plans for courses with a relatively high level of difficulty by Japanese experts, and review and quality control of lesson plans developed by local staff.
  - ✓ Presence of local staff during filming and editing, and establishment of a system to report any problems to Japanese experts and respond to them immediately.

Through the above activities, the Project, in collaboration with DPE, produced 344 mathematics lesson videos for television broadcast (for primary school Grades 1 to 5). The created mathematics lesson videos were broadcast on the national broadcasting station (Sangsad TV). During visits to schools near Dhaka, teachers and parents commented that the mathematics teaching methods were helpful.

[13] In May 2021, in response to the current situation where schools have been closed for over a year, DPE created a Recovery Lesson Plan and changed its policy to create video teaching materials in line with the current curriculum and current textbook for students whose only learning materials were the current textbook.

Issues and solutions regarding mathematics lesson video

Development support for the mathematics lesson video was completed in December 2021, but there were several challenges in disseminating the material.

◆ Viewing environmental issues

Sangsad TV is a national broadcaster, but it does not cover the entire country. In addition, there were cases where children were unable to watch the programs because they did not have a television at home[14] or were not informed of the broadcast schedule in advance. Those videos are also uploaded to DPE's YouTube Channel, but the total number of views is limited to 2,014 (as of February 4, 2022).

◆ Unaired mathematics lesson videos

344 mathematics video materials were produced for primary school Grades 1 to 5, of which 283, or about 80 percent, have been broadcast on the national broadcaster Sangsad TV. However, as of May 2025, the remaining 61 have not been broadcast. This is because DPE is having difficulty securing broadcasting slots. To address these issues, the following measures were implemented to encourage effective use of mathematics video materials in schools, at home, and in teacher training such as CPD:

DVD and flyer distribution

The Project aimed to promote awareness of the mathematics lesson video among government agencies and development partners, and to promote their use in schools, home study, CPD, and other teacher training programs. To respond to this aim, a set of five DVDs containing video materials for each grade level was created and distributed to relevant agencies, along with flyers describing how to use the materials in various situations (Attachment 10). The main recipients were the Government of Bangladesh agencies (MOPME, DPE, NCTB, NAPE, PTIs) and major development partner agencies (World Bank (WB), Asian Development Bank (ADB) , UNICEF, United Nations Educational, Scientific and Cultural Organization (UNESCO) , United States Agency for International Development (USAID), EU, Foreign, Commonwealth & Development Office (FCDO) , Campaign for Popular Education (CAMPE)).



DVD sets (five volumes for each grade)



Flyer (front and back)

Figure 2-5 Math Lesson Video DVD and Flyer

[14] 55.1% of households have a television (75.9 percent in urban areas, 48.7 percent in rural areas), 37.6 percent have Internet access (53.1% in urban areas, 33.2 percent), and 91.9 percent have electricity (97.8 percent in urban areas, 90.2 percent). (All figures are from 2019.) From "Global Data Lab, Bangladesh" https://globaldatalab.org/areadata/.

Posting on DPE YouTube channel
As a result of consultation with DPE, all digital materials, including those mathematics lesson videos which have not been aired, are made available on DPE's official YouTube channel "Ghore Boshe Shikhi".

Disseminating digital materials in collaboration with DPE
At the 9th JPS3 TC meeting held in March 2024, DPE agreed to use digital materials, including the mathematics lesson video, in CPD training and at schools. As a result, DPE notified district education offices and URCs nationwide to use these materials in CPD training and at schools. The Project distributed leaflets introducing those materials, including other CPD digital materials, to primary schools nationwide (Attachment 11).

(3) Activities related to Output 3

3.1 Provide technical inputs to the mathematics and science areas of the DPEd effectiveness study

In the end of the first term, due to the spread of COVID-19, the sharing of the draft report of the DPEd effectiveness verification study from DPE was delayed. The draft report was shared in the second term, and the Project provided technical advice to the mathematics and science field. The final report was submitted to DPE by the consultant employed under PEDP4 in December 2020.

3.2 Support revising mathematics and science curriculum and course materials of DPEd based on the results of the study in Activity 3.1 and revised primary curriculum

Revising the DPEd curriculum based on the results of the DPEd effectiveness verification study did not progress in the discussions within the Government of Bangladesh, and no immediate direction for revision was given by PEDP4. In the meantime, a revised DPEd (draft) with a different modality was being discussed.

Finally, at a meeting chaired by the DPE Director on May 18, 2023, it was decided to conform to DLI 3.4 by changing "Basic Training for Primary Teacher (BTPT)", which had been under consideration, to "Revised DPEd (BTPT)". Then, the DPEd revision work is fully fledged. As a result, it was decided that NAPE would complete all related procedures by June 20, 2023, and that pilot activities would begin in 15 PTIs from July 2023.

However, it was later discovered that the "Revised DPEd (BTPT)" was prepared by DPE, not NAPE. Thus, "Revised DPEd (BTPT)" was sent back to NAPE at the NAPE Board meeting in August 2023. Furthermore, the pilot activities that had been carried out since July 1, 2023, were also sent back by the NAPE Board because the plans for subsequent data collection and analysis were unclear. It resulted in continuous confusion.

As a result, the finalization of the revised DPEd curriculum was delayed, and the work of revising the mathematics and science teaching materials for DPEd trainees could not be started. In this situation, NAPE conducted a re-study to measure the effectiveness of the "Revised DPEd (BTPT)" with technical assistance from EU, and a presentation was held on November 13, 2024. In response to this, MOPME approved the re-revision on December 31, 2024, and DPE resumed the work of revising the DPEd.

In February 2025, a workshop for revising the "Revised DPEd (BTPT)" was held at NAPE. On February 10, Japanese experts of the Project also participated in the workshop and held discussions with the mathematics and science teams. The revised "Revised DPEd (BTPT)" consists of a 10-month program period consisting of seven months of PTI sessions and three months of teaching practice, and it was confirmed that the Lesson Study method introduced by JICA is incorporated into part of the program. The revised "Revised DPEd (BTPT)" was

completed in February 2025 and, as of May 2025, it is being implemented in 67 PTIs nationwide. Revised DPEd curriculum and materials on mathematics and science are presented in Attachments 12-1 to 12-6.

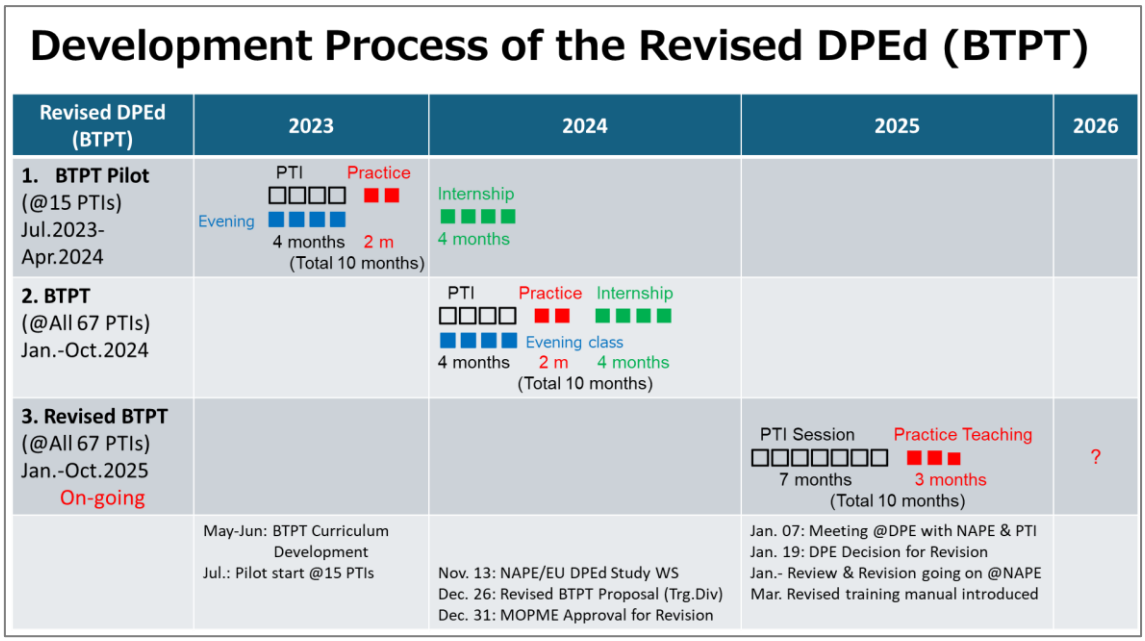


Figure 2-6 Changes in the Revision of DPEd in PEDP4

3.3 Conduct seminar(s) on the revised primary mathematics and science curriculum for PTI instructors for mathematics and science

On October 8, 2024, a seminar titled "Active Learning of Mathematics in Primary Education in Bangladesh" was held in a hybrid format, face-to-face and online, by Professor Baba of Hiroshima University at Dhaka PTI. At the seminar, Professor Baba introduced and shared innovative teaching methods and practical tools aimed at improving the quality of mathematics education in primary education in Bangladesh. These included approaches to strengthen the understanding and practice of active learning, with examples from both Japan and abroad. In a questionnaire conducted after the seminar, the overall satisfaction of the seminar participants, which is also an indicator of Output 3, was very highly rated at 87 percent (86 responses).

Table 2-10 Seminar on Revised Primary Curriculum (Mathematics and Science) for PTI

Active Learning of Mathematics in Primary Education in Bangladesh	
Purpose	To strengthen the understanding and implementation of active learning strategies in mathematics education for primary school students in Bangladesh, and to provide education stakeholders and education professionals from NAPE, NCTB, DPE, MOPME and PTIs with innovative teaching methods and practical tools to help students learn mathematics effectively, thereby improving educational outcomes in primary education.
Date	October 8, 2024, 14:30–17:00
Place	Dhaka PTI Auditorium
Presentation	"Hands-on and minds-on activity in mathematics learning in the world and Bangladesh" (Professor Baba, Hiroshima University)
Participants	Approximately 50 people including education officials from NAPE, NCTB, DPE, MOPME, PTIs, and schoolteachers

(4) Activities related to Output 4

4.1 Contribute to the CPD study based on the findings from JSP2

Advice on the CPD Effectiveness Verification Study was completed in the first term. The Project supported the CPD consultant employed by DPE, together with UNICEF, by creating survey tools, providing technical advice on analysis and report preparation, but much of the advice was not reflected due to a lack of time. The finalized "CPD Effectiveness Verification Study Report" did not cover all the CPD activities that should have been analyzed, and the scope and accuracy of the analysis were insufficient.

