Ministry of Education
Republic of the Union of Myanmar

The Project for Curriculum Reform
at Primary Level of Basic Education
in the Republic of the Union of Myanmar

Project Completion Report

May 2021

JAPAN INTERNATIONAL COOPERATION AGENCY

PADECO Co., Ltd.
International Development Center of Japan Inc.
KYOIKU-SHUPPAN Co., Ltd.

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(May, 2021)

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Abbreviations and Acronyms

ADB	Asian Development Bank
AERS	Assessment and Education Reform Support Program (UKAid)
ATEO	Assistant Township Education Officer
BECF	Basic Education Curriculum Framework
BERDC	Basic Education Resource Development Centre
CAPS	Continuous Assessment and Progress System
C&A SSWG	Curriculum & Assessment Sub-sector Working Group
CCA	Child-Centered Approach
CCT	Core Curriculum Team
CDT	Curriculum Development Team
CESR	Comprehensive Education Sector Review
CET	Chapter-End Test
COVID-19	Coronavirus Disease 2019
CPD	Continuous Professional Development
CREATE	The Project for Curriculum Reform at Primary Level of Basic Education
DAE	Department of Alternative Education
DBE	Department of Basic Education
DEO	District Education Office
DEPT	Department of Education Planning and Training
DERPT	Department of Education Research, Planning and Training
DFID	Department for International Development
DHE	Department of Higher Education
DHREP	Department of Human Resource and Education Planning
DME	Department of Myanmar Examinations
DMER	Department of Myanmar Education Research
DMNL	Department of Myanmar Nationalities' Languages
DTEd	Diploma in Teacher Education
DTET	Department of Teacher Education and Training
DTP	Desktop Publishing
EC	Education College
EDC	Education Degree College
EDPCG	Education Development Partners Coordination Group
EPIC	Education Promotion Implementation Committee
ESD	Education for Sustainable Development
EYE	Equipping Youth for Employment (ADB)
GPE	Global Partnership for Education
HBL	Home-Based Learning

ICET	the International Conference on Education for Teaching
JCC	Joint Coordinating Committee
JICA	Japan International Cooperation Agency
KG	Kindergarten
MDEP	Myanmar Digital Education Platform
MOE	Ministry of Education
MOI	Ministry of Information
MPPA	Myanmar Printers and Publishers Association
MTEWG	Myanmar Teacher Education Working Group
NAG	National Assessment Guideline
NAP	National Assessment Policy
NCC	National Curriculum Committee
NEPC	National Education Policy Commission
NESP	National Education Strategic Plan
NLD	National League for Democracy
ODA	Official Development Assistance
OJT	On-the-job Training
PCK	Pedagogical Content knowledge
PDM	Project Design Matrix
PLAF	Primary Student Learning Assessment Framework
PPTT	Pre-service Primary Teacher Training
R/D	Record of Discussions
SCCA	Strengthening Child-Centered Approach (JICA)
SET	Semester-End Test
SSWG	Sub-sector Working Group
STEM	Strengthening Pre-service Teacher Education in Myanmar (UNESCO)
SWC	Subject-wise Curriculum Committee
TE&M SSWG	Teacher Education & Management Sub-sector Working Group
TEO	Township Education Office
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UOE	University of Education
WALS	the World Association of Lesson Study
YET	Year-End Test

Summary of Project Achievement

This project provided comprehensive support for the formulation of curriculum policies and implementation of major curriculum reform in primary education in Myanmar. With the project purpose of "**Educational activities in line with the new curriculum principles are introduced at the primary level of Basic Education Schools and Education Colleges**," the project supported the following areas:

- Development of primary curriculum, textbooks, and teacher's guides;
- Formulation of a primary assessment policy and assessment tools;
- Planning and implementation of the new curriculum introduction training; and
- Reflecting the new primary curriculum on pre-service teacher education.

The specific achievement of the project are as follows.

1. Development of the first primary education curriculum document in the history of Myanmar education

The project developed a curriculum outline which was approved by the Myanmar approving authority. The curriculum outline shows the objectives, scope and sequence, and subject content for all ten subjects in the five primary grades that is based on the five strengths and the 21st century skills that Myanmar's basic education aims for. It was designed to be feasible for implementation considering the current situation of teachers and schools in Myanmar.

2. Development of textbooks to promote children's learning

Textbooks were developed for ten subjects in five primary grades, consistent with the curriculum outline, and by the end of the project they had been distributed nationally for up to Grade 4, and were being used in classrooms for up to Grade 3. The textbooks were richly illustrated and designed to attract children's interest, and provided high quality, life-based learning materials that enabled children to deepen their thinking. In addition to taking account of gender and ethnic differences, the textbooks are universally designed.

3. Development of teacher's guides to support new learning

As well as textbooks, the project developed teacher's guides for ten subjects in five primary grades. In order to foster the abilities that the new curriculum aims for, teacher's guides presented teaching-learning processes that encourage children to think for themselves and express themselves through learning activities including pair work, group work and experiments.

4. Development of the curriculum and textbook revision process

The main changes in the curriculum revision process from previous years were: the involvement of a number of authors with field experience as primary teachers; the development of the textbook through try-out lessons; the use of high quality illustrations and binding using InDesign; and the setting up teams to write and approve the textbooks and teacher's guides from different perspectives. The curriculum revision process was developed over the course of the seven-year project and detailed guidelines for the writing and editing of textbooks and teachers' guides were developed by the project.

5. **Proposal of a primary assessment policy with a focus on formative assessment and development of assessment tools**

Based on the view that feedback in the classroom and assessment integrated with instruction are particularly important in primary education, the project proposed and received approval for an assessment policy that explicitly emphasises formative assessment in the early grades. The project has also developed a set of various assessment items including those to assess higher-order thinking skills and assessment guidelines, which can be used by teachers for checking during classes as well as for end-of-unit and end-of-year testing.

6. **Conducting training programmes for new primary curriculum introduction for in-service teachers throughout the country**

The project designed training programmes, developed training materials and trained master trainers for the new curriculum introduction raining programmes to support the Ministry of Education to implement them. Training aimed to provide information on curriculum content and teaching approach under the new curriculum targeting in-service teachers, education administrators and education colleges nationwide. In the training for in-service teachers, the participants themselves experienced new learning approach, such as group learning and experiments during the 14 days of training each year (6-7 days from the Grade 4 training onwards), and acquired the basics of the child-centred learning aimed for in the new curriculum.

7. **Reflecting the new primary curriculum in pre-service teacher education curriculum**

In order to incorporate the content of the new primary curriculum into pre-service teacher education, the project developed teaching materials for education colleges, focusing on the content and pedagogy of the primary curriculum. In collaboration with UNESCO, which provides comprehensive support for teacher education and management, these materials were made available to the teams responsible for revising the curricula of education colleges. Some of these have already been used in textbooks and teacher's guides for the first year of the newly established four-year pre-service teacher education programme.

In addition, the results of the impact survey conducted by the project showed the following improvements in children's learning through these outcomes.

- Compared with pupils studying in the old curriculum, pupils studying in the new curriculum scored higher in the Mathematics tests.

- The gap in Mathematics test scores between urban and rural areas has narrowed.

- The percentage of girls, in particular, who said they liked Mathematics increased. This may be due to the increase in cooperative learning in the classroom after the new curriculum is introduced.

- Lesson observations from a third party showed a clear improvement in lesson development and teaching techniques by the primary teachers, though there was no change in the teachers' self-evaluation,

As described above, this project has made a significant contribution to the realisation of primary education reform and the improvement of children's learning in Myanmar, both through the improvement of educational content by curriculum revision and textbook development, and through cooperation with in-service and pre-service teacher education to reflect this in the learning process.

Chapter 1. Overview of the Project

1.1 Background to the Project

1.1.1 Background to the Request for Technical Assistance

At the time when the project started, the Republic of the Union of Myanmar (hereinafter, Myanmar) was experiencing remarkable economic and industrial development under the new government after the transfer of civil administration in 2011, and there were signs of development not only in the primary industry, mainly agriculture, but also in the secondary industry. In the labour market, there was a gap between supply and demand, particularly for managerial and administrative, IT and communication skills. In response to such social changes, reforms were being launched in the education sector along with other sectors which were undergoing vigorously initiated reforms. The expansion of basic education has been identified as one of the priorities in these series of reforms, and the Ministry of Education (MOE) has embarked on major education reforms to achieve international standards, including the enactment of the National Education Law, revision of the Basic Education Law, reform of the school system and decentralisation of basic education administration. The doubling of the education budget in 2012/13 compared to the previous year was another sign of the Myanmar government's commitment to reform[1].

Although the total enrolment rate in primary education (Grades 1-5) was maintained at a high level around 98% from 2000 to 2010 (World Bank[2], 2010), the nation faces issues caused by social and family constraints such as poverty, insufficient quality of education content and teaching staff, which has resulted in high drop-out rates that rise as the grades progressed, reaching 23% by the final year (Ministry of Education[3], 2011). In order to improve this situation, the MOE conducted the Comprehensive Education Sector Review (CESR, 2012-2014). Meanwhile, in October 2013, under the initiative of the President's Office, the Education Promotion Implementation Committee (EPIC) was established to accelerate educational reform by quickly formulating new education policies and establishing a framework for their implementation.

Since 1997, when Myanmar became a member of ASEAN, Japan has dispatched short-term curriculum experts to provide advices for curriculum reform, conducted a development study to provide technical support in teacher's guides, teacher education, and school construction starting 2001, which was followed by technical cooperation project called Strengthening Child-Centered Approach (SCCA) to promote the Child-Centered Approach (CCA)[4] (Phase 1 from 2004 and Phase 2 from 2008). After the completion of Phase 2 of SCCA in 2012, the MOE distributed teacher's guides nationwide and continued the CCA training programme through the MOE's own budget,. However, more than half of the textbooks had not been revised for more than 10 years, and there were major problems such as the use of memorization-based assessments (exams), which were an obstacle to the establishment of child-centered education.

As one of the three pillars of cooperation in line with Myanmar's Economic Cooperation Policy (2012), Japan has set up "Support for Capacity Building of Human Resources to Support

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[1] Doubled from USD 317 million in 2011/12 to USD 654 million in 2012/13. (Myanmar Education Sector Information Collection and Confirmation Survey Final Report, p.20. The amounts in Table 2-1 are converted from Myanmar Kyat to US Dollars at the exchange rate of 1 kyat = 0.001025USD as of August 2013).

[2] https://data.worldbank.org/indicator/SE.PRM.ENRR?locations=MM

[3] MOE. Education Statistics Year Book

[4] Child-centered education is an approach to education that aims to develop children's ability to think creatively by developing learning activities that focus on children's interests, rather than on rote learning through one-way teaching by teachers. It focuses on the environment surrounding the child, and incorporates problem-solving learning to find solutions to various problems and difficulties faced by society. It is based on the educational theories of Dewey (an American philosopher of the early 20th century) and has become an international trend in education.

Economy and Society", and started support for basic education by supporting the above CESR jointly with other development partners. In particular, Japan International Cooperation Agency (JICA) played a leading role in the development of the primary education curriculum framework and teacher education, drawing on its previous experience of cooperation. In July 2013, a request for this technical cooperation project was made to Japan based on the framework of the primary education curriculum that was being formed in CESR. A Record of Discussions (R/D) was concluded between JICA and the MOE of Myanmar in January 2014 for the Project for Curriculum Reform at Primary Level of Basic Education (CREATE).

1.1.2   Issues at the Onset of the Project

(1)   Issues in Primary Education Curriculum

In Myanmar, textbooks were not developed based on curriculum frameworks, and textbooks had served as the curriculum. In addition, there were a number of problems with the textbooks, such as the lack of connection between the units of each subject and the lack of content that takes into account the level of achievement according to the grade and the developmental stage of the children. In addition, due to the absence of a regular curriculum and textbook revision system, the curriculum had not been revised since 1998, and more than half of the subjects had not been revised for at least 10 years. Examinations to assess learning achievement were based on rote memorisation and knowledge, and there was a tendency for the main objective being to pass the examination. As a result, lessons tended to focus on rote memorisation, such as the repetition of test questions, and did not foster the children's ability to think critically. In other words, it can be said that the examination system at that time was not designed to analyse children's learning achievement, improve teaching methods and the curriculum, nor improve teachers' ability to improve their teaching.

(2)   Issues in Teacher Education

At the time of the project's launch, the debate on the reform of the teacher training system was growing, and a large-scale reform of the system (including the upgrading of Education Colleges [EC] to four-year programme) was being considered. On the other hand, it was pointed out that there was a lack of measures to cope with diverse situations, such as 1) the lack of a curriculum framework that takes into account the competencies required for teachers and the division of roles between pre-service teacher education and in-service teacher training, and 2) the lack of subjects such as special needs education and inclusive education, mother tongue education, multilingual education, multi-grade teaching, school management, and school health. Thus, the teacher education curriculum required reform not only in terms of reflecting primary education curriculum, but also in terms of strengthening the subject pedagogy.

In addition, some problems were pointed out with the EC textbooks, such as very few sections on subject pedagogy in the co-curriculum, and weak links between theory and practice. For example, it was observed that even where teaching methods are mentioned in the educational theory, how they can be applied in actual classes is not dealt in subject pedagogy.

1.2   Changes in PDM

1.2.1   Initial Project Design

At the beginning of the project, the work was based on the Project Design Matrix (PDM) agreed upon at the time of the R/D conclusion. The original PDM is attached as Appendix 1. The areas covered by the project and the Myanmar counterparts were as follows:

(1)   Area of Work

Nationwide

(2)   Counterpart Institutions and Related Organizations

Curriculum Section and Local Training Section,
Department of Education Planning and Training (DEPT), MOE

(3)   Beneficiaries

Children in primary education and their teachers

(4)   Overall Goal, Project Purpose, and Expected Outputs of the project

The purpose, expected outputs and their indicators are shown in Table 1-1.

Table 1-1: Project Purpose, Outputs, and Indicators (PDM Ver. 1)[5]

Overall Goal	Objectively Verifiable Indicators
The new curriculum at primary level of basic education is implemented nationwide.[6]	(1) The new school timetable is in use. (2) The new textbooks are in use. (3) Lesson is conducted in line with new curriculum. (4) The new assessment system is implemented. (5) The new EC curriculum is implemented.
Project Purpose	**Objectively Verifiable Indicators**
Educational activities that are in line with the new curriculum principles are implemented at the primary level of Basic Education Schools and ECs.[7]	According to the curriculum implementation plan, (1) New school timetable is introduced. (2) The new textbooks, including draft version, are introduced. (3) Lessons are introduced in line with the new curriculum. (4) The new assessment system is introduced. (5) The new curriculum for EC is introduced.

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[5] Tables and Figures in this report are created by CREATE unless otherwise specified.

[6] As of February 2014, the MOE had indicated that the new primary education curriculum would not be introduced simultaneously across all grades, but would be phased in each year, with G1 starting in June 2016 and G2 starting in June 2017, and so on. According to this schedule, the new G5 curriculum will be introduced in June 2020, which means that the new curriculum will be fully implemented after the end of the project period. In actuality, the introduction of the new G5 curriculum is scheduled to begin in June 2021 due to the delay of the new G1 introduction by one year, and the project period was also extended accordingly.

[7] This means that the textbooks, examinations, etc., necessary for the introduction of the new curriculum have been completed and are beginning to be used. However, as mentioned above, the introduction of the new curriculum will not begin at all grade levels, so the term "full implementation" was not used.

Expected Outputs	Objectively Verifiable Indicators
(1) The new curriculum framework is developed.[8]	(1) The new curriculum framework is proposed. (2) The new curriculum framework is finalised by MOE.
(2) The new textbooks and teacher's guides are developed.	(1) The new textbooks and the new teacher's guides are proposed. (2) The new textbooks and the new teacher's guides are finalised by MOE.
(3) The new assessment tools are developed.	(1) Question item bank (2) Guideline on how to utilise question item bank
(4) The new curriculum for EC is developed based on the new curriculum principle in line with teacher education policy.	(1) The new curriculum for EC is proposed. (2) The new curriculum for EC is finalised by the MOE. (3) Increment in the score of training evaluation, comparing between pre and post-test.
(5) Dissemination activities of the new curriculum are introduced.	(1) A training package is developed. (2) Teacher training dissemination activities are conducted according to the government-set schedule.

As of 2014, there were many uncertainties in curriculum reform: the Basic Education Curriculum Framework (BECF), which would provide the framework for the revision of the primary curriculum, was still in a draft form; the MOE was still in the process of finalising the subject structure for primary education organising the approval body for the new curriculum, and establishing the timetable for the introduction of the new curriculum. Similarly, discussions on the direction of teacher education reform was at the initial stage. Under this situation, the project, in order to achieve the expected outputs, worked based on the available documents that could be referred to, including the draft policies and plans that were the premise of the activities, and modified the plan during the course of its activities as the documents and policies were revised for finalisation. This approach has resulted in the smoothest and most efficient process management possible.

(5)   Activities of the Project

A summary of the original PDM, their outputs and activities are given in Table 1-2.

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[8] It was envisaged that this would set out the scope, objectives and sequences of each subject in the new curriculum. Prior to the start of the project, the general framework, content and scope of the subjects had been developed through CESR Phase 2, and the plan was to complete the new curriculum framework by determining the subject objectives, grade level objectives and content for each grade.

Table 1-2: Project Activities (PDM Ver. 1)

Outputs	Activities
Component 1: Curriculum, Textbook, Assessment	
Output 1: Development of new curriculum framework (scope of subject, objectives, systematics)	1-1. Provide technical support for the formulation of the new curriculum policy and strategy through CESR process and by other means.
	1-2. Design a new course of study / a new set of areas of learning / subject structure with clearly defined scope and sequence.
	1-3. Formulate aims and objectives for each area of learning.
	1-4. Select appropriate content (per grade) for each area of learning.
	1-5. Identify appropriate teaching-learning strategies for each area of learning.
	1-6. Adopt feasible assessment policy and guidelines and identify applicable strategies/techniques for assessing pupils' achievement.
Output 2: Development of textbooks and teacher's guide	2-1. Provide technical support to the formulation of new textbook and teacher's guide policy and strategy through CESR process and by other means.
	2-2. Define the range of content for textbook per grade based on the new curriculum framework.
	2-3. Define development procedures of new textbooks and teacher's guides.
	2-4. Edit content of new textbooks.
	2-5. Design textbook illustrations.
	2-6. Proofread the textbooks.
	2-7. Edit content of new teacher's guides.
Output 3: Development of assessment that enables evaluation of academic achievement aimed for by the new curriculum.	3-1. Provide technical support to the formulation of new assessment policy and strategy through CESR process and by other means.
	3-2. Develop a question item bank in line with the new curriculum principles, a part of which will be included in teacher's guides.
	3-3. Develop a guideline on how to utilise the question item bank.
Component 2: Teacher Education	
Output 4: Improvement of EC curriculum to reflect the new curriculum principles.	4-1. Provide technical support for the formulation of new teacher education policy and strategy through CESR process and by other means.
	4-2. Analyse consistency between the new curriculum framework and the current EC curriculum.
	4-3. Draft the new EC curriculum (teaching methodology subjects) based on the analysis (described in activity 4-2) and the on-going teacher education reform.
	4-4. Revise EC textbooks.
	4-5. Develop a training plan for EC trainers.
	4-6. Conduct training for EC trainers.
	4-7. Monitor and evaluate results of the training for EC trainers.
Output 5: Promoting teachers' understanding on the new curriculum.	5-1. Provide technical support for the formulation of dissemination strategy of the new curriculum through CESR process and by other means.
	5-2. Develop a detailed plan to disseminate the new curriculum through in-service teacher training.
	5-3. Develop training/dissemination materials.
	5-4. Promote the dissemination activities for the new curriculum.

As already noted, there remained a number of unsettled issues in the development of the new curriculum and teacher education. For example, with regards to Output 3, *the development of examination questions*, the examination-related system was due to be reviewed, but the department responsible for the institutional aspects of assessment was not clear, so for contract year 1 the emphasis was on activities to increase understanding among a wide range of stakeholders, and the activities and indicators for the development of examination questions were

to be updated as the policy was finalised. Similarly, with regards to Output 4, *the improvement of the teacher training programme*, as there was no timetable or strategy for the transition to the four-year system, the plan was to contribute to the promotion of discussions on teacher training reform by conducting surveys to identify current issues and organising seminars to propose ways of improvement, while updating activities and indicators according to the timing and content of the decision to introduce the four-year system.

1.2.2   First Round of Changes to PDM (PDM Ver. 2)

In the consultative mission conducted in August 2015, it was confirmed that the following points were clarified or had changed after the start of the project

    i)   The project supports the revision of EC curricula, not the development of new ones.

    ii)   The project's input to the EC Curriculum will be in the form of separate teaching materials.

    iii)   The English name of the sample questions to be developed by the project will be revised as it may be confused with the G5 final examination.

    iv)   The implementation structure in Myanmar should be aligned with the reorganisation of the MOE.

    v)   The project start date and plan of operation should be adjusted to the actual situation.

    vi)   Clarify the definition of the scope of support by JICA, and define Category B in curriculum development and training for introducing the new curriculum as the Myanmar side being responsible for the deliverables.

For this purpose, the revision of the PDM was discussed and agreed on at the Joint Coordinating Committee (JCC) meeting held during the mission. The revised PDM (PDM Ver. 2) is attached as Appendix 2.

1.2.3   Second Round of Changes to PDM (PDM Ver. 3)

During the consultative mission conducted in March 2017, it was confirmed that the following points were settled, or had changed in actuality after the start of the project.

    i)   As the revision of the EC curriculum is underway by the initiative of the MOE, the project will introduce a new primary curriculum in the EC in line with the revised EC curriculum.

    ii)   As the plan for a four-year EC system has not been solidified yet, the project will develop materials to help students learn the primary curriculum during their studies in the EC.

    iii)   To revise the terminology and names of documents used in the curriculum revision to match those used in practice, and the description of work processes to match the actual work processes.

    iv)   To align the implementation structure in Myanmar with the reorganisation of the MOE.

    v)   Extend the project completion date to after the completion of the Grade 5 curriculum development.

    vi)   Monitoring activities using a monitoring sheet will be introduced.

The revised PDM (PDM Ver. 3) is shown in Appendix 3.

1.2.4   Third Round of Changes to PDM (PDM Ver. 4)

In the mid-term review conducted from June to July 2019, it was pointed out that the following points need to be revised in the objectives and indicators in order to properly implement the evaluation around the end and after the project.

i)   There are overlaps between the indicators for Overall Goal and Project Purpose.

ii)   For those indicators for which numerical values can be extracted from the results of the impact survey, specific items and numerical targets should be set.

iii) Means of verification of reflecting the new primary curriculum on the EC curriculum are to be set.

iv)   To clarify the difference between Project Purpose and Overall Goal, "implementation" of the new curriculum should be changed to "introduction".

v)   As indicators and means of verification of the introduction of the new curriculum, the participation rate in the introduction training for in-service teachers and EC is to be used.

vi)   The name of the assessment document should be amended to match the one actually in use.

The revision of the PDM was discussed between the mission members, project team, and concerned MOE officials during the mid-term review, and the changes were agreed at the JCC meeting held in December 2019. The revised PDM (PDM Ver. 4) is attached as Appendix 4. The project purpose, expected outputs, and activities stipulated in this final version of the PDM is shown in Table 1-3 below.

Table 1-3: Project Purposes, Outputs, and Activities (Ver. 4)

Overall Goal	The new curriculum at primary level of basic education is implemented nationwide.
Project Purpose	Educational activities in line with the new curriculum principles are introduced at the primary level of Basic Education Schools and Education Colleges (ECs).
Outputs	**Activities**
Component 1: Curriculum, Textbook, Assessment	
Output 1: **The new curriculum framework is developed.**	1-1. Provide technical support to the formulation of the new curriculum policy and strategy through CESR process and by other means.
	1-2. Provide technical assistance to finalise curriculum framework
	1-3. Formulate aims and objectives for each area of learning.
	1-4. Provide technical assistance to develop subject-wise curriculum including contents per grade.
	1-5. Identify appropriate teaching-learning strategies for each subject
	1-6. Identify applicable strategies/techniques for assessing pupils' achievement.
Output 2: **The new textbooks and teacher's guides are developed.**	2-1. Provide technical support to the formulation of guidelines for new textbook and teacher's guide
	2-2. Define scope and sequences of contents of textbook per grade based on the new curriculum framework.
	2-3. Define development procedures of new textbooks and teacher's guides.
	2-4. Draft new textbooks and new teacher's guide.
	2-5. Coordinate with SWC for developing and improving new textbooks and new teacher's guide.
	2-6. Coordinate with NCC for finalizing new textbooks and new teacher's guide.

Output 3: **The new assessment tools are developed.**	3-1. Provide technical support to the formulation of new assessment policy and strategy through CESR process and by other means.
	3-2. Develop a sample test collection in line with the new curriculum principles, a part of which will be included in teacher's guides.
	3-3. Develop a guideline on how to utilise the sample test collection.
	3-4. Review and revise sample test collection and guidelines
Component 2: Teacher Education	
Output 4: **The new primary curriculum is disseminated to ECs.**	4-1. Provide technical support to the formulation of new teacher education policy and strategy through CESR process and by other means.
	4-2. Analyse consistency between the new primary curriculum framework and the current EC curriculum.
	4-3. Draft syllabi of teaching methodology subjects in ECs based on the analysis (described in the activity 4-2) and the on-going teacher education reform.
	4-4. Develop teaching–learning materials for ECs that reflect the new primary curriculum.
	4-5. Develop a training plan and training materials for EC trainers.
	4-6. Conduct training for EC trainers.
Output 5: **Dissemination activities of the new curriculum are introduced.**	5-1. Provide technical support to the formulation of dissemination strategy of the new curriculum through CESR process and by other means.
	5-2. Develop a detail plan to disseminate the new curriculum through in-service teacher training.
	5-3. Develop training/dissemination materials.
	5-4. Promote the dissemination activities for the new curriculum.

1.3   Overview of the Project

1.3.1   Overview of the Work

(1)   Structure of the Project

In order to provide comprehensive support for curriculum policy in primary education (curriculum, textbooks, teachers' guides, assessment, teacher education in EC, and implementation in schools through curriculum introduction training), this project divided its work into the three components shown below.

<u>Component A: General Management</u>
The function of project management and public relations (PR) were emphasized in order to build a mechanism to effectively implement two components and to disseminate the outcomes. The impact survey[9] to measure the outcomes of the new curriculum was conducted under this component.

<u>Component B: Curriculum, Textbook and Assessment</u>
The following activities were carried out in order to ensure the consistency of the three-tier curriculum (i.e., the "Intended Curriculum" set at the national and policy levels, the "Implemented Curriculum" taught by teachers in the classroom, and the "Attained Curriculum" learned by learners). The activities were conducted in collaboration with the 46 staff appointed as the Curriculum Development Team (CDT) by the MOE in September 2013, and those who were appointed later during the project.

- Development of the curriculum framework (setting of subject scope, objectives and sequence) (Output 1)

- Development of textbooks and teachers' guides (Output 2)

- Development of assessment questions that accurately assess the academic skills envisaged in the curriculum (Output 3)

<u>Component C. Teacher Education</u>
The following activities were carried out in order to promote implementation of the curriculum, textbooks, teacher's guides and assessment tools developed in Component B in collaboration with the 12 staff appointed as teacher education counterparts.

- Improvement of teacher education curriculum by reflecting the concept of the new primary curriculum (Output 4)

- Promoting in-service teachers' understanding of the new curriculum through introduction training (Output 5).

(2)   Target Subjects and Degree of Support

The project was to support the development of all subjects of the new primary curriculum. However, as the curriculum framework that should indicate the subject structure was still being developed at the beginning of the project, the subject areas of the project's support were adjusted after the framework was finalised. The degree of the support was different between category A and B subjects as shown in Table 1-4.

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[9] Implementation of the impact survey was decided after the project started.

Table 1-4: Differences between Category A and B Subjects

Category	Definition	Subjects at the Beginning of the Project	Subjects after Curriculum Reform
Category A	Focused technical assistance is to be given by the project. The Japanese side will be accountable for the quality of the textbooks and teacher's guides.	• Mathematics • Natural Science contents of Integrated Study (G1-G3) • Basic Science (G4-G5)	• Mathematics • Science
Category B	Some technical assistance on areas such as understanding subjects and objective setting is to be given by the project. The Myanmar side will be accountable for the quality of the textbooks and teacher's guides.	• Myanmar language • English • Ethics, Civics, and Life Skills contents of General Study (G1–G3) • Geography, History, Morals and Civics, and Life Skills contents of Social Studies (G4–G5) • Physical Education • Arts (Fine Art, Music) • Agriculture	• Myanmar language • English • Social Studies • Morals and Civics • Life Skills • Physical Education • Arts (Visual Arts, Performing Arts)

Note: G1, G2, G3, G4, and G5 stand for Grade 1, Grade 2, Grade 3, Grade 4, and Grade 5 respectively.

The subject structure was changed as follows:

- Science, Social Studies (including geography and history), Morals and Civics, and Life Skills are now taught as independent subjects throughout G1 to G5.

- As a result, Category A, Natural Science in General Studies (G1-G3) and Primary Science (G4-G5) were merged into Science.

- The subject "Agriculture" was omitted.

1.3.2 Implementation Structure

The implementation structure was revised reflecting the reorganisation of the MOE, and a collaborative relationship shown in Figure 1-1 was established with the Myanmar institutions that were newly formed during the project period. A JCC was formed to formulate the project activity plan, review the progress, and decide on important issues.
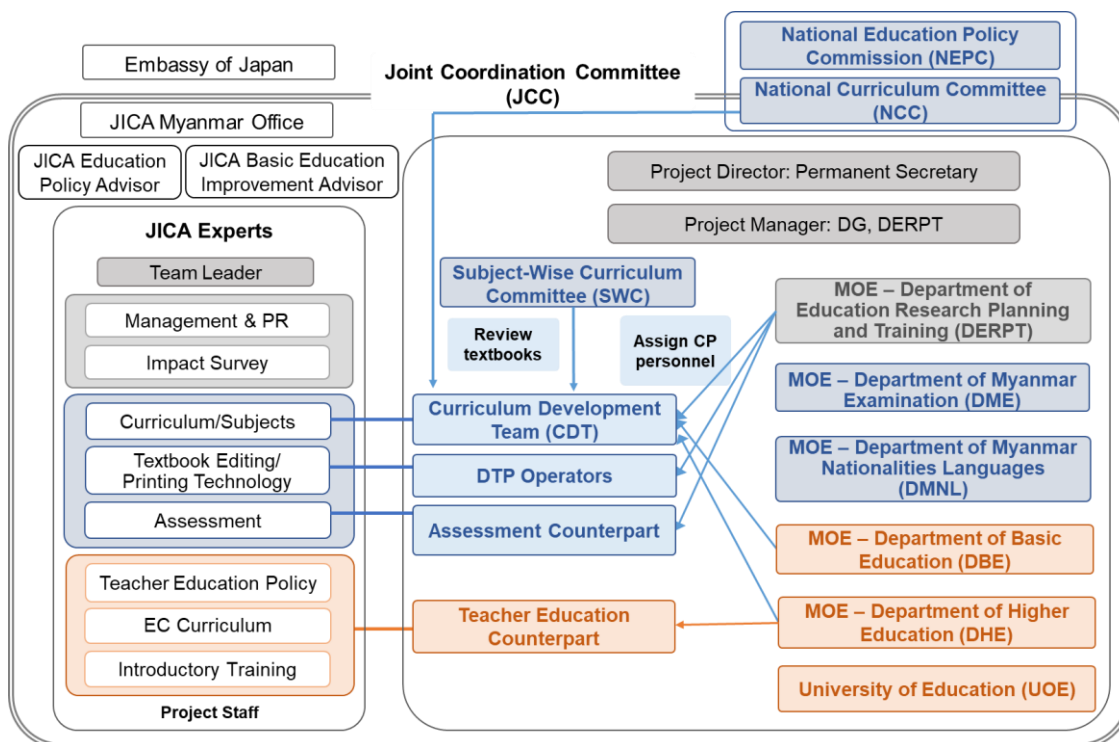
Note: DG, DEPT was the Project Director in the beginning of the project. It was later changed to Permanent Secretary according to the new organizational structure of the MOE. Afterwards, DG, DERPT (Department of Education Research, Planning, and Training) worked as Deputy Project Director cum Project Manager as the position of the Permanent Secretary became vacant.

Figure 1-1: Project Implementation Structure

1.3.3   Project Period and Contract Year

The project period and contract years planned at the beginning of the project were as follows:

Contract year 1:   May 2014 to September 2015
Contract year 2:   October 2015 to March 2017
Contract year 3:   May 2017 to September 2019

The initial assumption was for the project to end in September 2019 after completing the development of G5 textbooks and the MOE would carry out the introduction training of the new curriculum. However, as explained in Section 1.2.3, the cooperation period was extended until March 2021. This was because the introduction of the new primary grades was moved back by one year due to the delayed introduction of KG and the MOE requested that the project would support the introduction of the new G5 curriculum within the project period. The contract years were changed to the below:

Contract year 1:   May 2014 to March 2016
Contract year 2:   May 2016 to April 2018
Contract year 3:   May 2018 to April 2019
Contract year 4:   April 2019 to June 2021[10]

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[10] The Contract year 4 was extended to May 2021 at the time of the second revision of the PDM. Afterwards, it was further extended for one month up to June 2021 due to the additional tasks required to respond to the spread of COVID-19.

Chapter 2.   Input

2.1   Overview of Input

CREATE is a very extensive project that involves the development of textbooks and teacher's guides for all subjects in all five grades of primary education, the assessment reform, revision of pre-service teacher education curriculum and introduction training on the new curriculum. In order to carry out such a wide range of activities, a lot of input was provided by both JICA and the MOE of Myanmar.

