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

Summary of Comprehensive Report on 20 Years of JICA's Support in the Primary Education Sector in Bangladesh

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Chapter 1: JICA's 20 Years of Support for Primary Education (History)

- The Japan International Cooperation Agency (JICA) has been supporting primary education in Bangladesh for approximately 20 years since the launch of the technical cooperation project "Strengthening Mathematics and Science Education in Primary Education Project" in 2004.
- The technical cooperation was implemented in alignment with national policy under the framework of "Primary Education Development Program (PEDP)".
- Centered on technical cooperation, JICA organically combined multiple cooperation schemes, including the dispatch of individual experts, grant aid, JICA Volunteers, and training in Japan.
- Support for institutional development by central agencies such as National Academy for Primary Education (NAPE), the National Curriculum and Textbook Board (NCTB), and Directorate of Primary Education (DPE), was coordinated with classroom-level lesson improvement efforts by Japan Overseas Cooperation Volunteers (JOCV). As a result, the teaching materials and lesson improvement methods developed through the technical cooperation project were disseminated nationwide.
- Individual experts also contributed to policy dialogue and institutional reforms as part of the Development Partner Consortium, working in collaboration with other donors.

Chapter 2: Overview of JICA's Support in the Primary Education Sector

- JICA has supported the primary education sector through a wide range of cooperation schemes, including the dispatch of individual experts, grant aid, JICA Volunteers, preparatory surveys, grassroots technical cooperation, and technical cooperation projects.
- **Dispatch of individual experts**: JICA consistently dispatched primary education advisors who played key roles in linking technical cooperation projects with PEDP, engaging in policy dialogue, and coordinating with other donors.
- **Grant aid**: JICA provided financial support to the Third and Fourth Primary Education Development Programs (PEDP3 and PEDP4), contributing to institutional reforms through progress monitoring based on Disbursement Linked Indicators (DLI).
- **JICA Volunteers**: The number of JOCVs in the field of primary education had increased steadily, but dispatch was suspended after the Dhaka terrorist attack in 2016.
- **Preparatory survey**: A study was conducted in NGO primary schools operated by the Bangladesh Rural Advancement Committee (BRAC) to verify the effectiveness of learning support using Kumon materials. The results confirmed improvements in both academic achievement and non-cognitive skills.
- **Grassroots technical cooperation**: JICA implemented educational support activities in collaboration with local NGOs, focusing on areas such as school feeding, utilization of ICT, and development of thinking skills.
- **Technical cooperation projects**: In primary mathematics and science education, JICA

implemented a comprehensive approach beginning with lesson improvement and expanding to include curriculum revision support, development of textbooks and teaching materials, and improvements to training systems such as the Diploma in Primary Education (DPEd) and Continuous Professional Development (CPD).

Chapter 3: Achievements over 20 Years of JICA's Support for Education (2004–2025)

- **Implementation of inquiry-based and problem-solving lessons**:
  Teaching packages based on inquiry-based and problem-solving lesson approaches (Math: Grades 1–5; Science: Grades 3–5) were developed and implemented widely across Primary Teacher Training Institutes (PTIs) and experimental schools. These packages were distributed to PTIs, Upazila Resource Centers (URCs) and primary schools nationwide with funding from the Second Primary Education Development Program (PEDP2). In addition, Lesson Study was introduced to promote collaborative learning among teachers aimed at lesson improvement, and was scaled up nationwide using PEDP3 funding.
- **Awareness-raising activities for lesson improvement**:
  The drama series *Rupantar Kotha*, which featured teachers striving to improve their lessons, contributed to raising awareness of lesson improvement not only among educators but also among parents and local communities, through television broadcasting and outreach via social media. On-site support provided by JOCVs also played a significant role in shifting teachers' mindsets toward improving classroom instruction.
- **Support for curriculum revision emphasizing skill application and thinking processes**:
  Based on curriculum analysis and recommendations, a new primary math and science curriculum was developed in 2022. The new curriculum placed greater emphasis on higher-order cognitive skills such as "Applying" and "Analyzing," and promoted active, learner-centered education. JICA also contributed to the implementation of curriculum dissemination training conducted by NCTB.
- **Child-centered textbooks for math and science**:
  In Phase 2 of the technical cooperation project, textbooks and teachers' guides emphasizing learning activities and problem-solving were disseminated nationwide. The textbooks developed in Phase 3 featured questions designed to encourage children to think and express their opinions, as well as relatable, real-life content—earning positive feedback from teachers and stakeholders in the field.
- **Distance education support during the COVID-19 pandemic**:
  In response to COVID-19, JICA supported the production of 344 mathematics lesson videos for television broadcasting. These videos were aired on national television and made available on the DPE portal website, helping children continue learning at home during school closures.
- **Achievement of the Project Design Matrix (PDM)**:
  Aiming to improve the quality of primary math and science education, the project implemented a multi-dimensional and phased approach across three project phases. This included lesson improvement, curriculum revision, development of textbooks and teachers' guides, enhancement

of teacher training, and awareness-raising among stakeholders. Overall, the outcome indicators specified in the PDM were largely achieved throughout the three phases.