4.2 Support developing a framework for teachers and teacher-educators CPD, including a curriculum for the different profiles of professionals and a model for School-based CPD

Support was planned for the development of a CPD framework based on the CPD-related training programs outlined in the PEDP4 Program Document (2018), including subject-based training, need-based sub-cluster training, school-based training, leadership training for headteachers, induction training for newly appointed teachers, curriculum dissemination training, and ICT training. In addition, the Project also considered proposing a new modality that incorporates key elements such as the TED Plan issued in 2011 as the national policy for teacher education, the model proposed during Phase 2 to link sub-cluster training with school-based training, and the outcomes of the 2017 impact study, which highlighted the importance of strengthening collaboration among teachers and with parents. The Project did not aim to independently develop annual training schedules; rather, it was expected to provide technical input and advice on plans formulated by the Bangladeshi side.

The revision of the CPD framework was intended to be informed by the results of the CPD effectiveness study report, to which the Project also contributed through advisory support. However, as described in Activity 4-1, both the research design and analysis of the evaluation were inadequate. Consequently, the CPD framework approved by MOPME in June 2019 largely reiterated existing activities and lacked concrete implementation planning.

Subsequently, DPE decided to develop a CPD Implementation Plan to complement the framework. To ensure alignment with CPD activities, the Project gathered relevant information from ADB, the lead donor for the plan, and employed a former DPE official as a local staff member to liaise with the Training Division of DPE.

However, as of May 2025, the CPD Implementation Plan had not been officially released, making it difficult to grasp the overall strategy and annual schedule of CPD. Although certain training activities—such as subject-based training and leadership training－had been implemented intermittently, they did not appear to be based on a clearly articulated and coherent framework. Moreover, need-based sub-cluster training and Teacher Support Network (TSN)[15] training, both supported under the previous phase, had not been implemented. In response to these circumstances, the Project undertook activities that were not dependent on the CPD Implementation Plan, as described in Activities 4-3, 4-4, and 4-5.

[15] Lesson Study was disseminated nationwide through TSN in PEDP3.

Table 2-11 Status of CPD Framework Development

Period	Status
June 2019	The "CPD Effectiveness Verification Study Report" and CPD Framework were approved by MOPME to secure the PEDP4 second-year budget.
December 2019	Due to concerns over the quality of the CPD Framework, DPE established a CPD Task Team. The team was expected to develop a CPD Implementation Plan by March 2020.
2020	All CPD activities and Task Team operations were suspended due to the COVID-19 pandemic. Following the revision of the DLIs, the development of the Implementation Plan was postponed to Year 4 and training implementation to Year 5.
June 2022	The Training Division of DPE developed the "CPD Execution Plan," which was approved by the Director General of DPE. However, the content remained largely unchanged from previous versions.

4.3 Support developing CPD materials including digital materials in relevant areas (*)

Regarding CPD, the challenges were that teachers were not equipped with teaching methods for student-centered learning, teachers did not understand how to use textbooks, and the training did not provide sufficient guidance on this subject. In response to these issues, this Project supported the development of two types of digital materials for CPD: 1) video materials to support teachers' teaching and students' learning (mathematics and science), and 2) new teaching method videos that show effective use of textbooks andteachers' guides (mathematics and science). These materials were developed with the intention of being used in needs-based sub-cluster training, subject-based training, and school-based training such as Lesson Study.

The CPD digital materials were initially scheduled to be developed after the completion of the CPD Implementation Plan, but due to delays in curriculum revision and textbook development, it was decided to proceed with development in advance, considering the remaining time of the program. Development began after explaining the development plan to the DPE Training Division in July 2022 and obtaining their agreement. In February 2023, the Government of Bangladesh established a TC meeting to work with the Project to develop CPD digital materials. After review by the TC meeting, the new instructional video was completed in August 2023, and the animation video in October 2023. An overview of the teaching materials is shown in Table 2-12.

Table 2-12 CPD Digital Learning Materials Overview

Item	Animation video	New instructional video
Subjects and grades	12 Science/Mathematics videos (Grades 1 to 5)	17 Mathematics videos (Grades 1)
Purpose	Supporting visual understanding of abstract learning content	Explaining key concepts and teaching methods of the new curriculum to teachers in an easy-to-understand manner
Main content	Animated explanations of abstract concepts and natural phenomena	Explanations of lesson development, assessment methods, and how to use teaching materials along with the new textbook layout
Expected usage scenarios	To be utilized in CPD training and lesson preparation for teachers to deepen their understanding of the topics and to review effective teaching methods.	To be utilized for preparatory learning and instructional strengthening for teachers in subject-based training and general training
Features	Videos can be used with both old and new textbooks.	Videos are aligned with the new textbooks.

At the 9th JSP3 TC meeting in March 2024, DPE and the Project confirmed future responses regarding the four digital materials (Animation video, instructional video model lesson video, and

math lesson video) in training and at schools. The implementation status of the responses is as shown in Table 2-13.

Table 2-13 Actions for the Dissemination of Digital Materials

Action	Responsible section	Implementation status
Distributed three CPD digital materials (animation video, instructional video and model lesson videos) on USB memory sticks (67 PTIs and 505 URCs)	The Project	Completed in August 2024
Distributed brochures of introducing four CPD digital materials (67 PTIs, 505 URCs, and 65,542 primary schools)	The Project	Completed in August 2024
Distributed mathematics lesson video DVDs (67 PTIs)	The Project	Completed in August 2024
Provided notification to education offices nationwide regarding the use of digital materials at CPD training and in schools	DPE	Completed in August 2024
Posted CPD digital materials on DPE YouTube channel[16]	DPE	Completed in September 2024
Posted CPD digital learning materials on DPE Learning Management System (LMS)	DPE	Under preparation by DPE. A review of all digital learning materials, including those developed by the Project, is being carried out under the transitional government, and as of May 2025, the publication date has not been determined.

4.4 Contribute to capacity building of relevant stakeholders in CPD curriculum delivery based on Activity 4.3

The Project planned to provide technical support for training to strengthen the implementation capacity of CPD trainers so that training using the mathematics and science CPD materials developed in Activity 4-3 would be implemented. Specifically, to strengthen the implementation capacity of subject-based training at URCs and sub-cluster training by Assistant Upazila Education Officers (AUEOs), the Project considered proposing the content of orientation training for needs-based sub-cluster training and supporting the development of materials. In addition, since the follow-up system after CPD training was an issue, the Project also considered planning workshops incorporating Lesson Study[17] and mentoring for URC instructors, AUEOs, training instructors, head teachers, etc. The specific support content was to be clarified after the completion of the CPD Implementation Plan.

However, as described in Activity 4-2, the CPD Implementation Plan was not completed, and it became difficult to implement technical support to strengthen the CPD trainers' training implementation capabilities and improve the quality of CPD activities during the project period. Therefore, the Project reviewed the focus of its activities and revised its policy to indirectly strengthen the implementation capacity of CPD trainers' training and improve the quality of CPD activities. To achieve this, the Project supported the integration of the developed CPD digital materials into CPD training and carried out the following activities to maximize results.

[16] Math Lesson Videos had been uploaded on YouTube.
[17] In the Phase 2 of the Project "Strengthening the capacity of teacher trainings at primary teacher training institutes to improve classroom teaching," the Project supported the dissemination of Lesson Study as a PTI cluster activity together with NAPE, and it was incorporated into the PEDP3 training as "Teacher Support Network through Lesson Study (TSN training)" with the government budget. However, TSN training was not incorporated into PEDP4.

[Support for introduction into subject-based training manuals]

◆ Submission of "Recommendation for Revision of Subject-based Training manual in Math & Science"

The Project planned to provide support for the revision of the subject-based training manuals so that CPD digital materials would be used, but a clear schedule was not shared with the Project by the DPE Training Division. Therefore, the Project reviewed the current subject-based training manuals and submitted "Recommendation for Revision of Subject-based Training manual in Math & Science" to the DPE Training Division in May 2023. The proposal explains the features of CPD digital materials and suggests how to use them in CPD training (Attachment 13).

◆ Proposals at the Science Subject-based Training Manual Workshop

The Project participated in the first Science Subject-based Training Manual Development Workshop held in May 2024, where the Project screened CPD digital materials, explained their contents, and explained how to introduce them in training.

◆ Dissemination of CPD digital materials

As described in Activity 4-3, the Project distributed CPD digital materials (USB memory sticks and brochures) to PTIs and URCs nationwide and encouraged them to use them in CPD training.

Regarding the revision of the science subject-based training manual, the second workshop was postponed due to political instability after the first workshop. Although the Project has repeatedly followed up with the DPE training division, the revision of the manual has not resumed as of May 2025, and the introduction of CPD digital materials has not been achieved. There are no plans to revise the mathematics subject-based training manual during the PEDP4 period.

4.5 Monitor schools implemented school-based CPD and collect examples of lesson improvement activities

The original plan was to provide technical assistance to improve the quality of activities based on the CPD framework by using the developed CPD digital materials. However, the CPD monitoring activity was newly added in June 2023 as it became difficult to implement the original activities during the project period.

CPD was implemented in a three-stage cascade format: 1) national-level trainer training, 2) district-level teacher training, and 3) school-level in-school training. Therefore, to grasp the overall picture of CPD, the Project planned to monitor each stage of training: subject-based training (mathematics, science), revised curriculum dissemination training, and leadership training for head teachers, and focus on school-level lesson improvement activities, collect case studies, and make recommendations to DPE.

The monitoring results of the national and district-level training are shown in Table 2-14. In the revised curriculum dissemination training for teachers (face-to-face), while the progress and group activities were confirmed to be in line with the training manual, the lack of use of digital materials such as model lesson videos developed by the Project was identified as an issue. In the leadership training for head teachers, the importance of academic supervision and the theoretical framework were explained, and participants showed an understanding through group discussions. However, some challenges were observed, including insufficient subject expertise among the trainers and a lack of adequate discussion on strategies for applying specific activities to actual school settings.

Table 2-14 Results of CPD Monitoring at National and District Levels

Training type	Implementation level	Monitoring status	Status of implementation and key points of confirmed content and issues
Curriculum dissemination training	National	Not implemented	The training of trainers was already conducted prior to the addition of this activity.
	District	Implemented (2 locations)	Training was conducted according to the manual, and participants were given training on the revised curriculum, new textbook, and teachers' guide (Grade 1) through exchanges of opinions and demonstrations. The understanding of formative assessment was superficial, and the model lesson videos were not used.
Leadership training	National	Not implemented	Information on the implementation schedule is not available, so it is not subject to monitoring.
	District	Implemented (1 location)	The importance and theory of academic supervision were explained, and participants showed a certain degree of understanding. However, there was insufficient practical discussion, such as how to put it into practice in the actual school environment.
Subject-based training	National	Not implemented	Science: The training manual was currently being revised, so it could not be implemented during the project period. Mathematics: The training manual was not revised during the project.
	District	Not implemented	

For school and classroom level monitoring, 10 schools in the suburbs of Dhaka that continue to improve their teaching activities were selected from 40 schools, including those involved in Phases 1 and 2 of the Project, were selected as monitoring target. Surveys were conducted on the implementation status of lesson improvement mainly through Lesson Study, fortnightly meetings, and academic supervision by headteachers, as well as the teaching skills of teachers through lesson observations. Furthermore, detailed surveys were conducted at four schools that showed good examples.