In terms of human resources, the project experts covering 45 positions, with a total of 670.19 MM, managed and technically supported the implementation, and 66 counterparts from the MOE (as of the end of the project) were involved in curriculum development and teacher education activities. In addition, 30 local staff (as of the end of the project, excluding part-time staff) provided administrative support, interpretation and translation between experts and counterparts.

In terms of equipment and facility, he MOE provided the Basic Education Resource Development Centre (BERDC) building, located on the premises of the Yankin Education College, as the project office. In addition, JICA supported to enhance the efficiency of project activities by purchasing necessary equipment for the project office such as a server and network to produce and manage data necessary for curriculum development, computers for all counterpart personnel, printer-copiers, projectors, and video conferencing equipment. JICA also procured a digital press to print large numbers of textbook drafts and sample books in a short time, and photographic and video production equipment to produce textbooks and introduction training materials.

In order to supplement the technical assistance provided directly by experts during the work in Myanmar and continuous guidance and instruction conducted remotely from Japan or countries that experts resided via local staff, the project organised 13 Training programmes in Japan and one training in a third country. In addition, counterparts and project personnel were dispatched to JICA's in-country training courses in related fields in order to achieve synergy effects.

JICA provided the technical assistance as described above, while the MOE carried out printing and distribution of the new textbooks, teachers' guides, sample exercise books and training materials developed under the project, as well as the training for supervisors, all primary teachers, EC teacher educators and EC students.

2.2   Input by the Japanese Side

The following were inputs provided by the Japanese side for the implementation of the project activities.

2.2.1   Assignment of Experts

The experts were deployed as shown in Table 2-1 on the following page. The number of positions per activities were as follows.[11]

- Project management and PR: 4
- Curriculum revision and textbook development: 27
- Teacher education: 10
- Impact survey: 2
- Training in Japan: 2

Two of the project management and PR experts worked in Myanmar for a long period of time to ensure the continuity of the project management and to promote the project to the public and stakeholders in both Myanmar and Japan. Development of a high-quality curriculum was enabled by close collaboration of these experts and counterparts.

The curriculum development team consisted of the curriculum development team leader, subject experts, assessment experts, editing experts, Desktop Publishing (DTP) and printing experts, and textbook development experts in charge of coordinating the textbook development process. Subject experts provided subject-specific guidance, and assessment specialists and editing, DTP and printing specialists help improve curriculum books and documents from their respective perspectives. Textbook development experts supported cooperation between curriculum experts, their counterparts and the teacher education team, managed the progress, and provided guidance from the cross-curricular perspective.

Under the leadership of the teacher education team leader, teacher education experts were responsible for teacher education policy, teacher education planning and material development, planning and material development of introduction training, and training monitoring and evaluation. Before the introduction of the new curriculum, they made policy recommendations on issues of teacher education and training. They designed curriculum introduction training for education administrators, in-service teachers and EC, prepared training materials, and provided technical support for central training. After the decision was made to introduce a four-year system at EC colleges, the team provided technical support for the effective introduction of the new curriculum by reflect the new primary curriculum.

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[11] Number of positions throughout the whole project period. Excludes placements for short periods.

Table 2-1: Assignment of Experts

Name	Designation	Contract Year 1			Contract Year 2			Contract Year 3			Contract Year 4			Overview of the tasks
		Field	Home	Sub-total	Field	Home	Sub-total	Field	Home	Sub-total	Field	Home	Sub-total	
Mr. Norio Kato	Project Team Leader	14.13	0.80	14.93	14.47	0.35	14.82	7.73	0.20	7.93	7.57	5.45	13.02	Overall project planning; progress management and supervision; quality control; consultation with related organisations; reflecting policies and plans in deliverables; support for revision of Morals and Civics curriculum; and budget preparation support
Ms. Tomoko Tanaka (Masuda) (1 December 2020~)	Project Team Leader	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.68	1.68	Overall project planning; quality control; and consultation with related organisations
Ms. Hikari Miyahara (1 December 2020~)	Education Planning 2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.32	2.32	Progress management and supervision; consultation with related organisations; and reflecting policies and plans in deliverables
Mr. Yoshitaka Tanaka	Curriculum Development Team Leader	13.87	0.65	14.52	9.87	1.45	11.32	2.60	1.00	3.60	2.73	6.09	8.82	Implementation planning, progress management and reporting and consultation to the Team Leader regarding Component B; support for curriculum framework development; and planning and progress management of developing the new textbooks, teacher's guides and assessment
Ms. Tomoko Tanaka (Masuda)	Teacher Education Team Leader 1	3.23	1.05	4.28	5.10	2.30	7.40	2.30	1.00	3.30	2.33	4.90	7.23	Implementation planning, progress management and reporting and consultation to the Team Leader regarding Component C; support for teacher education policy; and planning and progress management of curriculum analysis of EC (Phase 1 and 2) and developing teaching materials for EC (Phase 3 and 4)
Mr. Ryuichi Sugiyama→ (Phase 3~)Mr. Takashi Soma	Teacher Education Team Leader 2	0.70	0.00	0.70	0.00	0.00	0.00	2.87	0.20	3.07	2.13	1.92	4.05	Implementation planning, progress management and reporting and consultation to the Team Leader regarding Component C; support for teacher education policy; and planning and progress management of curriculum analysis of EC
Mr. Norio Kato	Teacher Education Team Leader 3	0.97	0.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Implementation planning, progress management and reporting and consultation to the Team Leader regarding Component C; support for teacher education policy; support for curriculum analysis of EC; and planning and progress management of trainings
Ms. Yumiko Ono	Teacher Education Team Leader 4	0.33	0.00	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Same as above
Ms. Miho Ota	Teacher Education Team Leader 5	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Same as above
Mr. Isamu Imahori	Mathematics Education Advisor 1	13.77	0.00	13.77	13.77	0.00	13.77	7.60	0.40	8.00	7.63	7.83	15.46	As a chief supervisor, support for revision and preparation of Mathematics curriculum, textbooks, teacher's guides, and sample exercises; support for revision of EC curriculum and textbooks
Mr. Koji Takahashi	Mathematics Education Advisor 2	1.80	0.00	1.80	1.60	0.00	1.60	0.00	0.00	0.00	0.00	0.00	0.00	As a deputy chief supervisor, support for revision and preparation of Mathematics curriculum, textbooks, teacher's guides, and sample exercises; support for revision of EC curriculum and textbooks
Mr. Takashi Ito	Mathematics Education Advisor 3→(Phase3~)Mathematics Education Advisor 2	1.80	0.00	1.80	1.83	0.00	1.83	0.97	0.00	0.97	1.07	0.91	1.98	Same as above
Mr. Takashi Soma	Science Education Advisor 1	8.90	0.40	9.30	5.77	0.70	6.47	0.00	0.00	0.00	0.00	0.00	0.00	As a chief supervisor, support for revision and preparation of Science curriculum, textbooks, teacher's guides, and sample exercises; support for revision of EC curriculum and textbooks
Ms. Merle C. Tan	Science Education Advisor 2	4.63	0.00	4.63	5.47	2.10	7.57	1.67	1.30	2.97	2.40	2.71	5.11	As a deputy chief supervisor, support for revision and preparation of Science curriculum, textbooks, teacher's guides, and sample exercises; support for revision of EC curriculum and textbooks
Mr. Kenji Matsubara	Science Education Advisor 3	0.77	0.65	1.42	0.47	0.50	0.97	0.23	0.25	0.48	0.20	0.72	0.92	Same as above
Mr. Kenichi Jibutsu (18 January 2018~)	Science Education Advisor 4→(Phase3~)Science Education Advisor 1	0.00	0.00	0.00	0.43	0.00	0.43	4.23	0.25	4.48	2.73	6.04	8.77	As a deputy chief and a chief (Phase 3~) supervisor, support for revision and preparation of Science curriculum, textbooks, teacher's guides, and sample exercises; support for revision of EC curriculum and textbooks
Mr. Yoshitaka Tanaka	Social Studies Education Advisor	2.17	2.65	4.82	1.33	2.45	3.78	1.17	0.90	2.07	1.50	4.60	6.10	Support for revision and preparation of Social Studies curriculum, textbooks, teacher's guides, and sample exercises; and support for revision of EC curriculum and textbooks
Mr. Yuki Osada	Language Education Advisor	2.00	0.90	2.90	2.40	1.30	3.70	1.37	0.80	2.17	1.40	2.98	4.38	Support for revision and preparation of Myanmar curriculum, textbooks, teacher's guides, and sample exercises; and support for revision of EC curricula and textbooks
Mr. James Meriwether Hall	English Education Advisor→(Phase2~)English Education Advisor 1	2.00	1.10	3.10	1.87	1.08	2.95	1.07	0.55	1.62	1.23	2.34	3.57	Support for revision and preparation of English curriculum, textbooks, teacher's guides, and Sample Exercises; and support for revision of EC curricula and textbooks
Ms. Alison Nemoto→ (Phase3~)Mr. Brian Gaynor	English Education Advisor 2	0.00	0.00	0.00	1.10	0.20	1.30	0.53	0.20	0.73	1.03	1.87	2.90	Same as above
Mr. Yoshinori Okade	Physical Education Advisor	1.50	1.95	3.45	0.93	1.50	2.43	0.70	0.70	1.40	1.17	2.98	4.15	Support for revision and preparation of Physical Education curriculum, textbooks, teacher's guides, and Sample Exercises; and support for revision of EC curriculum and textbooks
Mr. Mitsuru Fujie	Art Education Advisor	2.50	1.10	3.60	2.00	0.70	2.70	1.37	0.65	2.02	1.00	3.10	4.10	Support for revision and preparation of Visual Arts curriculum, textbooks, teacher's guides, and sample exercises; and support for revision of EC curriculum and textbooks
Ms. Eiko Sakata	Music Education Advisor	1.80	1.10	2.90	1.50	1.65	3.15	1.07	0.75	1.82	1.10	3.85	4.95	Support for revision and preparation of Performing Arts curriculum, textbooks, teacher's guides, and sample exercises; and support for revision of EC curriculum and textbooks
Ms. Hiroko Kondo (20 February 2015~)	Lifeskills Education Advisor	2.23	0.60	2.83	1.70	1.05	2.75	1.00	1.00	2.00	1.30	3.94	5.24	Support for revision and preparation of Life Skills curriculum, textbooks, teacher's guides, and sample exercises; and support for revision of EC curriculum and textbooks
Mr. Chiko Yamaoka	Textbook Development Advisor 1	6.83	0.70	7.53	8.13	0.75	8.88	3.40	0.30	3.70	4.77	5.65	10.42	Support for coordination of textbook writing, editing, designing, and typesetting, and collection of images and illustrations; and progress management of developing textbooks and teacher's guides (vice in charge)
Ms. Hiromi Miyao (Nishizawa) (~13 January 2015, 5 April 2017~)	Textbook Development Advisor 2	1.07	0.00	1.07	1.57	0.55	2.12	1.77	0.50	2.27	2.63	5.03	7.66	Same as above
Ms. Tomoe Taira (14 January 2015~4 April 2017)	Textbook Development Advisor 2	3.77	0.75	4.52	2.33	0.50	2.83	0.00	0.00	0.00	0.00	0.00	0.00	Same as above
Ms. Hikari Miyahara	Textbook Development Advisor 3	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.00	2.00	1.73	2.13	3.86	Support for coordination betwee textbook writing, editing, designing, and typesetting; guidance on cross-subject matters; and liaison regarding textbooks and teacher's guides
Mr. Daisuke Hosokawa	Textbook Editing Advisor A	2.83	1.30	4.13	1.93	0.60	2.53	0.87	0.20	1.07	0.70	0.20	0.90	Technical transfer of editing methods using DTP; support for establishing writing and editing processes for textbooks/defining roles and responsibilities; support for plot planning; technical guidance on editing methods; and textbook proofreading support (Category A subjects)
Mr. Akira Inoue	Textbook Editing Advisor B1	0.77	1.00	1.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Technical transfer of editing methods using DTP; support for establishing writing and editing processes for textbooks/defining roles and responsibilities; support for plot planning; technical guidance on editing methods; and textbook proofreading support (Category B subjects)
Mr. Hiroyuki Seki (28 August 2015~)	Textbook Editing Advisor B1	0.37	0.55	0.92	0.43	0.60	1.03	0.47	0.25	0.72	0.70	0.65	1.35	Same as above
Mr. Norio Matsubara	Textbook Editing Advisor B2	3.00	2.10	5.10	1.40	1.70	3.10	0.47	0.40	0.87	0.50	0.78	1.28	Same as above
Mr. Shinsuke Minamidate	Textbook Editing Advisor B3	0.00	0.00	0.00	1.20	1.00	2.20	0.70	0.30	1.00	0.70	1.03	1.73	Same as above
Mr. Yuji Tanaka	Printing Technology Specialist	0.30	0.20	0.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Investigation of textbook printing capabilities and assistance in developing textbook specifications
Mr. Katashi Sakaguchi (28 August 2015~)	Printing Technology Specialist →	1.40	0.30	1.70	2.20	0.30	2.50	1.33	0.20	1.53	1.33	2.40	3.73	Investigation of textbook printing capabilities and assistance in developing textbook specifications → Support for technical improvement in DTP (Phase 2~)
Mr. Yasuhiro Sudo→ (Phase3~)Mr. Fumitaka Sato	Printing Technology Specialist 2	0.00	0.00	0.00	0.63	0.00	0.63	0.47	0.20	0.67	0.23	0.40	0.63	Investigation of printing process and proposing printing options
Mr. Masatsugu Murase	Assessment Advisor 1	2.57	1.95	4.52	2.37	1.50	3.87	1.37	0.60	1.97	1.03	3.07	4.10	Guidance on preparation of sample excercises; and training support for training to TEOs
Ms. Naomi Takasawa	Assessment Advisor 2	1.40	1.60	3.00	1.43	0.70	2.13	0.00	1.05	1.05	0.50	1.70	2.20	Same as above
Ms. Masami Watanabe	Impact Survey A	0.00	0.00	0.00	4.47	2.30	6.77	2.57	2.05	4.62	2.13	3.07	5.20	Preparation, implementation and analysis of impact surveys; and EC/INSET training monitoring (Phase 2 only)
Ms. Michiru Yabuta→ (Phase3~)Mr. Ryo Sasaki	Impact Survey B	0.00	0.00	0.00	4.13	2.30	6.43	1.57	0.95	2.52	1.80	1.85	3.65	Same as above/ld./do.
Ms. Yumiko Ono	Teacher Education Policy Advisor	2.60	0.85	3.45	2.80	0.30	3.10	0.00	0.00	0.00	0.00	0.00	0.00	Support for strengthening teacher education policy and capacity of its implementation with establishment of four-year teacher education system in mind
Mr.Ryuichi Sugiyama→ (Phase3~)Mr. Chiko Yamaoka	Teacher Education Training Planning Advisor 1	0.70	0.00	0.70	1.23	0.00	1.23	1.93	0.10	2.03	1.87	1.83	3.70	Support for the preparation of: training plan for EC; supplemental training materials; and the draft of revised textbooks for EC
Ms. Kanae Kawashima→ (Phase4~)Ms. Megumi Ando	Teacher Education Training Planning Advisor 2	2.90	0.00	2.90	6.37	0.50	6.87	4.40	0.20	4.60	2.17	3.42	5.59	Support for the preparation of: training plan for EC; supplemental training materials; and the draft of revised textbooks for EC; and support for implementation of EC training (Phase 2~)
Ms. Michiru Yabuta→ (Phase4~)Ms. Kaori Tanaka	Teacher Education Training Planning Advisor 3	0.00	0.00	0.00	0.00	0.00	0.00	1.60	0.00	1.60	4.00	4.36	8.36	Support for the preparation of: training plan for EC; supplemental training materials; and the draft of revised textbooks for EC; support for implementation of EC training (Phase 4~); and support for coordination with UNESCO and its consultants (Phase4~)
Mr. Atsushi Tsukui	New Curriculum Introduction Training Advisor A	2.30	0.20	2.50	6.40	0.60	7.00	3.57	0.40	3.97	3.97	6.58	10.55	Planning and promoting the implementation of training for in-service teachers, and creating training materials on new educational contents and methods for improving lessons
Ms. Naomi Takasawa	New Curriculum Introduction Training Advisor B	2.60	0.00	2.60	5.77	0.00	5.77	3.33	0.00	3.33	2.07	3.16	5.23	Same as above
Mr. Chiko Yamaoka	New Curriculum Introduction Training Advisor C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.24	0.47	Same as above
Ms. Miho Ota	Teacher Education Training M & E Advisor	3.00	0.00	3.00	3.33	0.00	3.33	1.33	0.00	1.33	1.43	0.85	2.28	Support for monitoring; and evaluation and feedback of trainings
Ms. Hikari Miyahara	Project Coordinator / Training Management / PR 1	12.97	0.00	12.97	16.23	0.00	16.23	7.80	0.00	7.80	8.47	7.53	16.00	Training management and implementation support; (Phase1 and 2) contracting and management of local sub-contracting; development and implementation of PR and media strategies; consultation with JICA and related organisations; and management of local project office
Ms. Kanae Kawashima→ (Phase3~)Ms. Eriko Kosuge →(16 August 2019~)Ms. Risa Matsunaga (Otsu)	Project Coordinator / Training Management / PR 2	3.20	0.00	3.20	5.80	0.00	5.80	3.83	0.00	3.83	1.93	7.82	9.75	Training management and implementation support; consultations with JICA and related organisations (logistics); development and implementation of PR and media strategies; and (Phase1 and 2) contracting and management of sub-contracting in Japan
Ms. Tomoko Tanaka (Masuda)→(Phase2~)Ms. Megumi Shiota	Japan Study Tour 1	0.00	0.20	0.20	0.00	2.55	2.55	0.00	1.05	1.05	0.00	0.85	0.85	Training management in Japan
Ms. Kanae Kawashima→ (Phase2~)Ms. Mihoko Aoyagi (Kikuchi)→	Japan Study Tour 2	0.00	1.75	1.75	0.00	1.75	1.75	0.00	0.00	0.00	0.00	1.75	1.75	Same as above
Ms. Akiko Nakano→ (Phase2~)Ms. Mana Nagao (Takasugi)	Japan Study Tour 3	0.00	0.20	0.20	0.00	1.75	1.75	0.00	0.00	0.00	0.00	0.00	0.00	Same as above
Ms. Megumi Shiota→ (Phase2~)Ms. Kanae Kawashima	Japan Study Tour 4	0.00	1.60	1.60	0.00	0.45	0.45	0.00	0.00	0.00	0.00	0.00	0.00	Same as above
Ms. Tomoko Tanaka (Masuda)	Japan Study Tour 5	0.00	0.20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Same as above
Total （Total of all phases : 670.19MM）		133.85	28.40	162.25	151.76	38.03	189.79	83.26	18.90	102.16	83.41	132.58	215.99	

2.2.2   Local Staff

Local staff made a significant contribution to the smooth implementation of activities in this project. A summary of the division of duties for each type of position is as follows.

- **Administrative staff**: Staff in charge of attendance taking of local staff, accounting, procurement, general affairs, PR, interpretation and translation assisting the Japanese experts in managing the project office, local staff, accounting, logistics of the activities, PR and liaison.

- **Impact Study**: Assisted the impact study experts with interpretation and translation, liaison with TEOs and other stakeholders, and orientation for surveyors. One of the staff who has extensive experience in CCA took charge of the classroom observation.

- **IT**: Developed and maintained the IT infrastructure of the project office, managed and stored information and data related to curriculum development and teacher education, operated the server, managed the website introducing the new curriculum, built, maintained and set up facilities for conferences (including videoconferences), maintained equipment, and provided Helpdesk services for counterparts.

- **Senior Adviser**: In the early stages of the project, the Senior Adviser was responsible for gathering information and guiding counterparts on the curriculum framework, and in the latter stages the advisor was responsible for coordinating with counterparts in the MOE and project counterparts, managing the progress for the development of textbooks and teacher's guides, and for facilitating the collaboration between CDTs and the teacher education team.

- **Curriculum Coordinator**: Assisted in liaising with the CDT on cross-curricular matters, compiling documents in Myanmar language, and coordinating with Subject-wise Curriculum Committee (SWC).

- **Curriculum Officer**: Supported curriculum development by interpretation, translation, liaison and reporting between subject experts, textbook development experts, and the CDT of respective subject.

- **Subject advisor (part-time)**: Advised the CDT with subject expertise in the Myanmar context.

- **Assessment**: Supported assessment-related activities by interpreting, translating, liaising and reporting between the Assessment Experts and the CDT, and gathering information related to assessment.

- **DTP**: Provided technical support to the counterpart in charge of DTP and took charge of actual DTP tasks. Designed and typeset textbooks and other teaching materials in InDesign[12], and printed them on the digital press.

- **Illustrator**: Created illustrations for textbooks and promotional materials.

- **Teacher Education Officer/Coordinator**: Supported teacher education activities by interpretation, translation, liaison and reporting between teacher education experts and teacher education counterparts, and assisted in the implementation of the new curriculum training.

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[12] A leading print preparation software, marketed by Adobe and widely used in print production worldwide.

The number of local staff[13] employed in each year is shown in Table 2-2.

Table 2-2: Local Staff

Position	1st Contract Year	2nd Contract Year	3rd Contract Year	4th Contract Year
Administration (including translator)	5	8	8	7
IT	2	2	2	2
Senior Advisor	1	1	1	1
Curriculum Coordinator	1	1	1	1
Curriculum Officer	9	10	10	10
Subject Advisors (part time)	2	2	3	4
Assessment	0	1	1	1
Desktop publishing	3	5	5	5
Illustrator	5	4	2	2
Teacher Education	2	2	2	1
Total	30	36	35	34

Note: Figures exclude researchers for impact survey (4 in the 1st Contract Year, 4 in the 2nd Contract Year, 2 in the 3rd Contract Year, 2 in the 4th Contract Year) and support staff for the curriculum training.

2.2.3 Equipment

The equipment purchased for the project was as follows:

Table 2-3: Equipment Provided

Items	Quantity	Date Procured	Remark
Visualizer	1	June 12, 2014	Disposed of due to being faulty
Projector	3	June 16, 2014	(2) Disposed of due to being faulty
Laptop computer	7	June 16, 2014	
Laptop computer	3	July 2, 2014	
Multifunction copier	2	July 18, 2014	
Laptop computer	5	August 7, 2014	
Digital video camera	1	August 14, 2014	
Desktop computer for DTP	3	August 19, 2014	
Digital camera	1	August 20, 2014	
Desktop computer for server maintenance	1	September 5, 2014	
UPS for server	1	September 8, 2014	Disposed of due to being faulty
Multifunction copier	1	September 17, 2014	
Laptop computer	2	October 2, 2014	
CS 6 Design Standard / Adobe	3	October 10, 2014	(1) Disposed of due to being faulty
Projector	1	October 14, 2014	
Server for data management	1	October 17, 2014	
Air conditioner	2	October 17, 2014	
Printer	3	October 30, 2014	(2) Disposed of due to being faulty
Air conditioner	20	December 2, 2014	
Desktop computer for internet management	1	December 3, 2014	Disposed of due to being faulty
Server rack	1	December 8, 2014	
Digital video camera	1	January 8, 2015	

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[13] Excluding the number of Researchers for Impact Survey (4 in the 1st contract year, 4 in the 2nd contract year, 2 in the 3rd contract year, 2 in the 4th contract year) and training support staff.

Items	Quantity	Date Procured	Remark
Laptop computer	59	January 8, 2015	(3) Disposed of due to being faulty
Digital video camera	1	January 14, 2015	
Generator	1	February 6, 2015	
Laptop computer	2	March 16, 2015	
Air conditioner	1	May 9, 2015	
Desktop computer for DTP	4	June 17, 2015	
Hardware for network management	1	September 11, 2015	
Tablet for illustration	3	October 23, 2015	
Speaker phone for TV conference	1	November 25, 2015	
Projector	1	December 4, 2015	Disposed of due to being faulty
Digital camera	1	December 10, 2015	
Stabilizer	1	January 7, 2016	
Laptop computer	4	January 12, 2016	(1) Disposed of due to being faulty
Shredder	1	January 12, 2016	
Laptop computer	1	January 26, 2016	
Air conditioner	3	January 27, 2016	
Server for data backup	1	January 27, 2016	
Virtualization server	1	January 27, 2016	
Data storage	1	March 9, 2016	
UPS for CCTV	1	June 1, 2016	
Wireless access point	2	June 20, 2016	Disposed of due to being faulty
Acrobat Pro DC / Adobe	1	June 23, 2016	
Laptop computer	1	October 26, 2016	
Multifunction copier	1	October 31, 2016	
NAS for image data storage	1	December 21, 2016	
NAS for data backup	1	January 5, 2017	
Hard disk	8	January 5, 2017	
Projector	2	January 27, 2017	(1) Disposed of due to being faulty
UPS for digital press	1	March 28, 2017	
UPS for copiers	1	March 28, 2017	
Rack for UPS	1	March 28, 2017	
Macro lens	1	March 30, 2017	
Desktop computer for DTP	1	April 3, 2017	
Digital press	1	May 9, 2017	
Laptop computer	17	July 10, 2017	
OS for server	8	July 20, 2017	
NAS for data backup	1	February 15, 2018	
NAS hard disk drive	10	February 15, 2018	
System Unit for desktop computer	8	February 15, 2018	
Adobe Acrobat Pro 2017	10	February 15, 2018	
Digital multifunctional copier	2	March 6, 2018	
UPS for server	1	March 9, 2018	
Projector	1	March 9, 2018	
Projector	1	March 16, 2018	
Server	1	March 4, 2019	
Desktop computer	1	March 5, 2019	
Speaker	4	March 7, 2019	
Audio mixer	1	March 7, 2019	
Projector	1	January 28, 2020	

2.2.4   Training in Japan and a Third Country

During the project period, 13 training programmes in Japan (9 on curriculum and 4 on teacher education) and 1 training in a third country (teacher education) were conducted. The following is a list of the training programmes conducted and dispatched under this project.

Table 2-4:Training in Japan and a Third Country

No.	Training Course	Duration	Training Institute	No. of Participants
Training in Japan				
1	Study Tour for Editing Textbooks	2014/10/19 – 2014/10/31	TIC	18
2	Study Tour: Policy and System Reform for Teacher Education (#1: teacher education policy)	2015/6/18 – 2015/7/2	Naruto University of Education	12
3	Study Tour for Curriculum and Textbook Development and Evaluation	2015/7/2 – 2015/7/15	TIC	12
4	Study Tour for Editing Textbooks on CREATE in Myanmar	2016/1/11 – 2016/1/23	TIC	18
5	Training on Textbook Development for Subject Teaching Courses of Primary Education Program (#2: EC teaching material development)	2016/6/19 – 2016/7/2	Naruto University of Education	10
6	Training on Textbook Development for Subject Teaching Courses of Primary Education Program (#3: EC teaching material development)	2016/10/31 – 2016/11/12	Naruto University of Education	12
7	Study Tour for Editing Textbooks on CREATE in Myanmar	2016/11/23 – 2016/12/3	TIC	14
8	Study Tour for Editing Textbooks on CREATE in Myanmar	2017/1/22 – 2017/2/1	TIC	14
9	Study Tour for Editing Textbooks on CREATE in Myanmar	2017/10/15 – 2017/10/25	TIC	15
10	Training on Material Development for Subject Teaching Methodology of Primary Teacher Education Program (#4: EC teaching material development)	2017/11/5 – 2017/11/19	Naruto University of Education	24
11	Study Tour for Editing Textbooks on CREATE in Myanmar	2018/10/24 – 2018/11/3	TIC	10
12	Study Tour for Editing Textbooks on CREATE in Myanmar	2019/10/22 – 2019/11/1	TIC	10
13	Study Tour for Editing Textbooks on CREATE in Myanmar	2020/8/24 – 2020/8/28	Online	7
Total				**176**
Training in Thailand				
1	WALS (World Association of Lesson Study)	2015/11/24 – 2015/11/27	Khon Kaen	7
Total				**7**

* TIC: JICA Tokyo Training Center

In each of the training courses on textbook development and editing (1, 3, 4, 7, 8, 9, 11, 12, 13 in the above table), the new CDT counterparts spent about two weeks systematically learning about the concepts and processes of curriculum development in Japan, textbook editing methods, and teaching practices based on the developed curriculum. Through lectures by experts, actual development work under the guidance of subject experts visits to textbook companies and primary schools, and engaged discussions, the impact of witnessing the practices behind the guidance

given by the project experts in their work in Myanmar was significant. The knowledge and experience gained from the training was very useful in the writing and editing of the textbooks.

The first teacher education trainings (2 in the above table) was held at Naruto University of Education for teacher educators and project counterparts who are involved in policy making, with the aim of building capacity in teacher education policy making. At the same time, the training participants took part in the 59th ICET (the International Conference on Education for Teaching) World Congress held at Naruto University of Education to better understand international trends in teacher education system reform. In addition, they learned the basic concept and development process of teacher education programme used at Naruto University of Education. Subsequent trainings in Japan (5, 6 and 10 in the above table) were conducted for project counterparts, focusing on the development of teaching materials on subject pedagogy, based on observations of classes at the university and guidance from instructors in charge.

In addition to the trainings in Japan directly related to the project activities, during the first phase of the project, counterparts (mainly from the teacher education team) were sent to the World Association of Lesson Study (WALS), a global conference on lesson study. This was an opportunity to examine in detail how to apply the methods of lesson study introduced in the previous project on CCA towards the implementation of the new curriculum.

From the third phase onwards (from the 11th training), the management of the training was integrated into the project in order to improve efficiency. This has led to significant savings in administrative costs and has also enabled the project's local staff to accompany the training as an interpreter, providing appropriate contextual interpretation and facilitation, pre-training preparation support and post-training follow-up. In order to prevent the spread of Coronavirus Disease 2019 (COVID-19), the 13th and final training in Japan was conducted online instead of on-site in Japan. The results of the online training are described in detail in section 3.6.

An example of the programme for the training in Japan in textbook development and editing is shown in Table 2-5 on the following page.

Table 2-5: Example of Training Program on Textbook Editing in Japan

Program Period	2019/10/22 - 2019/11/1			Number of training participants		10

Program Output: To propose the actions for Grade 4 textbook development based on the learning from the training programme.
- Program Objective 1: To understand the curriculum development in Japan (e.g. the Course of Studies and Textbook Authorization System).
- Program Objective 2: To understand the process of textbook development in Japan.
- Program Objective 3: To understand the evaluation criteria and actual methodologies for lesson delivery in Japan.

Date		Time			Contents	Lecturer / Facilitator	
						Name	Organization
23 Oct	**Wed**	9:20	～	10:00	Program Orientation	Megumi Shiota	CREATE (PADECO)
		10:00	～	11:30	JICA Briefing		JICA Tokyo
		11:30	～	12:00	Program Orientation	Megumi Shiota	CREATE (PADECO)
		13:00	～	15:00	Brain Developmental Stage and Curriculum Development	Tadahiko Abiko	Distinguished Professor, Kanagawa Univ. (Honorary Professor, Nagoya Univ.)
		15:00	～	16:00	Academic Assessment and Tutorial System	Norio Matsubara	Kyoiku Shuppan
		16:00	～	17:00	Textbook Editing Process	Norio Matsubara	Kyoiku Shuppan
24 Oct	**Thu**	9:30	～	12:30	Lesson Observation: Visit Elementary Classrooms	Chizuru Suzuki	Kamakura Women's University Affiliated Primary School
		12:30	～	13:15	Lunch Break and Social Gathering		
		13:15	～	14:20	Lesson Observation: Discussion with Teachers		
		15:00	～	16:00	Visit Kotoku-in (Kamakura Great Buddha)	Michiko Sato	Director, Kamakura Branch, UNESCO Japan
25 Oct	**Fri**	9:00	～	11:00	Textbook Development System in Japan	Yuichi Tatsuno -	-Japan Textbook Research Center
		11:00	～	12:00	Observation of Textbooks Library		
		14:30	～	15:05	Recent Education Reform in Japan	Aya Yamamoto	Unit Chief for Office for Curriculum Planning, School Curriculum Division, Elementary and Secondary Education Bureau, MEXT
		15:05	～	15:30	Textbook Revision in Japan	Nanako Takahashi	Unit Chief, Textbook Division, Elementary and Secondary Education Bureau, MEXT
		15:45	～	16:30	Visit Information Square	-	-
26 Oct	**Sat**	9:30	～	11:15	Visit Tokyo Sky Tree (Japanese Culture and History)	Megumi Shiota	CREATE (PADECO)
		11:30	～	15:40	Lunch Break and Visit Sensouji (Japanese Culture and History)	Megumi Shiota	CREATE (PADECO)
		16:00	～	17:00	Visit Nippori Fabric Town (Japanese Textile and Industry)	Megumi Shiota	CREATE (PADECO)
28 Oct	**Mon**	9:30	～	12:10	Lesson Observation: Visit Classrooms	Junji Sawada	Yanagawa Primary School, Koto ward
		12:15	～	13:05	Lesson Observation: School Lunch with Students		
		13:15	～	14:00	Lesson Observation: Discussion with Teachers		
		14:30	～	15:30	Textbooks and Copyrights	Toshiaki Yoshida	Kyoiku Shuppan
		15:30	～	16:30	Textbooks and Universal Design		
		16:30	～	17:00	Q&A and Company's Guide	Shinsuke Minamidate	
29 Oct	**Tue**	9:00	～	10:30	Evaluation Criteria and Methodologies	Hiroshi Kojima	Senior Researcher, Kyoiku Kenkyusho, Kyoiku Shuppan
		10:30	～	12:00	Evaluation and Teaching in the Classrooms		
		13:00	～	15:00	Curriculum Development	Toji Tanaka	Honorary Professor, University of Tsukuba (Professor, The Open University of Japan)
		15:00	～	16:30	New Academic Ability and Evaluation Methodologies (Academic Achievement Survey)	Yukiyasu Motohashi	Associate Professor, Saitama University
30 Oct	**Wed**	9:30	～	10:30	Lesson Observation: Business Policy and Facility Tour	- Kazuhiko Ikeda	- Oizumi Gakuen Sakura Primary School, Nerima-ward
		10:30	～	12:10	Lesson Observation: Visit Classrooms		
		12:15	～	13:30	School Lunch with Students		
		13:45	～	14:30	Lesson Observation: Discussion with Teachers		
		15:30	～	17:00	Preparation for Presentation	Megumi Shiota	CREATE (PADECO)
31 Oct	**Thu**	9:00	～	12:00	Group Discussion on Course Reflection and Observation	Norio Kato Hiroyuki Seki	CREATE (PADECO, Kyoiku Shuppan)
		12:00	～	13:00	Lunch Break	-	-
		13:00	～	15:00	Presentation on Course Reflection and Observation	Norio Kato Hiroyuki Seki	CREATE (PADECO, Kyoiku Shuppan)
		15:00	～	16:00	Closing Ceremony	Yumi Tokuda	JICA HQ

2.2.5   Operation Expenses in Myanmar and Subcontracting

JICA covered the following cost for operating activities in Myanmar.