Chapter 4: Lessons Learned from JICA's Primary Education Cooperation

- **Project implementation within a program-based approach:**
  JICA's technical cooperation projects successfully developed a model that bridged policy and practice by linking on-the-ground activities for lesson improvement with the policy-level coordination undertaken by individual experts within the framework of programs such as PEDP. This approach contributed to tangible institutional reforms, such as the nationwide dissemination of Teaching packages and support for textbook development.
- **Mindset and practice transformation among counterparts for improving education quality:**
  Although collaboration with counterparts was initially limited, their awareness and engagement gradually improved through participation in training and project activities, eventually becoming key drivers of the project's success. Motivational tools such as training in Japan and third countries, and participation in international conferences, functioned effectively as non-financial incentives.
- **Raising stakeholder awareness through media utilization:**
  Awareness-raising efforts through mass media such as the educational drama *Rupantar Kotha* contributed to a broader understanding of lesson improvement among both teachers and the general public. The integration of such dramas into training sessions and the use of social media to foster dialogue also proved effective and are considered promising tools for future cooperation.
- **Potential of distance education through ICT:**
  During school closures caused by COVID-19, TV-based math lessons supported by JICA helped ensure continuity of learning. At the same time, disparities in access to information and equipment became apparent, highlighting the need to establish notification systems and improve the digital learning environment as key future priorities.

Chapter 5: Remaining Challenges in Primary Education in Bangladesh

■ **Curriculum**

- **Intended curriculum (syllabus and textbooks)**:
  The new curriculum revised in 2022 emphasizes the development of competencies and attitudes necessary for children to thrive in the future society. However, issues remain, such as an imbalance in cognitive levels and overlapping content. While the textbooks developed during Phase 3 incorporate elements that encourage student participation, a couple of aspects such as inconsistencies and connectivity to higher grades require further revision.
- **Implemented curriculum (lessons in practice)**:
  The introduction of Lesson Study led to some improvements in classroom practices. However, there remain significant disparities in teaching capability among teachers across regions and schools, and the average score of teacher competency only slightly exceeds the minimum standard.
- **Attained curriculum (student learning outcomes)**:

In the endline assessment conducted by the Project in 2024 for Grade 3, the average correct response rate in mathematics improved from 35 percent (in 2018) to 54 percent, while science remained at a similar level (51 percent). These results indicate a certain level of achievement; however, disparities in performance between regions and schools remain a significant challenge.

■ **Human and Organizational Capacity**

- **Personnel involved in curriculum and textbook development**:
  While human resources playing central roles are gradually being developed, frequent staff transfers within the NCTB hinder the accumulation and transmission of expertise. Unclear criteria for selecting textbook writers and weak management capacity also remain challenges.
- **Personnel involved in teacher training**:
  Although the DPE Training Division has conducted training programs in terms of quantity, there is insufficient effort in measuring their effectiveness and improving content quality. The limitations of the cascade training model and underutilization of monitoring are also issues.
- **Personnel involved in classroom instruction**:
  Lesson Study was once scaled up nationwide in Teacher Support Network through Lesson Study, however, this training is not introduced in CPD training currently. There is also a shortage of personnel who can transfer sufficient subject knowledge and pedagogical skills. A system that enables continuous support at the school level needs to be established.
- **Issues in DPE, NCTB, and NAPE**:
  Shortages of staffing, lack of coordination, and delays in budget execution hinder the implementation of policies and collaboration with stakeholders.

Chapter 6: Recommendations for Improving the Quality of Primary Education in Bangladesh

- **Recommendations for curriculum revision and textbook development**:
  In the curriculum revision and textbook development, it is essential to strengthen coordination among relevant ministries and ensure consistency with the National Curriculum Framework (NCF) and other key policies. Additionally, NCTB's capacity for implementation and management should be enhanced through the selection of qualified personnel, development of an appropriate organizational structure, effective use of textbook development manuals, and systematic accumulation of institutional knowledge.
- **Recommendations for improving the quality of mathematics and science lessons**:
  Improving the quality of instruction requires enhancing the learning environment, strengthening the implementation of Lesson Study and teacher training systems, and introducing diverse teaching methodologies. Furthermore, efforts should focus on creating learning environments that foster positive learning attitudes and students' self-efficacy, alongside whole-school initiatives led by strong leadership from headteachers.
- **Recommendations for improving student learning outcomes**:
  In addition to "easy-to-understand" lessons, linking classroom instruction with home learning is vital for ensuring sustained student achievement. It is necessary to develop and distribute teaching and learning materials aligned with textbooks, raise awareness about home learning support, and

provide relevant training to teachers. These efforts should contribute to establishing an integrated learning support system that combines classroom and home-based learning.

Chapter 7: Future Directions of JICA's Education Cooperation

- **Future direction of JICA's education cooperation**
  To further contribute to the development of education in Bangladesh, it is recommended that JICA leverage Japan's strengths in science and mathematics education, as well as its experience in implementing inquiry-based and problem-solving learning. JICA is also encouraged to contribute to emerging areas such as enhancing teachers' instructional capacity, improving educational assessment, and fostering non-cognitive skills. Furthermore, it would be beneficial to prioritize support based on the specific characteristics and needs of each region.
- **Strengthening collaboration with existing programs**
  It is advisable for JICA to strengthen collaboration with existing initiatives led by other organizations and the Government of Bangladesh—such as the Upazila Governance and Development Project (UGDP)—with technical cooperation positioned at the core. Enhancing the capacity of local education administration through such partnerships is expected to facilitate sustainable and locally driven improvements in education.
- **Strategies for sustainable and effective cooperation**
  To ensure the long-term effectiveness and sustainability of education reforms, it is important to clearly define priority areas, reinforce follow-up mechanisms for training, and promote the use of ICT for distance education. These efforts will help ensure that reforms are institutionalized and continuously implemented in the field.
- **Deepening collaboration with the Government of Bangladesh**
  JICA is encouraged to play a more strategic role in contributing to the long-term institutionalization of educational reforms through policy dialogue and human resource development. In addition, collaboration should include the development of leadership among school administrators, to strengthen the link between national policies and school-level practices, and to promote sustainable school-based improvement.