As described in Activity 4-2, the CPD framework developed under PEDP4 remained largely a reiteration of existing systems, and no clear structure was established for the annual training plan or institutional implementation. Through Phases 1 and 2, the Project supported the introduction and promotion of school-level CPD activities such as Lesson Study, fortnightly meetings, and academic supervision by headteachers. However, these practices were not sufficiently institutionalized within the PEDP4 framework, and no mechanism was established to ensure their continuity at the school level.

The findings of the CPD monitoring survey directly reflect these institutional shortcomings. The results revealed that CPD activities were not being implemented in a sustained or systematic manner at the school level, as evidenced by the discontinuation of Lesson Study, the superficial implementation of fortnightly meetings, and inconsistencies in the quality of classroom observations by headteachers.

- Lesson Study was disseminated nationwide during PEDP3 through TSN. However, during the PEDP4 period, no training or monitoring was provided. Although more than half of the 10 surveyed schools had prior experience with Lesson Study, none were

continuing it at the time of the survey. In addition to the lack of institutional support, securing time for implementation was also a challenge.

- Fortnightly meetings were being conducted in many schools, but their frequency and linkage to lesson improvement were limited. Significant variation was observed in how these meetings were conducted across schools. Moreover, the absence of need-based sub-cluster training under PEDP4 meant that these meetings did not function effectively as a platform to identify and share teachers' training needs.
- Academic supervision by headteachers was generally well received by teachers; however, the quality of classroom observation and feedback varied significantly.
- Observations of mathematics and science lessons confirmed some degree of student engagement and use of teaching materials, but fundamental instructional skills—such as classroom processes and time management—remained weak. No statistical correlation was found between the implementation of CPD activities and the quality of lessons, suggesting that insufficient quality and continuity of CPD may have contributed to this gap.
- External support by URC instructors and AUEOs showed some positive effects, but more practical and continuous engagement was considered necessary.

Based on the above monitoring findings, the Project compiled "CPD Monitoring Report" for DPE and made the following three recommendations (Attachment 14):

1. Rebuild and institutionalize a coherent school-based CPD framework tailored to teachers' career stages. Ground it in experiential learning and integrate it into national level development programs (professional development plan for primary teachers) such as PEDP5 to ensure sustainability.
2. Promote reflective practice among teachers by embedding Lesson Study and structured reflection into school-based training, thereby cultivating a school culture that encourages continuous professional learning.
3. Enhance subject-specific and school-level support by mobilizing local experts and systematizing ICT-based school visits. Redefine the roles of AUEOs and URC instructors as learning coordinators who connect teachers with relevant training and resources.

4.6 Conduct the dissemination seminar for improving the quality of CPD activities implemented under the CPD framework based on Activity 4.3

Based on the results of Activities 4-5, the CPD seminar was held in April 2025 with the aim of improving the quality of future CPD activities. The Project shared the result of CPD monitoring survey and four target schools that showed the good practices made presentation on their teaching improvement activities and teaching practices. Teachers and related parties in the field raised issues such as the difficulty of finding time for CPD activities and a lack of teaching materials. In response, it was suggested that to implement CPD sustainably and effectively, it is important to incorporate Lesson Study and other activities into teaching plans and the school's annual schedule. DPE expressed its gratitude for the issues raised in the field, explained the response policy within the "Fifth Primary Education Development Program (PEDP5)" framework, and stated the need to create a system to support the implementation of CPD activities.

Table 2-15 CPD Seminar

Enhancing Mathematics and Science Education through CPD: Reflections and Way Forward		
Purpose	Regarding improving lessons through CPD, relevant parties share the current situation, issues and good practices, and exchange opinions on implementing more effective and sustainable CPD activities.	
Date	April 23, 2025, 12:30-17:00	
Place	Dhaka PTI Auditorium	
Presentation	CPD Monitoring Findings: Good Practices and Remaining Challenges	This project
	Diverse approaches to improving mathematics and science lessons	4 school Head Teachers
	Efforts and implementation in CPD: Way Forward for the Next CPD Design	DPE Training Section Chief
Participants	Approximately 90 people participated, including DPE, NCTB, NAPE, PTIs, URCs, UEO officials, headteachers of the 10 schools that were subject to CPD monitoring, mathematics and science teachers, and officials from development partner agencies.	

2.1.3 Other Activities

(1) Training in Japan

First Country-focused Training in Japan

From October 26 to November 24, 2019, a country-focused training course entitled "Strengthening the Capacity of Planning and Implementing Effective CPD for Teachers" was held. A total of four participants from DPE, NAPE, and PTI, which are the main organizations involved in CPD implementation, participated in the training. The purpose of this training was to improve the capacity required to formulate a development plan for CPD programs and teaching materials in line with the new curriculum, textbook, and CPD framework. Hiroshima University and KJS Company LTD. (Miyazaki City), which has experience in implementing ICT education projects in Bangladesh and is familiar with the country's educational situation, were selected as host organizations. At Hiroshima University, training was provided on the relevance of competency-based curriculum and child-centered learning to CPD, as well as human resource development for primary school teachers in schools. At KJS, participants learned how to use ICT in CPD and also received practical training on creating ICT teaching materials that can be introduced into CPD programs. As an outcome of the training, "CPD elements learned in Japan that would be good to introduce to Bangladesh" (presentation materials) and video teaching materials for teachers on CPD were created.

Second Country-focused Training

Country-focused training "Strengthening planning and implementation capacity regarding the connectivity of primary and secondary science and mathematics curricula, textbook and assessment in Bangladesh" was conducted from February 4 to February 17, 2024. Four DPE Education Administrative Officers, six education administrators of Directorate of Secondary and Higher Education (DSHE)/Secondary and Higher Education Division (SHED), four NCTB science specialists, and four NCTB arithmetic and mathematics specialists participated. Through lectures, the trainees learned about the theory and practice of the Japanese curriculum, and through school visits, they learned how the curriculum is implemented, deepening their understanding of the "theory and practice" and "systematic curriculum" of Japanese student-centered mathematics and science education. Then, in their respective organizations, the trainees analyzed the current issues in Bangladesh's primary and secondary mathematics and science curriculum, issues that need to be resolved in the future, and discussed how to apply the skills and ideas they gained in Japan to Bangladesh. They made presentations and exchanged opinions with their Japanese CPs. This training provided a useful opportunity for trainees from different

organizations to receive training together and exchange opinions on issues and future measures in Bangladesh from various perspectives.

In addition, a report session was held by the participants of the training in Japan on March 12, 2024. Based on the final presentations from the training in Japan, the DPE, DSHE/SHED, NCTB science, and NCTB arithmetic and mathematics teams made proposals on what their organizations should specifically work on and exchanged opinions with the participants.

Table 2-16 Reporting Session after Returning from Training in Japan

Strengthening Planning and Implementation Capacity Regarding the Connectivity of Primary and Secondary Science and Mathematics Curricula, Textbook and Assessment in Bangladesh	
Purpose	The participants of the training in Japan share what they have learned and, as a final outcome of the training, disseminate new ideas that contribute to improving the quality of mathematics and science education in Bangladesh over the next 10 years.
Dat	March 12, 2024 10:00~12:00
Place	NCTB conference room
Presentation	Issues to be resolved in the next 10 years, ideas for resolving these issues gained from training in Japan, implementation methods within the existing Bangladeshi system, problem analysis, objective analysis, future plans, etc. (Participants in training in Japan for NCTB mathematics and science, DPE, and DSHE)
Participants	Approximately 30 people from NCTB, DPE, DSHE, JICA, the Project, etc.

(2) Endline Survey

The Project conducted an end-line survey to measure the project purpose of the mathematics and science achievement of students and the teaching skills of primary school teachers. Only Grade 3 students were surveyed. This is because the revised textbook was used only in Grades 1 to 3 due to delays in the revision of the primary curriculum and textbook development. In addition, Grade 3 was selected to ensure consistency with the survey conducted by NCTB at the start of PEDP4 (2018), which targeted students in Grades 3 and 5. In addition, the Project was not implemented as a direct intervention targeting primary school teachers or students. Instead, it was designed to generate ripple effects on improving teachers' practical teaching skills and students' learning quality through indirect support for the implementation of PEDP4 policies. Therefore, this survey did not aim to measure the direct outcomes of the Project's intervention. Rather, it measured the absolute levels of students' achievement in mathematics and science, as well as the practical teaching skills of primary school teachers, at the end of PEDP4[18]. This proposal was explained to DPE at the 10th JSP3 TC meeting in August 2024 and verbal agreement was obtained. However, the chairman of the TC meeting, the Director General of DPE, was replaced after that, and formal approval could not be obtained. Therefore, a meeting to reconfirm the same meeting was held in October, after which the proposal was formally approved. A survey was conducted at 10 target schools in November 2024. The survey results are summarized in the "Endline Survey Report" (2025, JICA). The report is presented in Attachment 15.

(3) Seminar on Review of 20 Years of JICA Cooperation for Primary Education in Bangladesh and Completion of JSP3 Project

A joint seminar was held with the JICA Bangladesh Office on May 14, 2025. The first part was a review of 20 years of JICA cooperation hosted by the JICA Bangladesh Office, and the second part was a project Phase 3 completion report seminar hosted by the Project.

In the first part, the JICA Bangladesh office made a presentation to look back on the results of JICA's 20 years of cooperation in the field of primary education, sharing concrete results such as teacher training, improvement of teaching materials and textbook, and the institutionalization of

[18] At the time of planning the endline survey methodology, PEDP4 was scheduled to be completed in June 2025.

Lesson Study. The presentation also suggested the importance of CPD and collaboration with families. In the Q&A session, lively opinions were exchanged about continuing support for Lesson Study and school meals (grassroots-level technical cooperation), indicating high interest from the field. Officials from the Government of Bangladesh expressed their gratitude for JICA's support, which has contributed greatly to system reform and class improvement and made a wide range of requests for the future, including support for the introduction of teacher training, school meals, disaster prevention education, NCTB reform, and the re-dispatch of JICA Overseas Cooperation Volunteers. JICA expressed its intention to continue its cooperation and to continue to consider collaboration flexibly in the future. The seminar was a positive and enthusiastic atmosphere from start to finish, with government officials, education practitioners, and development partners deepening their dialogue together.

In the second part, where the Project's achievements and challenges were shared, three project experts presented the overall achievements, challenges based on the endline survey results for mathematics and science, and recommendations for future measures that the Government of Bangladesh should take. While achievements such as teaching material development, teacher training, and use of digital materials were presented, challenges in establishing improvements in lessons, supporting home learning, and using ICT were also made clear. In the subsequent presentations from Bangladesh, NAPE, NCTB, and DPE expressed their gratitude for the institutional achievements through JICA's support and stated their intention to focus on establishing the content within the system, improving at the implementation level, and strengthening the management system. Due to time constraints, the Q&A session was limited, but the event served as an opportunity to strengthen cooperation between related institutions and share practical suggestions for PEDP5.