Table 2-6: Actual Expenses for the Operation in Myanmar Born by JICA

Category	Actual cost for operating activities in Myanmar (JPY)						
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Assistant, Secretary	8,462,640	21,689,730	24,950,335	38,935,915	35,583,034	34,314,229	32,330,059
Remuneration, Honorarium	6,291,814	19,540,026	11,941,122	16,499,582	12,540,163	14,293,801	10,259,508
Car-related expenses	2,273,111	3,445,547	2,573,545	3,435,789	3,536,276	3,109,513	547,549
Rental fee	355,723	694,713	194,889	111,970	85,845	98,858	0
Facility and Equipment Maintenance	1,893,252	890,606	960,199	990,594	581,810	1,116,530	341,715
Consumables	10,299,677	6,914,611	10,095,254	13,795,036	7,411,258	3,392,435	3,055,244
Travel	970,220	5,278,945	3,339,194	5,356,362	4,400,923	4,930,025	132,483
Communication	1,392,330	3,283,758	3,329,060	3,772,321	901,273	686,154	1,534,747
Photocopy, Translations, Printing and Binding	1,480,349	5,780,286	8,696,816	13,525,178	9,727,547	14,516,203	6,517,408
Utilities	0	0	2,273	36,460	38,175	32,662	0
Others	1,215,520	2,112,373	1,109,345	745,524	985,825	1,186,603	920,455
Total	**34,634,636**	**69,630,595**	**67,192,032**	**97,204,731**	**75,792,129**	**77,677,013**	**55,639,168**

Note: Costs before rounding down are shown.
(FY2020 is an estimated amount before confirmation.)

As shown in the table below, the assessment training (in Japan) and the production of a TV drama for publicity (in Myanmar) were subcontracted.

Table 2-7: List of Subcontracts

Overview of subcontract	Subcontractors	Period	Cost
Proposal of assessment structure and support for trainings in Myanmar	The Japan Institute for Educational Measurement, Inc.	22 December, 2014 – 25 May, 2015	2,500,000JPY
Development and broadcast of TV drama for PR	Akar Production	19 May, 2017 – 20 March, 2018	12,515,000JPY

2.3   Input by the Myanmar Side

The following section describes the inputs made by the Myanmar side towards the implementation of the project activities and the implementation of the new curriculum.

2.3.1   Deployment of Counterparts

The MOE deployed counterparts for the project activities as shown in Table 2-8 below. The counterparts in each subject area acted as the CDT and were responsible for drafting textbooks, teachers' guides and other documents for the new curriculum, as well as instructors for training in the introduction of the new curriculum. The teacher education counterparts were responsible for preparing modules for the new curriculum introduction training and for preparing teaching materials to reflect the new primary curriculum in the new curriculum of education colleges (ECs). Computer operators were responsible for the typesetting and design of textbooks and teachers' guides. In addition to those listed in the table, part-time counterparts were assigned to work with assessment experts.

Table 2-8: List of Counterparts

No	Name	Affiliation	Position	Subject in charge	Period
Myanmar					
1	Daw Thaung Thinn Aye	Dept. of Myanmar, Yankin EC	Associate Professor	Myanmar	2013-Sep
2	Daw May Zin Oo	BEPPS, Ah Lin Yaung, Bago Township, Bago (East) Region, DBE	Junior Teacher	Myanmar	2013-Sep
3	Daw Khin Aye Moe	Dept. of Methodology, Bogalay EC	Professor	Myanmar	2015-Aug
4	Daw Nwe Ni Hlaing	BEHS (Branch), Thapyaegone, Dala Township, Yangon Region, DBE	Junior Teacher	Myanmar	2015-Dec
5	Daw Aye Aye Khaing	BEMS (3), Sanchaung Township, Yangon Region, DBE	Junior Teacher	Myanmar	2016-Jan
6	Daw Maw Maw	Curriculum, DERPT	Staff Officer	Myanmar	2017-Jul
English					
7	Daw May Thu Aung	Curriculum, DERPT	Deputy Staff Officer	English	2013-Sep
8	Daw Saw Mya Nandar	BEMS, (Nandar-North), Patheingyi Township, Mandalay Region, DBE	Junior Teacher	English	2013-Sep
9	Daw Hnin Oo Yan	Curriculum, DERPT	Curriculum Developer (1)	English	2013-Sep
10	Daw Win Yu Aye	Dept. of Language (English), Mandalay EC	Lecturer	English	2014-Aug
11	Daw Su Han	Dept. of Language (English), Bogalay EC	Assistant Lecturer	English	2015-Aug
12	Daw Aye Aye Thant	Dept. of English, Yangon University	Lecturer	English	2017-Jul
13	Daw Phyu Phyu	Dept. of English, Meikhtila University	Lecturer	English	2017-Aug
14	Daw Ei Phyo Zaw	Curriculum, DERPT	Curriculum Developer 2	English	2019-May
Mathematics					
15	Daw Thuzar Khine	Dept. of Mathematics, Pyay EC	Associate Professor	Math	2013-Sep
16	Daw Su Thandar Aung	BEPS (13), Thingangyun Township, Yangon Region, DBE	Junior Teacher	Math	2013-Sep
17	U Soe Naing	Dept. of Methodology, Loikaw EC	Professor	Math	2013-Sep
18	Daw Thin Nu Zar	Curriculum, DERPT	Curriculum Developer (1)	Math	2013-Nov
19	Daw Wah Wah	BEHS(Sub), Wahtayar, Htan-da-binn Township, Yangon Region, DBE	Junior Teacher	Math	2018-Sep

No	Name	Affiliation	Position	Subject in charge	Period
20	Daw Lwe Zing	Dept. of Methodology, Katha EC	Professor	Math	2019-Apr
21	Dr. Hla Thet Paing	Dept. of Educational Theory, Yankin EC	Assistant Lecturer	Math	2019-Apr
Science					
22	Dr. Kay Thi Maw	Dept. of Methodology, Taungoo EC	Associate Professor	Science	2013-Sep
23	Daw Sandar Kyaw	Dept. of Methodology (Science), Pyay EC	Lecturer	Science	2015-Dec
24	Daw Sandar Win Myint	District Education Office (East), Yangon Region, DBE	Staff Officer (Project M&E)	Science	2016-Jul
25	Dr. Khaung May Latt	Dept. of Botany, Yangon University	Lecturer	Science	2017-Jun
26	Daw Soe Soe Nwe	Dept. of Methodology (Science), Thingangyun EC	Lecturer	Science	2018-Mar
27	Dr. Aye Mya Phyu	Dept. of Zoology, Yangon University	Lecturer	Science	2019-Jan
Social Studies					
28	Daw Khin Sandar Win	Curriculum, DERPT	Staff Officer	Geography	2013-Sep
29	Daw Khaing Khaing Myint	Dept. of Social Studies Subjects, Yankin EC	Professor	Geography	2013-Sep
30	Daw Aye Aye Than	BEHS- Nyaungbinthar, Pyinnmana Township, Naypyitaw, DBE	Junior Teacher	Geography	2013-Sep
31	Daw Thandar Aung	Dawei EC	Vice Principal	Geography	2014-Sep
32	Daw Zarchi Seint Seint Win	BEMS (Branch), Hlegu Township, Yangon Region, DBE	Primary Teacher	History	2013-Sep
33	Daw Khin Nu	Dept. of Social Studies Subjects, Yankin EC	Associate Professor	History	2020-Jun
Morals and Civics					
34	Daw Khin Swe Win	BEHS (6) Myaungmya Township, Ayeyarwady Region, DBE	Junior Teacher	Morals and Civics	2013-Sep
35	Daw Nant Myint Myint Aye	Dept. of Methodology, Kyaukphyu EC	Professor	Morals and Civics	2014-Aug
36	U Swuan Pyae	BEHS (Sub), Nanpan, Pinlaung Township, Shan State (South), DBE	Senior Teacher	Morals and Civics	2020-Jun
Life Skills					
37	Daw Khine Yin Mon	Curriculum, DERPT	Curriculum Developer (1)	Life Skills	2014-Aug
38	Daw Khine Su Wai	Curriculum, DERPT	Curriculum Developer (2)	Life Skills	2014-Jul
39	U Tin Win Naing	BEPPS, Minn O, Gyobingauk Township, Bago Region (West), DBE	Junior Teacher	Life Skills	2018-Sep
40	Daw Oo Khin Win	BEMS (7), North Okkalappa Township, Yangon Region, DBE	Junior Teacher	Life Skills	2018-Sep
Physical Education					
41	U Than Min Soe	BEPPS (Pyinn Chaung), Sintkuu Township, Mandalay Region, DBE	Primary Head	Physical Education	2013-Sep
42	Daw Khin Myo Maw	Curriculum, DERPT	Deputy Staff Officer	Physical Education	2017-Jul
43	Daw Khin Moe Myint	Dept. of Physical Education, Dawei EC	Lecturer	Physical Education	2019-Mar
44	Daw Thida Hlaing	Dept. of Educational Theory, Dawei EC	Professor	Physical Education	2019-Mar
Performing Arts					
45	Daw Sandar Myint	BEHS (1) Lewai Township, Naypyitaw, DBE	Junior Teacher	Music	2013-Sep
46	Daw Aye Aye Myint	BEHS -Pa Lai, Shwebo Township, Sagaing Region, DBE	Senior Teacher	Music	2013-Sep

No	Name	Affiliation	Position	Subject in charge	Period
47	U Kyaw Myint	Dept. of Educational Psychology, Lashio EC	Professor	Music	2014-Sep
48	Dr. May Phyusin	Curriculum, DERPT	Staff Officer	Music	2017-May
Visual Arts					
49	U Shwe Mya Tha	Dept. of Methodology, Yankin EC	Associate Professor	Drawing	2015-Jun
50	Daw Mya Pwint Phyu	BEPPS, Kyonehpa, Kawhmu Township, Yangon Region, DBE	Junior Teacher	Drawing	2018-Sep
51	U San Lynn Thu	BEPS, Nyaung Lann Kan, Khayan Township, Yangon Region, DBE	Primary Teacher	Drawing	2018-Sep
52	Daw Phoo Ngon Si	BEPS, Kyet Shar Soon Village, Kyan Khinn Township, Ayeyarwaddy Region, DBE	Primary Teacher	Drawing	2018-Sep
Computer Operator					
53	U Win Myint Oo	Curriculum, DERPT	Computer Operator	Computer	2014-Jun
54	Daw Swe Zin Myint	Curriculum, DERPT	Deputy Staff Officer	Computer	2014-Jun
55	Daw Si Si Aung Twin	Computer Dept., Yankin EC	Senior Clerk	Computer	2014-Jun
56	Daw Khine Nyein Zaw	Curriculum, DERPT	Curriculum Developer (2)	Computer	2015-Dec
Teacher Education					
57	Daw Aye Aye Than	Dept. of Methodology, Yankin EC	Professor	Mathematics	2014-Jul
58	Daw Lwe Lwe Khaing	Dept. of Methodology, Thingangyun EC	Professor	Social Studies	2014-Aug
59	Daw Naw Eh Wah	Dept. of Methodology (Geography), Thingangyun EC	Lecturer	Morals and Civics	2015-Oct
60	Daw Po Po	Dept. of Methodology. Meikhtila EC	Professor	English	2015-Sep
61	Daw Kyi Kyi Myint	Dept. of Educational Psychology, Yankin EC	Lecturer	Educational psychology (Assessment), Performing Arts	2015-Sep
62	Daw Tin May Yee	Dept. of Methodology (Geography), Bogalay EC	Lecturer	Life Skills	2015-Sep
63	Daw San Myint Tun	Dept. of Methodology, Meikhtila EC	Professor	Physical Education	2015-Sep
64	Daw Thandar Thway	Dept. of Methodology (Science), Pyay EC	Assistant Lecturer	Science	2017-Aug
65	Daw Thae Wut Yi	Dept. of Methodology (Myanmar), Thingangyun EC	Lecturer	Myanmar	2017-Oct
66	Daw Phyo Wai Theint (Visual Arts)	Dept. of Educational Theory, Kyaingtone EC	Assistant Lecturer	Visual Arts (Educational Theory)	2019-Jul

Note: Excluding 31 counterparts who have already retired or transferred.

2.3.2   Budgetary Expenses Born by the Myanmar Government

The MOE introduced and implemented the new curriculum based on the textbooks and related materials developed by the Project. Major expenses required for the introduction of the new curriculum are the printing of textbooks, teacher's guides, and training modules; procurement of teaching-learning materials to be used at school; and cost of introduction training. Approximate cost of the introduction of Grade 1 to Grade 4 curriculum born by the Government of Myanmar was 28.5 billion MMK for printing, 11 billion MMK for teaching-learning materials, and 38.3 billion MMK for curriculum introduction training, which totals approximately 77.8 billion MMK. The breakdown of the expenses for introduction of the new primary curriculum born by the Myanmar Government is shown in Table 2-9 below.

Table 2-9: Actual Expenses Born by the Myanmar Government

(million MMK)

Items	2016-2017	2017-2018	2018 (6 months)	2018-2019	2019-2020
G1 TB+TG+Training Module		2719.225			
G1 Teaching Learning Material		3288.800			
G1 Training expense (DERPT)	317.413				
G1 Training expense (DBE)		5653.935			
G1 EC Training expense (DHE)		43.888			
G2 TB+TG+Training Module			4195.206		
G2 Teaching Learning Material			966.409		
G2 Training expense (DERPT)		231.133			
G2 Training expense (DBE)			14417.025		
G2 Training expense (DHE)			61.319		
G3 TB+TG+Training Module				8974.088	
G3 Teaching Learning Material				1484.748	
G3 Training expense (DERPT)				117.7015	
G3 Training expense (DBE)				11442.279	
G3 Training expense (DHE)				36.820	
G4 TB+TG+Training Module					12603.106
G4 Teaching Learning Material					5271.350
G4 Training expense (DERPT)					20.403
G4 Training expense (DBE)					5940.448
G4 Training expense (DHE)					8.365
Total	317.413	11,936.981	19,639.959	22,055.637	2,3843.673
Grand Total					**77,793.663**

* The fiscal year cycle was changed from April-March to October-September in 2018. Therefore, the budget of 6 months from April to September 2018 was managed separately.

Chapter 3.   Activities

3.1   Overview of the Project Activities

3.1.1   Overall Schedule of Activities

The core activities of the project consisted of an annual cycle of developing the curriculum to be introduced in the following academic year in line with the basic education school year in Myanmar, and conducting introduction training for in-service teachers over the long holidays before the start of the new academic year, based on the approved textbooks and teacher's guides as shown in Figure 3-1. The development of the new G1 curriculum was preceded by a series of activities that were a prerequisite for the compilation of the textbooks, including the review of the Basic Education Curriculum Framework (BECF), recommendations for the revision of assessments and training for the project counterparts. This preparatory work took about a year and a half due to the postponement of the introduction of the new Kindergarten (KG) curriculum, which preceded the primary curriculum reform.
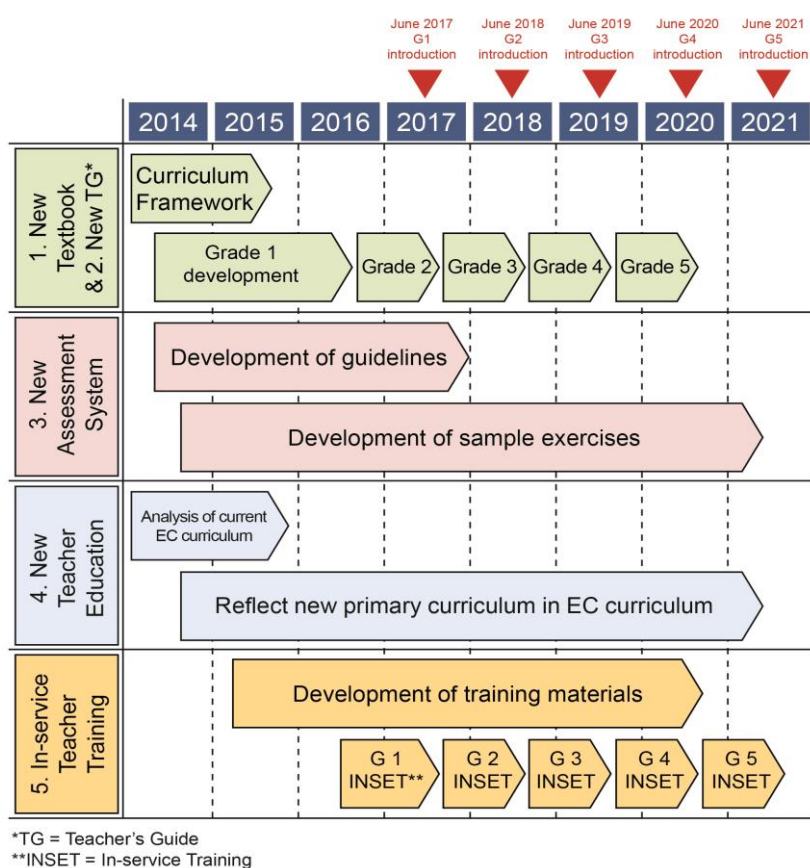
Figure 3-1: Schedule of Activities

The overall plan and results of the activities are shown in Appendix 10.

3.1.2   General Component

Due to the sheer scale and breadth of the project's activities, particular care has been taken to establish the implementation structure. The structure for the management of the activities are described in section 3.7. In terms of the administration of the project, some of the most significant features are as follows.

- Local staff: Staff hired by the project has contributed greatly to the efficiency and quality of the work carried out by the counterparts and the support provided by the experts. Responsibility of each person was clarified by subject and tasks.

- Procurement of equipment: The identification and effective use of equipment required for curriculum and textbook development and teacher training has increased efficiency.

- Security measures and data management: Since many members were involved in the project, efforts were made to strengthen security measures for the project office and data, and to establish a communication system in case of emergencies.

Five impact surveys were carried out[14] to determine the impact of the new curriculum on learning. The project also focused on liaison, publicising the project, and raising awareness of the new curriculum.

From March 2020 onwards, activities continued through remote operations, due to the return of experts to their countries and local travel restrictions to prevent COVID-19.

3.1.3   Curriculum, Textbook, and Assessment Component

During the project period, the following deliverables were completed, each covering 10 subjects and 5 years of primary education.

- Textbooks
- Teacher's guides[15]
- Sample exercises
- Reference book on classroom assessment at the primary level
- Guidebook on classroom assessment for the primary level

In this process, the project established procedures and systems for curriculum development in Myanmar, and the trained CDT and DTP operators locally and in Japan to strengthen their understanding of the curriculum and their capacity for textbook development and editing, through training sessions as well as On-The-Job training (OJT). Technical support was provided to improve the quality of textbook printing after the distribution of the new curriculum textbooks started.

From April 2020 to March 2021, in addition to the original plan, activities were carried out to support learning continuation under COVID-19.

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[14] The sixth survey could not be carried out due to COVID-19. It was replaced by an additional analysis using the existing data.

[15] The G5 teacher's guides were submitted in final draft due to the political changes that occurred in February 2021.

3.1.4   Teacher Education Component

The teacher education component provided support to formulate teacher education policy, support for revisions of pre-service teacher education courses at Education Colleges (EC), and support for annual curriculum introduction training in line with the development of the new textbooks and teacher's guides. Technical support for the integration of the new primary curriculum into EC curriculum was provided in close collaboration with the United Nations Educational, Scientific and Cultural Organization (UNESCO), which supports the comprehensive reform in teacher education and management including the development of four-year teacher education programmes. The project developed and provided UNESCO and the MOE with EC teaching materials (lesson plans, lecture notes, student handouts) that can be utilised in EC textbooks and teacher's guides.

The new curriculum introduction training was designed for three different target audiences described below. The project developed training materials for G1-G5 and video materials for each training and technically supported the implementation of the training[16].

- Training for supervisors (education administrators)
- Training for in-service teachers
- Training for EC teacher educators and EC students

Teacher education activities were implemented by the teacher education counterpart, whose capacity was strengthened through training in Myanmar, Japan and a third country.

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[16] The project planned to support the central training of G5 training, but the training was postponed and did not take place during the project period due to COVID-19 and the political change in February 2021.

3.2   Curriculum, Textbooks, and Assessment

3.2.1   Curriculum Outline of the Primary Education

(1)   New Curriculum Framework

The Basic Education Curriculum Framework (BECF) describing the direction and strategy of basic education was completed in December 2014 through CESR that was conducted under the initiative of the MOE from 2012 to 2015 since before the start of CREATE, and it was formally approved by the MOE in May 2015. The development of this curriculum framework involved the cooperation of various international development partners, for example, United Nations Children's Fund (UNICEF) was in charge of pre-primary education, JICA was in charge of primary education and Asian Development Bank (ADB) was in charge of secondary education. This curriculum framework was re-examined after the new government led by the National League for Democracy (NLD) assumed office in 2016 and it was finally approved in 2019 with some revisions.

This curriculum framework is the first curriculum document in Myanmar, which has traditionally considered textbooks as the curriculum, and it can be said that this document is significantly innovative for Myanmar's educational history. In this curriculum framework, objectives of each educational level, structure of learning areas, teaching and learning methodologies and assessments are described in detail. The aim of this document is to achieve the balanced development of pupils and students in various areas (the so-called "Five strengths" including *intellectual strength*, *physical strength*, *moral and ethical strength*, *social strength* and *economic strength*), to adapt to "21st Century Skills" as necessary competencies for life in the complex global society, and to treat all subjects equally. Figure 3.2 and Figure 3.3 shows the "Five strengths" and "21st Century Skills" described above. Table 3.1 describes how these two concepts are combined together to form the competency model of the BECF.
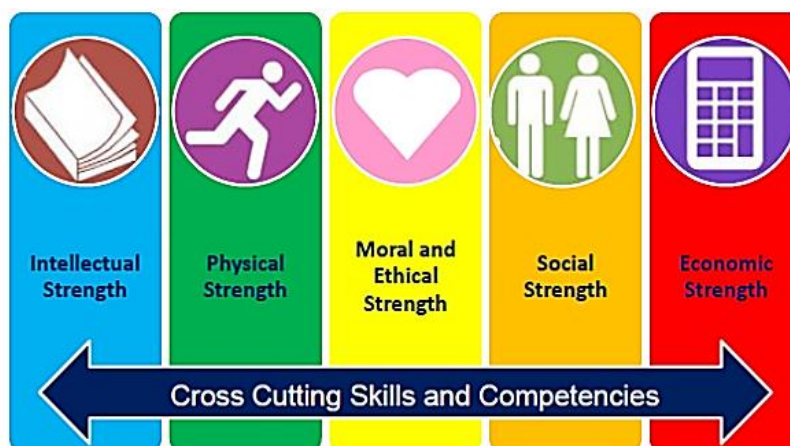
Figure 3-2: Five Strengths in the BECF
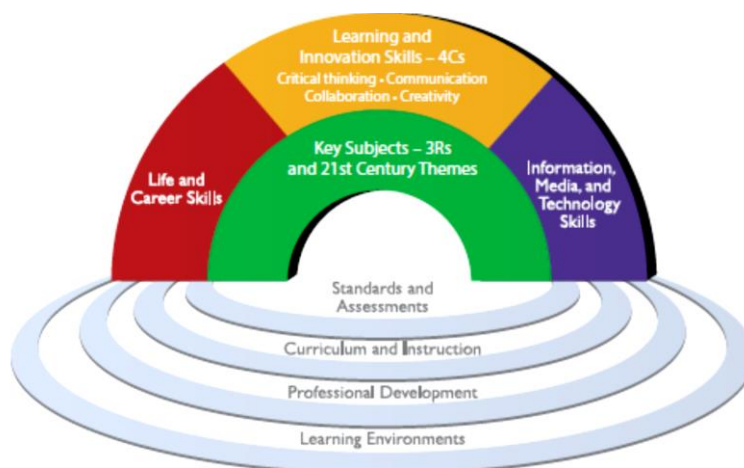
Figure 3-3: Concept Map of the 21st Century Skills

Table 3-1: Competency Model of the BECF

Five Strengths Targeted for Learning in the 21st Century For the development of national and global citizenship with competencies				
Intellectual Strength	**Physical Strength**	**Moral and Ethical Strength**	**Social Strength**	**Economic Strength**
Knowledge Based Literacies • Academic Literacies in core subjects: - Language - Mathematics - Science • Environmental Literacy **Skills and Competencies** • Language/Literacy Skills • Mathematical Skills • Scientific Skills • Technology (ICT) Skills • Creative and Innovation Skills	**Knowledge Based Literacies** • Health Literacy **Skills and Competencies** • Health-Related Life Skills • Healthy and Sustainable Environment	**Value Based Literacies** • Global Awareness and Civic Literacy • Moral, Ethical and Aesthetic Literacy	**Skills and Competencies** • Interpersonal Skills including Social Skills, Peace Building Skills and Communication Skills • Intrapersonal Skills (e.g. self-motivated learning, life-long learning, etc.)	**Knowledge Based Literacies** • Financial Literacy • Economic Literacy • Business Literacy • Entrepreneurial Literacy **Skills and Competencies** • Vocationally Relevant Skills • Employability (soft) Skills
Cross Cutting Skills and Competencies □ Higher Order Thinking □ Creative Skills and Problem-Solving Skills □ Leadership Skills				

In addition, the curriculum framework clearly outlines the structure of the learning areas for primary education level (subjects, local curriculum, school activities, etc.) and a number of lesson periods per week and year for each subject as shown in Table 3-2 below:

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Table 3-2: Structure of Learning Areas and Numbers of Lesson Periods in Primary Education

Learning Areas	Grade 1			Grade 2			Grade 3			Grade 4			Grade 5		
	Periods per week	Hours per week	Hours per year	Periods per week	Hours per week	Hours per year	Periods per week	Hours per week	Hours per year	Periods per week	Hours per week	Hours per year	Periods per week	Hours per week	Hours per year
Myanmar	8	5h20	213h20	8	5h20	213h20	8	5h20	213h20	7	4h40	186h40	7	4h40	186h40
English	3	2h	80h	3	2h	80h	3	2h	80h	5	3h20	133h20	5	3h20	133h20
Mathematics	7	4h40	186h40	7	4h40	186h40	7	4h40	186h40	6	4h	160h	6	4h	160h
Science	2	1h20	53h20	2	1h20	53h20	2	1h20	53h20	3	2h	72h	3	2h	72h
Social Studies	2	1h20	53h20	2	1h20	53h20	2	1h20	53h20	3	2h	80h	3	2h	80h
Morals and Civics	2	1h20	53h20	2	1h20	53h20	2	1h20	53h20	3	2h	80h	3	2h	80h
Life Skills	2	1h20	53h20	2	1h20	53h20	2	1h20	53h20	3	2h	80h	3	2h	80h
Physical Education	2	1h20	53h20	2	1h20	53h20	2	1h20	53h20	2	1h20	53h20	2	1h20	53h20
Arts (Performing Arts and Visual Arts)	2	1h20	53h20	2	1h20	53h20	2	1h20	53h20	3	2h	80h	3	2h	80h
Sub-Total	**30**	**20h**	**800h**	**30**	**20h**	**800h**	**30**	**20h**	**800h**	**35**	**23h20**	**933h20**	**35**	**23h20**	**933h20**
Local Curriculum	Ethnic languages and ethnic literatures can be taught in the lower primary level.									Local geography, history, regional economic, agriculture or business can be taught in the upper primary level, according to the local needs.					
	5 lessons per week, 120 lessons per year														
Total Hours	920 hours per year in the lower primary level									1053 hours 20 minutes per year in the upper primary level					
School Activities	60 hours per year														
	980 hours per year in the lower primary level and 1113 hours 20 minutes per year in the upper primary level														

Note: Grades 1 to 3 are lower primary and Grades 4 and 5 are upper primary grades.

(2)   Subject-Wise Curriculum Outline

In the project, textbooks and teacher's guides for 10 subjects were developed according to the basic direction described in the curriculum framework. Prior to developing the specific content of textbooks and teacher's guides, the project produced "Curriculum Outlines" which are detailed subject-wise and grade-wise curriculum documents. These include subject-wise learning objectives and grade-wise learning objectives, along with their content. At first glance of these documents, educational directions and learning content by subject can be clearly understood.

In Curriculum Outline, four types of subject-wise objectives were set up based on the initiative of "balanced development of students with various abilities" in the curriculum framework: 1) objectives related to knowledge and understanding, 2) objectives related to thinking, 3) objectives related to skills, and 4) objectives related to attitude. In addition, regarding the grade-wise objectives, not only lower level objectives such as "Remember" and "Understand", but also higher level objectives such as "Apply" and "Analyse" were included (the levels of "Remember," "Understand," "Apply" and "Analyse" are based on the Bloom's Taxonomy of Educational Objectives, especially Anderson's revised version of the Taxonomy).

Learning content is described in Curriculum Outline by grade and by strand. For example, Myanmar language consists of four strands: "Basics," "Listening and Speaking," "Reading" and "Writing." English consists of four strands: "Listening and Speaking," "Reading and Writing," "Language" and "Culture." Mathematics consists of four stands: "Numbers," "Geometry," "Measurement" and "Mathematical Relations."

The first draft of Curriculum Outline for each subject was produced by the project experts and the CDT in 2015 and then submitted to and approved by the SWC. After that, this draft was repeatedly revised every year by the project experts and the CDT considering the content of textbooks and actual situations of the primary schools. From 2016, Curriculum Outline drafts were submitted to and accepted by National Curriculum Committee (NCC) along with the SWC. The final version of Curriculum Outline was formally approved by the NCC in January 2020, and it is currently considered as the formal curriculum document for Myanmar's primary education.

Table 3-3 shows an example of Curriculum Outline for primary Mathematics.

Table 3-3: Example of Curriculum Outline (Mathematics, Extract)

Subject: Mathematics

Leaning Objectives:

Students will

- Have basic mathematical knowledge and skills regarding numbers, quantities, geometrical figures and data representation (knowledge and skills)

- Be able to reason and explain logically in problem solving (thinking)

- Be able to apply mathematical knowledge and skills to the problems in daily life as well as in their learning (knowledge and understanding, skills)

- Appreciate the usefulness of mathematical ideas and approaches (attitude)

Grade-Wise Objectives

Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
· To use all numbers from 0 to 100 · To do addition and subtraction up to 19 · To identify triangular, rectangular and circular shapes near at hand	· To use all numbers up to 1,000 · To do calculations using the rules of addition and subtraction · To describe triangles and rectangles based on the number of vertices and sides	· To use the all numbers up to 100,000 · To solve problems on additions and subtractions up to 100,000	· To all numbers up to 10,0000,000 · To use the concept of rounding in solving problems · To solve problems on divisions (up to 4-digit numbers divided by 3-digit numbers)	· To identify even and odd numbers · To use the concept of least common multiples and greatest common factors to solve problems · To describe polygons including pentagons and hexagons

Grade-Wise and Strand-Wise Learning Contents

Strand	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
Numbers	· Concept of numbers · Addition and subtraction	· Concept of numbers · Addition and subtraction · Multiplication · Division	· Concept of numbers · Addition and subtraction · Multiplication · Division · Concept of fractions	· Concept of numbers · Division · Four calculations · Addition and subtraction of fraction · Addition and subtraction of decimals	· Concept of numbers · Multiplication and division of fractions · Division of decimals
Geometry	· Polygons · Solids	· Angles · Polygons	· Polygons · Circles · Solids	· Lines and angles · Polygons · Symmetry	· Polygons
Measurement	· Length · Time	· Length · Weight · Time · Volume	· Length · Weight · Time · Volume	· Length · Area	· Area · Volume

3.2.2   Textbooks and Teacher's Guides

In the project, textbooks and teacher's guides for 10 subjects and 5 grades have been developed in collaboration among the project experts, the CDT and the SWC, based on the directions described in both the BECF and Curriculum Outline. With textbooks and teacher's guides development, the following three basic policies and two strategies were kept in mind.

<Three Basic Policies>
Policy 1: Textbooks and teacher's guides must be interesting for all pupils.
Policy 2: Textbooks and teacher's guides are the primary sources of knowledge.
Policy 3: Textbooks and teacher's guides promote critical thinking by both teachers and pupils.

<Two Basic Strategies>
Strategy 1: The textbooks must be useful for both pupils and teachers.
Strategy 2: Textbooks and teacher's guides must indicate assessment criteria and methods clearly.