Table 2-17 Seminar on Review of 20 Years of JICA Cooperation for Primary Education in Bangladesh and Completion of the JSP3 Project

Seminar on Review of 20 Years of JICA Cooperation for Primary Education in Bangladesh and Completion of the JSP3 Project		
Purpose	[Part 1] Review the achievements of JICA's 20 years of cooperation in the field of primary education in Bangladesh, share key lessons learned, and discuss the future direction. [Part 2] Report on the completion of the Project.	
Date	May 14, 2025, Part 1: 9:00-11:40 / Part 2: 12:00-16:00	
Place	Pan Pacific Sonargaon Dhaka	
Presentation (Part 1)	Review of 20 Years of JICA Cooperation for Primary Education in Bangladesh	JICA Bangladesh Office
	"The Path Forward for Bangladesh's Primary Education Development" by DPE	Deputy Director. DPE PEDP4
Presentation (Part 2)	Completion of JICA Support Program 3 on Strengthening Mathematics and Science Education in Primary Education Project	Project Leader
	Primary Mathematics Education in Bangladesh	Project mathematics expert
	Primary Science Education in Bangladesh	Project science expert
	Technical Collaboration between JICA and NAPE for Teachers' Professional Development	Deputy Director, NAPE Evaluation Division
	NCTB and JICA Collaboration: Reflecting on the past and possibilities of Moving Forward	Member Curriculum (Additional charge, Primary and Secondary Wing)

	Teachers' Professional Development Programs in Primary Education	Director, DPE Training Division
Participants	120 participants including the stakeholders from the Bangladesh side (Education Advisor, MOPME, DPE, NCTB, NAPE, PTI, URC, UEO officials, head teachers, mathematics and science teachers), Ambassador and embassy officials, development partners, JICA and the Project	

(4) Preparation of report and leaflet on "20 Years of Cooperation in the Field of Primary Education"

The report summarizes the efforts, achievements, and lessons learned from 20 years of education cooperation in Bangladesh based on past literature, CPD monitoring, and end- line survey results. In addition, a leaflet was created in three languages, Japanese, English, and Bengali, to visually and clearly convey the approach and achievements of JICA's education support in Bangladesh to the public, government officials, education officials, and development partner organizations in Japan and Bangladesh. At the "Seminar on Review of 20 Years of JICA Cooperation for Primary Education in Bangladesh and Completion of the JSP3 Project" held in May 2025, the JICA Bangladesh Office distributed a draft English version of the leaflet to participants. The report and the leaflet are presented in Attachments 16 and 17.

(5) Technical Committee Meeting

In the Project, a JSP3 TC meeting was established to ensure that the stakeholders have a common understanding of the Project's progress and to discuss countermeasures to issues. The TC meeting, chaired by the Director General of DPE, met twice a year in principle, and a total of 11 meetings were held during the Project. Participants from the Bangladeshi side were the Director General of DPE, the Deputy Director General, division directors and related parties from each department, Member Curriculum of Primary Wing of NCTB, a senior expert from NCTB, and education experts from NAPE, while participants from the Japanese side were from JICA headquarters, Bangladesh office, and the Project members. Information on the latest schedule and implementation methods for PEDP4 were updated in the TC meeting, and the Project responded flexibly. The minutes of JSP3 TC meeting are presented in Attachment 18.

(6) Coordination with PEDP4 and other development partners

The Project was implemented as part of PEDP4's "Component 1: Quality" and all project activities were incorporated into the PEDP4 activity plan, so it was necessary to work closely with PEDP4. Therefore, project activities were carried out while closely monitoring the discussions and action plans in the PEDP4 progress management framework—Joint Annual Review Mission: JARM (once a year), Joint Consultation Meeting: JCM (twice a year), Program Coordinating Unit: PCU (once a month).

(7) Analysis and Development of a Curriculum Map for Pre-Primary to Secondary Mathematics and Science

In April 2025, NCTB requested support from the JICA Bangladesh Office for the revision of the secondary education curriculum. However, as the Project was scheduled to end in June 2025, it was determined that providing direct support would be difficult. On the other hand, given that the lack of alignment between the primary and secondary curricula is a recognized issue, it was agreed through consultation with the JICA Bangladesh Office that the Project would analyze the mathematics and science curriculum from pre-primary to secondary levels and develop a curriculum map. This map would serve as a reference document for the development of NCF and the forthcoming secondary curriculum revision. In response, a Japanese expert from the Project prepared the curriculum map and submitted it to the JICA Bangladesh Office.

3. Achievement of the Project

Table 3-1 Achievement Level of Project Purpose and Each Output

Project summary	Achievement level
Children better understand mathematics and science in primary education.	Almost achieved. The Project has completed the support for the development of textbook and teachers' guide, but the dissemination training was only conducted for the revised Grade 1 curriculum. Thus, issues remain regarding the implementation of the curriculum in schools. In the future, the Government of Bangladesh will be required to take action to improve students' understanding.
Output 1: Measures to address the challenges in teaching and learning in primary mathematics and science are identified and responded in curriculum revision (PEDP4 Subcomponent 1.1).	Achieved. All indicators for Output 1 were achieved, and the revised curriculum was approved by MOPME in March 2022.
Output 2: The challenges in teaching and learning in primary mathematics and science are responded to in the revisions of textbook and TLMs (PEDP4 Subcomponent 1.2).	Achieved. Textbook and teachers' guide for Grades 4 and 5 have not yet been approved due to circumstances on the Bangladesh side, but the Project completed its support for their development, and all indicators for Output 2 have been achieved.
Output 3: Teachers are trained through appropriately designed Teacher Education to respond to the challenges in teaching and learning in mathematics and science (PEDP4 Subcomponent 1. 3).	Achieved. All indicators for Output 3 were achieved, and Lesson Study, which the Project has supported its dissemination, has been officially introduced into the "Revised DPEd (BTPT)" which is being implemented in PTIs nationwide. On the other hand, the Government of Bangladesh did not reach a unified view on the revision of DPEd until the very end of PEDP4. It resulted in limited intervention by the Project.
Output 4: Teachers are continuously supported through appropriately designed CPD to respond to the challenges in teaching and learning (PEDP4 Subcomponent 1.5 and 1.6).	Achieved. All indicators for Output 4 were achieved. However, due to the circumstances at the Bangladeshi side, the intervention of the Project was limited for supporting CPD implementation.

3.1 Achievement Status of Project Purpose

Table 3-2 shows the degree of achievement of the two indicators for the project purpose, "Children become to understand mathematics and science better in primary education".

Table 3-2 Achievement Status of Project Purpose

Indicators	Status	Basis
1. The average score of Grade 3 students will be 50% or higher on the math and science achievement tests in 2024.	Achieved	The average percentage of correct answers in the achievement tests of students in the endline survey was 54.0% for mathematics and 50.6% for science, both of which achieved the target values.
2. The average score for lesson observation results of practical teaching skills in mathematics and science classes is 2.3 points or higher out of 5 points.	Almost achieved	The score for mathematics in the end-line survey lesson observation evaluation was 2.0, just short of the target, but the score for science was 2.3, which achieved the target.

The endline survey results are summarized below.

[Achievement test]
Mathematics:
- The average score varied from 25 percent to 86 percent depending on the content.
- No statistically significant differences were found when comparing gender.
- In terms of content, students showed a high rate of correct answers in basic calculation problems such as addition and subtraction (69 percent) and number concepts (59 percent), but the rate of correct answers was low in applied areas such as fractions (42 percent) and measurement (35 percent).
- Compared to the NCTB Curriculum Effectiveness Study (2018), it was found that while there have been clear improvements in learning outcomes in certain areas (number concepts of 10, 100, 1000, applied problems), there are still areas that require improvement (two-digit multiplication with carrying).

Science:
- The average score varied from 20 percent to 70 percent depending on the content.
- No statistically significant differences were found when comparing gender.
- Broken down by subject area, “Physical Sciences” (56 percent) and “Life and Environment” (54 percent) showed relatively high correct answer rates, while “Earth and Space” (45 percent) and “ICT” (43 percent) showed low correct answer rates, indicating issues with comprehension.
- Compared to the NCTB Curriculum Effectiveness Study (2018), there was a significant improvement in the percentage of correct answers for certain questions (e.g., questions about solids, questions about how to dry wet clothes quickly), but it was clear that further improvement is needed in certain areas (e.g., questions about the energy provided by nutrients, questions about communication methods).

[Teaching skills]
Mathematics:
- The scores of the 10 schools ranged from 1.7 to 2.3 out of 5, indicating that, overall, there is a need to improve the quality of teaching.
- No statistically significant differences were found between urban and rural areas.
- Looking at the evaluation criteria, the scores for time allocation (2.6) and learning activities (2.5) were relatively high, while the scores for teaching and learning process (1.2) and use of the blackboard (1.1) were very low. This revealed that while there was some ingenuity in learning activities and time management, there was a lack of problem-solving-based lesson development and effective use of the blackboard.

Science:

- The scores of the 10 schools ranged from 1.9 to 3.0 out of 5, indicating that overall, there is a need to improve the quality of instruction.
- No statistically significant differences were found between urban and rural areas.
- In terms of the evaluation criteria, the scores for use of teaching materials (3.3), learning activities (2.9), and questioning (2.8) were relatively high, while the scores for teaching and learning process (1.2) and use of the blackboard (1.1) were very low, revealing that insufficient problem-solving lesson structure and use of the blackboard were common issues.

As described above, there have been some improvements in both academic performance level and instruction, but issues remain in certain learning content and classroom practice. Grade 3, which was the subject of the endline survey, has been using the new textbook since January 2024, and the teachers' guide was distributed in June 2024. However, since the revised curriculum dissemination training was conducted in 2023 based on the Grade 1 textbook, no training was conducted for the content of Grade 3. Therefore, although the use of the textbook and teachers' guide has begun, it is believed that there are still issues remaining in the smooth implementation of the curriculum and the achievement of the goals.

3.2 Achievement Status of Output Indicators

(1) Output 1

Table 3-3 shows the states of achievement of the three indicators for Output 1, "Measures to address the challenges in teaching and learning in primary mathematics and science are identified and responded to in curriculum revision."

Table 3-3 Achievement Status of 1Each Indicator of Output 1

Indicators	Status	Basis
1. Reports including the measures to address the challenges faced in children's learning in primary mathematics and science to inform curriculum and TLMs revision are prepared.	Achieved	The report, "Effectiveness, Situation Analysis and Needs Assessment of Current Pre-primary and Primary Curriculum of Bangladesh: A Compilation of Key Findings," was completed with the support of the Project.
2. Revised curriculum reflects the suggestions in the Reports.	Achieved	Mathematics and Science curriculum that reflects the recommendations of the Project was approved in March 2022 by MOPME.
3. Materials for curriculum dissemination training for mathematics and science are developed.	Achieved	10 model lesson videos for mathematics and science (5 for mathematics, 5 for science) as curriculum dissemination training materials were developed and provided to NCTB.

(2) Output 2

Table 3-4 shows the status of achievement of the three indicators of Output 2 "The challenges in teaching and learning mathematics and science are responded in the revisions of textbooks and teaching-learning materials (TLM)".

Table 3-4 Achievement Status of Each Indicator of Output 2

Indicators	Status	Basis
1. Revised textbook to reflect the suggestions in the Reports from Output1.	Achieved	Development of new textbooks for Grade 1 to 3 that reflect the recommendations from the Project was completed. Support for development for textbooks for Grades 4 and 5 was also completed. Textbooks for Grades 4 and 5 have not yet been approved due to circumstances on the Bangladesh side. NCTB is planning activities to distribute them from January 2026. The textbooks are scheduled to be revised in 2025 based on the problem-solving format proposed by the Project.
2. Revised teachers' guides/editions reflect the suggestions in the Reports from Output 1.	Achieved	Teachers' guides incorporating suggestions from the Project were completed for Grades 1 to 3. For Grades 4 and 5, technical support has been completed in line with the new textbook drafts supported by the Project. Due to delays in the development of textbooks for Grades 4 and 5, development of the Teachers' guides has also been delayed. NCTB plans to revise the Teachers' guides for distribution from January 2026.
3. Other TLMs are developed and/or revised based on the suggestions in the Reports from Output 1 (to be specified in the course of the Project).	Achieved	Mathematics lesson video teaching (344 videos) and digital TGs (5 for mathematics and 5 for science) were developed and provided to NCTB.

(3) Output 3

Table 3-5 shows the status of achievement of the two indicators of Output 3: "Teachers are trained through appropriately designed Teacher Education to respond to the challenges in teaching and learning in mathematics and science."

Table 3-5 Achievement Status of Each Indicator of Output 3

Indicators	Status	Basis
1. Seminar outcomes are rated satisfactory or above by at least the 70 %[19] of the seminar participants.	Achieved	87 % of participants of the seminar for PTI officials on October 8, 2024, responded that they were "very satisfied" or "satisfied" (n=86).
2. Revised DPEd curriculum and course materials reflect the suggestions in the DPEd effectiveness study and the seminar(s).	Achieved	Japanese experts participated in the workshop for revising "Revised DPEd (BTPT)" on February 10, 2025, and discussed with the mathematics and science teams. Lesson Study was introduced into the curriculum.

[19] In the follow-up meeting of the 10th JSP3 TC held in October 2024, the target value of 70 percent was agreed upon.

(4) Output 4

Table 3-6 shows the status of achievement of the three indicators of Output 4: "Teachers are continuously supported through appropriately designed CPD to respond to the challenges in teaching and learning."

Table 3-6 Achievement Status of Each Indicator of Output 4

Indicators	Status	Basis
1. The CPD framework has been revised.	Achieved	The CPD framework was completed during the first term. However, advice from the Project was not fully incorporated. In the end, the CPD framework did not significantly differ from existing approaches.
2. CPD materials are developed.	Achieved	Development of a new teaching instructional video, an animation video, and a model lesson video [20] was completed. In addition, the Project collaborated with DPE on the use of these video materials in CPD training and their dissemination to school sites. Although the Project completed the distribution of the materials, DPE has not yet completed the implementation of these materials into the CPD training manuals.
3. Recommendations on improving the quality of CPD are documented and shared with the stakeholders.	Achieved	A recommendation based on the results of the CPD monitoring survey was submitted to DPE in May 2025.

3.3 Others

(1) Progress of Considerations on Gender/Peace Building/Poverty Reduction

In order to maintain gender equality in education, the illustrations in the textbooks show equal numbers of male and female students, and the color of the callouts has been carefully considered. With regard to learning activities, the textbook introduces learning activities that can be implemented in primary schools throughout Bangladesh, while taking into account urban-rural disparities and regional characteristics. For example, learning activities using inexpensive and universally accessible teaching materials were introduced to provide fair and equal learning opportunities for children across Bangladesh, regardless of economic and regional disparities. The Project also considered ensuring that the teachers and children appearing in the digital materials were selected in a gender-balanced manner.

[20] In response to a request from the DPE Training Division, a part of the formative evaluation was added to the model lesson video developed in Activities 1-3 and provided to the DPE.

4. Project Evaluation

4.1 Considerations from the Perspective of the DAC Evaluation Criteria

(1) Relevance

The Project is closely related to the education policy and development goals of the Government of Bangladesh. The Government of Bangladesh has been working toward achieving Millennium Development Goal Target 2, "Universal completion of primary education," and has made remarkable progress in increasing primary school enrolment rates and reducing dropout rates. However, improving the quality of education, especially the academic achievement of students, remains a major challenge. Against this background, the Government of Bangladesh has been implementing the PEDP in stages since 1998 with the aim of improving the quality of primary education. In PEDP1 (1998-2003), PEDP2 (2004-2011), and PEDP3 (2011-2018), the focus was on improving access to education, and although the results were good in increasing school enrolment rates, there was not enough improvement in academic achievement. In response to this, the ongoing PEDP has set "quality of education" as one of its main goals, and the Project was implemented in coordination with the Government of Bangladesh's primary education policy within the PEDP4 framework, with the aim of "improving students' understanding of mathematics and science in primary school".

In addition, the Government of Bangladesh's 8th Five-Year Plan (2021-2025) lists improving learning outcomes in primary education, strengthening mathematics and science education, and developing teachers' professional skills as important policies, which directly align with the activities of the Project. In addition, under the Digital Bangladesh Vision 2021, the use of ICT in education is being promoted, which is related to the use of the digital teaching materials developed in the Project and its policies.

(2) Coherence

The Project was implemented under PEDP4 led by the Government of Bangladesh in collaboration with development partner organizations such as UNICEF, ADB, WB, and EU. Coordination among the development partners was led by JICA experts, and the Project also worked closely with the experts to ensure consistency with the development partner projects.

The Project is positioned in the "Cluster for improving learning through the development of textbooks and learning materials" of JICA's Global Agenda. JICA aims to improve learning outcomes through the development of high-quality textbook and teaching materials, and the Project also contributes to this goal by supporting the revision of the primary mathematics and science curriculum, the development of textbooks and teachers' guides, teacher training, and CPD, and is therefore highly consistent with JICA's policy.

(3) Effectiveness

The project achieved all the planned outputs. However, the approval for the textbooks and Teachers' guides for Grades 4 and 5 have been suspended, involvement in the development of mathematics and science teaching materials for DPEd was limited due to confusion over the revision of DPEd, and the use of CPD digital materials was not fully implemented due to inadequate CPD implementation plans. Due to delays and changes in implementation on the part of the Bangladeshi side, as well as the impact of the COVID-19 pandemic, the utilization of project outcomes and their institutionalization remained limited.

Regarding the project goal of improving students' academic performance level and teachers' teaching skills, the endline survey conducted in 2024 showed that the average correct answer rate

was 54.0 percent for mathematics and 50.6 percent for science, and the target was achieved for students' academic performance level. The classroom observations also showed that the target was achieved for science and almost achieved for mathematics. However, due to delays in the development of teaching materials, it was difficult to compare and verify the results before and after the project intervention, and the survey captured only that moment in time. Therefore, there were limitations in clearly demonstrating the causal relationship between the outputs and the project purpose.

(4) Efficiency

The duration of the Project was extended from the initially planned period of 51 months (April 2019 – June 2023) to 75 months (April 2019 – June 2025), representing 147% of the original plan. The project budget also increased from the initially planned 390 million yen to approximately 560 million yen which corresponds to 144% of the original plan[21].

The extension of the project period was due to the two-year extension of PEDP4 by the Government of Bangladesh. Due to the spread of COVID-19, PEDP4 activities stagnated, and it became difficult to proceed as planned. Thus, in a mid-term review of PEDP4, the Government of Bangladesh assessed the overall progress of PEDP4 and decided to extend it for two years. In response to this, the Project was extended for two years at the official request of the Government of Bangladesh.

The increase in project budget was attributed to both the response to COVID-19 and the additional activities conducted during the extended period. As part of the COVID-19 response, 344 mathematics lesson videos were developed for television broadcasting, based on the Government of Bangladesh's COVID-19 Response and Recovery Plan. Furthermore, during the two-year extension period, new activities not included in the original plan—such as training in Japan and the preparation of a 20-Year Summary Report and leaflet—were implemented while keeping the additional budget to a minimum. Outputs 1 to 4 were all achieved, realizing efficient project management.

However, it is undeniable that some activities were not implemented in a timely manner due to delays and changes in the implementation plan on the part of the Bangladeshi side. These delays prevented several key activities from being carried out at the appropriate time. As a result, the logical implementation of the input-to-output sequence envisioned under PEDP4, which the Project supported, was disrupted. This is considered to have had a certain negative impact on the achievement of project outcomes. In particular, such delays were a significant factor that adversely affected the efficiency of the Project.

(5) Impact

The Project established the foundation for improving students' academic performance level through revising the mathematics and science curriculum, developing textbook and teaching materials, and supporting teacher training. By working closely with DPE, NCTB, and NAPE, and directly contributing to Bangladesh's primary education policy within the PEDP4 framework, the Project's contribution at the policy level is high. The outcomes of the Projects are expected to be expanded nationwide within the PEDP4 framework. However, due to long-term school closures caused by COVID-19, non-approval of Grades 4 and 5 textbooks, and delays in CPD implementation plans, the results were not fully disseminated to schools, and the contribution to short-term academic improvement was limited.

[21] Original plan is referred to ex-ante evaluation table.
https://www2.jica.go.jp/ja/evaluation/pdf/2018_1700288_1_s.pdf

(6) Sustainability

Policy sustainability

The activities of the Project were implemented within the framework of PEDP4 and are likely to be continued in PEDP5, which is currently under consideration. The Government of Bangladesh has made improving the quality of primary education a continuing priority and is expected to continue efforts to strengthen mathematics and science education and institutionalize teacher training (CPD), in particular. Therefore, the sustainability of the policy is considered relatively high.

Technical sustainability

The Project implemented technology and knowledge transfers to the NCTB and textbook writers to improve their capacity for curriculum and textbook development. However, the sustainability of technology and knowledge transfer is low because textbook writers are assigned by different members each time; the development of professional human resources within the organization responsible for curriculum and textbook development and revision within the NCTB is inadequate; and the sustainability of technology and knowledge is moderate.

In CPD training, the use of the digital CPD materials developed by the Project is expected to improve the knowledge of trainers. Designed as a short series of about five- to 10-minute segments, it has the advantage of being easy to incorporate efficiently into training. If it is introduced into the CPD training manual, the sustainability of the technology is relatively high.