(1)   Textbooks

Textbook development was carried out in the seven steps shown in Table 3-4. In addition, this process was continuously repeated 5 times, from G1 textbook to G5 textbooks during the period of the project. One cycle of this process usually took 10 to 12 months, but the first cycle of developing G1 textbooks took 24 months. The main reasons for this were; 1) it took longer for CDT to build own capacity and to comprehend the textbook development process when the project started to develop G1 textbooks as the first attempt, 2) the BECF was not completed when the project started to develop them in May 2014, and 3) the introduction of KG curriculum, which was implemented prior to the primary education curriculum, was delayed by one year. Therefore, before the start of G2 textbook development, the project reviewed the development process of G1 textbooks and then discussed and agreed on the basic direction and process on developing textbooks with the MOE, the NCC, the SWC and the CDT through the kick-off meeting. This process was repeated up to G5 curriculum development.

Table 3-4: Process and Timeframe of Textbook Development

Steps	Work	Textbooks for G1	Textbooks for G2 to 5
1st Step	Review the current textbooks	May to June 2014	January (since 2017)
2nd Step	Understand the new curriculum framework	May to June 2015	January
3rd Step	Develop subject objectives and leaning content	July 2014 to June 2015	January to March
4th Step	Draft unit content	August 2014 to July 2015	February to July
5th Step	Create new textbook design	September 2014 to September 2015	May to August
6th Step	Examine the effectiveness of new textbooks in pilot schools	January to December 2015	June to August[17]
7th Step	Revise and finalise the new textbooks	September 2015 to March 2016	August to December

Note: The duration for developing textbooks for each grade is as follows: G2 textbook (January to December 2017); G3 textbook (January to December 2018); G4 textbook (January to December 2019); and G5 textbook (January to December 2020)

Based on the instruction of the MOE, new textbook size was decided at 9.5 inches long (241.3 mm) and 6.875 inches wide (174.6 mm), which is the same as the old textbook. However, new textbooks were printed in colour which is different from old textbooks printed in black and white

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[17] Try-out lessons for G5 textbook development was conducted for only a few of the subjects around January 2020, as there was no G5 in the following academic year due to the transition from the old to the new school system.

(A few old textbooks were printed in three colours). Textbooks with colour printing greatly attracted children's interests. Such specification of new textbooks including size, font, margin, illustration and figures was described in the "Textbook and Teacher's Guide Development Guideline" (Appendix 11) and this booklet was shared with the MOE, the NCC, the SWC, the CDT and the project experts, in order to build a common understanding of textbook development. The guideline was extended to cover a wider range of technical support and has been revised to include specifications and formats for each grade.

The new textbooks have many characteristics. One of the most important characteristics is to make pupils think deeply about the learning content and to make their learning more creative. This is based on the idea of the CCA that has gradually been introduced in the beginning of 2000 by the MOE. CCA is completely different from the traditional education practices in which teachers provided only knowledge to pupils repeatedly. New textbooks include various exercises which promote group work and pair work with inquiry learning. Try-out lessons were conducted with a view to confirm the appropriateness of such content and learning activities, and whether these are explained in textbooks and teacher's guides in a way that enables the implementation of the curriculum. Based on the result of try-out lessons, draft was reviewed and revised for improvement as necessary. The list of pilot schools[18] where the draft textbooks were tried-out are listed in Table 3-5 below. Pilot schools were involved in shooting of photographs for the textbooks, development of lesson videos for the curriculum introduction training and PR activities as well.

Table 3-5: Pilot Schools in the Project

Time when the schools were assigned as pilot schools	Number	Name of Schools
Initial pilot schools	1	Yankin EC Practicing School
	2	Thingangyun EC Practicing School
	3	Hlegu EC Practicing School
Added in July 2015	4	BEPS 1 Bahan
	5	BEPS 3 Bahan
	6	BEPS 2 South Okkalapa
	7	BEPS 4 South Okkalapa
	8	BEPS 18 South Okkalapa
	9	BEPS 3 Tamwe
	10	BEPS 7 Tamwe
	11	BEPS 18 Tamwe
	12	BEPS 11 Yankin
	13	BEPS 13 Yankin
Added in June 2019	14	BEHS 4 Botataung
	15	BEHS 2 Kamayut
	16	BEHS 2 Sanchaung
	17	BEMS 1 Dagon
	18	BEPS 6 Kyauktada
	19	BEPPS 2 Hlaing

Note: BEPS=Basic Education Primary School, BEPPS= Basic Education Post Primary School, BEMSB= Basic Education Middle School (Branch), BEHSB= Basic Education High School (Branch), BEHS= Basic Education High School

Although 10 textbooks of each grade from G1 to G5 were produced in the project, only six textbooks for lower primary grades of G1, 2 and 3 were distributed to pupils nationwide due to the budget constraint of the MOE. These were only "Myanmar," "English," "Mathematics," "Science," "Social Studies" and "Morals and Civics." The remaining four textbooks including

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[18] The pilot schools were often referred to as "try-out schools" during the implementation of the project.

"Life Skills," "Physical Education," "Arts (Performing Arts)" and "Arts (Visual Arts)" for G1, 2 and 3 were distributed only to teachers in each school. New textbooks for G4, however, were delivered to Township Education Offices, to be distributed to all pupils nationwide as one set of 10 textbooks. At the time of the completion of the project, preparation was underway to distribute the new textbooks for G5 nationwide as well.

The learning content of the new textbooks are shown in the tables below.

■   **Myanmar**

The new Myanmar textbooks encourage pupils to acquire not only the basic 4 skills, "speaking, listening, reading and writing," but also ability to express information correctly, ability to think for themselves, and ability to think creatively.

G1	1. Let's introduce oneself	2. Let's study a poem (1)	3. Let's study a poem (2)
	4. Let's read and write consonants	5. Let's sing, write and talk	6. Let's study vowels and combine it with consonants (1)
	7. Let's study vowels and combine them with consonants (2)	8. Let's study vowels and combine them with consonants (3)	9. Let's study vowels and combine them with consonants (4)
	10. Let's study vowels and combine it with consonants (5)	11. Let's talk about interesting stories	
G2	1. Myanmar alet mark[19] with consonants (1)	2. Myanmar alet mark with consonants (2)	3. Myanmar alet mark with consonants (3)
	4. Myanmar alet mark with consonants (4)	5. Myanmar alet mark with consonants (5)	6. Myanmar alet mark with consonants (6)
	7. Myanmar alet mark with consonants (7)	8. Let's study words with stories	9. Let's write a sentence about myself
	10. Let's enjoy reading a story	11. Let's acquire information by listening a story	
G3	1. Let's study with joy	2. Let's talk about a story after studying it	3. Let's study the proverbs in order to gain the knowledge
	4. Let's go to the school library to get new knowledge	5. Let's go to a zoo to study various story	6. Let's write a letter and talk about it
	7. Let's review		
G4	1. Stars and moon	2. Draw a picture by suing words	3. Goodwill
	4. Word tree	5. Salt	6. Review (1)
	7. Bee and black-nosed bee	8. Acquire knowledge in the library	9. Two pots
	10. Let's look at a picture and imagine and write	11. Play actor, U Po Sein	12. General Aung San
	13. Let's play vocabulary	14. Bagan	15. Write a longer sentence
	16. Number	17. Computer	18. Conjunctions
	19. Which is a raw egg?	20. Write in detail about an event	21. When you look down at the mater, you will see an arrow in your mouth
	22. Vacationers	23. Thadingyut festival	24. Discuss why
	25. Use punctuations	26. Make a story by yourself	27. Riddles
	28. Flowers, 12 months	29. Letter	30. Proverbs
	31. Three flowers, Group	32. Drum sound	33. Ask and answer
	34. Research and write about your childhood	35 Review (2)	36. Myanmar heroes
G5	1. Mountain is under my feet (poem)	2. Let's continue to speak with the last word	3. Each ability
	4. Onomatopoeia	5. Make a story freely	6. Interview
	7. River side (poem)	8. Shwedagon pagoda	9. Let's read newspaper
	10. Precious sparrow's nest	11. Riddles	12. Let's issue wall newspaper
	13. Discipline story	14. Introducing dictionaries	15. Sein Beda (biography)
	16. Let's talk about the references	17. Various expressions	18. Let's give a speech about what we have researched
	19. Ayeyarwady river	20. Conjunctions	21. Hero leader
	22. Let's read an instruction	23. Facts and opinions	24. Traveller coming from the Union
	25. Let's justify and talk	26. Let's look at a picture and describe it	27. Writing letters, reading sounds
	28. Tamane festival	29. How to cook favourite dishes	30. Proverbs
	31. Ehton and Snake (short novel)	32. Basic composition	33. Vinyl bag trip
	34. Be a good boy (drama)	35. Review	

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[19] Pronunciation mark used in combination with Myanmar alphabets

■ English

The new English textbooks encourage pupils to enhance their communication ability through listening, speaking, reading and writing in English with great interests, and to be interested in foreign cultures.

G1	1. Making friends	2. English for our class	3. Our face and body
	4. Fruits and vegetables	5. My favourite foods and drinks	6. Things around us
	7. Animals at home and around the world	8. Flag of the world	9. Watching the weather
	10. My school and family		
G2	1. My good fiends	2. People, animals and things around us	3. A mango on Monday
	4. Fun and games	5. Animals	6. My T-shirt
	7. Places to visit	8. Numbers and time	
G3	1. Family, friends and I	2. My favourite…	3. My house and my pets
	4. Numbers and shapes	5. Things I do at home and at school	6. My day
	7. Things we do for fun	8. Around town	
G4	1. People around us	2. Animals	3. Seasons in Myanmar
	4. Happy days in my life	5. Shopping	6. Myanmar and its neighbouring countries
	7. Clothing	8. Food and health	9. A holiday
	10. Thigs to do		
G5	1. Everyday English	2. Time and seasons	3. Past events
	4. Signs, instructions and rules	5. My school	6. Staying health
	7. My town	8. Travelling around	9. All about me
	10. My future plans		

■ **Mathematics**

The new Mathematics textbooks encourage pupils to acquire basic Mathematics knowledge and problem-solving skills by using learned knowledge when facing problems in their daily life. In addition, the new textbooks also encourage pupils to understand that a mathematical way of thinking is significantly useful and important for daily life.

G1	1. Number up to 10	2. How many and how many?	3. Zero
	4. What comes next?	5. A variety of shapes around us	6. Addition (1)
	7. Subtraction (2)	8. Calculation of three numbers (1)	9. Review exercise (1)
	10. Which is longer?	11. Number up to 20	12. Addition (2)
	13. Subtraction (2)	14. What time do you do what?	15. Calculation of three numbers (2)
	16. Ordinal numbers (1)	17. Review exercise (2)	18. Drawing figures
	19. Larger numbers	20. Addition and subtraction with large numbers	21. Ordinal numbers (2)
	22. Review exercise (3)	23. Review exercise for Grade 1	
G2	1. Tables and graphs	2. Time and time duration	3. Addition (1)
	4. Subtraction (1)	5. How to calculate in simple ways?	6. Review exercise (1)
	7. Length (1)	8. Number up to 1000	9. Addition (2)
	10. Subtraction (2)	11. Solving problems using diagrams	12. Review exercise (2)
	13. Triangles and quadrilaterals	14. Multiplication	15. Review exercise (3)
	16. Length (2)	17. Division	18. Which is more in volume?
	19. Which is heavier?	20. Fractions	21. Review exercise (4)
	22. Review exercise for Grade 2		
G3	1. Number up to one hundred thousand	2. Addition and subtraction	3. Time and time duration
	4. Fraction (1)	5. Length and distance	6. Review exercise (1)
	7. Rules and multiplication	8. Tables and bar graphs	9. Division
	10. Circle	11. Diagrams of multiplication and division	12. Review exercise (2)
	13. Multiplication in vertical form (1)	14. Fraction (2)	15. Volume
	16. Triangles	17. Review exercise (3)	18. Multiplication in vertical form (2)
	19. Using for mathematical sentences and diagrams	20. Cubes and cuboid	21. Weight
	22. Review exercise (4)	23. Review exercise for Grade 3	
G4	1. Big numbers	2. Line graphs	3. Rules of calculations
	4. Review exercise (1)	5. Angles	6. Decimal number (1)
	7. Round numbers	8. Division	9. Review exercise (2)
	10. Area	11. Various quadrilaterals	12. Decimal number (2)
	13. Review exercise (3)	14. Line symmetry	15. Calculation using round numbers
	16. Fraction (1)	17. Fraction (2)	18. British units of measurement
	19. Review exercise (4)	20. Review exercise for Grade 4	
G5	1. Whole numbers and decimal numbers	2. Volumes	3. Congruent figures
	4. Review exercise (1)	5. Multiplication of decimal numbers	6. Division of decimal numbers
	7. Polygons and their angles	8. Review exercise (2)	9. Whole numbers
	10. Addition and subtraction of fractions	11. Averages	12. Relation between fractions, decimal numbers and whole numbers
	13. Multiplication and division of fractions by whole numbers	14. Review exercise (3)	15. Areas of triangles and quadrilaterals
	16. Multiplication of fractions	17. Division of fractions	18. Review exercise (4)
	19 Review exercise for Grade 5		

■   **Science**

The new Science textbooks encourage pupils to be interested in the natural environment through their understanding of scientific phenomena happening in their surroundings. In addition, the new textbooks provide pupils with various methods for approaching such scientific phenomena logically and for using such methods actively in their daily life.

G1	1. Our immediate surroundings	2. Ourselves	3. Plants around us
	4. Our land	5. Our sky	
G2	1. Observation of living and non-living things in our environment	2. Requirements of living things	3. Relationship between living things and their environment
	4. Observation of objects inside the classroom	5. Observation of the colour and shape of objects	6. Size
	7. Differentiating hot and cold	8. Listening to sounds	9. Differentiating light and dark
	10. Magnet and electricity	11. Observation of weather condition of the day	12. Observation of water in relation to its source
	13. Describing the objects seen in the sky in the day and night		
G3	1. Food, water, air and basic needs for living things	2. Weather, seasons and community	3. Light and sound
	4. Type of soil	5. Telling directions	6. Materials that float or sink in water
G4	1. Groups and growth of plants	2. Human body processes	3. Animal groups
	4. Force and motion	5. Matter	6. Magnet and electricity
	7. Light and sound	8. Soil and soil layers	9. Water cycle
	10. Earth, moon and star		
G5	1. Life cycles of living things	2. Works of parts together in living things	3. Mixtures
	4. Physical change and chemical change	5. Effect of heat from the sun	6. Sun and planets
	7. Electricity and magnet	8. Light and sound	9. Work and energy
	10. Living things in the environment		

■   **Social Studies**

The new Social Studies textbooks encourage pupils to think about the society in which they are living, and to consider how to relate the society with their daily life. In addition, the new textbooks also help develop knowledge about their country through covering historical events and implications of their country. At the same time, the textbooks provide pupils with precious opportunities to think what they should do to create a peaceful society in the current global age.

G1	1. Ourselves and our friends	2. Our house and family	3. Food we eat everyday
	4. Clothes we wear	5. Weather and our living	6. People we admire: King Anawahtar, King Baying Naung, King Alaungmintaya
G2	1. Our classroom	2. Our school	3. Our school environment
	4. People we admire: King Kyansithar, Shinsawpyu, Mahabandoola		
G3	1. Our town	2. Our village	3. Relative study of two regions
	4. People we admire: King Mindon, General Aung San, the great leader, Peacemaker U Thant		
G4	1. Our country, Myanmar	2. Eastern highlands	3. Western mountain ranges
	4. Bagan Era	5 Toungoo Era	
G5	1. Rakhine coastal areas	2. Central plains areas	3. Neighbouring Countries India, Bangladesh, China, Laos, and Thailand,
	4. Konbaung Era	5. British colonial era	

■ Morals and Civics

The new Morals and Civics textbooks encourage pupils to make the right judgment when facing various problems in their daily life, and to foster the attitude to work in collaboration with others. To do so, it is especially important to maintain a peaceful living environment and to become global citizens who respect basic human rights of individual persons as human nature.

G1	1. Po Po's family	2. Help parents and elders	3. Good manners at home
	4. Making in place for oneself and others	5. Phyu Phyu's regret	6. Be dutiful
	7. Clever cow	8. Code of conduct for brothers	9. Politeness
	10. Code of conduct for pupils	11. Phoe Chit who is fond of playing	12. Love each other
	13. Someone to trust	14. Good morning	15. A Body's thought
	16. Never tell a lie	17. The one who sympathizes to others	18. Make our environment more beautiful
	19. Loving Myanmar	20. Our nation	
G2	1. Respect parents and teachers	2. Caring for small children	3. Perseverance and diligence
	4. School playground	5. Keep rules and regulations	6. Good manners at school
	7. Judge right or not	8. Advantages of honesty	9. Polite communication and actions to others
	10. Trust and respect each other	11. Understand	12. Be honest
	13. Know the place for oneself	14. Love Myanmar	15. Thank to blessing of the nature
	16. Throw litters		
G3	1. Caring and kindness to the younger ones	2. Polite guest	3. Proper use of the ICT
	4. A trustworthy person	5. Getting pleasure, getting fairness	6. Needs to understand
	7. Being hardworking by setting-up the objective	8. Contributing for bringing advantages for other people	9. Having good friendship with people
	10. Keep the rules	11. Good manners at street	12. Self-place, self-duty
	13. Taking caring to the public goods	14. Keep love on the mother land	15. Remembering to the beauty to nature
	16. For nice and clean environment		
G4	1. Fair persons	2. Use the right way	3. Persistent diligence
	4. Contribute for people	5. Will be helpful each other	6. Attribute of honesty
	7. Good manners at playing	8. Follow appealing discipline	9. Take responsibility in any role
	10. Our rights	11. Do and think by oneself	12. Obligated persons by whose conscientiousness
	13. Living with love and unity	14. Happiness is concord	15. Preserve the earth
	16. Want to keep the natural environment	17. Will tell the truth	
G5	1. Live with fair mind	2. Attention about technology	3. Overcome difficulties
	4. Make self-help efforts for people	5. Good communicators	6. Honesty
	7. Manners during travelling	8. Follow the rules	9. Own duty and other's duty
	10. Rights and responsibilities	11. Someone who can decide everything by himself	12. Social workers
	13. With love and unity	14. Respect and love relatives	15. Protect natural beauty
	16. Conserve the natural environment	17. Trust yourself (programme to promote honesty)	

■ **Life Skills**

The new Life Skills textbooks consist of three strands: "personal hygiene," "social skills," and "coexistence with nature." In each strand, the necessary knowledge and skills for their daily life are provided: how to maintain a healthy body (hygiene, nutrition and diseases), how to make a good relationship with others, and how to protect themselves from natural disasters. Pupils can develop their abilities of problem solving, critical thinking and decision making through thinking about those issues.

G1	1. Let's clean our body	2. Let's wash our hands	3. Let's eat various foods to have enough strength
	4. Invisible things	5. Why we get diarrhoea?	6. Everybody has good points
	7. I am not alone	8. Stranger danger	9. Should you do these things?
	10. Be careful of the accidents	11. Let's encourage	12. Throwing rubbish properly
	13. Appreciate the beauty of plants	14. What we should do, when earthquake happens at school	15. What we should do, when it rains heavily
	16. What we should do, when there is a fire at school		
G2	1. Clean body to prevent sickness	2. Take care of teeth	3. Vitalise by eating local foods
	4. Require refilling	5. What is it?	6. Be careful about drugs
	7. Living together peacefully	8. Behave well	9. Let's prevent dangers
	10. Refuse	11. Let's grow trees	12. What we should do, when the earthquake happens
	13. What we should do, when it rains heavily	14. What we should do, when there is thunder	15. What we should do, when a typhoon attacks
	16. What we should do, when a fire breaks out		
G3	1. Protect our body	2. Growing the body	3. Three nutrition
	4. Smoke of the tobacco	5. Dengue fever	6. Happy classroom
	7. Refusing	8. What you should do when you don't understand	9. Pocket money
	10. Traffic rules	11. Avoiding the danger	12. Delighted each other
	13. Living together with nature	14. What we should do, when landslide happens	15. What we should do, when flood happens
	16. What we should do, when the tornado happens		
G4	1. Live well	2. Eat safely	3. Danger of tobacco
	4. First aid	5. Malaria prevention	6. HIV/AIDS
	7. Puberty	8. Live in harmony	9. Cooperation
	10. Use wisely	11. Follow the rules	12. Become a valuable person
	13. Do not bother	14. Change	15. Nature and creature
	16. What you can do in the event of natural disaster?		
G5	1. Good health habits	2. Ways of eating for resilience against diseases	3. Let's avoid substance dependence
	4. Let's help with first aid	5. Transmission via sneezing and coughing	6. To live together
	7. Health tips for teenager	8. Help each other	9. Let's stop bullying
	10. Let's think from different points of view	11. How to deal with worries and anxieties	12. Let's try to fulfil our goal (future dream)
	13. Let's work together to reduce waste	14. Things we can do for the future community	15. Let's work together to reduce the risks of disasters

■ **Physical Education**

The new Physical Education textbooks consist of four strands: "singing and dancing game," "fitness exercise," "group games" and "competition." Pupils can become interested in physical exercises through learning these contents in a balanced way, and they can be actively involved in some physical activities in order to maintain a healthy body.

G1	1. Warming up exercise	2. Generous "Wa"	3. Let's say 1 to 10
	4. 1, 2 stretch the hands	5. The big car will drive	6. Uniformly
	7. Jumping	8. Running	9. Mimic of different movements like animals
	10. Balancing	11. Playing with ball	12. Rope jumping
	13. Story telling	14. Differences with talking game	15. Ah-Mi-Pinle
	16. Little pigeon and sparrow	17. Ma Aye Mosquito net	18. Giving over the head
	19. Playing like a train game	20. Passing the things	21. Picking up the things
G2	1. Warming up and cooling down exercise	2. Let's play	3. Our union
	4. The little boat	5. Small garden	6. We are happy
	7. Jumping	8. Running	9. Playing mimic
	10. Balancing and flexibility exercise	11. Playing with a ball	12. Rope jumping
	13. "Touching the back" game	14. What time is it? Wolf game	15. Tai-Kuu game
	16. Butterfly game	17. Tag game	18. Giving the balls with hands game
	19. Picking up potatoes game	20. Jumping over the loops game	21. White crow and black crow
G3	1. Warming up and cooling down exercise	2. Let's do exercise happily	3. Let's do physical exercise
	4. Jumping	5. Running	6. Balancing and flexibility exercise
	7. Playing with a ball	8. Rope jumping	9. Over under round
	10. Hula hoop pass game	11. Closing eyes with cloth	12. Change the number game
	13. Building game	14. Three-legged race game	15. Passing a ball on the book game
	16. Race and jump over legs game	17. Throw the ball game	
G4	1. Line up procedures	2. Warming up and cooling down exercises	3. Group fitness exercises (volume 1)
	4. Aerobics exercises	5. Jumping	6. Running
	7. Balancing and flexibility exercises	8. Playing with a ball	9. Rope jumping
	10. Connected game	11. You will be the king if you are the last game	12. Pair game
	13. Taking vacancy game	14. Running through the tunnel game	15. Plucking ribbon game
	16. Carrying a ball game	17. Poor fishing game	18. Train game
	19. Balancing game	20. Three-in-a-row game (Tie Tac Toe)	21. Picking eggs game
	22. Slaloming game	23. Relay game	24. Carrying the ball with poles
	25. Mini basketball	26. Mini volleyball	27. Throwing the ball game
	28. Mini football	29. Stretching	
G5	1. Line up procedures	2. Group fitness exercises (volume 2)	3. Aerobics exercise
	4. Basic track and field movements	5. Balancing and flexibility exercises	6. Playing with a ball by hand
	7. Rope jumping	8. Plucking ribbons game	9. Pan Htote Pyit game
	10. Three-in-a row game	11. Dee Htoe Htut game	12. Htoe See Htoe game
	13. Relay game	14. Throwing rubber ring game	

■ Arts (Performing Arts)

The new Performing Arts textbooks consist of three strands: "song," "traditional dance" and "musical instruments." Pupils can acquire basic knowledge and skills for music through learning these activities with fun. In addition, pupils can also develop rich sensibilities, respect for others, empathy, and feelings of cooperation.

G1	1. A little bird	2. Let's sing and dance with joy	3. Poem for dancing
	4. Basic head movements for dancing	5. Playing the flute	
G2	1. A flower seller	2. Mingalabar (hello)	3. Introduce Myanmar's dance (1)
	4. Introduce Myanmar's dance (2)	5. Let's study the tone of sounds	6. Brother's moon
G3	1. Song of cleanliness	2. A sweet village girl and a small bear	3. Si-wa (put your legs forward) dance
	4. Si-wa (put your legs backward) dance	5. Everyone is pretty	6. Peaceful Myanmar
G4	1. Song: Let's go to school	2. Song: Tobo, Tobo	3. Dance: Dance with legs out
	4. Dance: Puppet dance	5. Musical instruments: Bon Jee Tan	6. Musical Instrument: Love form parents
G5	1. Song: Lepan Pyin Kaw	2. Song: Peace Song	3. Dance: Two Step Dance (A Nyein Byay)
	4. Dance: Leg High-up Dance (Hta Mein Nar Swe)	5. Musical Instrument: See Tee Than	6. Musical Instrument: Three Seasons are fun

■ Arts (Visual Arts)

The new Visual Arts textbooks consist of three strands: "drawing," "craft" and "appreciation." Pupils can acquire basic skills for drawing and creativity through producing art from their own imagination. In addition, pupils can also develop a feeling of pride and cherishing traditional local arts by learning to appreciate them.

G1	1. Draw lines by using colour pencils and crayons	2. Draw pictures and colour them	3. Create simple things by using paper
	4. Create simple things by using materials around us	5. Understand Myanmar's traditional arts	
G2	1. Draw geometrical shapes	2. Draw various shapes by recalling	3. Paper handicrafts
	4. Crafts by using various things surrounding us	5. Understand Myanmar's traditional arts	
G3	1. Draw a picture by using basic skills	2. Understand three primary colours and mixed colours	3. Draw a picture with creative imaginations
	4. Produce an art with imaginations	5. Understand Myanmar's traditional arts	
G4	1. Draw a box	2. Draw overlapping objects	3. Add and draw objects
	4. Learn the three primary colours	5. Distinguish between cool and warm colours	6. Create creatures of various colours
	7. Copy things around you	8. Draw outdoor scenery	9: Imagine and draw a sight you have seen
	10. Draw jointly		
G5	1. Learn the basic skills for drawing	2. Express your ideas and emotions by drawing a picture	3. Make a craft
	4. Appreciate Myanmar's traditional arts		

Since the use of new textbooks started, the MOE requested that the number of pages of textbooks be reduced, maintained across grades, or kept within a set volume. The restriction was placed partly due to the vast budget required to print the textbooks, and partly out of concern about the weight of the textbooks that may be a burden for young children in lower grades. Based on these instructions, the number of pages of textbooks of G3 did not increase and reduced in some subjects compared to those of G2, while the volume of textbooks normally increase as the grade progresses and the content becomes more advanced. Reducing the volume in the middle of textbook development process caused problems such as compromising the consistency of the content. In order to avoid such situations, the number of pages of textbooks was discussed and agreed upon before the start of textbook development. Although weight of textbooks was no longer considered a serious issue for upper-primary grades, CDTs were still requested to minimize the increase of volume at the approval stage. Number of pages of textbooks is shown in Table 3-6 below.

Table 3-6: Number of Pages of Textbooks by Subject and Grade

Subject	G1	G2	G3	G4	G5
Myanmar	160	120	92	110	116
English	118	124	90	110	112
Mathematics	164	156	148	188	188
Science	84	84	84	130	130
Social Studies	84	60	72	76	80
Morals and Civics	76	76	76	80	78
Life Skills	76	60	58	76	72
Physical Education	68	68	68	96	96
Arts (Performing Arts)	52	48	44	48	48
Arts (Visual Arts)	52	54	54	52	46

Note: The number of pages is based on the data prepared for printing the deliverables.

(2)   Teacher's Guides

The development of teacher's guides generally started when the new textbooks were completed to a certain extent. But the process of developing teacher's guides was different from subject to subject, because in some subjects the CDT proceeded developing both textbooks and teacher's guides at the same time. Despite such different work processes, the basic steps for teacher's guides development were the same in all subjects that are indicated in Table 3-7 below. It took five to six months to develop teacher's guides in all subjects, with the exception of G1 teacher's guides.

Table 3-7: Process and Timeframe of Techer's Guide Development

Steps	Work	Teacher's Guides for G1	Teacher's Guides for G2 to G5
1st Step	Create the new teacher's guide design	July to September 2015	May since 2017
2nd Step	Examine the effectiveness of the new teacher's guides in local schools	December 2015 to March 2016	June to November[20]
3rd Step	Revise and finalise the new teacher's guides	January to August 2016	December

Note: The duration for developing teacher's guides for each grade is as follows: G1 teacher's guides (May to December 2017); G3 teacher's guides (May to December 2018); G4 teacher's guides (May to December 2019); and G5 teacher's guides (May to December 2020)

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[20] Try-out lessons to verify the effectiveness of teacher's guides were not conducted for G5 because the schools were closed at time of teacher's guide development due to regulations for COVID-19 infection prevention.

Based on the instruction of the MOE, the size of the new teacher's guides was decided at 10.75 inches long (273.05 mm) and 8.25 inches wide (209.55 mm). The design was made in consideration of the usability by teachers. Specifically, a copy of the textbook page was placed in the centre of the two-page spread and detailed lesson processes and instructions were described on the left and right sides of the pages (Figure 3-4). The organisation of the teacher's guides is shown in Figure 3-4. Under the copy of the textbook page, important points for teachers to keep in mind during lessons were described. With this design of teacher's guides, teachers do not have to look at both textbook and teacher's guide during preparing for their lesson plans. They only need to look at the teacher's guides.
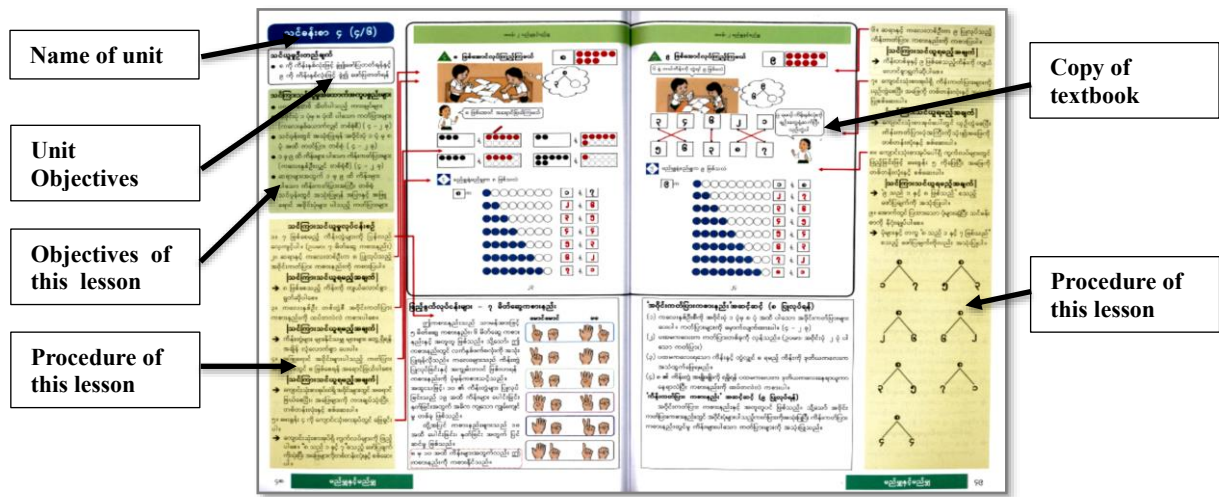
Figure 3-4: Design of Teacher's Guides

Such specification was described in the "Guideline on Textbook and Teacher's Guide Development" and this booklet was shared among the MOE, the NCC, the SWC the CDT, and the project experts, in order to build a common understanding of teacher's guide development. There was one exception with the design of the English teacher's guides, which was slightly different from the other 9 subjects. This was because the SWC strongly insisted that the learning content and instructional methods of English were significantly different from the other subjects and the design of teacher's guides must follow this. Numbers of pages of the developed teacher's guides are shown in Table 3-8.

Table 3-8: Number of Pages of Teacher's Guides by Subject and Grade

Subject	G1	G2	G3	G4	G5
Myanmar	162	180	192	214	214
English	158	166	194	240	228
Mathematics	258	182	170	200	174
Science	128	100	102	152	154
Social Studies	76	58	68	106	116
Morals and Civics	84	84	84	96	90
Life Skills	94	84	94	108	116
Physical Education	84	84	84	112	118
Arts (Performing Arts)	62	62	62	64	58
Arts (Visual Arts)	54	52	52	58	60

The new teacher's guides of each subject and grade were distributed to all teachers nationwide and the teachers can implement their lessons by referring to them.

(3)   Approval of Textbooks and Teacher's Guides

New textbooks and teacher's guides became formal school educational materials through the approval of the NCC. After the approval, the MOE printed the textbooks and teacher's guides and distributed them to local schools nationwide. The date of approval of textbooks and teacher's guides by NCC is shown in Table 3-9 below.

Table 3-9: Approval Date of Textbooks and Teacher's Guides by the NCC

	G1	G2	G3	G4	G5
Textbooks	December 2016	November 2017	September 2018	September 2019	January 2021
Teacher's Guides	December 2016	November 2017	January 2019	December 2019	Approval pending

Note: The approval date of textbooks and teacher's guides were different from subject to subject. Therefore, the months when all subjects were approved are shown in the above table.