Organizational sustainability

Improving the quality of school monitoring by URC instructors and AUEOs is crucial for enhancing classes using new textbooks and for implementing continuous class improvement activities at school sites. However, at present, guidance on lesson observation methods and supervision, and advice on lesson improvement activities are not sufficiently implemented. To improve sustainability in terms of organization, it will be necessary to strengthen the monitoring system and improve the instruction skills of URC instructors and AUEOs in the future.

As part of efforts to improve the institutional structure, the initial plan for the DPEd revision included strengthening the monitoring and mentoring components. This was based on lessons learned from PEDP3 and was designed with the following objectives:

- To cultivate DPEd trainees as reflective practitioners who can think critically, reflect on their experiences, and grow professionally;
- To ensure that the internship period becomes a meaningful learning experience;
- To establish a strong support system involving headteachers and AUEOs;
- To create an environment that enables teachers to continue learning on the job.

However, due to delays caused by circumstances on the Bangladeshi side as well as the impact of the COVID-19 pandemic, the DPEd revision process was significantly delayed, and it became unrealistic to implement the planned support. As a result, the development of training modules related to mentoring was officially dropped following consultations between JICA and the Project, and this decision was agreed upon with the Bangladeshi side at the 7th JSP3 TC meeting.

While the formal introduction of mentoring modules was abandoned, the objectives and underlying significance of mentoring remain highly relevant. To build a sustainable system for continuous educational improvement, it is essential to strengthen monitoring practices that incorporate mentoring elements and enhance the field support skills of URC instructors and AUEOs. Therefore, future efforts should aim to compensate for the missed opportunity caused by the removal of the mentoring module.

Financial sustainability

Textbook development is considered a regular part of the NCTB's work, ensuring financial sustainability. Meanwhile, regarding teacher education, TED Plan, published in 2011, sets out a vision for "improving the quality of primary education through comprehensive and lifelong CPD". The TED Plan is still the official plan of the Government of Bangladesh, and its basic principles continue to be respected, although discussions on its revision have been taking place in recent years. At present, a revised version has not been formulated or implemented, and budgetary support is considered necessary.

4.2 Changes in Risk Factors and Measures to Mitigate Them, and Measures Taken by JICA and the Government of Bangladesh

4.2.1 Key Factors Affecting Implementation and Outcomes

(1) Risks Related to Curriculum Revision

The delay in approval of the revised curriculum and the fluidity of the policy had a significant impact on project activities. The revised curriculum was initially scheduled to be completed in September 2019, but it was delayed and completed in April 2020. Later, due to efforts to align it with the K-12 NCF, formal approval by MOPME was delayed until March 2022. This in turn delayed the development of textbooks and teachers' guides for Output 2 and further affected DPEd (Output 3) and CPD (Output 4).

Even after its approval, there have been efforts outside the PEDP4 framework to align the revised primary curriculum with the K-12 NCF with the support of UNICEF, and a further revision is planned for 2025 to align the primary and secondary curricula.

(2) Risks Related to Revisions of Textbooks and Teacher's Guides

1) Delay in revision of textbooks and Teacher's Guides

Due to delays in approval of the revised curriculum, the schedule for textbook development was also significantly delayed. Initially, the development of textbooks for Grades 1 and 2 was scheduled to be completed during the first term. However, because the curriculum had not been approved at the start of the second term, the development work could not be started. After that, the DLIs were revised through the PEDP4 mid-term review, and the NCTB revised the Action Plan. However, the schedule of textbook development, pilot activities, textbook refinement, and introduction to primary schools nationwide was very tight. Although the development work for the textbooks and teacher's guides for Grades 4 and 5 was completed in August 2024, approval was not granted, and they were not distributed to schools in January 2025.

2) Textbook quality

During the development of the Grade 1 textbook, the spread of COVID-19 led to travel restrictions for Japanese experts. In addition, the sudden scheduling of workshops and frequent changes in plans made it difficult to coordinate travel dates. As a result, Japanese experts were unable to directly provide guidance to textbook writers or collaborate with them on-site. Consequently, the suggestions for improvement to the textbook and teacher's guide developed by the Project were not sufficiently reflected in the final products. In addition, the format and educational philosophy of the teacher's guides for Grades 2 and 3, which were distributed nationwide in June 2024, were significantly different from those for Grade 1. In addition, NCTB revised the textbooks for Grades 4 and 5 with a new format that incorporated the "experiential learning approach" of secondary education, but a clear revision policy was not presented in the textbook development process, resulting in inconsistent teaching materials. As a result, new textbooks for Grades 4 and 5 were scheduled to be distributed in January 2025, but it was

suspended. Current textbooks are being used in the academic year 2025, and NCTB will revise textbooks for Grade 4 and 5 in 2025.

(3) Risks Related to the Revision of DPEd

The DPEd Effectiveness Verification Study was delayed due to delays in hiring DPEd consultants by the Bangladesh side. In addition, the COVID-19 pandemic made it difficult to conduct field surveys, and the preparation of the report was also delayed. Furthermore, the revision of the DPEd curriculum was scheduled to be implemented after the approval of the primary curriculum, but the responsible agencies, NAPE and the DPE Training Division, were unable to decide on a policy. It also took time to decide on changing the DPEd qualification awarding agency. Those issues contributed to the delay in the DPEd revision.

(4) Risks Related to CPD

In the first term, together with UNICEF, the Project provided technical advice to the CPD consultants employed by DPE on the creation of survey tools, analysis, and report writing for the CPD Effectiveness Verification Study. However, due to lack of time, much of the advice was not reflected. As a result, the finalized "CPD Effectiveness Verification Study Report" did not cover all the CPD activities that should have been analyzed and was insufficient in terms of scope and accuracy. Furthermore, the CPD framework only followed the previous activities, and no fundamental improvements were made. After that, to complement the CPD framework, the DPE Training Division established a CPD task team and took steps to create a CPD Implementation Plan, but as of May 2025, the CPD Implementation Plan has not been created.

In addition, development of CPD digital materials was significantly delayed due to delays in approval of the revised curriculum.

(5) Risk of Decline in Students' Academic Performance Level due to Long-term School Closures Caused by the COVID-19 Pandemic

Due to the spread of COVID-19, primary schools in Bangladesh were closed for about two years from March 2020. This resulted in a significant loss of learning opportunities for children, and the risk of a decline in academic performance level became a serious issue. In particular, children who did not have any learning materials other than their current textbook continued to face difficulties in their studies. To mitigate this impact, the government and development partners promoted distance learning support through the development and distribution of video lessons, but there were challenges in disseminating and utilizing the materials. In particular, it was confirmed that the viewing rate of the broadcast video materials was low, and there was a call for promoting their use in schools.

4.2.2 Risk Management Assessment

JICA, the Government of Bangladesh, minimized the impact of risks by taking the following measures:

(1) Responses to the Risks Related to Curriculum Revision

JICA

- The Project maintained close cooperation with NCTB and endeavored to grasp the latest status by attending the PEDP4 mid-term review, Development Partners' Consortium (DPC) meetings, JCM, etc.
- The Project made a direct offer to MOPME, NCTB, DPE, NAPE, and others to encourage early approval of the revised curriculum.

- The Project raised the issue with the NCTB regarding the possibility that the alignment of the revised primary curriculum with the K-12 NCF may cause discrepancies with the training content.

The Government of Bangladesh

- NCTB formulated the NCTB Action Plan in line with the latest policy of the Government of Bangladesh, and shared it with development partners, including the Project.

(2) Responses to the Risks Related to Curriculum Revision of Textbook and Teacher's Guides

JICA

- The Project worked closely with the NCTB and provided early support for developing the Grade 1 and Grade 2 textbooks in line with the proposed curriculum even before it was approved.
- The Project provided technical support while closely monitoring the revision of the NCTB Action Plan.
- The Project created a textbook development manual and submitted to NCTB and trained local staff and established a system to provide technical support even when Japanese experts were not available.
- The Project made an agreement with NCTB regarding textbook development and established a framework for joint development.
- Regarding the issue of the textbook format for Grades 4 and 5, the Project recommended that it be reverted to the previous format.

The Bangladesh side

- In line with the latest policy of the Government of Bangladesh, NCTB formulated the NCTB and shared it with development partners, including the Project.

(3) Responses to the Risks Related to the Revision of DPEd

JICA

- The Project shifted its focus to activities that can be implemented regardless of the progress of the DPEd revision (seminar for PTI instructors) in response to the situation where the DPEd curriculum revision depends on government decisions.
- The Project hired former DPE employees as DPEd/CPD personnel and strengthened cooperation with the DPE Training Division.
- JICA experts participated in the results presentation workshop of "Revised DPEd (BTPT) Effectiveness Verification Study" in November 2024 and Revised DPE (BTPT) Curriculum Revision Workshop in February 2025 and provided technical support.

The Government of Bangladesh

- DPE shared information regarding the revision of the DPEd curriculum with the Project through the JSP3 TC meeting held regularly every six months and communication between the Project and DPE Training Division.

(4) Responses to the Risks Related to CPD

JICA

- The Project pointed out to the DPE Training Division that there were issues with the "CPD Effectiveness Verification Study Report" and the contents of the CPD Framework.

- Given that the CPD Implementation Plan has not yet been completed, the decision was made to focus on developing and disseminating CPD digital materials, rather than on strengthening the capabilities of CPD trainers or supporting the improvement of the quality of CPD activities.
- In response to the absence of a plan to revise the subject-based training manuals, a "Recommendation for Revision of Subject-based Training manual in Math & Science" was submitted to the Training Division of DPE. The proposal included recommendations on the characteristics of digital materials and their effective use in training.
- JSP3 TC meeting confirmed the actions of both DPE and the Project to promote the use of all digital materials developed by the Project (model lesson videos, new instructional videos, animation videos, and mathematics lesson videos).

The Government of Bangladesh

- DPE shared information regarding CPD with the Project.

(5) Responses to the Risks Related to Decline in Students' Academic Performance Level due to Long-term School Closures Caused by the COVID-19 Pandemic

JICA

- The Project developed 344 mathematics lesson videos (Grades 1 to 5) for television broadcast based on the Government of Bangladesh's COVID-19 Response and Recovery Plan, in collaboration with DPE.
- The Project uploaded the educational materials to the project's Facebook page for online access.
- The Project revealed that few students actually watched the television broadcast, so the materials were made into a DVD and distributed to URCs nationwide to promote their use in training and in schools.
- To promote the mathematics lesson videos to government officials and development partners, DVDs and flyers were created.
- The Project sent a letter to DPE requesting that 61 unaired films be aired.
- The request was submitted to DPE to use the digital materials developed through the Project in primary school classrooms and teacher training.
- Leaflets were distributed to primary schools nationwide to provide information on how to use math lesson videos by showing YouTube channel link of DPE and the Project.

The Government of Bangladesh

- The Government of Bangladesh developed a COVID-19 Response and Recovery Plan
- DPE worked closely with the project experts, developed mathematics lesson videos and broadcast them on television (283 out of 344) and posted them on the DPE YouTube channel.
- DPE informed schools nationwide of the timetable for the use of mathematics lesson videos during the school closure and instructed them to use TV broadcasts and radio materials.
- DPE instructed education offices nationwide to provide CPD training and school applications for digital materials developed by the Project, including mathematics lesson videos.

5. Project Lessons Learned

5.1 Lessons Learned from Project Implementation and Management

5.1.1 Collaboration with PEDP4

The Project was positioned as Phase 3, building upon the achievements of the previous phases. It was designed to work in closer collaboration with PEDP4, the overarching program in the primary education sector of Bangladesh and aimed to contribute to improving math and science competencies among primary school students, teachers, and schools nationwide.

Furthermore, in terms of financial support, similar to the grant aid based on the Poverty Reduction Strategy for PEDP3, the "Budgetary Assistance Scheme Grant Aid (PEDP4: approximately 500 million yen per year for five years)" has been continued for PEDP4 since 2018 and, by firmly positioning itself as a development partner participating in PEDP4. It was very helpful that the technical cooperation project could be managed with a sense of unity between JICA's support program and the Government of Bangladesh's PEDP. It was expected that the support of the technical cooperation project would directly lead to support for the implementation of the partner country's education policy, and that cooperation activities would be expanded nationwide at once with the Government of Bangladesh's budget through curriculum, textbooks, DPEd, and in-service teacher training.

However, PEDP4 management was inconsistent, with sudden changes to the plan, which caused confusion in the implementation of activities. The first year of PEDP4 was a survey phase, with various surveys being conducted and no specific activities being implemented. In the second year, the logically constructed PEDP4 plan was easily changed. For example, in 2019, NCTB decided to introduce a unified curriculum (K-12) from pre-primary to high school before starting the revision of the primary curriculum. However, the revision work did not progress, so the development of textbooks and teacher's guides was delayed. Furthermore, teacher training based on the revised curriculum and textbook could not be conducted, and all activities related to primary mathematics and science were postponed.

Collaborating with PEDP4 means that while positive aspects can be shared, negative aspects are also shared at the same time. As a result, there were situations in which the Project was unable to carry out project management in a fully proactive and controlled manner. This point requires careful attention, as it may affect the overall evaluation of the technical cooperation project.

During the second term of the Project, the spread of COVID-19 made it difficult to travel to the site and maintain close communication with the local CPs. Although online TC meetings continued to be held once every six months, it became difficult for the Project to receive necessary information.

In 2023, due to the extension of PEDP4, the Project was also granted a two-year extension. During this extension period, additional activities such as CPD monitoring and work related to the creation of the 20 years' cooperation summary report and leaflets were added, and the assignments of some members were increased accordingly. However, in principle, no additional assignments were made for existing activities because the original plans had not been completed.

However, it took a lot of time to coordinate with PEDP4 when implementing each existing activity during the two-year extension period. In particular, it was difficult to grasp the content and progress of PEDP4 activities. Although the Project made efforts to collect information through weekly online meetings with local staff, there were cases in which information was not shared by

CPs in advance about changes to plans or the end of activities. This situation affected the planned implementation of each activity.

5.1.2 Impact of COVID-19

Since March 2020, travel by Japanese experts to the area has been completely restricted due to the spread of COVID-19. To avoid interruption of activities, the Project has continued all discussions with related organizations, development of teaching materials, training support, etc. online. The TC meeting, which serves as the project's decision-making body, also held online meetings with the cooperation of DPE.

In terms of technical cooperation activities, as an alternative to face-to-face classes and training, JICA participated in the COVID-19 Response and Recovery Plan implemented by the Government of Bangladesh and development partners, produced mathematics lesson videos, supported their nationwide broadcast on national television, and strengthened efforts to distribute digital materials on mathematics and science education to PTIs and URCs across the country.

In addition, a flexible work system based on working from home was introduced for local staff, ensuring project continuity while preventing the spread of infection.

The main lessons learned from this series of responses were that 1) the rapid establishment of an ICT-based remote support system is essential for crisis response, 2) it was confirmed that the digitization of training materials and instructional support tools during normal times is extremely effective as an alternative in times of emergency. In addition, the continued communication with local institutions through online means served as a valuable reminder of the importance of building trust and maintaining flexible communication.

5.1.3 Bangladesh Political Change[22] (2024)

In August 2024, a political upheaval occurred, leading to the ruling party leader fleeing the country and the establishment of a transitional government, with a spreading political vacuum and social unrest. Although there were concerns about safety and temporary interruption of administrative functions, the Project maintained working-level relationships with the main CPs, DPE and NCTB, and steadily carried out the prescribed work. The 10th JSP3 TC meeting was held online immediately after this political upheaval, but the chairman (the Director General of DPE) was later transferred, and the TC meeting was held again in October with the successor Director General of DPE to obtain the signature of the minutes, and finally an agreement was reached on the decisions recorded in the minutes. In this series of arrangements, the contributions of practitioners from Program Division and Training Divisions of DPE were significant.

However, delays in reaching an agreement with DPE meant that the planned endline survey and CPD monitoring survey were delayed, forcing the team to stick to a tight survey schedule. However, the advance preparations for the survey and the nationwide distribution of study materials proved to be effective, and the impact of the political upheaval was minimized.

[22] Since July, security forces have been clashing with students in Bangladesh who were demanding the abolition of preferential employment quotas for the relatives of those who served in the war of independence. Opposition members and activists joined in, and the protests escalated into an anti-government movement. Prime Minister Hasina resigned on August 5 and fled to India, causing the collapse of her government. On August 8, an interim government led by Muhammad Yunus was formed, running the country until a formal government was formed through general elections. According to a senior official in the interim government, the death toll from the series of student demonstrations and the chaos that followed the collapse of the government has exceeded 1,000 (Kyodo News glossary).

An important lesson learned from this situation is the need for flexible work plans and early implementation in preparation for political or institutional risks. Particularly in an uncertain political environment, flexible adjustments to plans and early completion of high-priority work are key to ensuring the reliability and continuity of the project. In addition, strengthening relationships of trust with the implementing agencies during peacetime is extremely important to avoid project interruptions due to external factors such as political upheaval. Furthermore, maintaining an information-sharing system with the JICA office and relevant parties in the Government of Bangladesh was also a factor in making decisions to quickly respond to changes in the situation.

5.2 Lessons Learned for Improving Education Quality

5.2.1 Difficulty in Raising Awareness Among Stakeholders

The Project aimed to improve the quality of mathematics and science education in primary education through revising the curriculum, developing textbooks and teachers' guides, reviewing teacher training curricula, and CPD. However, while progress has been made in improving systems and teaching materials, it has become clear that a "change in mindset" among stakeholders, including schools, government agencies, and teacher trainers, remains a major challenge.

For example, the use of model lesson videos and digital materials created in line with the revised curriculum has been promoted. However, in the CPD monitoring and Endline survey, the Project identified that many teachers were accustomed to traditional, one-way instructional methods, which hindered their full understanding and implementation of the intended pedagogical approach of the new materials. Additionally, project monitoring revealed that there were variations in participants' understanding of the training content and in how well the training was applied in classroom practice. In some cases, the training remained superficial and was carried out merely as a formality.

Behind these issues lies the reality that fundamental perspectives on education—such as what constitutes quality teaching and how lessons should be designed to prioritize students' understanding—are not necessarily shared among all stakeholders. Furthermore, some stakeholders were reported to have perceived system reforms and the introduction of new materials as top-down changes, which led to persistent passive attitudes toward implementation.

What can be drawn from these lessons is that qualitative improvement in education requires not only the development of systems and materials, but also a transformative process involving changes in the perceptions and attitudes of key stakeholders. Such transformation inevitably takes time and demands sustained engagement. In particular, dialogic training for teacher educators and trainers, as well as hands-on, school-based support, are essential for bridging the gap between awareness and practice. However, under PEDP4, dialogic training was discontinued, and opportunities for interactive, practice-oriented training—such as Lesson Study—were significantly reduced. This trend was further exacerbated by the spread of COVID-19. In light of this situation, it is expected that DPE policymakers will take a more reflective approach and reintroduce dialogic training and school-based practical support in the next phase of the program (PEDP5).

The Project also involved a relatively large amount of coordination work with central primary education-related institutions such as DPE and NCTB and, compared to past projects, there was less direct intervention in schools and teacher training. As a result, one point of reflection is that the Project was not always able to provide timely and appropriate feedback to relevant stakeholders regarding the situation on the ground. It is therefore considered that, in future

opportunities, a project design that places a stronger emphasis on field-level engagement would better leverage the strengths of JICA's technical cooperation.

5.2.2 Achievements and Future Challenges in Improving the Quality of Education (Lessons Learned from the Endline Survey)

In the endline survey conducted to confirm the results of primary mathematics and science education, which is the target of the Project, an evaluation was conducted from three perspectives: students' academic performance level, teachers' teaching skills, and the learning environment. The results revealed that despite progress in establishing systems and revising teaching materials, there are still many challenges to be overcome in improving the quality of education.

Although the sample size was limited, some progress was seen in terms of academic achievement. The average correct answer rate for mathematics was 54.0 percent, and for science it was 50.6 percent, showing some improvement compared to the survey conducted by NCTB in 2018. However, there was a significant gap in academic achievement between urban and rural areas, with the average correct answer rate for urban children in both mathematics and science being significantly higher than that in rural areas (in mathematics: urban - 57.8 percent, rural - 49.8 percent, in science: urban - 57.9 percent, rural - 42.7 percent). This shows that regional differences in educational environment and teachers' teaching skills are directly linked to learning outcomes.

On the other hand, the results of the lesson analysis were important evidence of the difficulty of improving the quality of education. The average score for mathematics classes was 2.0 out of 5, and for science classes it was 2.3. Both result shows "slightly above the minimum standard. "The results were as follows: "Problem-solving learning", "use of blackboard", and "interactive activities" in the classroom received extremely low marks, revealing the reality that teaching materials are merely used for the sake of appearance. In particular, the tendency for teachers not to encourage students to think for themselves or to accept incorrect answers in class can be a major barrier to the establishment of inquiry-based learning.

In addition, the teacher survey repeatedly highlighted challenges such as a lack of teaching materials and equipment, limited time for lesson preparation, and lack of students' concentration. Although "Lesson Study" was recognized as an effective initiative for improving classroom instruction, its implementation remained limited due to shortages of time and resources. These challenges clearly illustrate the gap between classroom realities and the mindset reform needed to improve education quality—suggesting that simply developing systems and tools alone is insufficient to achieve the outcomes envisioned by central-level primary education stakeholders.

Furthermore, the results of the student survey showed that while students had a high level of interest and a favorable attitude toward mathematics and science, they also had a strong sense of anxiety about making mistakes. This highlighted the need to create a learning environment where students can learn without the fear of failure.