In textbook editing, the project was mainly concerned with setting policy before starting, checking progress, providing guidance during development and checking data after completion. The editing process for G1 textbooks was very complicated due to the time taken to establish collaboration with the SWC, the delay in establishing the NCC[21], and the different perspectives on illustrations, style, and other non-curricular content that were raised at various stages of the editing process. In May 2016, just a few months before the deadline, the MOE set up a small group called Editing Committees within each SWC and instructed them to carry out intensive peer reviews, which led to the finalisation of the textbook on time. In the light of this lesson, the editing of textbooks from G2 onwards was carried out in consultation with the SWC from a relatively early stage in the development process, in order to facilitate the approval process by carefully agreeing on not only the curriculum outlines for each subject, the basic concept and structure of learning for each grade, and the editorial policy, but also the content of each individual unit. In principle, all units were to be submitted to the NCC only after they had been completed, but the introduction of the new secondary school curriculum made it necessary for the NCC to review a large number of textbooks in a short period of time, so the procedure was changed to one in which the units approved by the SWC are submitted sequentially.

(4)   Inhouse Workshops and Seminars for Developing Textbooks and Teacher's Guides

For developing quality textbooks and teacher's guides, various knowledge and skills are required. The CDT, who was in charge of textbook and teacher's guide development, unfortunately lacked such knowledge, skills and experience at the beginning of the project. Therefore, in addition to daily continuous instruction, the project organised various workshops and seminars for the CDT through the project period. Some of them were conducted in collaboration with other development partners. These workshops and seminars included one for strengthening the CDT's understanding of the CCA, one for providing basic knowledge of curriculum development, and ones related to gender issues, inclusive education, the education for sustainable development (ESD), and assessment. The major workshops and seminars are shown in Table 3-10 below.

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[21] The National Education Policy Commission (NEPC), the upper body of the NCC, was set up in September 2016 and the NCC in November 2016, with all subjects approved by the following December.
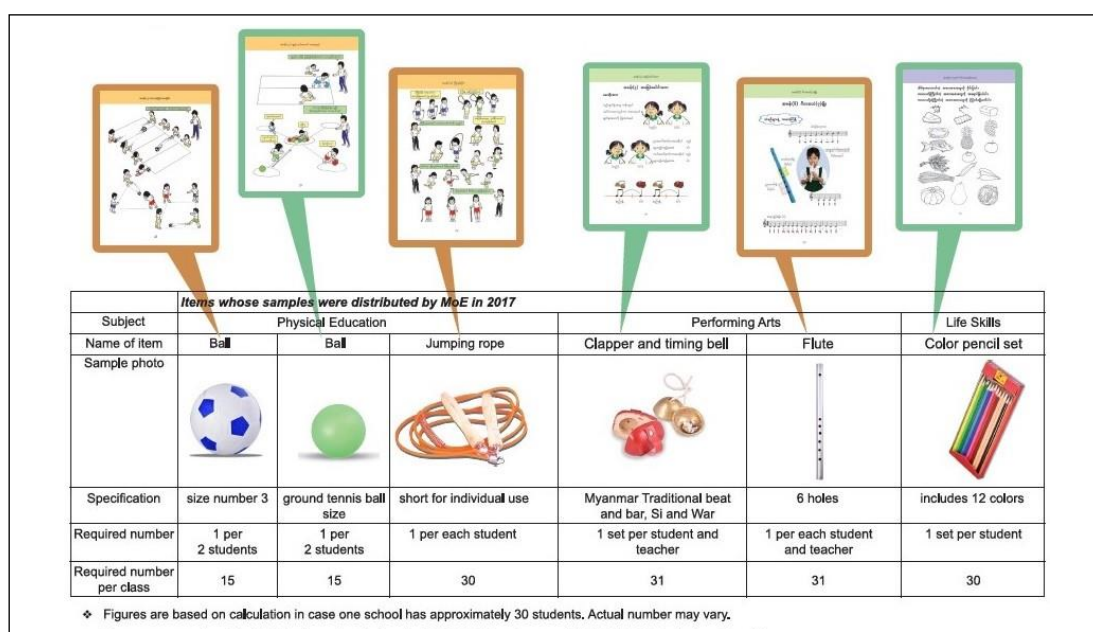
Table 3-10: Training for the CDT related to Textbook and Teacher's Guide Development

Names of Training	Date	Lecturers
Understanding of CCA Lesson Practices	August 2014 to November 2018	Yangon Japanese Schools (Principal and Teachers, including discussion and visit to sport day and school festival)
Workshop for Curriculum and Gender	June 2015	CESR consultant
Workshop for Inclusive Education	November 2015	VSO volunteer
Workshop for Developing the Curriculum of English	January 2016	British Council
Workshop for Inclusive Education	May 2017 August 2017 (by subject) December 2017 March 2018 (by subject)	Myanmar Independent Living Initiative: MILI
Workshop for Textbook Development in Consideration with Inclusive Education	July 2017 March 2018	Save the Children
Workshop for ESD	February 2018 February 2019	UNESCO
Workshop for Assessment focusing on Formative Assessment	November 2018	CREATE
Workshop for Life Skills	December 2018	UNICEF, UNFPA
Orientation Seminar for Textbook and Teacher's Guide Development	June 2014 July 2015 June 2016 September 2017 July 2018 September 2018 July 2019	CREATE

Note: VSO: Voluntary Service Overseas
          UNFPA: United Nations Population Fund

(5) Proposal of Teaching and Learning Materials Necessary for Implementing the New Curriculum

In developing the new curriculum, the use of sophisticated equipment and expensive materials has been avoided as much as possible, so that learning activities can be carried out using textbooks and everyday materials. However, the learning process for the new curriculum does require minimum teaching-learning materials. The project prepared a list of these materials for each grade and provided it to the MOE. In selecting teaching-learning materials, the project tried to choose specifications that are readily available in Myanmar to ensure the convenience of replenishment. In addition, distribution of posters of durable material based on textbook pages was proposed for Life Skills, Physical Education, Performing Arts and Visual Arts, as the textbooks of these four subjects are distributed only to teachers and not to the children in lower primary grades.

	Items whose samples were distributed by MoE in 2017					
Subject	Physical Education			Performing Arts		Life Skills
Name of item	Ball	Ball	Jumping rope	Clapper and timing bell	Flute	Color pencil set
Sample photo						
Specification	size number 3	ground tennis ball size	short for individual use	Myanmar Traditional beat and bar, Si and War	6 holes	includes 12 colors
Required number	1 per 2 students	1 per 2 students	1 per each student	1 set per student and teacher	1 per each student and teacher	1 set per student
Required number per class	15	15	30	31	31	30

❖ Figures are based on calculation in case one school has approximately 30 students. Actual number may vary.

Figure 3-5: Example of Proposed Teaching-Learning Materials (G1)

Based on the information on teaching-learning materials and the design of posters proposed by the project, the MOE procures and distributes the materials. According to Department of Basic Education (DBE), which is in charge of the distribution of textbooks and teaching-learning materials, all the items on the list are distributed only in the first year of the introduction of each grade in reduced quantities due to budgetary constraints. However, it is envisaged that the lack of quantity may affect the learning process, and that children in the second and subsequent years of introduction may not receive the consumables. According to interviews conducted as part of the impact study, in some cases the instructions on how to use the teaching materials and posters were not clear, and in other cases the materials were distributed late for the implementation of the lesson of the unit in which they were to be used, so operational improvements are required.

A summary of the list of teaching-learning materials produced by the project is given in Table 3-11.

Table 3-11: List of Essential Teaching-Learning Materials (G1-G5)

Grade / Subject	Materials : Quantity (per pupil, group, class, and school)				
	GRADE 1	**GRADE 2**	**GRADE 3**	**GRADE 4**	**GRADE 5**
English	1. Audio DVD: 1 / school 2. E-DVD player with built-in speaker: 1 / school	1. Audio DVD (G1&G2): 1 / class 2. Picture cards: 202 cards / class 3. Colour paper: 3 packets / class	1. Picture cards: 1 / school 2. Flip charts: 1 set / class 3.	1. Flash cards (161 cards): 1 set / class 2. Audio CD: 1 / school	1. Flash cards (77 cards): 1 set / class
Mathematics	1. 1 meter ruler : 1 / class	1. Square dotted paper (A4 size): 2 sheets / pupil 2. Grid paper (A4 size): 2 sheets / pupil 3. A4 coloured sheet: 8 sheets / pupil 4. Multiplication vinyl chart (10 x10): 1chart / class	1. Measuring 1 litre cup with ml marks: 1 / class 2. Scale (measuring up to 5 kilogram): 1 / school 3. Clock: 1 / class 4. Large compass (for teacher): 1 / school 5. Large square set (for teacher): 1 / school	1. Health scale: 1 / class 2. Large protractor: 1 / class 3. A pair of large set squares: 1 / class 4. Protractor: 1 / pupil 5. A pair of set squares: 1 / pupil	1. Tracing paper : 4 / pupil 2. Compass (small): 1 / pupil 3. Compass (big): 1 / class 4. Protractor and set-squares (small) : 1 / pupil 5. Protractor and set-squares (big) : 1 / class
Science		1, Magnifying hand lens: 1 / 6 pupils	1. Thermometer: 1 / 4-8 pupils 2. Magnet: 1 / 4-8 pupils 3. Compass: 1 / 4-8 pupils	1. Ring and ball apparatus: 1 / school 2. Sound meter: 1 / school 3. Globe: 1 / school 4. Model of the Sun, Earth and Moon: 1 / school	1. Laboratory thermometer: 1 / group of 4 2. Metal tripod stand: 1 / group of 4 3. Evaporating basin: 1 / group of 4 4. Alcohol burner: 1 / group of 4 5. 1.5 V light bulb: 1 / group of 4 6. 3 V light bulb: 1 / group of 4 7. Buzzer: 1 / group of 4 8. Laser pointer: 1 / group of 4 9. Glass slab: 1 / group of 4
Social Studies					1. Map of natural part of the region of Myanmar: 1 / class 2. Map of neighbouring countries of Myanmar: 1 / class
Life Skills	1. Colour pencil set: 1 / pupil	1. A4 size paper (for group work): 1 packet / class 2. A4 size cards for each lesson (16 cards/set): 1 set / pupil 3. Vinyl poster: 4 / class	1. "Decision card": 16 cards / pupil 2. Vinyl poster: 3 / class	1. "Decision card": 18 / pupil 2. Vinyl poster: 8 / class	1. Vinyl poster: 4 / class 2. Wall paper: 3 / class 3. "Decision card": 15 / pupil 4. Writing paper, drawing paper: 5 / pupil 5. Colour pencils (red, blue): 12 / school 6. Balloon: 3 / class

Grade Subject	Materials : Quantity (per pupil, group, class, and school)				
	GRADE 1	GRADE 2	GRADE 3	GRADE 4	GRADE 5
Physical Education	1. Ball (No.3): 1 / 2 pupil 2. Ball (ground tennis ball size): 1 / 2 pupils 3. Individual jumping rope: 1 / pupil	1. Ball No.3: 1 / 4 pupils 2. Individual skipping rope (adjustable): 1 / pupil 3. Adjustable rope or long rope: 1 / 2 pupils 4. Small colourful plastic balloon (50/packet): 2 packets / class	1. CD (including two songs for sing and dance units): 1 / school 2. Jumping rope: 1 / pupil 3. Long jumping rope: 1 / 4 pupils 4. Hula hoop: 1 / 8 pupils 5. Plastic ball (No.3): 20 / school 6. Basketball ring: 7 / school 7. Basketball poles (PVC pipe): 3 / school 8. Hurdles (PVC pipe): 5 / school	1. PVC pipe (2 feet 6 inches) : 10 / class 2. Hula hoop (diameter 3 feet): 10 / class 3. Ribbon (3 feet): 10 / class 4. Balloon: 10 / class 5. 5. Plastic rope: 1 / school 6. Rubber ring: 3 / class 7. Plastic egg: 2 bags / class 8. Plastic basket (small): 2 / class 9. Basketball (no.3 size): 3 / class 5. Volley ball: 3 / class	1. Basketball (No.3): 3 / class 2. Basket goal ring: 2 / school 3. Velley ball (No. 5): 3 / class 4. Soft ball: 10 / class
Performing Arts	1. Si-War (Myanmar traditional clapper and bell): 1 / pupil and teacher 2. 6 holes flute: 1 / pupil and teacher	1. Si-War: 1 / class 2. 6 holes flute: 1 / 1 pupil 3. Vinyl poster: 14 / class	1. Si-War: 1 / class 2. 6 holes flute: 1 / pupil 3. Vinyl poster: 13 / class	1. Si-War: 1 / class 2. 6 holes flute (442 Hz): 1 / pupil 3. Vinyl poster: 10 / class	1. See-War: 1 / class 2. 6 holes flute (442 Hz): 1 / pupil 3. Vinyl poster: 15 / class
Visual Arts	1. Art Box 1 (crayon, watercolour, 2 brushes): 1 / pupil and teacher 2. Art Box 2 (drawing pencil, drawing paper, colour paper, scissors): 1 / pupil and teacher	1. A4 size paper (for drawing): 3 packages / class 2. Crayon: 1 box / pupil 3. Painting set (3 Cups, 3 Brushes, Water colour - 12 colour): 1 set / 6 pupils 4. Plastic string (5 colours): 1 set / class 5. Scissors: 1 / pupil 6. Stapler: 1 / 6 pupils 7. Vinyl poster: 4 / class	1. Poster colours: 1 / 5-6 pupils 2. Paint brush set (4 brushes): 1 set / pupil 3. Palette (for watercolours): 1 / pupil 4. A4 paper (white): 20 / pupil 5. A4 paper (colour): 2 / pupil 6. Crayon: 1 set / pupil 7. Plastic bag (size 12 x 15): 1 / pupil 8. Plastic bag (size 5 x 9): 1 / pupil 9. Cup (watercolours): 1 / pupil 10. Tape: 1 / pupil 11. Scissors: 1 / pupil 12. Markers: 1 / pupil 13. Vinyl rope: 1 / class 14. Vinyl poster: 3 / class	1. A4 paper: 24 sheets / pupil 2. Crayons (12 colours): 1 box / pupil 3. Water colour (yellow, red, blue, white, black): 1 set / group of four 4. Palette (with 14 small cells):1 / pupil 5. No. 10 brushes (round, flat): 1 set / pupil 6. Colour paper: 2 sheets / pupil 7. Scissors: 1 / pupil 8. Glue: 1 / pupil 9. Tape in cutter: 1 / four 10. Stapler: 2 / four	1. A4 Paper (set of 32 sheets): 1 / pupil 2. Crayons : 1 / pupil 3. Water colour (Yellow, Red, Blue, White, Black, Orange, Green, Purple): 1 / group of 4 4. Palette: 1 / pupil 5. No. 10 brushes (round, flat): 2 / pupil 6. Bucket: 2 / class 7. Colour paper: 3 / pupil 8. Chopstick: 2 / pupil 9. Scissors: 1 / pupil 10. Glue: 1 / pupil

3.2.3   Editing, DTP, and Printing

(1)   Steps of Editing and DTP

After the draft textbooks and teacher's guides for each grade were completed by the CDT and the project experts, DTP work was carried out by the operators (MOE staff in charge of DTP and CREATE's editorial staff) and proofs were produced. These were submitted to the SWC and the Department of Myanmar Nationalities' Languages (DMNL) for review from content and language points of view respectively. After revising as instructed by the SWC and DMNL, the final draft was prepared in the project by checking the design and printing data, and was submitted to the NCC for the final review. It was then revised and resubmitted to the NCC for their approval, and finally became an official textbook and teacher's guide. Table 3-12 shows the procedure of editing, proofreading and DTP.

Table 3-12: Process and Timeframe for Editing, Proofreading and DTP of Textbooks and Teachers' Guides

Steps	Work	Grade 1 Materials	Grades 2 to 5 Materials
1st Step	Submit the first draft to the SWC	November 2015 to May 2016	August to October (Since 2017)
2nd Step	Revise the draft and make the second draft	January to May 2016	August to November
3rd Step	Submit the second draft to the DMNL, MOE	N/A	September to November
4th Step	Revise the draft and make the third draft	February to June 2016	September to November
5th Step	Submit the third draft to the SWC	February to July 2016	October to December
6th Step	Revise the draft and make the final draft	March to August 2016	October to December
7th Step	Submit the final draft to the NCC and Approval	March to August 2016	November to December

Note 1: DMNL was in charge of editing work of the second draft from G2 textbooks and teacher's guides. Before DMNL, the SWC was in charge of this process. In addition, regarding G4 and G5 textbooks and teacher's guides, the University of Yangon (Department of Myanmar Language) was temporarily in charge of this process because of DMNL's tight schedule to review other grades' textbooks that were ongoing at the same time.

Note 2: Regarding the development of textbooks and teacher's guides from G1 to G5, the procedure was slightly different from subject to subject. Some subjects proceeded the above process unit by unit. The above working periods are shown as average periods.

(2)   Establishment of Editorial and DTP Processes and In-House Training

At the beginning of the project, none of the project's counterpart personnel had any experience in editing, such as drafting, proofreading and revising curriculum documents, designing textbook pages, producing illustrations and photographic diagrams, and working on InDesign. Therefore, in the first training course in Japan "Study Tour for Editing Textbooks" (described in section 2.2.4), the trainees, mainly the CDT members, were instructed on how to edit textbooks and what to keep in mind, and a basic InDesign course was conducted to the operators. Until then, "textbook revision" in Myanmar meant minor proofreading by pasting images onto PDF files used for printing in the previous year, which was very different from the practice of textbook editing in Japan, and the prerequisite environment and conditions were also different. For this reason, in parallel with the actual editing work, the project developed a system, procedures, and necessary techniques and methods for editing textbooks suitable for the conditions and context in Myanmar. In addition to the guidance from subject experts, textbook editing experts provided specific advice on design and editing as needed during the development of textbooks for each subject, and checked the data before submission to the NCC and after approval and before submission of data for printing.

In terms of notation, it was found that the Myanmar fonts specified by the MOE for G1 textbooks contained some incomplete forms. As a result of the investigation, it was found that none of the Myanmar fonts in common use at the time could reproduce all Myanmar characters perfectly, and that the government-promoted Unicode font was incomplete and could not be used with Adobe software such as InDesign[22]. No problematic characters have been used since.

As described above, the development and editing of the new curriculum was based on the knowledge of experts in various fields such as curriculum, subject matter and editing, while carefully monitoring and flexibly responding to the situation under which the stakeholders in Myanmar were working. In addition to the continuous guidance given by experts, meetings and training sessions on editorial practice were organized, as shown in Table 3-13 below.

Table 3-13: Major Training Related to Textbook Editing

Title of Meeting and Training	Date	Instructor
Textbook Editing Meeting (including textbook cover design and production of illustrations)	12 times from December 2014 to December 2019	Project experts
Basic Computer Course	January and September 2015	Project local staff
Editing and Proofreading Training	October 2015	Project experts
Textbook Editing Seminar for Department of Myanmar Education Research (DMER) Officials	June 2016	Project experts

For the establishment of quality control system, procedures need to be decided based on the experience of actually inspecting delivered textbooks. Also, the old habit of making changes on the finalised textbook data at the printing stage was negatively affecting management of original master and print quality of the textbooks. In order to address these issues, another seminar on textbook quality control had been planned to be organized in the latter half of 2020. However, it was cancelled due to restrictions for COVID-19 infection prevention, and in its place, a material on the topic was prepared for future reference.

(3)   Survey and Training in Printing Technology

The role of the project in the development of the new textbooks and teacher's guides stipulated in the PDM is up to the preparation of print-ready data. However, it is difficult for the new curriculum to be fully utilised unless the textbooks and teacher's guides that have been developed are available to children and teachers as books in the appropriate quality. For this reason, the project contributed to securing the budget for the printing of textbooks for the new curriculum by estimating the budget. It also contributed to ensuring the appropriate textbook printing and introduction of a quality control system of textbook printing mainly by the printing technology expert who visited the site on a regular basis. The intervention included checking the quality of the textbooks actually distributed in schools, surveying the current status of printing at printing houses, conducting interviews with the Myanmar Printing and Publishing Association (MPPA), and conducting seminars for ministries in charge of textbook printing and representatives from printing companies.

Due to the very short turnaround time for the G1 textbooks caused by the delay in approval, some of the distributed textbooks showed problems in printing and binding. Therefore, in addition to technology transfer through seminars and other means, the project also provided the MOE with samples of the imposition paper[23] along with sample books and print-ready data when submitting the approved textbooks to the MOE, so that the intended design could be reproduced more

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[22] Subsequent development and refinement of the Myanmar Unicode font has led to its increased use in many applications on digital devices, but as of the end of the project, its use in print has not been confirmed.

[23] Placing data for each page in the correct order on the printing sheet.

accurately in the printed version of the textbook. As the ordering of textbook printing was transferred from the MOE to the Ministry of Information (MOI) from 2018, the training on textbook printing for G3 was held for representatives of the MOE, the MOI and the MPPA.

The recommendations and technology transfer made for textbook printing can be divided into three stages:

- Phase 1 (2014-2017): Identification of issues in textbook printing and binding and recommendations to the MOE on the introduction of a quality control system.

- Phase 2 (2018-2019): Presentation of quality control methods to the MOE, the MOI and to printing companies, mainly from a production point of view.

- Phase 3 (2020): Proposal of introduction of minimum quality standards for textbooks and a method to check whether delivered textbooks meet these standards, for inspectors in District Education Offices (DEO) across the country.

The major surveys and seminars conducted to improve the printing of textbooks are listed in Table 3-14 below.

Table 3-14: Survey and Seminars on Textbook Printing

Title of Survey and Seminars	Date
Textbook printing survey (including printing house). Report and proposal to DEPT of the MOE.	June to August 2014
Textbook printing survey (MPPA)	May to July 2015
Textbook printing survey (printing companies). Discussion with Minister for Education and presentation of proposal.	June to July 2016
Textbook printing survey (printing companies). Advice on quality control of textbook printing.	November 2016
Discussion with DERPT, DBE on quality control in textbook printing	September 2017
Textbook printing survey (schools, printing houses, and MPPA). Textbook printing technology seminar for senior management of the MOI, the MOE, and the MPPA	October 2018
Textbook printing survey (schools, printing houses, and MPPA). Textbook printing quality improvement seminar for senior management of the MOI and printing companies	February 2019
Textbook printing survey (schools, printing houses, and MPPA). Textbook printing quality standard seminar for textbook inspectors	February 2020

(4)   Distribution of Textbooks and Teacher's Guides

As mentioned in (1) above, the project was responsible for the process of obtaining the final approval from the NCC and completing the official textbook and teacher's guide data. Once the approved textbook/teacher's guide data and sample books were submitted by the project to the MOE, they were printed with the arrangement of the MOE and the MOI and delivered to DEO nationwide. After the books are inspected by DEO and delivered to Township Education Offices (TEO), the teacher's guides are distributed as one of the training materials in the township level training for the new curriculum introduction. The textbooks are distributed to each school by the first of June when the new school year begins.[24]

In Myanmar, textbooks are often not distributed in time for the new school year, and textbooks and teachers' guides for G1 were notoriously late due to short delivery times. Although the

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[24] Teacher's guides for G1 were distributed at the start of the new school year, together with textbooks. Teacher's guides for G4 were distributed at the training for the new curriculum introduction; textbooks for G4 were distributed to schools as usual, but were not in the hands of children by the end of the project due to the ongoing closure of schools affected by COVID-19.

situation has improved from G2 onwards, in some cases, particularly in remote and conflict-affected areas, distribution before the start of the new school year is difficult, and efforts are being made by the MOE and the MOI to ensure smoother distribution. The distribution of the new teacher's guides to teachers at the venue of the training for the new curriculum introduction allowed teachers to confirm the content and teaching methods for the whole curriculum in advance, and is thought to have contributed to improving the effectiveness of the training. However, problems were observed: teachers who are absent from the training due to illness or maternity leave cannot receive the teacher's guides; when a teacher moves to another school, he or she takes teacher's guides as personal property, leaving the school and his or her successor with no teacher's guides; and new teachers cannot receive teacher's guides for the grade that have been already introduced unless they request. Therefore, during the training, the MOE instructed that school head teachers will keep the necessary number of teacher's guides and ask teachers to return them to the school upon transfer.

(5) Corrections to Textbooks and Teachers' Guides

As detailed above, during the development of textbooks and teacher's guides, various people are involved in proofreading and checking the content, but it is possible that some typographical or other errors may be found at a later date. In addition, although efforts are made to adopt more appropriate explanations and activities through try-out lessons, the very limited timeline for developing the curriculum for one academic year in one year may not allow for full consideration. There were some problems with the print data for G1 materials. Therefore, the project provided support for the production of corrected versions of approved textbooks and teacher's guides. The management of the corrected editions was based on the Japanese method of textbook production, using a list of corrections, a Master Original and a Print Original.[25] Corrections to textbooks and teachers' guides were made in the order shown in Table 3-15.

Table 3-15: Procedures of the Correction of Textbooks and Teacher's Guides

	Steps	G1	G2	G3	G4
1	The CDT, under the guidance of the project, prepared a list of corrections that need to be made and Print Original copy showing the corrections. The list of corrections and copies of the Print Original were submitted to the MOE or the NCC.	June 2018 September 2019 February 2020	November 2018 September 2019 February 2020	September 2019 February 2020	February 2020
2	Approval of corrections by the MOE[26].	March 2019	March 2019	July 2020	July 2020
3	Based on the approved corrections, the project filled in the corrections on the Print Original and Master Original, edited the data for printing, and submitted the corrected data and Print Original to the MOE.	April 2019	April 2019	July 2020	July 2020

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[25] Master Original is the first printed edition with the corrections written in and labeled on the relevant pages, and the Print Original is the latest edition before the corrections are made, with the corrections indicated in the same way. Because of the number of minor corrections made each year, the Master Original is marked in a different colour and with a different sticky note for each correction. This allows the revision history to be tracked from edition to edition.

[26] G1 and G2 textbooks and teacher's guides were planned to be thoroughly corrected according to instruction by the MOE. However, due to a change in approval process, the first revision was decided to be limited to corrections of topographical errors. Therefore, the version of G1 and G2 books reflecting more comprehensive corrections was printed for AY2020 distribution at the same time as the corrected G3 and G4 books. Also, two rounds of corrections were reflected in the same batch of G1 to G3 books, because the new G4 books were completed before the corrections of previous grades were approved, and a decision was made to make corrections on the new G4 books without waiting for them to be used in classrooms, along with additional corrections on G1-G3.

3.2.4   Assessment

(1)   Assessment Issues Before the Project

The results of CESR indicated that assessment in Myanmar had taken the following path; basically, teachers teach the same phrases as written in textbooks repeatedly and pupils memorise and recite what teachers say. The Continuous Assessment and Progress System (CAPS) was introduced in AY1998 in order to improve the conventional teaching-learning process. The CAPS was intended to incorporate Classroom-Based Assessment (as formative assessment), however as a result, it did not improve the conventional teaching-learning process. The introduction of the Chapter-End Test (CET) in CAPS has, on the contrary, resulted in the reinforcement of the conventional memorization-oriented tests. Parents began to send their children to cram schools (tuitions) to prepare for CET, which became a monthly test, and the cost became a financial burden for households.

Students learning at the primary level was assessed with the following two main criteria under the previous curriculum in Myanmar.

  (a) The results of CET (monthly test), semester-end test (SET), and year-end test (YET)

  (b) Attitude towards school activities: attendance rate, taking exams, obeying school regulations, helping teachers and parents, keeping school grounds clean, participation in sports and art activities, etc. (2 levels)

The following characteristics can be indicated regarding school test implementation related to (a) above.

  (1) written test centered

  (2) marking oriented

  (3) memorization of textbooks is encouraged
       (questions are directly taken from descriptions in textbooks)

Based on the above situation, the SCCA project, assisted by JICA, introduced and promoted teaching-learning process realising CCA, formative assessment, and assessment for wider range and higher order thinking skills rather than just rote learning and knowledge.

CREATE has promoted the above SCCA's direction and taken further steps. The project introduced a new primary assessment to meet the orientation of Myanmar's new primary curriculum, designed with international standards and 21st century skills at its core. The project's assessment experts re-examined how to indicate competencies required in the new primary curriculum, and how to arrange them in order to design new assessments in line with the views, orientations, and contents of the new primary curriculum. The project proposed the new primary assessment guidelines to the MOE and stakeholders. The specific suggestions for the new primary assessment can be summarised as follows.

  • Shifting emphasis from summative assessment to formative assessment (a viewpoint of assessment to promote pupils' learning and improve teacher's facilitation skills)

  • Assessment for wider, more diverse, higher order thinking skills rather than mere knowledge by rote learning (introduction of various and concrete item types)

- Introduction of performance assessment for aesthetic and Physical Education or expression activities (with simplified rubrics[27])

- Introduction of portfolio assessment to see and reflect change and depth in learning or performance over a certain period (i.e., a semester or a year)

- Introduction of pupil's self-assessment to reflect one's own learning (supported by teachers)

- Introduction of simplified assessment sheets for formative assessment

Through a series of seminars, workshops, and discussions[28], the MOE and the project reaffirmed the need for a drastic change from the conventional assessment and agreed on the above proposal as basic approach. In line with such approaches, the following assessment guidebooks and tools were developed and are already in use .

Moreover, the above approaches and concepts of the new primary assessment directly influenced the Primary Student Learning Assessment Framework (PLAF) and National Assessment Policy (NAP) since discussions and confirmation of the new primary assessment guidelines progressed before designing overall assessment frameworks and the secondary assessment.

(2)   Reference Book on Classroom Assessment at the Primary Level

Reference Book on Classroom Assessment at the Primary Level (hereinafter referred as Reference Book) introduces the background of the new assessment introduction, explanation regarding the new assessment approaches, categories of competencies of the new primary curriculum, concrete steps to design assessment items and rubrics, and new forms for recording assessment. The Reference Book, developed by the project, indicates orientations of the new primary assessment. The descriptions were written to avoid excessive complexity and to be user-friendly for primary teachers to utilise it without difficulties.
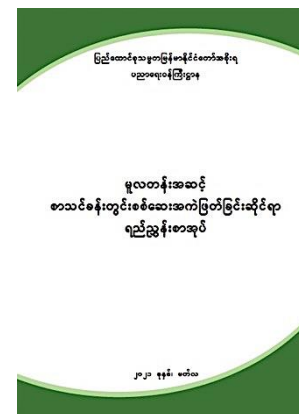
The Reference Book is also positioned as an introduction for Sample Exercises indicated in the following section. The Reference Book was officially approved in September 2018. The contents of the Reference Book are indicated in Table 3-16 below.

[27] Assessment table that indicates evaluation viewpoints and criteria.
[28] The seminars that were organised by the project to help set the basic direction of primary assessment included Primary Assessment Workshop in August 2015 and July 2016, Information Sharing Seminar in March 2017, Primary Assessment Seminar for NCC in June 2017, and Primary Assessment Seminar for SWCs in March 2018. In addition, close communication was maintained with NEPC, NCC, DERPT, DME, DBE, and ADB assessment experts regarding the basic principles of primary assessment of the new curriculum.

Table 3-16: Table of Contents of Reference Book on Classroom Assessment for the Primary Level

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1. **Background**
   New National Education System
   Basic Education Curriculum Framework in Myanmar
   Primary Student Learning Assessment Framework in Myanmar
2. **Objectives of Educational Assessment**
3. **Educational Assessment Categories and Approaches**
4. **Assessment Design**
   What needs to be assessed?
   How do we assess student's learning?
   1) Questions for Exercises
   2) Performance Assessment
   3) Flow of Question and Rubric Design
   4) Portfolio Assessment
   5) Self-Assessment
5. **Classroom Formative Assessment**

Suggested Assessment Format for Reflection and Feedback

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(3)   Sample Exercises for G1-G5

Sample Exercises for G1–G5 (hereinafter referred to as Sample Exercises) contain items and rubrics of 10 subjects. The volume varies from 50 to 100 pages for each grade. It is expected that primary teachers refer to items and rubrics in Sample Exercises for classroom activities and achievement tests. Each grade version of Sample Exercises has been developed annually. Thus far, Sample Exercises for G1–G4 were approved and distributed to schools nationwide[29]. The table of contents of Sample Exercises is as shown in Table 3-17.
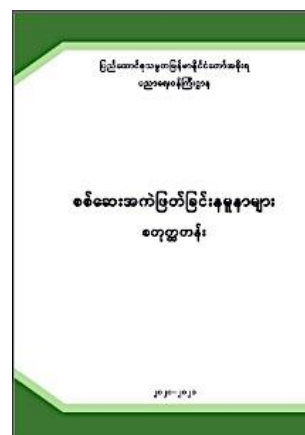
As mentioned above, assessment tools consist of mainly two types: item types and rubric types. Item type can be utilised for achievement or periodical tests as well as tasks of classroom activities. Item type includes both closed questions with fixed answers and open questions with unfixed answers and free descriptions. Item type at the primary level suggested by the project adopts three levels of thinking skills (Remembering, Understanding, and Applying) to indicate the higher order thinking skills based on the revised Bloom's Taxonomy (Anderson & Krathwohl, 2001[30]). Originally, the revised Bloom's taxonomy indicated six cognitive process dimensions: Remember, Understand, Apply, Analyse, Evaluate, and Create. The upper dimensions (Analyse, Evaluate, and Create) are consolidated into Applying level or higher level in primary education. It is intended to be simple so that Myanmar primary teachers can easily understand the new item types and utilise them in classroom activities.

Rubric type means performance assessment. Rubrics indicate concrete viewpoints and criteria for learning activities. Rubrics are utilised for assessing performances such as exploration processes, works, expression, physical activities etc., which do not require correct answers.

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[29] G5 Sample Exercises was not officially approved before the end of the project period due to the political changes that occurred in February 2021.