In conclusion, this endline survey confirmed the results of the "hard" reforms, such as the curriculum, textbooks, teachers' guides, and teaching materials, while also indicating that improvements in the "soft" aspects, such as teachers' teaching philosophy and learning culture, will be key to developing excellent human resources for greater development in Bangladesh in the future. This survey shows that, to improve the quality of education, it is essential not only to improve teaching materials and training systems, but also to change the practical culture in schools and provide continuous support.

6. Recommendations for the Overall Goal

6.1 Outlook for Achieving the Overall Goal

The super goal, overall goal, and project purpose on the PDM for this project are listed below.

Table 6-1 Objectives for Each Level Listed in the PDM

Goal level	Goal content
Super Goal	Quality teaching-learning practices in all schools enable children to acquire the essential grade-level competencies stipulated in the curriculum for primary mathematics and science
Overall Goal	National level of academic skills and knowledge obtained in primary mathematics and science is improved
Project Purpose	Children come to understand mathematics and science better in primary education

The greatest advantage of the Project is that it is positioned to scale up to all primary schools, primary school teachers, and students in the country at once by working together with DPE, the implementing organization of the Bangladesh education policy while providing advice and improvement support for their respective policies. Therefore, communication with PEDP implemented by DPE was important. PEDP4 also aims to improve the quality of education, and there is no discrepancy with the direction of this project's activities. In addition, the Director General of DPE served as the chair of the TC meeting, which met every six months, to check the progress of both DPE and JICA and to align the direction of cooperation.

However, during the implementation of the Project, it was difficult to carry out activities as originally planned due to various challenges, including prolonged school closures caused by the spread of COVID-19 in 2020–2021 and the lingering impact of the 2016 terrorist incident. Although the Project was extended by two years in alignment with the extension of PEDP4, the overall goal was not fully achieved.

The table below is an evaluation of key performance indicators (KPI) based on the NSA results published in the 2022 edition of the Annual Sector Performance Review (ASPR) by DPE. KPI 2 shows the percentage of Grade 3 students who took the exam and were deemed to have reached the academic performance level of Grade 3 or higher, and KPI 4 shows the percentage of Grade 5 students who were deemed to have reached the academic performance level of Grade 5 or higher. In Grade 3, the result shows a slight improvement when comparing the 2017 baseline with the 2022 results. However, in Grade 5, the result shows a decline. It should also be noted that the percentage of students who have reached the academic performance level of the relevant grade in both grades is very low.

Table 6-2 KPI 1, 2, 3, and 4 (NSA-Related Indicators) Listed in ASPR 2022

Key Performance Indicators (on learning achievements)		Year		
		2017 (Baseline)	2022	
			Target[6]	Achievement
KPI 1: Percentage of Grade 3 students achieving grade-level competencies in Bangla	**All**	**47%**	**47%**	**51%**
	Boys	45%	45%	47%
	Girls	48%	48%	55%
KPI 2: Percentage of Grade 3 students achieving grade-level competencies in Math	**All**	**34%**	**34%**	**39%**
	Boys	35%	35%	38%
	Girls	33%	33%	40%
KPI 3: Percentage of Grade 5 students achieving grade-level competencies in Bangla	**All**	**44%**	**44%**	**50%**
	Boys	43%	43%	47%
	Girls	44%	44%	52%
KPI 4: Percentage of Grade 5 students achieving grade-level competencies in Math	**All**	**32%**	**32%**	**30%**
	Boys	32%	32%	29%
	Girls	34%	34%	31%

Source: NSA 2017 and 2022

Source: NSA 2017 and 2022

It has become clear that PEDP4 did not sufficiently improve children's mathematical abilities. It can be said that various emergency measures have prevented a significant drop in academic performance level even after the COVID-19 pandemic, but the current situation in which only 30 percent of students in Grade 5 have acquired the academic performance level of their respective grade is an issue. All stakeholders need to address with a greater sense of urgency, but no such efforts were seen in PEDP4.

6.2 Bangladeshi Action Plan and Implementation Structure to Achieve the Overall Goal

The Government of Bangladesh's initial planning for the start of PEDP4 is considered to be well thought out. JICA also participated in PEDP4 as a technical cooperation project aimed at improving the quality of primary education, and the design of implementing support activities in cooperation with DPE, NCTB, and NAPE was also reasonable. However, that each stakeholder was unable to implement the PEDP4 plan as planned was a major point of reflection. The JICA technical cooperation project was also supposed to plan various support activities in line with the initial PEDP4 plan, hold regular discussions with DPE, NCTB, and NAPE, and implement improvement measures while constantly coordinating with each other. However, in reality, there were successive changes and interruptions to the PEDP4 plan, and the changes in the plan made project management very difficult, while the Project experts' activities on the ground were limited. In other words, if the Project acted first, there would be a risk of having to go back and redo the process due to changes in the plan on the Bangladesh side. On the other hand, if the Project just waited for the plan to be finalized, teachers and students would never receive improved training and teaching materials. The Project faced with this dilemma during six years with PEDP4.

The principle of participating in PEDP is that PEDP is the main body and the technical cooperation project is secondary. The Project can make proposals, but the decision-making is the responsibility of the Bangladesh side. Unless the parent program is well managed, the technical cooperation project implemented within the program cannot perform well.

In this context, JICA's financial support scheme could serve as a mechanism to apply a certain degree of leverage. Since the implementation of financial support is conditioned on the audit of PEDP operations, it may be worth exploring ways to exert control through this process. However, it should be noted that under PEDP4, there were instances—particularly toward the end of the

fiscal year—where activities were rapidly implemented without sufficient prior consultation with JICA. This was a regrettable missed opportunity for coordination.

The implementation of PEDP4 also appeared to have been affected, at times, by political interference, which contributed to operational disruptions. This serves as a valuable lesson for the management of future programs. It is conceivable that, had there been more timely consultations and coordination before such confusion arose, PEDP4 could have progressed more smoothly, potentially contributing more significantly to the overarching goal of improving students' competencies in mathematics and science.

6.3 Recommendations for Bangladesh

In the case of PEDP4, it was regrettable that the implementing agency, DPE, was unable to operate the PDCA cycle—Plan, Do, Check, and Act—in a logical and consistent manner. In several instances, plans were altered even before implementation due to sudden interventions, effectively undermining the original design of PEDP4. Such interventions subsequently became normalized throughout the program period.

A more appropriate approach would be to implement the plan as designed, conduct thorough evaluation based on the results, and then revise it as needed for continuous improvement. It is hoped that future implementation of PEDP will return to these basic principles. Doing so would also enable development partners to engage more efficiently and collaboratively.

The limited progress of PEDP4 in improving student learning outcomes nationwide can be attributed, in part, to the significant amount of time spent on coordination at the central level. More directly, it was due to the long lead times required to translate policies into school-level implementation, as well as the lack of synchronization in the timing of those interventions. It is essential that stakeholders remain mindful of the fact that many teachers and students across the country were awaiting effective measures.

6.4 Monitoring Plan from Project Completion to Ex-post Evaluation

The Project ends in June 2025, but it is necessary to continue monitoring in the mid- to long-term after the end of the project to verify the sustainability of the results and the achievement of the overall goal. In particular, the new textbooks and teacher's guides for Grades 4 and 5 of mathematics and science for primary schools supported by the Project are scheduled to be used in schools nationwide in 2026 and 2027. It is essential to understand their usage status including how teachers actually use them. As of May 2025, the Government of Bangladesh is discussing the further extension of PEDP4 and the subsequent launch of PEDP5. In this context, it is strongly recommended that NCTB consider and implement a mechanism to assess the actual use of textbooks and teacher guides at the school level.

It is also essential to continuously monitor the use of digital materials developed under the Project—such as model lesson videos and animation videos—within CPD training and regular classroom practice, in order to evaluate their integration into school settings and their relationship with student learning outcomes. Regarding the CPD materials, it is recommended that the DPE Training Division ensure their availability through the LMS platform, and that CPD—particularly subject-based training in mathematics and science—be continued under PEDP5. In this context, securing sufficient time for teachers to become proficient in effectively utilizing these materials will be critical for improving student achievement. Further consideration of these aspects is strongly encouraged.

Furthermore, to measure nationwide changes in children's basic academic abilities, it is effective to utilize the NSA conducted by the government, and a system should be established to analyze NSA data over time every two to three years. As repeatedly suggested, feedback for schools on the results of the analysis should be provided.

Monitoring indicators include: 1) the actual usage of textbooks and teacher's guides and the users' (teachers' and students') review of them, 2) the frequency of use of digital materials and the satisfaction of users (teachers and students), 3) the students academic achievement and percentage of grade-level understanding in NSA (analysis results on answer trends for each unit would be useful), 4) changes in disparities between urban and rural areas and between genders, etc. Possible sources of information include simple school surveys and teacher questionnaires by DPE, YouTube/LMS access logs, CPD training manuals and implementation reports, etc.

Finally, it is expected that JICA—led by its Bangladesh Office and the Education Policy Advisor—will align and incorporate the various assets developed through past technical cooperation into the planning of PEDP5. It is further hoped that JICA will work in collaboration with other development partners to promote phased and systematic monitoring efforts moving forward.

Table 6-3 Basic Monitoring Policy (July 2025-2030) (Draft)

1. Main monitoring targets (draft)	
a. New textbooks and teacher's guides for Primary School Grades 4 and 5 (Mathematics and Science) b. Usage status of the digital materials developed in the Project (model lesson videos, animation videos, mathematics lesson videos, etc.) c. Trends in national academic achievement of children (NSA)	
2. Key performance indicators (KPI) (draft)	
a. Usage of textbooks and teacher's guides	- How new textbooks and teacher's guides are used in actual classes - Frequency of use by teachers (e.g., more than x times per week) and their impressions of its usability - Frequency of use and students' impressions (questionnaires and interview surveys)
b. Usage of digital learning materials	- Number of views and play time of model lesson videos (YouTube analytics, LMS logs, etc.) - Whether or not digital materials are used in CPD training or subject-based training - User (teacher and student) satisfaction with the materials (questionnaires and interview surveys)
c. Students' academic performance level	- Average scores of NSA results (mathematics and science) and the percentage of understanding equivalent to the grade level - Change in the urban/rural score gap - Gender analysis
3. Monitoring Schedule (draft)	
FY2025	Designing monitoring, discussing with DPE, NCTB and NSA staff, establishing a data acquisition system
FY2026	Grade 4 textbook usage survey immediately after the introduction
FY2027	Textbook usage survey and National Student Assessment (NSA) to be conducted at the point when the introduction of Grade 5 textbooks marks the first time that all primary grades are using the new textbooks.
FY2028-2029	Regular follow-up surveys (status of digital materials usage, comparison with NSA, detailed analysis of NSA results)
FY2030 and beyond	Comprehensive data analysis and output evaluation for JICA ex-post evaluation