[30] Anderson, K. W., & Krathwohl, D. R. (2001) *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives: Complete Edition*. New York, Longman

Table 3-17: Table of Contents of Sample Exercises

1.   Background
2.   Introduction
Student Learning Assessment
Classroom-level Assessment
Sample Exercises for Each Grade
3.   Subject-wise Sample Exercise Items and Rubrics for Each Grade
3.1 Myanmar Language
3.2 English
3.3 Mathematics
3.4 Science
3.5 Social Studies
3.6 Morals and Civics
3.7 Life Skills
3.8 Visual Arts
3.9 Performing Arts
3.10 Physical Education

The MOE has proactively introduced and disseminated the Sample exercises together with the Reference Book at various occasions nationwide. The project also presented the new primary assessment based on Sample Exercises and he Reference Book as a panel with ADB and UNICEF at the Assessment Information Sharing Seminar in mid-October, 2018. Additionally, the CDT and assessment counterparts served as trainers at the national assessment training programme implemented in December, 2018 and introduced the new primary assessment approaches and provided detailed explanation on the Sample Exercises for G1 and G2 and the Reference Book.

(4)   Guidebook on Classroom Assessment for the Primary Level

The Guidebook on Classroom Assessment at the Primary Level[31] is developed to indicate how to utilise the Reference Book and Sample Exercises above and how to practice the new primary assessment at schools. The Guidebook provides explanation on how to practice the new assessment with the 5 steps and introduces sample cases[32] of selected chapters/units of each subject. The following Figure 3-6 indicates the 5 steps of classroom assessment. The table of contents of Guidebook on Classroom Assessment is shown in Table 3-18.

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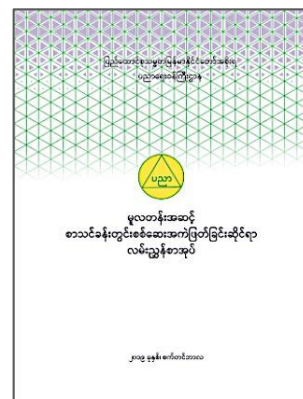
[31] This Guidebook was originally entitled "Guidelines on How to Utilise Sample Exercises" in line with PDM 1. The title was changed to the current one to represent the finalised contents. The Guidebook was drafted by the project and finalised by a series of discussions with DERPT, DBE, DME, and NEPC. The Guidebook was officially approved on December 4th, 2019.

[32] 7 sample cases are introduced in the latest version of the Guidebook. 5 sample cases are included in the approved version. 2 sample cases are newly added afterwards and not yet approved.
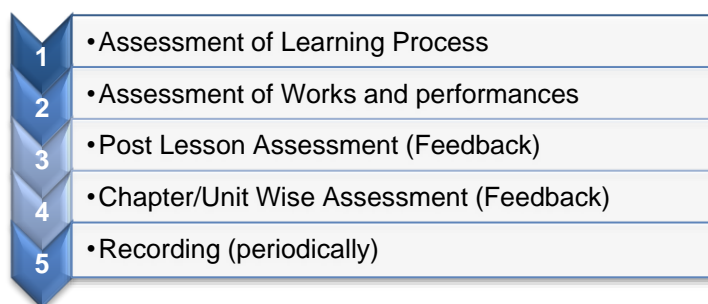
Figure 3-6: Steps of Classroom Assessment

Table 3-18: Table of Contents of Guidebook on Classroom Assessment at the Primary Level

[Main Text]
    1.   **Background**
   1.1 New Direction of Students Assessment at the Primary Level
   1.2 Objectives of this Guidebook
  2. **How to Conduct Classroom Assessment and Create Student's Assessment Records**
  2.1 Classroom Assessment
  2.2 Concrete Practices of Classroom Assessment
   Sample Cases
     1. Mathematics   2. Visual Arts
[Appendix]
   Sample Cases
     3. Myanmar   4. Social Studies
     5. Physical Education
   New Student Assessment Formats
   Primary Student Learning Assessment
   Framework (PLAF) (Guideline)

The project introduced all assessment materials and tools including the Guidebook, which were developed by the project, at the Knowledge Sharing Seminar hosted by Department of Myanmar Examinations (DME) of the MOE in November, 2019. The union minister of education, all directors of the MOE, and other stakeholders who attended the seminar highly appreciated the development of the Guidebook and all other assessment materials.

(5) Capacity Development in Assessment

The project has provided the CDT, assessment counterparts, and teacher education counterparts with various learning opportunities on how to foster, enhance, and assess pupil's competencies implied by the new curriculum through item and rubric development of each subject, OJT style workshops, in-house training, and so on. It was challenging for CREATE counterparts to understand how to develop new item types, their meaning, and objectives at the beginning. Then, they made significant progress and developed their own capacities of assessment through the project. It was initially challenging for CREATE counterparts to comprehend various concepts regarding new assessment, for instance, why open-ended items are needed, what are applying level items, how do we design questions to promote inquiries, meaning of performance assessment and rubrics, how do we design and use rubrics, and how do we assess lower primary pupils not required to take achievement tests. Eventually, some of the counterparts reached the level to become trainers at the national assessment training programme. The project also collaborated with DME for the capacity development of assessment resource persons. Assessment

experts of the project provided technical support to DME's annual workshop for G4 and G8 examination teams from all states/regions and districts.

(6)   Support for Assessment Policies and Aid Coordination

PLAF was officially approved as assessment guidelines at the primary level on September 19th, 2017. The project developed the Reference Book and had a series of discussions regarding new assessment approaches with National Education Policy Commission (NEPC) and the NCC prior to drafting PLAF. The same concepts and approaches from the Reference Book are adopted in the drafting process of PLAF. As a result, PLAF and assessment materials and tools developed by CREATE are consistent.

NAP was developed and enforced in line with National Education Strategic Plan (NESP) to cover from KG and primary to upper secondary level. DME lead the drafting process of NAP in active collaboration with the major development partners in the education sector such as ADB, UNICEF, JICA, and Department for International Development (DFID) (back then). CERATE also joined the drafting process and provided significant input. The contents of NAP in the early stage of drafting were exam-centered and summative assessment-oriented. There was a gap between the contents of NAP and the new assessment approaches at the primary level stipulated in PLAF and assessment materials developed by the project. Therefore, the project suggested to fill the gap by adopting and promoting formative assessment approaches and practices into NAP and the suggestion was accepted and reflected in NAP. Eventually, NAP was finalised and enforced in July 2019.

The National Assessment Guideline (NAG) was developed as operational guidelines for NAP and finalised in September, 2020. NAG was drafted in close cooperation between UK aid/Assessment and Education Reform Support Program (AERS) and DME. The drafting process was shared among the concerned departments of the MOE, NEPC, and the NCC. The process was shared with development partners including CREATE at the beginning. The project also provided the necessary input in line with the primary assessment concepts and approaches. However, NAG was finalised in a rather closed manner and not opened to other development partners in the end. As a result, the contents of NAG are quite secondary level-oriented and some parts are not applicable to KG and primary level. Although CREATE provided significant information and materials on the primary assessment to AERS prior to the drafting, the concepts and approaches were not incorporated in NAG. It can be predicted that the KG and primary teachers will get confused with NAG, which is not applicable for the KG and primary level in some parts. Therefore, CREATE made suggestion to DME to make modifications on points related to the KG and primary level or to treat NAG as assessment guidelines for the secondary level.

3.3   Teacher Education

In the field of teacher education and training, the project conducted activities in three areas: support to teacher education policy formulation; improvement of pre-service teacher education curriculum by reflecting the new primary curriculum; and support to the implementation of training programmes to introduce the new primary curriculum. For the improvement of pre-service teacher education curriculum, the project collaborated with UNESCO, which provides comprehensive support in the field of teacher education and management. In the area of training programmes to introduce the new primary curriculum, the project supported the implementation of the following training programmes annually since the introduction of G1: training for supervisors targeting representatives of regional education offices nationwide; training for in-service teachers targeting more than 200,000 primary teachers nationwide; and training for EC targeting teacher educators and students. However, the training for G5 has not been implemented by the end of the project due to the impact of COVID-19 and the political changes that occurred in February 2021.

3.3.1   Support for Formulation of Teacher Education Policy

At the start of the project in 2014, the general direction to transform the two-year pre-service teacher education programme in EC[33] into a four-year programme in the future was indicated, however, the MOE did not have a specific strategy or timeline for this. In addition, with the reorganization of the MOE, the department in charge of teacher education and training changed frequently[34]. For this reason, in the first two years after the project began, activities related to pre-service teacher education focused on those that would contribute to the formulation of teacher education policies by the MOE.

(1)   Organising Workshops for Stakeholders Involved in Teacher Education and Training

The project organised the meetings, broadly targeting those involved in teacher education, in order to facilitate consensus building on the issues and strategies in teacher education and training (Table 3-19). Participants included officials from the Department of Teacher Education and Training (DTET), representatives of the ECs, which train primary and middle school teachers, and the University of Education (UOE), which had been the accrediting body for the EC curriculum, as well as the MOE's advisors on teacher education. At the symposium, a professor from the Curriculum Center for Teachers at Tokyo Gakugei University introduced case studies from Asian countries, and at the second seminar, the vice president of Naruto University of Education introduced practical examples of curriculum development at the university.

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[33] The first year of the EC curriculum is on primary school teacher training, and the students can complete the lower secondary teacher training at the end of the two years curriculum.

[34] The department of teacher education and training changed from the original Department of Educational Planning and Training (DEPT) to the Department of Teacher Education and Training (DTET) in 2014 and to the Department of Higher Education (DHE) in 2016.

Table 3-19: Conferences Related to Teacher Education Policy Formulation

Activity	Schedule	Topics
Teacher Education Symposium *How teacher education should move forward on quality improvement, Focusing on pre-service teacher education curriculum*	22nd – 23rd September 2014	**[Keynote Speech]** • Issues on teacher education curriculum development and quality assurance system from experiences in East Asia (Tokyo Gakugei University) • Designing four-year pre-service teacher education (CREATE) • Planning four-year teacher education based on teacher demand forecast (JICA Education Policy Advisor) **[Plenary Discussion]** • Response to teacher shortage • Improving the quality of teacher education programme **[Report from the Project]** Interim report on the results of "the EC Curriculum Survey" (conducted by the project)
The 1st Teacher Education Seminar	6th March 2015	**[Keynote Speech]** • Preparing reflective teachers who implement curriculum right **[Plenary Discussion]** • Improvements of the teacher education programme to meet the primary curriculum reform **[Report from the Project]** • Suggestions on revising the content of subject pedagogy, improving EC classes, and improving teaching practice and assessment
The 2nd Teacher Education Seminar	20th – 21st August 2015	**[Keynote Speech]** • Defining Teacher Competencies and Designing Teacher Education Curriculum *- Pre-service teacher education curriculum that ensures teacher quality from experience of Naruto University of Education -* • Evaluation of Students' Learning and Assessment of Curriculum in Pre-service Teacher Education *- from experience of Naruto University of Education* **[Report from the Project]** Introduction of video examples of EC class improvement and suggestions for improvement of pedagogy

(2)   Workshop for Departments Related to Teacher Education and Training

The staff of DTET, which was newly established in 2014 as the department in charge of teacher education and training, were mostly transferred from the DBE and lacked knowledge of international trends and issues in the field of teacher education and training. At the request of the Director General of DTET, the project conducted several workshops as part of capacity building for DTET staff (Table 3-20).

In mid-2016, a policy decision was made to upgrade the two-year EC from the status of post-secondary technical schools to a four-year EDC with the status of higher education institutions. As a result, the department in charge of teacher education and training was to be absorbed from DTET to the Department of Higher Education (DHE). Therefore, the third workshop was conducted for DHE staff.

Table 3-20: Information Sharing to the Departments in Charge of Teacher Education and Training

Activity	Schedule	Participant	Topics
The 1st Workshop	4th September, 2015	DTET staff	• Role of DTET • Teacher Competencies • Approaches to teacher development (teacher training, in-service teacher training, and continuous professional development) • The need for EC to improve teaching
The 2nd Workshop	22nd February, 2016	DTET staff	• Teacher qualifications and teacher evaluation
The 3rd Workshop	5th September 2017	DHE Deputy Director General and Directors in teacher education	• Workshop on the overall teacher system with a focus on the teacher licensing system

(3)   Implementation of Training in Japan and in Thailand

The project organised a total of three training abroad with the aim of obtaining information and promoting debates on teacher policy. An overview is given in Table 3-21 below.

Table 3-21: Overseas Training to Support Teacher Policy Formulation

Activity	Schedule	Site	Participant	Topics
The 1st Training in Japan	June – July 2015	Naruto University of Education	• Director General and Assistant Director of DTET • UOE Representatives • UDNR[35] Representatives • Project Counterparts in Teacher Education	• Understanding of international trends in teacher education system reform through participation in the 59th ICET World Congress held at the university • Understanding of the process and methods of examining teacher education programme by exchanging opinions with university staff and visiting related organizations
The Third-Country Training	November 2015	Khon Kaen University (Thailand)	• Project Counterparts in Teacher Education • CCA Team, the MOE[36]	• Participation in WALS • Examining past practices in Myanmar and clarifying the future direction on lesson study, which is one of the measures to improve the quality of teachers
The 3rd Training in Japan	November 2017	Tokushima Prefectural General Education Center, National Institute for School Teachers and Staff Development	• DHE Deputy Director / Director	• Information collection for teacher education and management policies through visits with relevant organizations and discussions with stakeholders

Note: The 2nd Training in Japan was solely for the development of EC materials, as described below. The 4th training serviced two purposes: teacher policy formulation and EC material development.

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[35] University for the Development of National Races
[36] The MOE assigned staff until 2016 to continue the dissemination training of CCA conducted under the Project for Strengthening Child-Centered Approach (SCCA) , which was supported by JICA until 2012.

In addition to the learning that was extremely beneficial to the participants through the visits and exchange of opinions, the training outcomes were further enhanced through the pre-training preparation and post-training debriefing. For example, the project had the opportunity to make a presentation on teacher education in Myanmar at the ICET's issue-specific breakout sessions. All training participants discussed repeatedly and organised the issues in preparation for this presentation. This process was a good opportunity for stakeholders to unify their intentions on the issues and directions to be addressed in the project.

After participating in WALS in 2015, a debriefing session was held for about 30 people in DTET. The participants shared their presentations on international trends in lesson study, the progress and current challenges in introduction of lesson study in Myanmar, and ways to promote lesson study. The presentations were clear and persuasive, and the Director General and others involved expressed many positive opinions about the need to promote lesson study activities in the future. Unfortunately, due to the subsequent reorganisation of the department in charge of teacher education and training, a concrete activity plan could not be formulated and implemented. However, the lesson study at the school level has been included in the new curriculum introduction training for in-service teachers and supervisors and has been made known as a measure of Continuous Professional Development (CPD).

3.3.2   Improvement of Pre-Service Teacher Education by Reflecting the New Primary Curriculum

Following the reorganisation of the MOE after the new government took office in 2016, and the launch of comprehensive support for teacher education and management by UNESCO in 2017, the expected contribution to be made by teacher education activities in CREATE was reviewed through discussions with the DHE. As a result, based on the findings of the curriculum and lesson analyses of EC carried out in 2014-2015, the project decided to develop an outline of the subject pedagogy course of each subject reflecting the new primary curriculum that could be used in textbooks and teacher's guides in pre-service teacher education curriculum. The project provided these materials to UNESCO in line with the revision schedule of the pre-service teacher education curriculum, and played a complementary role with UNESCO in this task.

(1)   Analysis of the EC Curriculum

The design, implementation and evaluation of EC curricula should be carried out consistently within the same framework. To enable counterparts to tackle subsequent revisions of EC curricula with a full understanding of this point, the analysis of EC curriculum focused on the gap between the intended, implemented and attained curriculum. In addition, the project checked the objectives and content of the subject pedagogy courses against the teacher' competencies drafted with UNESCO support, to see if they were sufficient for developing the competencies, identified necessary and unnecessary topics, and organised the subject content.

Based on the results of these investigations, the project started to develop the EC curriculum framework in September 2015, and since the specific time frame for the transition to a four-year EC programme was not clear at the time, the project decided to propose transitional improvements that could be implemented within the framework of the current one-year primary pre-service teacher education program, after consulting with DTET. The main points for improvement were: 1) the development, implementation, and evaluation of the curriculum based on teacher competencies; 2) the addition of subject pedagogy courses for Physical Education, Performing Arts and Visual Arts, which had not been included so far; 3) the extension of teaching hours per class; and 4) the improvement of teaching practice, and assessment in EC. After the first consultation meeting on 2nd November, 2015 and the second consultation meeting on 18th December, 2015, the project submitted the final version of this curriculum framework to DTET.

Furthermore, as a formal approval process at the time, DTET submitted this to the Board of Study of the UOE, which discussed it at the committee meeting on 8th February, 2016

Under the new government that took office in April 2016, along with a review of the previous decision-making process and the content and timeline of the development plan, the MOE was restructured and the department in charge of teacher education and training was transferred from DTET to DHE. In addition, the MOE later announced the policy that the selected EC would be upgraded to four-year EDCs ahead of others. As a result, the curriculum framework which was to be used for one year primary teacher education as a transitional measure was not utilised. However, counterparts' experience in scrutinising the subject content of EC based on teacher competencies and examining the issues and directions for improvement of the EC curriculum was extremely useful in preparing for the subsequent development of teaching materials as described in the section below.

(2)   Positioning of the CREATE Activities in the Revision of Pre-Service Teacher Education Programme

In 2014, UNESCO launched Strengthening Pre-Service Teacher Education in Myanmar (STEM), a project to comprehensively support the development of teacher education and management. In Phase 2 of the project, which started in 2017, UNESCO had begun full-scale support to revise the teacher education programme. In this context, UNESCO began to develop the curriculum framework, textbooks and teacher's guides of EDC, as well as to reform the teacher promotion system necessary for the introduction of the primary and middle school teacher training majors to be adopted in the new EDC. CREATE had several rounds of consultations with the Director General and the Deputy Director General of DHE, and the scope of the CREATE project was organised as follows, considering the advantages of the project and the scope of UNESCO support.

- Development and proposal of an outline for the subject pedagogy of the ten primary subjects in the 4-year EDC curriculum

- Based on the outline, develop a package of lesson plans, lecture notes for teacher educators, and handouts for EC students for those areas that need to be reflected in the teacher education curriculum

- Providing these materials to the authors of EDC textbooks and teacher's guides (consultants contracted by UNESCO-STEM and the counterpart team of UNESCO-STEM)

The reason why the project developed teaching materials in the form of a lesson plan is due to the following two reasons: 1) As the primary curriculum requires a major shift from "teaching" to "children's thinking," it is necessary for EDC classes to change from lecture-oriented to one that provides ample opportunities for students to think. Lesson plans would provide concrete information on the new style of lessons; and 2) It is easy to use as a part of EC textbooks and teacher's guides, or as attachments of sample lesson plans.

(3)   Development of Syllabi and Teaching Materials for EDC

The project developed teaching materials in the steps shown in Figure 3-7 below. In Step 5, five domains were set as the content of subject pedagogy necessary to implement the new primary curriculum: understanding of subject goals, understanding of curriculum, students' learning according to developmental stages, teaching approaches, and assessment. Then, the necessary topics were identified in each of these areas. Steps 3 to 6 were conducted in a combination of activities in Myanmar and in Japan. First, 1) counterparts prepared teaching materials under the guidance of teacher education experts in Myanmar; 2) they learned about the ways subject pedagogy is taught at Naruto University of Education where training took place in Japan and

added new ideas to teaching materials; 3) they returned to Myanmar and worked with teacher education experts to prepare a revised version; and 4) they finalised the teaching materials after receiving confirmation and guidance from the subject experts of the project. The counterparts who experienced the process up to Step 6 during the total of three trainings in Japan continued to develop teaching materials. Since the four-year system of EDC and the development of EDC textbooks were carried out in parallel with the basic education curriculum reform, there was a problem that the revised content of basic education could not be fully reflected in the EDC curriculum and textbooks. The textbooks and teacher's guides for G5 was planned to be completed at the end of 2020, but the input for the development of EDC textbooks needed to be done by the end of 2020. Therefore, the content of G5 was not fully reflected in the materials developed for the EDC textbooks and teacher's guides.

Step 1: Review the current textbooks	
Review structure, contents, and learning activities	Identify problems and issues to be improved

Step 2: Understand the new curriculum framework and curriculum outline of the primary subjects	
Students' knowledge, skills, attitudes, and capacities to be cultivated in the new curriculum	Teacher competencies required to implement the new curriculum

Step 3: Understand "Subject pedagogy"	
what kind of knowledge base is required	what kind of skills are required

Step 4: Develop objectives of subject pedagogy
Develop objectives of the course inline with teacher competencies

Step 5: Develop outline of domains
Develop structure of 5 domains to be included

Step 6: Develop EC lesson package
Develop lesson package (lesson plans, lecture notes, and student handouts for selected lessons

Figure 3-7: EC Material Development Procedure

(4) Training in Japan

As shown in Table 3-22, a total of three trainings in Japan at Naruto University of Education were one of the most important technical support activities for the development of teaching materials. The project counterparts developed teaching materials based on the understanding of the new primary curriculum in Myanmar, and received guidance for improvement from the perspective of subject pedagogy at the university. Through the observation of classes at Naruto University of Education, they learned that it is possible to enable students to think even in a large class, and that it is necessary to have activities that allow students of education universities to experience that teachers need to devise various ways to plan lessons through trial and error even if they are referring to teacher's guides. Furthermore, through the observation of classes at the primary school attached to Naruto University of Education, they deepened their understanding of what abilities Myanmar teachers need to further develop. The representatives of the CDT participated in the fourth training in addition to the teacher education counterparts. It was very beneficial for both team to discuss what the primary textbooks and teacher's guides should be and how teachers should be trained. For the CDT, it was an opportunity to reaffirm the importance of developing textbooks and teacher's guides that focus on children's "learning". The following is a summary of the implementation of the training in Japan for the development of EC materials.

Table 3-22: Training in Japan for EC Materials Development

Activity	Schedule	Participant	Purpose	Achievement
The 2nd Training	June – July 2016	10 (all counterparts in Teacher Training)	• Finalise the goals, structure, and table of contents for each subject based on the curriculum framework for teacher training colleges • Finalise textbook writing policy and work schedule	Proposed structure of academic pedagogy for each subject
The 3rd Training	October – November 2016	12 (all counterparts in Teacher Training)	• Develop lesson plans, lecturer notes, and student handout for units selected from G1 curriculum	Development of lesson plans for selected units
The 4th Training	November 2017	22 (all counterparts in Teacher Training and one representative of CDT from each subject)	• Obtain advice for finalising lesson plans that incorporate the content of G2. • Develop lecture notes and student handout for those lesson plans.	Development of EC materials package (lesson plans, lecture notes, and student handouts)

(5)   Collaboration with UNESCO-STEM

In 2017, as the activities of EDC's curriculum development supported by UNESCO-STEM finally started to move forward, CREATE continuously shared information with UNESCO-STEM and held discussions on possible ways of collaboration by presenting the proposed teaching materials that CREATE had developed[37]. The following is a chronological description of the work done in collaboration with UNESCO-STEM.

- Provision of comments on the EDC 4-year roadmap and the EDC curriculum framework.

- Provision of comments on the draft EDC syllabus and the outline prepared by CREATE. Notification of units for which materials will be developed by CREATE.

- Participation and presentation at EDC syllabus review workshops.

- Discussion of specific ways to collaborate with the consultant who was contracted to write the EDC textbook and teacher's guides, in which:
    - CREATE develops and provides teaching materials according to the development schedule for Year 1 and Year 3 relevant to primary teacher training.
    - CREATE develops and provide teaching materials in the format developed by the project.
    - STEM uses materials provided by CREATE for EDC textbooks and teacher's guides. Lesson plans will be attached as sample lesson plans.

- Sharing of developed materials that are expected to be used in the EDC textbooks and teacher's guides for Year 1 (June-October 2018).

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[37] A Core Curriculum Team (CCT) consisting of representatives from EC and UOE was organised for EDC curriculum development and capacity building training was conducted. In addition, the decision to outsource the writing of textbooks and teacher's guides took some time, and CREATE was able to begin discussions with UNESCO-STEM on specific ways to collaborate only after the end of 2017.

- Participation in the EDC textbook/teacher's guides review workshop and pilot class review workshop for Semester 1 of Year 1 curriculum, to check whether the materials already provided are being used appropriately, and to suggest additional areas where they are insufficient.

- Provision of teaching materials, lesson videos, etc. to be posted on the e-library to be established with the support of UNESCO-STEM.

- Modification of teaching materials to align with the newly developed UNESCO's style guide for EDC textbook and teacher's guides.

- Participation and presentation in the Year 3 syllabus review workshop.

- Sharing of developed materials that are expected to be used in Year 3 of EDC textbooks and teacher's guides (October 2020).

The number of materials developed and provided by the project is shown in Table 3-23. Of these, about half of the materials provided in 2018 were used in textbooks or teacher's guides for EDC Year 1. The materials shared by CREATE in 2020 are expected to be used for Year 3 and 4 of the EDC curriculum, which is under development at the end of the project.

The following issues were encountered during the development of Year 1 EDC textbooks and teacher's guides.

- Communication between UNESCO and the textbook authors was partly not smooth because the syllabus development process took a lot of time to coordinate the opinions of the parties involved, and revisions often occurred.

- CREATE organised and provided the materials after the syllabus was finalised, but the textbook authors started writing the textbook before the syllabus was finalised, so the timing of the CREATE's provision was not appropriate in some subjects.

- Communication between the authors and the CCT was insufficient, and the information provided by CREATE to the CCT was not conveyed to the authors, so revisions were not reflected.

Based on these issues observed, it was agreed with UNESCO that subject-specific meetings including authors would be held as soon as possible for the Year 3 EDC textbooks and teacher's guides development. However, due to the impact of COVID-19, the constraints of the TOR of the consultant in charge of writing the textbook, and the delay in hiring the consultant, consultations between CREATE and the authors did not materialise. The project instead tried to provide information to the CCT.

Table 3-23: Number of EC Teaching Materials Developed

Subject	Teaching materials		Total
	2018	**2020**	
Myanmar Language	24	24	48
English	12	15	27
Mathematics	13	30	43
Science	8	28	36
Social Studies	13	25	38
Morals and Civics	9	8	17
Life Skills	15	12	27
Physical Education	14	14	28
Performing Arts	17	16	33
Visual Arts	8	18	26

Note: Indicates the number of packages consisting a lesson plan, lecture notes, and student handout.

3.3.3 Training for the New Primary Curriculum Introduction

(1) Overview

In order to effectively introduce the new primary curriculum, it is necessary for all stakeholders in primary education to have the basic knowledge and skills of the new curriculum. For this purpose, the project organised training for representatives of education offices at the state/region, district, and township education offices who supervise and guide teachers, in-service primary teachers, EC teacher educators who produce new teachers and EC students who are to enter the teaching profession. These trainings were conducted in every grade except G5 starting from the 2016/17 academic year when the new curriculum for G1 was introduced. The project supported the planning of detail training programmes, development of training materials and training of master trainers, while the relevant departments of the MOE (DERPT, DBE, and DHE) implemented the training.

(2) Training for Supervisors

The purpose of the training for supervisors was to promote the understanding of the new primary curriculum of the education administrators so that they would be able to facilitate the smooth introduction of the new curriculum, and that they would be able to prepare and conduct the training for in-service teachers. The project was responsible for formulating the training plan, developing training materials, training the trainers, and supporting the implementation of the training, while the DERPT of the MOE was in charge of the implementation and management of the training. The initial plan of the project was to conduct a total of three training for supervisors during the project period, but in response to the MOE's request, it was decided to conduct the training annually. G5 training for supervisors was planned to be conducted in February 2021, later than the previous year due to the impact of COVID-19, but it has not been conducted as of the end of the project due to the political changes in February 2021.

About 400 participants representing education offices across the country[38] attended the training in two batches at the MOE's training centre in Yangon. The training period was set at two days every year, but the G3 training was shortened to one day. This was due to the fact that the introduction training for the new G6 curriculum supported by ADB-Equipping Youth for Employment (EYE) was to be conducted at the same time, and it was necessary to adjust the schedule between the participants and the training centre. G5 training for supervisors was also scheduled to be a one-day online training due to the impact of COVID-19. The overview and programmes of the G1-G4 training for supervisors is given in Table 3-24 below.

Gradually, the DERPT has become more involved and proactive in the management of the training. In addition, the training was smoothly implemented with the increased ownership of the MOE, as the staff of DBE, which is the supervising authority of the participants' organisations participated in the training and supplemented the explanations.

Since almost half of the participants in the training for supervisors were new participants every year, the training content was duplicated to some extent with improvement, and new information on the policies and measures of the MOE was added as necessary. This was a valuable opportunity for the MOE to directly convey information on the new curriculum to education officers nationwide, as well as to understand the challenges of implementing the new curriculum at the school level.

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[38] The G3 training also included representatives of the EC.

Table 3-24: Overview of Training for Supervisors

Grade	G1	G2	G3	G4
Implementation Schedule	Batch 1: 16th – 17th January, 2017 Batch 2: 19th – 20th January, 2017	Batch 1: 14th – 15th December, 2017 Batch 2: 19th – 20th December, 2017	Batch 1: 17th December, 2018 Batch 2: 20th December, 2018	Batch 1: 9th – 10th December, 2019 Batch 2: 16th – 17th December, 2019
Length of training	2 days	2 days	1 day	2 days
Participants	One representative from each of the State/Division, District, and TEOs	One representative from each of the State/Division, District, and TEOs	One representative from each of the State/Division, District, TEOs, One representative from each of the 25 EC	One representative from each of the State/Division, District, and TEOs
	Batch 1: 217 Batch 2: 194 Total 411	Batch 1: 226 Batch 2: 173 Total 399	Batch 1: 288 Batch 2: 280 Total 568	Batch 1: 207 Batch 2: 206 Total 413
Topics	- Features of the new primary curriculum - Assessment - Preparation for new primary curriculum introduction for in-service teachers - Monitoring and supervision for curriculum implementation - Results of impact survey on curriculum implementation, etc.			

According to the results of the questionnaire survey of the participants of the G4 training for supervisors, the most frequently raised issues at the school level that would affect the introduction of the new curriculum were the lack of teaching materials, the lack of teachers, the lack of number and ability of Assistant Township Education Officers (ATEO) and Mentors who provide guidance to schools and teachers, and the lack of parental understanding.

The project also confirmed the future training needs for education officers, there was a significant demand for further training on assessment and pedagogy, as shown in Figure 3-8. In particular, there were many requests for training for ATEOs and Mentor. In the free text responses, some wanted to know more specific methods on how to monitor and evaluate practices of the new curriculum implementation at schools. Although this is a topic covered in the training, it is necessary to present concrete measures that are more relevant with the situation at school.

Topics for further training

Source: Compiled from the evaluation results of the CREATE G4 Training for Supervisors

Figure 3-8: Training Needs for Supervisors

Plenary session (G4 training)   Group session by state/division
                                                      (G4 training)

(3)   Training for In-Service Teachers

The purpose of the training for in-service teachers was to help in-service teachers understand the features of the new primary curriculum, the content structure of textbooks, and the use of teacher's guides, so that they can start teaching with the new textbooks in the new school year.

Since primary teachers in Myanmar are likely to be in charge of all primary grades and are expected to be in charge of all subject areas, the training for in-service teachers targeted all primary teachers[39]. Since this was a large-scale training for all primary teachers in about 47,000 government schools (as of March 2020)[40] as well as teachers from private and monastic schools, the project proposed a four-tiered cascade of training for this purpose: central, state/region, district, and township. The project supported the formulation of the overall training plan, development of

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[39] After the start of the G1 training programme, the MOE decided to reduce the number of participating teachers (limited to G1 teachers plus one or two teachers from each school), so the programme eventually covered about 40% of all teachers. However, above G2, all primary school teachers were covered in the training.

[40] Volunteer teachers without teaching qualifications were also targeted in some areas.

training modules and materials for each tier, training of trainers for the central training, implementation of the central training, and monitoring of all tiers of training in limited areas. DERPT was in charge of the central training and the state/region training, while DBE was in charge of the district training and the township training. The MOE was responsible for operational management including the training costs.

The standard programme of training for in-service teachers was 14 days, consisting of one day for each subject, half a day each for the common teaching methodology and assessment, and two days for real lessons (including preparation and reflection). In addition to the township training. Training at the central, state/region, and district level included the time for preparing for the training at the next layer. An example of township training is shown in Table 3-25.

Table 3-25: Program of Training for In-Service Teachers (G3 Township Training)

Day	Date	AM (9:00-12:00)	PM (13:00-16:00)
1	10-May	Orientation (8:30 – 9:00) Myanmar (Session 1)	Myanmar (Session 2)
2	11- May	Mathematics (Session 1)	Mathematics (Session 2)
3	13- May	Performing Arts (Session 1)	Performing Arts (Session 2)
4	14- May	Science (Session 1)	Science (Session 2)
5	15- May	Social Studies (Session 1)	Social Studies (Session 2)
6	16- May	Visual Arts (Session 1)	Visual Arts (Session 2)
7	17- May	Morals and Civics (Session 1)	Morals and Civics (Session 2)
8	18- May	Physical Education (Session 1)	Physical Education (Session 2)
(9	20- May	English (Session 1)	English (Session 2)
10	21- May	Life Skills (Session 1)	Life Skills (Session 2)
11	22- May	Pedagogy for G3 Lessons	Microteaching/ Lesson Preparation (Myanmar, Performing Arts)
12	23- May	Real Lesson and Reflection (Myanmar, Performing Arts)	Microteaching/ Lesson Preparation (Math, Physical Education)
13	24- May	Real Lesson and Reflection (Math, Physical Education)	Micro teaching (English and Social Studies)
14	25- May	Assessment	Closing

G1-G3 Training for in-service teachers

G1-G3 training for the in-service teachers was conducted in these four tiers, with some modifications based on the annual review of the training programme, such as selection of master trainers, the number of participants in each tier, and the content of the training. The following Table 3-26 provides an overview.

The 14-day training programme consisted of one day for each subject, half a day each for general pedagogy and assessment expected in the new curriculum, and two days for preparation and implementation of actual lessons.

Table 3-26: Overview of Training for In-Service Teachers (G1-G3)

Level	Item	G1 Training	G2 Training	G3 Training
Central training	Trainer	CREATE Counterparts		
	Participant	Average of 10 representatives from each state/region (mainly teachers and head teachers of high schools), 4 from each EC Total 287	12 to 14 participants from each EC Total 320	12 to 14 participants from each EC Total 314
	Implementation schedule	Batch 1: 23rd January – 7th February, 2017 Batch 2: 13th – 28th February, 2017	Batch 1: 15th – 19th January, 2018 Batch 2: 22nd – 26th January, 2018 Batch 3: 29th January – 2nd February, 2018	Batch 1: 21st – 25th January, 2019 Batch 2: 28th January – 1st February, 2019 Batch 3: 4th – 8th February, 2019
	Length of Training	14 days (on all subjects)	5 days (on one specialised subject)	
State/ Divisions training	Number of Participants	3,960	2,171	2,340
	Implementation Schedule	24th March – 8th April, 2017	30th March, 2018 – 12th April, 2018	1st – 10th April, 2019
	Length of Training	14 days (on all subjects)	9 days (divided into 2 groups, each group studies 5 subjects)[41]	
District training	Participant	7,570	21,921	23,212
	Implementation Schedule	26th April, 2017 – 11th May, 2017	19th April – 5th May, 2018	22nd April – 8th May, 2019
	Length of Training	14 days (on all subjects)		
Township training	Participant	100,530, mainly teachers in charge of G1	185,573	231,955
	Implementation Schedule	13th–26th May, 2017	8th – 23rd May, 2018	13th - 28th May, 2019
	Length of Training	14 days (on all subjects)		

G4-G5 training for in-service teachers

As in the past, the G4 introduction training was initially planned to be conducted in four tiers, and the central training was held in January 2021. MOE and the project decided to use in-service teachers and head teachers of primary schools as master trainers who had served as township trainers in the past instead of EC teacher educators.[42] Although those teachers were not as knowledgeable as the EC teacher educators in subject matters, they enthusiastically participated in the training reflecting their experiences at school and earnestly worked on the practical skills, which lifted the spirits of the training sessions. It was the first time for them to learn and spend time with other participating teachers at the training centre, and the exchange of opinions and

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[41] Based on the feedback that it was difficult for trainers to take on all subjects, the project decided to divide the trainers into two groups, one for Myanmar, English, Social Studies, Morals and Civics, and Performing Arts and one for Mathematics, Science, Life Skills, Physical Education, and Visual Arts.

[42] This was due to two reasons: 1) Since the G3 training, more experienced EC teacher educators have been mobilised for the new secondary curriculum introduction training, and more EC teacher educators with limited field experience have been assigned as master trainers for the new primary curriculum introduction training; and 2) EC teacher educators became busy with the EC curriculum reform.

sharing of experiences contributed greatly to enhancing the professional awareness and motivation of the participants.

All participants practicing flute during lunch break (G4 Central Training)

The training below the central training program was scheduled to start in March 2020, but due to COVID-19, the programme was postponed and was conducted in a very different way. It was unfortunate that the master trainers were not able to conduct the training as originally planned, but it is expected that they will play a leading role in the introduction of the new curriculum in each region.

Finally, in June 2020, the MOE decided to implement trainings at the lower levels in the form of online trainer training and face-to-face township training. The trainer training basically required the trainers to access the Myanmar Digital Education Platform (MDEP), where materials and textbooks are uploaded, and to study independently. Over the next two days, online trainings were held by connecting with all TEOs. The project counterparts explained each subject session. The project's IT staff also assisted in conducting online meetings from the project office. Since the township training was also shortened from the original 14 days to 6 days to reduce the risk of COVID-19 infection, the learning time per subject was reduced to half a day and some of the activities were given as homework to be completed by the participants the day before. In addition, by reducing the number of micro-teaching and real lesson activities with children, the learning time for each subject was secured. The project hastily revised and provided modules to fit this 6 day programme. Although the township training was conducted in the absence of sufficient trainer training, it was conducted without major disruptions because the structure of the training content up to G3 was followed in G4 and the trainers had studied on their own beforehand by watching the video of the G4 central training. The Monitoring report of the G4 training for in-service teachers is attached in Appendix 12.

Since the impact of COVID-19 was still ongoing when the G5 training was planned, the project planned to incorporate online training based on the experience of the G4 training. The G5 training was not conducted at the end of the project due to the impact of COVID-19 as well as the political change that occurred in February 2021. Table 3-27 provides an overview of the G4 and G5 training for the introduction training programmes.

Table 3-27: Overview of Training for In-Service Teachers (G4-G5)

Level	Item	G4 Training	G5 Training (Plan)
Central training (face-to face training)	Trainer	CREATE Counterparts	None
	Participant	Representative of each state/region (primary school teachers and heads) Total 248	
	Implementation period	Batch 1: 14th -24th January, 2020 Batch 2: 27th January – 6tj February, 2020	
	Length of training	9 days (study 5 subjects)	
Trainer training (online training)	Participant	24,781 (through approximately 300 access points) (approximately 80,000 had access to MDEP and were eligible for independent study)	Approximately 25,000 participants (Assuming 2 batches of 20-30 participants each for 500 access points)
	Implementation period	12th – 13th June, 2020	Batch 1: 16th – 25th March, 2021 Batch 2: 30th March- 8th April, 2021
	Length of training	2 days (online training) (With independent study by watching the central training video, reviewing the training modules, and studying teacher's guide)	8 days (including 1 day of briefing by the Ministry of Health on the COVID-19 response)
Township training (face-to face training)	Participant	206,567	Approximately 210,000
	Implementation period	15th – 20th June, 2020	3rd -11th May, 2021
	Length of training	7 days (including 1 day of briefing by the Ministry of Health on the COVID-19 response)	7 days (including 1 day of briefing by the Ministry of Health on the COVID-19 response)

Common approach for G1-G5 training

The project analysed the results of the monitoring of the training for in-service teachers and made annual improvements to the content and delivery of the training. The basic ideas and approach, however, has been standardised over the five years. In the new primary curriculum, teachers are expected to act as good facilitators to help children learn through experience, thought and error, and learn not alone but together with their classmates. The fundamental idea behind the design of the training was that the teachers themselves would experience such a way of learning in the training. In order to achieve this, the following specific measures were taken in the development of the training materials.

- **Activity-based training**: Participants are given sufficient time for activities in which they could actively participate, such as pair work, group work, and presentations to the whole class, moving away from conventional trainings that consist entirely of explanations by lecturers. Practical activities such as micro-teaching and actual lessons[43] were included.

- **Reflective practice**: Participants regularly reflect on their own learning and activities.

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[43] Actual lessons were conducted with the cooperation of nearby primary schools, with participation of children from the relevant grades.

- **Learning from concrete cases**: Lesson videos of all subjects were produced and used in the training so that participants could visually experience the classes under the new curriculum and learn from concrete cases.

- **Conceptualisation of learning**: Rather than understanding the concepts explained, participants are given tasks to summarise their thoughts and learning using their own words.

- **Understanding of learners' perspectives**: Through simulations of the activities described in the textbooks, participants were trained to understand and imagine the situation of the learners.

In addition, the biggest challenge in this training was how to prevent the quality of the lower level training from deteriorating in the four-tiered cascade training. The following points are considered to have been effective in addressing this issue.

- The training modules were basically the same for each tier so that trainers could train what they had learned.

- To ensure the quality of the trainers, the trainings were always conducted in groups of multiple trainers. Specifically, four trainers are expected to take on a class of about 30 participants, and the project planned to secure the necessary number of trainers.

- In addition to the use of video materials, practical activities such as micro-teaching and actual lessons were included in the training programme to avoid over-reliance on explanations by the trainers.

- Key points of discussion and sample answers to the activities were posted at the end of the training module for participants to refer to afterwards, and for trainers to appropriately support the discussions on important issues.

As a result, there was no apparent decline in quality due to the cascade training in the comprehension tests and self-evaluations of the participants of the township trainings. As school teachers have been experiencing this training for up to four years, they were accustomed to the participatory method of training and were observed to be more proactive in their approach to the training.

Box 1: Production of Lesson Video Materials

As mentioned above, lesson videos were used as the main training material for the introduction training. The project selected one lesson per subject per grade, filmed the lessons and edited them to 15 minutes short videos, producing a total of 50 videos.[44] The training participants watched the videos and discussed them in groups, focusing on the children's learning and the teacher's response to what happened in the classroom. After that, the trainer re-presented the video along with the viewing points, adding explanations and facilitating discussion.

Development of lesson videos greatly contributed to deepening counterparts' understanding on the new curriculum, and to enhancing the capacity of lesson planning on the other hand. This column describes how the video material was produced by the project, in which the lesson study method was applied. The procedure of video production is as follows. One or sometimes several periods were used for the lesson before filming the video to be used in the training. After each lesson, reflection using the video was conducted to improve the lesson.
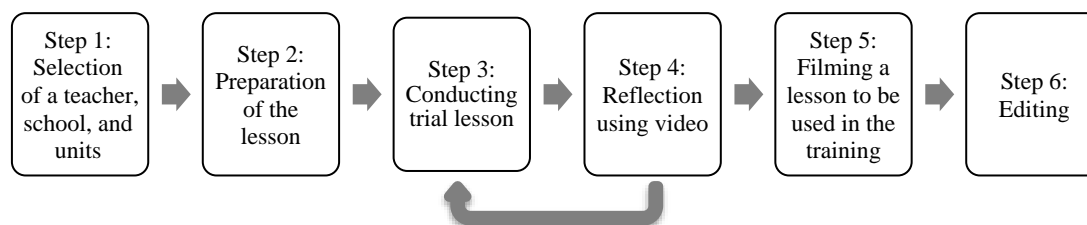
Steps of Lesson Video Development

Step 1: In most cases, the CDT responsible for textbook and teacher's guides development was the teacher for the lesson. Schools for trial lessons and final video filming were selected from the pilot schools. The selection of units was decided by the CDT on the advice of the project subject experts.

Step 2: In addition to reviewing the content of the teacher's guides, the CDT, teacher education counterparts and the project teacher education experts used try-out lesson videos to identify any difficulties that the teacher might anticipate in conducting their lesson and discussed how these might need to be addressed.

Step 3: In many cases, the lessons to be filmed and presented were in the middle or second half of the unit, when there is more activity and deepening of the children's thinking. For this reason, it was necessary for the teacher to conduct preceding lessons before filming the lesson for the production of lesson videos for the training.

Step 4: The team reflected on how and when the children learned using the filmed lesson. Seeing first-hand how the children's responses changed due the teacher's questions and prompts has motivated the teachers to do better from the next lesson. In particular, it is important to; ensure that there is adequate time for pair and group work, because too much lecturing by the teacher can reduce children's interest; to promote communication between children rather than between the teacher and one child; and to ensure that there is a balance

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[44] From G2 onwards, the videos for Performing Arts were mainly based on sound recordings rather than lessons. In 2020, it was not possible to film at the school due to COVID-19, so part of the G5 video was made using the videos from G1 to G4, rather than the G5 lessons, to observe the differences in learning between the grades.

between listening to explanations, activities, confirmation of activities, and presentations. If the teachers found it difficult to proceed with the filming, they repeated the process in a different class.

Step 5: During the filming of the lesson to be used in the training, three cameras were used; two cameras were used to show the children candidly, and one camera was used to film the teachers only. The project expert's camera captured the expressions of each child, their hands, and their interactions with each other, which was equipped with a gun microphone and a special recorder to be able to pick up even the slightest voices of the children. The whole flow of the lesson was filmed with a wide-angle camera from the back, so that the individual and the whole could be mixed when editing.

Step 6: Using synchronised audio and video recorded with a gun microphone, everything was transcribed into a timecoded script, which was then edited to 15 minutes. The editing was done in order to: 1) show the context of the learning of the subject knowledge, 2) use the scenes in which the children are most active, 3) edit the video as little as possible in order to show the context of the learning, 4) show the participation of the children of concern (mostly those who are not learning). After the video was completed, it was subtitled in case the participants could not hear the voice of pupils and the teacher in the video at the training site. In case the video could not be played back due to a power outage, photos of the main scenes were taken, and explanations were added to accompany the training module.

(4)   Training for Education Colleges

The project supported the MOE to conduct training for EC to ensure that EC teacher educators fully understand the content of the new primary curriculum and the required pedagogy and assessments, and that EC graduating students acquire the minimum knowledge and skills necessary to implement the new primary curriculum. The training needed to be continued every year until the EC curriculum is revised by reflecting the new primary curriculum.

The training was to be conducted in three phases: 1) central training for EC representatives, 2) EC teacher educators training where EC master trainers share information to other teacher educators in their EC; and 3) EC student training in respective EC. The project supported the development of the training programme and training modules, and the implementation of the central training, while the DHE was in charge of the training costs, administration, and printing/ distribution of the training materials.

The representative from the EC was the master trainer for the in-service teacher training in the G1-G3 training and also the trainer for the EC training. Therefore, the central training for EC training was combined with the central training for in-service teacher training for G1-G3. For G4, since the EC teacher educators were not master trainers of in-service teacher training, a separate central training for trainers of EC training was conducted. For G5, representatives of the EC teacher educators were scheduled to participate in an online training of trainers for in-service teacher training, but due to the impact of COVID-19 and political changes, this training was not conducted by the end of the project.

The EC training programme for G1 to G5 is outlined in Table 3-28. 12 teachers from each EC participated in the central EC training programme, including teachers in charge of educational theory and educational psychology, in addition to teachers in charge of teaching methodology for the ten primary subjects. The DHE provided the EC with expected programme and schedule, but there were cases where the EC changed the schedule and duration of the training due to their own reasons. Particularly in the G1 and G2 trainings, there were some cases where the trainings were

conducted before the materials were distributed by the DHE, the training period was shortened, and as a result, group work and discussion activities, which were intentionally heavily used in the trainings, were reduced, or the trainings were conducted in a lecture method with more than 100 students in an auditorium. There were also situations where, due to lack of coordination with DBEs, primary textbooks and teacher's guides were not delivered to EC on time, and effective training could not be conducted while referring to them.

Based on this experience, after G3 the training period was significantly shortened to make it easier for EC to conduct the training even when they are busy; and for the training for students, the project proposed a programme in which teacher educators of subject teaching methodology used three sessions for each subject in their regular classes. The project also developed reference materials for EC students that can be used as self-study materials to supplement the limited training period, for there is not sufficient time for training despite the increasing volume of training content for EC students.

EC training (G4 central training)

Table 3-28: Overview of Training for EC Teacher Educators and Students

		G1 Training	G2 Training	G3 Training	G4 Training	G5 Training (Plan)
Central Training	Trainer	CREATE Counterparts				
	Participant	12 teacher educators from each EC, total 300	12 or 14 teacher educators from each EC, total 320	12 or 14 teacher educators from each EC, total 314	12 teacher educators from each EC, total 300	12 teacher educators from each EC, total 300
	Implementation Schedule	Batch 1: 29th May – 2nd June, 2017 Batch 2: 5th – 9th June, 2017 Batch 3: 12th – 16th June , 2017	Batch 1: 15th – 19th January, 2018 Batch 2: 22nd – 26th January, 2018 Batch 3: 29th January – 2nd February, 2018 (Participated in the central training for in-service teachers)	Batch 1: 21st–25th January, 2019 Batch 2: 28th January – 1st February, 2019 Batch 3: 4th – 8th February, 2019 (Participated in the central training for in-service teachers)	Batch 1: 17th–19th February, 2020 Batch 2: 24th–26th February, 2020 Batch 3: 3rd – 5th March, 2020	Batch 1: 16th – 25th March, 2021 Batch 2: 30th March – 8th April, 2021 (Participated in the training of trainers for in-service teachers)
	Length	5 days x 3 batches	5 days x 3 batches	5 days x 3 batches	3 days x 3 batches	8 days
Training for teacher educators in each EC	Participant	1,709	Approximately 1,700	Approximately 1,700	Approximately 1,700	Pending
	Implementation Schedule	Set by each EC between 19th – 30th June, 2017.	February 2018, Set by each EC	Week of 25th February, 2019	Batch 1 subjects: 23rd – 24th February, 2020 Batch 2 subjects: 3rd – 4th March, 2020 Batch 3 subjects: 10th – 11th March, 2020	(Initial plan) Utilise trainer training videos and implement in each EC
	Length of Training	8 sessions (3 hours per session)	8 sessions (3 hours per session)	4 sessions (3 hours per session)	2 days	(Initial plan) 2 days
Training for students in each EC	Participant	2-year EC students, PPTT participants 11,000	2-year EC students, PPTT participants 11,000	2-year EC students, PPTT participants 11,000	(Initial plan) 2-year EC students, PPTT participants	(Initial plan) PPTT participants
	Implementation Schedule	Set by each EC between 3rd and 31st July, 2017	PPTT students: June 2018 2-year students: July 2018	PPTT students: June 2019 2-year students: July 2019	(Initial plan) PPTT students: May 2020 2-yaer students: August 2020	(Initial plan) Utilise trainer training videos and implement them in each EC
	Length of Training	13 sessions (3 hours per session)	22 sessions (3 hours per session)	30 sessions (45 minutes per session)	(Initial plan) 6 days	(Initial plan) 6 days

Note: PPTT　(Pre-service teacher training) is 8-month's course for bachelor degree holders.

3.4   Impact Survey

The objective of the impact survey was to verify the impact of introducing the new curriculum and the textbooks on pupils' learning outcomes.

To measure the impact on pupils' learning outcomes, a math test was given to G1, G2 and G3 pupils before and after the introduction of the new curriculum and textbooks. To analyse factors that may have affected the outcomes of the pupils' test results, a questionnaire survey was also administered to pupils, teachers and head teachers (HTs). Along with the above-mentioned large-scale, quantitative data collection activities, we also conducted math class observations to assess classroom teaching and learning practices at a few selected schools.

3.4.1   Survey Methodology

(1)   Math Test for Pupils

The project developed a G1, G2 and G3 math test, where each test comprised of 15 or 16 multiple-choice questions from the relevant grade with four answer options. Some questions were traditional type (T-type) questions, which focus on knowledge, understanding, and basic skills, and others were new type (N-type) questions, which require critical thinking and problem-solving skills.

(2)   Questionnaires for Pupils, Head Teachers and Teachers

Together with the math test, pupils were given a multiple-choice questionnaire with questions on their preference for math and study habits as well as their basic information such as gender, age, and language. Separate questionnaires were used for HTs and teachers. The main content of questionnaires for pupils, HTs and teachers are shown in Table 3-29 below.

Table 3-29: Content of Impact Survey Questionnaire

Pupils	Head Teachers	Teachers
• Personal Information: age, gender, language used at home, possession of motorcycle (economic status of family) • Interest and habits: preference for math, use of textbook in math class, study at home, family's support for studying, family's interest in studies.	• Personal Information: gender, professional qualification, education background, current position, teaching experience, experience of trainer of teacher training. • School Information: school type, number of pupils & teachers, languages used by pupils. • School Management: HT's activities regarding management of their school, satisfaction with teachers, pupils, and school, community	• Personal Information: gender, professional qualification, education background, current position, teaching experience, experience of trainer of teacher training, teaching grade. • Professional Development: participation in/satisfaction with teacher training, experience regarding lesson observation • Teaching practices and attitudes: class size, pupils' attendance in class, access to Math textbook/teacher's guide, teacher's activities regarding Math class, satisfaction with HTs/ teachers/pupils/school/ community

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(3)   Math Class Observation:

To assess classroom teaching and learning systematically, we have developed a class observation sheet with 13 statements which were divided into 6 areas, i.e., Lesson Design Skill, Use of Teaching and Learning Materials, Teacher's Teaching Skill, Assessment Skill, Teacher's Positive Attitude and Students' Positive Attitude. During or after the class observation, the observer assessed the class by rating each statement on a 4-option scale from "fully agree" to "completely disagree".

3.4.2   Sample Townships and Schools

Four sample townships were selected randomly, two from states and two from regions (except Yangon and Naypyitaw). In both sets, the urban population of one of the two townships was above the national average and the other was below the national average[45]. Two townships were selected from the states and two from the regions, considering the children's native language skills. Table 3-30 shows the selected townships.

Table 3-30: Sample Townships in Impact Survey

State/Region	District	Township	Urban Population
TANINTHARYI Region	Myeik	Tanintharyi	Below national average
KAYAH State	Loikaw	Loikaw	Above national average
MAGWAY Region	Magway	Magway	Above national average
SHAN State	Kyaukme	Naungkhio	Below national average

In each township, 50 schools were selected by the stratified random sampling method using the level of schools, i.e., high school, middle school, and primary school. In principle, each impact survey should have been conducted at the same 200 schools[46]. For the math class observation, 12 schools[47] from among the 200 schools (3 schools in each township) were selected.

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[45] Based on the data from 2014 National Census, sample townships were randomly selected from two groups of townships; one group with urban population of above the national average of 29.2% and another group with that of below the national average.

[46] Before the 2nd survey, 37 schools in Naungkhio were replaced by other schools due to security issues in that area. In replacing the schools, the project, together with the TEO, tried to maintain the representativeness of the school types in the original sample.

[47] Math class observation was conducted at 8 schools (2 schools in each township) for the 1st survey (AY2015/16), which increased to 12 (3 schools in each township) from the 2nd survey.

3.4.3   Survey Target and Schedule

The target and the schedule of the survey is summarised in Table 3-31 below. As the new curriculum was introduced simultaneously throughout the country, the survey compared the situation before and after the introduction of the new curriculum. The groups of children compared are therefore different. Similarly, the same teachers have not been compared before and after because of the frequent teacher transfer, although the sample schools are targeted.

Table 3-31: Target and Schedule of Impact Survey

Survey	Target and Schedule	Control Group (Before New Curriculum/ Textbooks Introduction)	Comparison	Treatment Group (After New Curriculum/ Textbooks Introduction)
1st Survey	Target population	G1 pupils (5 years old) and G2 pupils (6 years old) in AY 2015/16*		
	Schedule	February 2016 (at the end of AY 2015/16) (after 1 year/2 years of current textbook use)		
2nd Survey	Target population	G2 pupils (6 years old) and G3 pupils (7 years old) in AY2016/17*		
	Schedule	January 2017 (at the end of AY 2016/17) (after 2 years/3 years of current textbook use)		
3rd Survey	Target population	G3 pupils (7 years old) and G4 pupils (8 years old) in AY2017/18*		G1 pupils (6 years old) in AY 2017/18
	Schedule	January 2018 (at the end of AY 2017/18) (after 3 years/4 years of current textbook use)		January 2018 (at the end of AY2017/18) (after 1 year of new textbook use)
4th Survey	Target population			G2 pupils (7 years old) in AY 2018/19
	Schedule			January 2019 (at the end of AY2018/19) (after 2 years of new textbook use)
5th Survey	Target population			G3 pupils (8 years old) in AY 2019/20
	Schedule			January 2020 (at the end of AY2019/20) (after 3 years of new textbook use)

Note: Due to the age difference of G1, G2 and G3 before and after the curriculum reform, the data of pupils for both G1 and G2 in 2015/16, G2 and G3 in 2016/17 and G3 and G4 in 2017/18 are collected from the control group.

Table 3-32 shows the sample schools, target grade and the schedule of Math class observation.

Table 3-32: Target and Schedule of Math Class Observation

Township	School No.	School Type	Rural Urban	Survey 1 Feb. 2016	Survey 2 Nov/Dec. 2016	Survey 3 Nov/Dec 2017	Survey 4 Nov/Dec 2018	Survey 5 Nov/Dec 2019
Tanintharyi	120	BEPS	U	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	141	BEMSB	R	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	115	BEHS	R	-	OG2, OG3	OG3, OG4, NG1	NG2	NG3
Loikaw	217	BEPS	U	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	244	BEHS	R	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	228	BEPPS	R	-	OG2, OG3	OG3, OG4, NG1	NG2	NG3
Magway	301	BEHSB	U	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	337	BEPS	U	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	306	BEHSB	R	-	OG2, OG3	OG3, OG4, NG1	NG2	NG3
Naungkhio	421	BEMSB	U	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	426	BEMSB	R	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	443	BEPS	R	-	OG2, OG3	OG3, OG4, NG1	NG2	NG3
So far, we have video recorded: OG1: 8 classes, OG2: 20 classes, OG3: 24 classes, OG4: 12 classes, NG1: 12 classes, NG2: 12 classes and NG3: 12 classes								

Note 1: BEPS=Basic Education Primary School, BEPPS= Basic Education Post Primary School, BEMSB= Basic Education Middle School (Branch), BEHSB= Basic Education High School (Branch), BEHS= Basic Education High School

Note 2: OG1, OG2, OG3, and OG4 are G1, G2, G3, G4 under the old curriculum, NG1, NG2 and NG3 are G1, G2 and G3 under the new curriculum.

3.4.4   Survey Team

The survey team was composed of two M&E experts, two project staff in charge of M&E[48] and 2 researchers who led the surveyor training and survey implementation in the assigned township. Normally, in each township 20 surveyors were selected by the TEO and trained by the survey team. Most of the surveyors were current or former HTs or teachers in the township. Math class observation and rating of the class was carried out by a project officer, who has extensive experience in teacher education, especially in the field of CCA.

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[48] Both of them had dual responsibilities.

3.4.5 Survey Reports

Since the start of the project the following survey reports were submitted to the MOE and JICA.

Table 3-33: Survey Reports Developed by the Project

No.	Title	Date	Submission
1	Report on Impact Survey 1	September 2016	Appendix to Progress Repot (PR) 3, March 2017
2	Report on Impact Survey 2	June 2017	Appendix to Project Completion Report (PCR) Year 2, March 2018
3	Report on Impact Survey 3	August 2018	Appendix to PCR Year 3, March 2019
4	Report on Impact Survey 4	June 2019	Appendix to PR 4, April 2020
5	Report on Impact Survey 5	April 2020	As a technical report, April 2021
6	Additional Analysis Report	November 2020 – February 2021	As a technical report, December 2020 and February 2021
7	Summary Report on the Impact Surveys	March 2021	Appendix to Final Project Completion Report, April 2021

3.5   Public Relations

The revision of the primary curriculum supported by the project was a major shift in the way school teaching and learning take place. In the old curriculum, children were not allowed to ask questions or express their opinions, and in class, the teacher would write down content of the textbook on the blackboard and the class would recite it in unison. In the new curriculum, the children are expected to notice the problems, think about them, work on specific activities with their classmates, share the findings, and present their ideas. Examinations, which were mostly based on the content of the textbooks, are now assessed on the basis of the pupils' work in class, and include questions that test not only their knowledge, but also their ability to apply it. These methods of teaching were new to many people involved in education, including teachers, parents, and education administrators. In order to facilitate such a major change, it was necessary to communicate clearly and simply what the new curriculum would aim to achieve, how learning would change and what benefits could be expected as a result.

The project attracted a wide range of interest from within Japan as well as in Myanmar. The scale of the cooperation, which supports curriculum revision and teacher education for all primary education subjects and grades in a single project, is unprecedented in Japan's technical cooperation in the field of education. It is meaningful from the perspective of Myanmar's economic development and educational development that Japan's assistance is making a significant contribution to the development of the people who will support Myanmar as it begins its democratization.

For this reason, the project carried out a public relations (PR) campaign targeting a variety of audiences, including Myanmar education stakeholders, the general public, Japanese stakeholders and the media in both countries. In addition to printed materials, the project made extensive use of visual images, television, radio, the internet, social networking sites, newspapers and magazines to ensure that the information was easily accessible to non-education specialists. In addition to distributing and disseminating materials produced by the project, the team responded to numerous visitors, interviews and requests for talks to explain the features of the new curriculum and the project's approach. Outside of the project, experts working as members of the team shared their findings through presentations at conferences and publication of papers.

3.5.1   Public Relations for the New Primary Curriculum

Soon after the start of textbook development, the project began to produce pamphlets, posters and TV commercials to introduce the new curriculum, as it was foreseen that a certain period of time was needed to build understanding and momentum to support learning based on the new curriculum before its introduction. However, there was a great deal of reluctance within the MOE to communicate about the significant changes for primary school education ahead of the introduction of the new curriculum, as it was feared that this might provoke negative public opinion. The publication of the documents was not approved until mid-May 2017, two weeks before the start of first year classes in the new curriculum.

When the new curriculum was first introduced, the response from schools was mostly positive, with children actively participating in lessons and happy to go to school, but there were also concerns about the seeming reduction in the amount of knowledge to be learned, the inability of parents to teach, the confusion caused by the different teaching methods of cram schools, and the increased workload for teachers. There were also some comments about the increased burden on teachers. As the school years progressed, there was a noticeable change in the children's learning outcomes, teachers demonstrated increasing confidence during the introduction training, and the impact survey consistently showed that the academic performance of the pupils in the grades that had studied the new curriculum was high. Therefore, after the introduction of the new curriculum,

PR materials were designed to address the concerns and questions of teachers, schools, and parents in an easy-to-understand manner, including the expected roles of teachers, schools, and parents, the image of the children the new curriculum aims to nurture, the outcomes of learning based on the new curriculum, and new assessment concepts and examples. As the positive results of the new curriculum emerged, the MOE itself expanded its own PR of the new curriculum, and the concept of the PR programme reflected the MOE's desire to disseminate the results of the impact study. In 2020, the Department of Alternative Education (DAE) launched an education channel on which the video materials produced by the project was regularly broadcasted.

Table 3-34 shows the PR materials produced by the project on the new curriculum.

Table 3-34: Public Relation Materials for the New Curriculum Created by the Project

No.	Public Relations Material	Overview	Date of Publication	Language	Target	Media	URL
1	New curriculum pamphlet	The structure and features of the new primary curriculum will be explained mainly to teachers and other interested parties.	01/2017	M E	Educators	Distributed at New curriculum introduction training, etc.	
2	New curriculum poster (1)	To inform education administrators and school staff about the new primary curriculum being introduced and its features.	01/2017	M E	Educators	Distributed at New curriculum introduction training, etc.	
3	Newspaper and magazine advertising (1)	To inform the general public of Myanmar about the new primary curriculum being introduced and its features.	05/2018	M	General public	Placed on Local newspaper	
4	New curriculum poster (2)	To inform education administrators and school staff about the new primary curriculum being introduced and its features.	-	M E	Educators	Distributed at New curriculum introduction training, etc.	
5	Newspaper and magazine advertising (2)	To publicise the new primary curriculum being introduced and its features.	05/2019	M	General public	Placed on Local newspaper	
6	Website (interlinked with MOE website)	To publicise the new primary curriculum being introduced and its features.	06/2018	M E	General public	Internet	M: https://createmm.org/mm E: https://createmm.org/en
7	Teacher resources on the website (documents, audio, lesson videos)	To provide resources, primarily for teachers and other educators, to help implement the new primary curriculum.	08/2018	M	Educators	Internet	https://createmm.org/mm/download
8	YouTube channel (linked from website)	Video material on the new primary curriculum is made available.	07/2018	M E	General public	Internet	https://www.youtube.com/c/CREATEProject
9	Facebook	To keep up to date with the introduction of the new primary curriculum.	06/2018	M E	General public	Internet	https://www.facebook.com/pg/JICA.CREATE.Project/posts/
10	New curriculum TV commercial (3 minutes, 30 seconds)	To publicise the new primary curriculum being introduced and its features.	05/2017	M E subtitled J subtitled	General public	TV, Internet, Radio	M(J&E subtitled): https://youtu.be/dlJK-jmzqm4 M(45s): https://youtu.be/NfO01Dtn0Ig E subtitled (3min): https://youtu.be/Gl7vzCnDoqk E subtitled (45s): https://youtu.be/NdF021xrKTg

No.	Public Relations Material	Overview	Date of Publication	Language	Target	Media	URL
11	New curriculum awareness drama (45 minutes)	This drama tells the story of the new primary curriculum and the role of teachers, schools and parents in its introduction.	02/2018	M E subtitled J subtitled	General public	TV, Internet, Preview	M: https://youtu.be/jNFT6VMdiQ8 E subtitled: https://www.youtube.com/watch?v=EYJu5yktHUo J subtitled: https://youtu.be/HgtYzhre38o
12	New curriculum short drama (3 minutes) (Theme: Active)	To promote understanding and cooperation with the new primary curriculum by describing how children's attitudes improve as they go through it.	04/2019	M E subtitled	General public	TV, Internet	M: https://youtu.be/6CHsq7ufPXw E subtitled: https://youtu.be/y8v7W0fy5ks
13	New curriculum short drama (3 minutes) (Theme: Creative)	To promote understanding and cooperation with the new primary curriculum by describing how children's creativity increases as they go through it.	04/2019	M E subtitled	General public	TV, Internet	M: https://youtu.be/5NIfCrAdJEs E subtitled: https://youtu.be/aCx7XaNOBtE
14	New curriculum short PR programme (Impact: Mathematics)	To publicise the benefits of the new primary curriculum with the math teaching process and impact study results to encourage understanding and cooperation with the new curriculum.	05/2020	M E subtitled	General public	Internet (produced to be broadcast on TV and radio, but on hold due to COVID-19)	M (original ver.): https://youtu.be/y-mKu6YzudY M (promo ver.): https://youtu.be/_JM0P6vEIco E subtitled: Impact w/ Math https://youtu.be/WMBkBvFpPHE
15	New curriculum short PR programme (Impact: Science)	To publicise the benefits of the new primary curriculum with the Science teaching process and impact study results to encourage understanding and cooperation with the new curriculum.	05/2020	M E subtitled	General public	Internet (produced to be broadcast on TV and radio, but on hold due to COVID-19)	M (original ver.): https://youtu.be/ZeIV2gAU4Qk M (promo ver.): https://youtu.be/YnQYIJLk3og E subtitled: Impact w/ Science https://youtu.be/-1gju_N9jDM
16	New curriculum short PR programme (Impact: Myanmar language)	To publicise the benefits of the new primary curriculum with the Myanmar language teaching process and impact study results to encourage understanding and cooperation with the new curriculum.	05/2020	M E subtitled	General public	Internet (produced to be broadcast on TV and radio, but on hold due to COVID-19)	M (original ver.): https://youtu.be/47y3Ft6r13k M (promo ver.): https://youtu.be/8ipkO1iGkbo E subtitled: https://youtu.be/Aac41E3SDGU
17	New curriculum short PR programme (Assessment)	The purpose and process of formative assessment in the new primary curriculum is communicated with specific examples to encourage understanding and cooperation with the new curriculum.	05/2020	M E subtitled	General public	Internet (produced to be broadcast on TV and radio, but on hold due to COVID-19)	M (original ver.): https://youtu.be/-MLHxMzK5-8 M (promo ver.) : https://youtu.be/YeLPKJVGlR8 E subtitled: Assessment https://youtu.be/6nyuBx0rQiw

Some of the PR materials are shown below:

(1)   Paper-based Materials

The posters distributed in the first year of the new curriculum were designed to serve as a notice, outlining the planned introduction, content and features of the new curriculum, and were displayed mainly in primary schools. The posters were designed to promote understanding of the new curriculum by visually presenting the five key competencies and 21st century skills, as well as the features of the new textbooks.

Figure 3-9: New Curriculum Poster (Newspaper Advertisement- 1)

Figure 3-10: New Curriculum Poster (Newspaper Advertisement- 2)

The pamphlet is aimed mainly at teachers and provides a comprehensive and easy-to-understand overview of the new curriculum, including plans for its introduction, the structure of the subjects and the number of lesson hours, the basic concepts, and the characteristics of the lessons and assessments. It was distributed as a handout at training sessions for the introduction of the new curriculum, and was also widely used as a general-purpose document.

**Figure 3-11: Pamphlet Introducing the New Curriculum
(Cover and Paper Extracts)**

(2)   Online Platforms

The project has developed a website to provide basic information about the new curriculum, as well as up-to-date event schedules and notices. The website also has a page for teachers' reference materials, and a questionnaire page to solicit opinions from educators and the general public. In addition, a Facebook page, which is used by many people in Myanmar, and a YouTube channel, which allows people to watch the video materials created by the project for PR and training purposes, were operated in conjunction with these pages.

**Figure 3-12: Website to introduce the New Curriculum
(Home Page and Downloadable Resources for Teachers)**

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Figure 3-13: Facebook Page
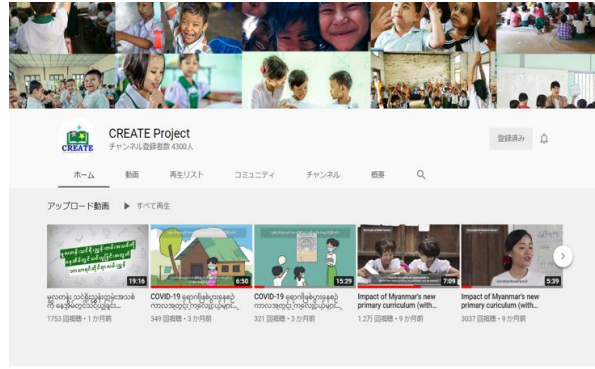
Figure 3-14: YouTube Channel

(3)   TV Commercials and TV Drama

Just before and after the introduction of the new curriculum, TV commercials (3-minute and 30-second versions) and a TV drama (45-minute) were aired. The commercials briefly explain the features of the new curriculum, while the drama is a medium-length film about teachers and parents who are confused by the changes in the primary school curriculum, but come to realise their significance and support their children's active learning. TV commercials were aired around the start of each school year during high-rated programmes, with inserts on public channels at other times. The commercials were also broadcast on the radio to help reach those who did not own a television set. Prior to the release of the drama, screenings were held for the MOE, the SWC and others involved in the editing and approval of textbooks, as well as for educational cooperation organisations.

Figure 3-15: TV Commercial for the New Curriculum (3 min)

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Figure 3-16: TV Drama "Our Hope, Our Future" (45 min)

(4) Short Dramas

The project developed a series of short dramas to coincide with the introduction of G3 and G4, showing the non-cognitive and learning aspects of how children's learning changes, and what impact this can have on their lives. The two short dramas, which were shown on TV before the introduction of G3, showed how children become more active and engaged in their learning and how this was applied to their daily lives in the theme of "Active", and how they used everyday materials to create music and art in the theme of "Creative". Four short dramas for the introduction of G4, set in the school and at home, told stories of learning outcomes and assessments in a compelling way.

Figure 3-17: New Curriculum Changes Children (Theme: Active)

Figure 3-18: New Curriculum Changes Children (Theme: Creative)
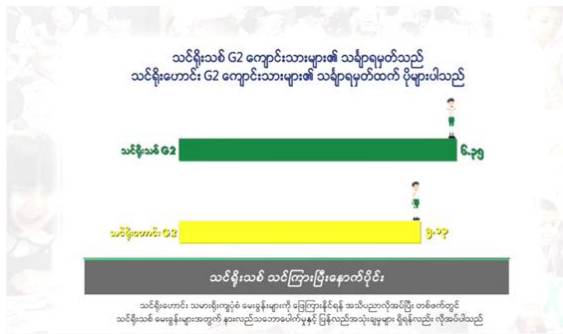
Figure 3-19: Impact of the New Curriculum (Math)

Figure 3-20: Impact of the New Curriculum (Science)

Figure 3-21: Impact of the New Curriculum (Myanmar Language)

Figure 3-22: Assessment in the New Curriculum

3.5.2 Public Relations for the Project

At the beginning of the project, the main focus of PR was to inform the public about the new curriculum, but with the introduction of the G1 curriculum in 2017, interest in the project itself has grown, so printed materials, handouts and video materials introducing the project have been updated to be more message-oriented. The project has also contributed to the dissemination of Official Development Assistance (ODA)'s achievements through the production of special programmes and feature articles by JICA. The main PR materials covering the project are shown in Table 3-35.

Table 3-35: Public Relations for the Project

No	Public Relations Material	Overview	Publication Date	Language	Target	Media
Produced by the project						
1	Project pamphlet	An overview of the project.	11/2014	M, E, J	General public	Paper
2	Project introduction video (pre-introduction version)	An introduction to the curriculum development process.	09/2015	M, E	General public	Used for explaining to visitors and lecturing, Internet
3	Teacher education promotional video	An introduction to our approach to teacher education.	02/2016	M, E	General public	Used for explaining to visitors and lecturing, Internet
4	Project introduction video (inaugural version)	An overview of curriculum development and teacher education initiatives and reactions to the new curriculum.	05/2018	M, E, J	General public	Used for explaining to visitors and lecturing, Internet
	M (E subtitled): https://youtu.be/K07roSNJl9Y J: https://youtu.be/FeD-zJ_QiXk					
5	Project introduction video (finished version)	An overview of the project's work to date, its achievements and the views of those involved.	-	M, E, J	General public	Internet
6	Calendars and planners	Designed to be an easy to use scheduler for educators in Myanmar, with an overview of the project.	Calendar: 01/2015 Planner: 11/2015 - 6 times	M, E	Educators	Project goods
7	Pens, plastic holders, paper files, hand bags, etc.	In order to make the project more widely known to educators, the name of the project and the concept of the new curriculum were printed on tools to be distributed to participants and collaborators in the various activities.	12/2015 ~	M, E	Educators	Project goods
Cooperation with JICA for special programmes and feature articles						
8	Press release on the introduction of new textbooks		05/2017	E, J	General public	Media
9	JICA Magazine Mundi Feature Article	An introduction to the development of the new curriculum and textbooks.	04/2018	J	General public	Internet, Paper
	https://www.jica.go.jp/publication/mundi/1804/ku57pq000027i0zn-att/03.pdf					
10	Morisaki Win x JICA Myanmar Collaboration Video	This was the main theme of a video by Mr. Win Morisaki introducing JICA's project in Myanmar.	02/2020	M (Partially English subtitled)	General public	Internet
	https://m.facebook.com/story.php?story_fbid=199836491133255&id=484006651635487					
11	JICA Magazine Mundi Feature Article	An introduction to Physical Education in the new curriculum.	04/2020	J	General public	Internet, Paper
	https://www.jica.go.jp/publication/mundi/202004/ku57pq00002m1583-att/04.pdf					
12	JICA education newsletter	An overview of the activities of schools and projects in Myanmar under COVID-19, and the newly launched support for education under COVID-19.	07/2020	J	General public	Internet
	https://www.jica.go.jp/activities/issues/education/ku57pq000027dz1y-att/education_news_202007.pdf					
13	JICA Educational Cooperation Brochure	An overview of the project.	Not yet published (as of 02/2021)	J	General public	Internet

Some of the PR materials are shown below:

(1)   Public Relations Material Produced by the Project

Pamphlets and videos were used to effectively explain the project in interviews, visits and lectures as described in Section 3.5.3 below. Project goods were used in activities involving a large number of participants, such as training for the introduction of the new curriculum and impact surveys.
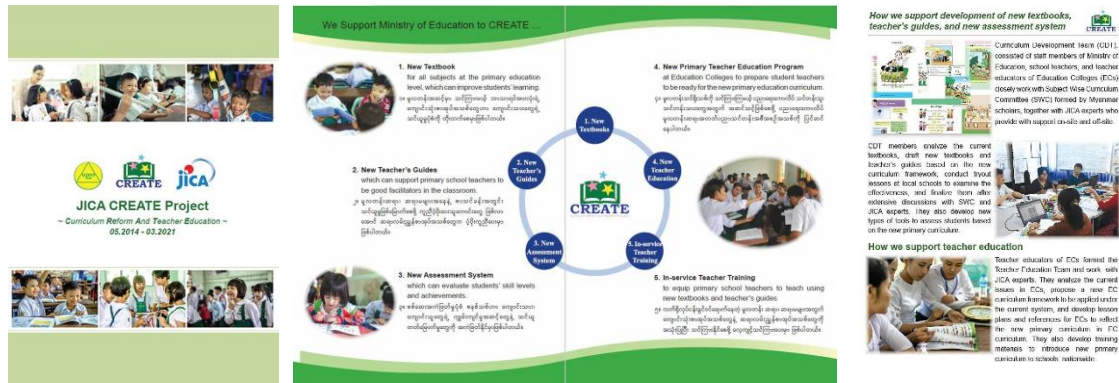
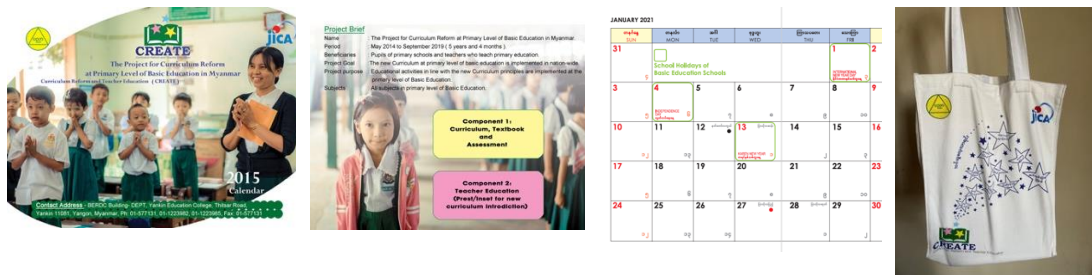**Figure 3-23: Pamphlet for Project Introduction**

Figure 3-24: Video for Project Introduction

Figure 3-25: Project Goods (Calendar, Planner, and Bag)

Figure 3-26: Planner (Cover Pages)

(2)　Contribution to Public Relation Materials Produced by JICA

Articles, materials and support for site visits were provided in the production of special programmes and feature articles by JICA.

Figure 3-27: Mundi Article (April 2018)

Figure 3-28: Mundi Article (April 2020)

Figure 3-29: JICA Education Newsletter

Figure 3-30: JICA COVID-19 Response Introduction Articles

Figure 3-31: Morisaki Win x JICA Myanmar Collaboration Video

(3) Publication of Articles in JICA's Online PR Media

In addition to the materials produced by the project and JICA, a number of articles on CREATE were published on JICA's website, JICA's Media and Public Relations Department Facebook and Myanmar Office Facebook. Some of the articles published in JICA's online PR media are shown in Appendix 14.

Figure 3-32: JICA Technical Cooperation Project Website

Figure 3-33: Newsletter Published on JICA Technical Cooperation Project Website

Figure 3-34: JICA News Topics

Figure 3-35: JICA Media and Public Relations Department Facebook

Figure 3-36: JICA Myanmar Office Facebook

3.5.3   Information Sharing with Media and Visitors, Lectures, etc.

The project received over a hundred media coverages, visitors, and delegations, and was invited to give lectures. In addition to organisations working in the education sector, a wide range of stakeholders such as Myanmar and Japanese government personnel, JICA headquarters, counterpart personnel of a JICA project in another country, Myanmar and Japanese NGOs and NPOs, Myanmar and Japanese companies, Yangon Japanese Association, a working group of Japan Chamber of Commerce and Industry, Yangon Japanese School, Japanese and foreign universities, researchers, high schools, and graduate students were briefed on the project. Synergy effect was enhanced by exchanging information with development partners and companies that operate in Myanmar. By the media coverages, the project contributed to the dissemination of the new primary curriculum among Myanmar citizens. and communication on ODA and education cooperation among Japanese citizens. Examples are listed in Table 3-36 below. Copies of selected media coverage are attached as Appendix 15. In addition to the listed visits, the Minister of

Education, the Director Generals, the Chief Representative of JICA Myanmar Office and other relevant officials visited the project office, gave talks to counterparts, and inspected try-out lessons and training sites. This has laid the foundations for close supervision based on hands-on information of activities.

Table 3-36: Major Presentations, Media Coverages, and Visitors

No.	Overview	Month/Year
Lectures and Presentations		
1	Annual Education Conference	11/2014, 2015 & 2016
2	Lecturer at Yangon Japanese School Teachers' Workshop	10/2016
3	Presentation at the regular meeting of the Construction Division of the Japan Chamber of Commerce and Industry in Myanmar	10/2018
4	Presentation at the JICA expert/volunteer liaison meeting	11/2018
5	Presentation at the regular meeting of the Japanese NGO Network (JNN)	12/2018
News coverage		
6	The Asahi Shimbun	09&12/2014, 05&06/2017, 07/2018, 10/2019
7	Kyodo News	02/2015
8	NHK World and local media	01/2017
9	Myanmar Express	08/2017
10	NHK International / MRTV	08&09/2017
11	NHK World Radio	09/2017
12	The Mainichi	09 and10/2017
13	The Tokyo Shimbun	03/2018
14	NHK World Radio "News Insight"	05/2018
15	The International Development Center of Japan	05/2018
16	Yangon Japanese Association Bulletin "Shining Japanese"	10/2018
17	Media Tour organized by JICA Myanmar Office	01/2019
18	Local Japanese-language magazine "MYANMAR JAPON"	03/2019
19	Media Tour organized by JICA Myanmar Office	07/2019
20	Special programme on local TV station (MNTV)	09/2019
Visitors		
21	ODA Research Mission of the House of Councillors, Japan	02/2017
22	Safety mission, JICA	07/2017
23	Director, Sports Agency, Ministry of Education, Culture, Sports, Science and Technology, Japan	09/2017
24	Ambassador of Japan in Myanmar	09/2017
25	Mr. Mizuguchi, Deputy Minister of Education, Culture, Sports, Science and Technology, Japan	10/2017
26	TRC Library Service Inc.	11/2017
27	360ed (Educational application development company)	03/2018
28	Director of International Affairs Division, Japan Sports Agency	10/2018
29	Deputy Director General for Education, Culture, Sports, Science and Technology; Director, International Strategic Planning Office, International Affairs Division, Cabinet Secretariat, Japan	11/2018
30	Leopalace 21 Corporation	03/2019
31	House of Representatives Parliamentary Group Mission on the Political and Economic Situation in South Asian Countries, Japan	08/2019
32	JICA Volunteers	09/2019
33	Mr. Tanaka, Director of JICA	09/2019
34	Mr. Yamaguchi, Representative of Komei Party, Japan	12/2019
35	Mr. Shigeta, member of the JICA Advisory Committee for Environmental and Social Considerations	03/2020

3.5.4 Papers and Presentations at Conferences

The process of curriculum development through the project and the results obtained from the impact survey are of great academic significance. Table 3-37 below shows the presentations made by the project experts at conferences and in papers outside the official project activities. While the majority of the presentations were made by project experts, a few were jointly presented with counterpart or local staff of the project.

Table 3-37: Papers and Presentations at Conferences

Title	Author	Year	Publisher	URL
Art Education in Myanmar (*Art in Education* No. 889)	Mitsuru FUJIE	2016	Educational Art Promotion Association	
Application of Japanese Language Education – Example in Myanmar (*Science of Reading* Vol.58-3)	Yuki OSADA	2016	Japan Reading Association	https://doi.org/10.19011/sor.58.3_122
The State of National Language Education at Introductory Stage in Myanmar: Analysis of G1 Textbooks (*Humanities Education and Research* 43)	Yuki OSADA	2016	Humanities Education Society	http://doi.org/10.15068/00148615
Analysis of the Contents of Grade 2 National Language Textbook of Myanmar (*Humanities Education and Research* 44)	Yuki OSADA	2017	Humanities Education Society	http://doi.org/10.15068/00150856
Language Education in Myanmar as a Multilingual Multicultural Nation (*Elementary School National Language Newsletter* Autumn 2017)	Yuki OSADA	2017	Kyoiku-Shuppan.Co., Ltd.	
What We Can Learned from the Textbook Development in Myanmar (*Elementary School National Language Newsletter* Spring 2018)	Yuki OSADA	2018	Kyoiku-Shuppan.Co., Ltd.	
The Contents of a Grade 3 National Language Textbook of Myanmar: Contents Analysis of 2018 Textbook (*Humanities Education and Research* 45)	Yuki OSADA	2018	Humanities Education Society	http://doi.org/10.15068/00155489
The Contents of a Grade 4 National Language Textbook of Myanmar: Contents Analysis of 2019 Textbook (*Humanities Education and Research* 46)	Yuki OSADA	2019	Humanities Education Society	http://doi.org/10.15068/00159108
Development Aid in Education (*Latest Education Keywords – Understanding Education with 155 Keywords*)	Yuki OSADA	2019	JIJI Press Publication Service, Inc.	
The Contents of a Grade 5 National Language Textbook of Myanmar: Contents Analysis of 2020 Textbook (*Humanities Education and Research* 47)	Yuki OSADA	2020	Humanities Education Society	http://doi.org/10.15068/00162451
The Republic of the Union of Myanmar (*Overseas Textbook System Research Report*)	Yuki OSADA	2020	Japan Textbook Research Center	
Developing Quality Physical Education delivery system in Myanmar (*The 5th International Conference on Physical Education, Sport and Health*)	Than Min Soe, and Yoshinori OKADE	2019	ASEAN Council of Physical Education and Sport (ACPES)	

Title	Author	Year	Publisher	URL
The Development of Mathematics Textbooks in Myanmar – under the CREATE Project	Takashi ITOH, Isamu IMAHORI, Koji TAKAHASHI	2020 (postponed) [49]	14th International Congress on Mathematical Education, Shanghai China	https://www.icme14.org/static/en/index.html
Contribution to SDGs Goal 4.1: Impact Survey of the Project for Curriculum Reform at Primary Level Basic Education (CREATE) in Myanmar	Ryo SASAKI, Masami WATANABE, Aye Yie Mon, Htay Htay Han	2019	Japan Evaluation Society (the 20th National Conference)	-
Impact Survey of the Project for Curriculum Reform at Primary Level Basic Education (CREATE) in Myanmar	Ryo SASAKI, Masami WATANABE, Aye Yie Mon, Htay Htay Han	2020	Japan Evaluation Society (the 21st National Conference)	-
How were our video lessons developed? A description of cross-cultural lesson study among Myanmar and Japanese practitioners	Atsushi TSUKUI, Nyein Su Mon, Aye Moe Moe Chit	2020	The 14th annual conference of the World Association of Lesson Study	https://docs.google.com/document/d/1p20GnXZGQmglZyqbAXKtl5VAjkJ4caRbSWhUNMX8gg8/edit

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[49] Postponed by 1 year although it was originally planned to be organized in July 2020.

3.6　Response to COVID-19

3.6.1　Impact of COVID-19 in Myanmar and the Response by the Project

The impact of COVID-19 in Myanmar was thought to be limited throughout the first half of 2020, but various restrictions were imposed relatively early on due to concerns about the weak health care system. The number of new cases of COVID-19 decreased in 2021 and a lull seemed to have been reached, but since the political change on 1 February, data collection and compilation has been limited and the status of infection at the end of the project is unknown as shown in Figure 3-37.
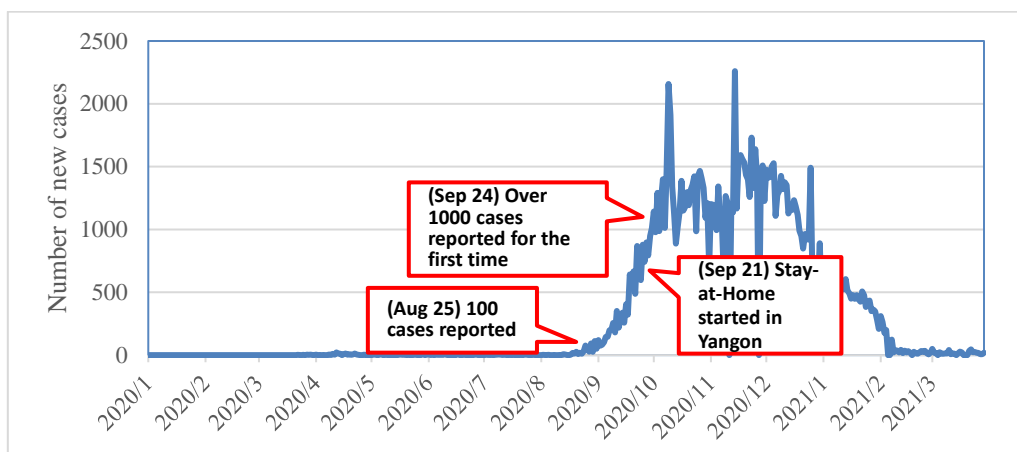
Source: Compiled by CREATE based on *WHO COVID 19 Global Data*

Figure 3-37: Number of New COVID-19 Infections in Myanmar

All the project experts returned to Japan by late March 2020 as instructed by JICA and switched to remote operations. The G4 training, which was planned to be completed in all layers by May, was postponed and was conducted in June using a combination of online and face-to-face training, as explained in 3.3.3 (3). The start of the new school year (which normally begins in June) was postponed, with preparations based on a plan to start in mid-August with high schools, middle schools and primary schools where infection control measures had been completed, but the rapid spread of the disease followed soon after the opening of the first batch of high schools, and subsequently all schools were closed. In January 2021, a plan was drawn up to extend the school year until around August, with the commencement of home-based learning (HBL) officially instructed and the distribution of textbooks and HBL materials scheduled in early March. However, due to the political change on 1 February, this was not possible. As a result, at the end of the project, the primary schools have not held any classes for the 2020/21 school year.

In the period between the decision to postpone the opening of the school and January 2021, the MOE maintained its policy of "continuing learning opportunities for all children", but in the absence of classes in schools and in preparation for the opening of schools with drastically reduced teaching hours, there was an urgent need for guidelines on how to proceed with learning activities at home and for teaching materials for the children to use. The MOE therefore asked CREATE to develop HBL materials during the closure of the school, to develop a shortened curriculum to ensure a minimum level of learning with a reduced risk of infection during the shortened school year, and to develop HBL materials to supplement the lessons in the shortened curriculum, to ultimately support the continuation of learning in the COVID-19 pandemic.

The following table gives an overview of the operation of the COVID-19 response, including additional activities carried out.

Month	Restrictions for infection prevention / MoE plans	Home-Based Learning Materials, Reduced Curriculum, Lesson Videos	Awareness and Information for Education under COVID-19	Operation, Online training
March 2020	Year-End Test of AY2019/20			Experts return to Japan Remote operation started
April	Education Channel started	HBL materials outline (short-term)		Work-from-Home started
May	Postpone G4 INSET		"Learning under COVID-19" video	Online training preparation started
June	G4 INSET (online/face-to-face)	HBL materials & / Reduced curriculum		Office attendance resumed
July		HBL materials & guideline (long-term) [1] / Annual lesson plan for Reduced curriculum		
August	Some high schools open → closed		"Learning under COVID-19" pamphlet & poster	Online training in Japan
September	"Learning Continuity Plan" including HBL			Alternate office attendance
October		HBL materials (long-term) [2] / Lesson video script [1]	"Subject-wise guidance on HBL" video	Work-from-Home resumed
November			How to Use HBL materials	
December	Lesson video script writers training	HBL materials (long-term) [3] / Lesson video script [2]	Japan's experience in school reopening under COVID-19	
January 2021	HBL orientation for REO/SEOs		"Subject-wise guidance on HBL" pamphlet	
February				
March			"Learning under COVID-19" pamphlet & poster after MoHS comments	

(Column between: Participate in GPE HBL meetings)

(School Holiday: April–May)

* "Reduced curriculum" and related documents were revised based on comments by NCC. "HBL guideline (short-term)" was revised in response to changes in school opening plan.

Figure 3-38: Overview of COVID-19 Response by the Project

3.6.2   Support for the Development of HBL Materials, Shortened Curricula and Lesson Videos

(1)   HBL Materials for Reviewing the Previous School Year

In order to support HBL when schools are closed for the new school year, outlines for the preparation of HBL materials were prepared for five subjects: Myanmar, English, Mathematics, Science and Social Studies. In order to cope with the situation where the pupils were not able to attend classes for a long period of time, the content was designed to review the previous year's learning and prepare for the new year. Later, the project was informed that the printing and distribution of the HBL materials would be supported by the Global Partnership for Education (GPE) COVID-19 Response Fund. Therefore, in consultation with the MOE and UNICEF, the coordinating agency for the GPE COVID-19 Response Programme, the project developed a four-week learning programme consisting of weekly learning cards and assignments, and two HBL guidelines (one for parents and one for TEOs/principals/teachers). The materials were made available on MDEP, an online platform operated by the MOE, and printed versions were distributed to 65 townships selected by the MOE based on the GPE criteria.

(2)   Shortened Curriculum to be Taught under COVID-19

In June, at the start of the new school year, the MOE decided not to open any schools for the time being, and devised a plan for school attendance based on a combination of shifts and two sessions, depending on the size of schools. According to this plan, the number of teaching hours in relatively large schools would be reduced to about half the normal number. In addition, the participatory teaching-learning practices included in the new curriculum involve many activities in which several children work together, and in some subjects, there are units or lessons that are very difficult to teach while reducing the risk of infection. Therefore, in response to the MOE's request, the new curriculum and annual lesson plans for all 10 subjects were reduced to about half the original design. The shortened curriculum is based on a policy of covering all units of Myanmar, English and Mathematics, while switching exercises to HBL, and for the other subjects, prioritizing lessons to be covered at school and setting lessons to be substituted by HBL.

(3)   HBL Materials based on the Shortened Curriculum

Because the shortened curriculum requires pupils to study at home, it is necessary to provide support for HBL. To this end, the project developed a series of HBL materials for Myanmar, English and Mathematics, following on from the previous HBL materials for reviewing the previous year's curriculum. As the materials were designed to be used in parallel with school lessons, in addition to the learning instructions and tasks for the children, a guide for teachers and a record sheet were also prepared. Due to the large scope and time consuming nature of the work, the materials were prepared and submitted in three batches for one school year.

(4)   Suggestions for the Use of Materials and Resources to Support HBL

After April 2020, when the opening of the school was uncertain, the MOE moved up the release of the Education Channel and MDEP, which were still in the preparation stage at the time, and started planning for the introduction of a portable server for the use of educational references and teaching materials posted on a site called the DBE Box in the MDEP in areas without Internet access. The MOE was working tirelessly to ensure the availability of tools for the provision of

distance education. The project supported this by providing videos to be broadcast on the Education Channel and materials to be posted on MDEP.

Initially, the MOE did not formally instruct pupils to study at home before school started, out of concern for the burden on families. However, when the outbreak spread rapidly just after the start of high school classes in August and there was no prospect of schools re-opening afterwards, the MOE developed a Learning Continuity Plan to provide learning opportunities during the closure, and switched to HBL. In parallel with the development of the G5 curriculum, the project's experts and local staff worked to produce HBL materials in response to the MOE's request. However, as the timeline for the opening of schools changed frequently, it became necessary to adjust the use of the materials that had been produced and were being produced to suit the situation. For example, the HBL materials for reviewing the previous school year, whose opening date was uncertain at the time of development, were designed to be easy to use under different circumstances, and the guidelines were revised to meet the changing requirements.

In order to respond flexibly and effectively to changing needs, the project continued to be a key member of the 16 HBL meetings held jointly by the MOE and development partners, sharing information on the development of HBL materials and resources and updated ways of using them. The project also helped the MOE to put the plan into practice by compiling a guide "How to use Home-Based Learning materials" and "Experiences of School Reopening in Japan" in advance of the notification that was planned to be made in December 2020, which would formally instruct the implementation of HBL. In addition to regular HBL meetings, the team participated in thematic review meetings on HBL assessment, HBL inclusion and remedial education under COVID-19, and held frequent consultations with UNICEF and other relevant development partners. Advice was provided for MDEP team and Advisor to the Minister for online distribution of HBL materials through MDEP.

(5)   Support for the Production of Lesson Videos

As soon as the Learning Continuity Plan was submitted, the MOE began to prepare the production of lesson videos to replace in-class lessons at schools. The MOE appreciated the project's experience in producing training material videos and publicity videos for the introduction of the new curriculum, and approached the project to co-produce lesson videos to support HBL during school closure. The project counter-proposed to support the MOE by providing training for its script writers and preparing sample scripts for the videos. Based on this proposal, the project gave a lecture on the purpose of lesson videos, how to select units, and points to be considered in the creation of educational video materials at the "Lesson Video Script Writer Training" conducted by the MOE. The project also provided sample scripts for Myanmar, English, Mathematics (3 subjects: batch 1), Science, Social Studies, Physical Education, Performing Arts, and Visual Arts (5 subjects: batch 2).

3.6.3   Awareness-Raising Materials on Learning under COVID-19

(1)   Preparation of Communication Materials on "Learning under COVID-19"

The project developed an awareness raising video, pamphlet, and poster on ways to continue child-centered learning while taking COVID-19 infection prevention measures. The video contains information that will be useful to both school staff and parents, such as consideration for the physical and mental health of children who have stayed at home for a long time for COVID-19 prevention, measures for conducting participatory lessons while preventing infection, and points to keep in mind in supporting the children's learning at home. The message is that this is an opportunity to return to the essence of children's learning rather than the form of learning. The description of the video is summarised in Table 3-38 and the snapshots are shown in the following figures.

Table 3-38: Description of the Video of Learning under COVID-19

Title	Abstract	Distribution	Production
"Learning under COVID-19"	How CCA-type of learning can be achieved under constraints posed due to COVID-19	October 2020	June to September 2020
Full movie: https://www.youtube.com/watch?v=-XOfISdoTLo&t=6s Short version: https://www.youtube.com/watch?v=ee_wOppy-BM			

Figure 3-39: Learning Activities that can be Conducted while Taking Prevention Measures

Figure 3-40: Measures at School and at Home

(2) Preparation of Subject-wise Guidance on HBL

In response to the decision to promote HBL, at the request of the MOE, the project produced a video and a pamphlet on how to conduct HBL in Myanmar, English, Mathematics, Science and Social Studies. The video material is intended to be used in conjunction with an awareness-raising video produced by UNICEF to promote HBL itself. The description of the video is shown in Table 3-39 and snapshots in the following figures.

Table 3-39: Description of the Video of Subject-wise Guidance on HBL

Title	Abstract	Distribution	Production
"Subject-wise Guidance on HBL"	Provide guidance on how to conduct HBL in Myanmar, English, Mathematics, Science, and Social Studies, to support the implementation of HBL.	January 2021	August to December 2020
https://www.youtube.com/watch?v=pIgtqIRmMpM			

Figure 3-41: Main Content of Each Subject's HBL
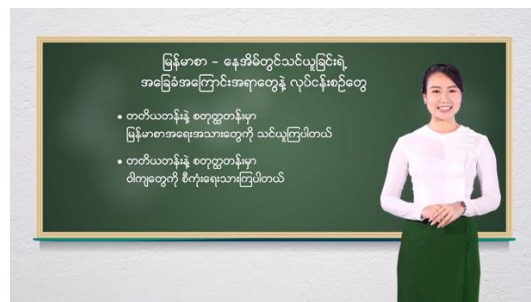
Figure 3-42: Step-by-step Guidance on How to Conduct HBL in Each Subject

3.6.4   Measures Taken for Continuous Operation under COVID-19

The following measures were taken to prevent infection in the project office where a large number of counterparts and staff work, while continuing to carry out project activities.

(1)   Infection Prevention Measures

The project's "Infection Prevention Guidelines" was developed and disseminated to local staff and counterparts as a guideline to follow when they were present in office. In line with this, the following infection prevention measures were implemented.

    a)   Project office: disinfection of office space and furniture, provision of disinfectant solutions, office layout to maintain social distance, and instalment of partitions

    b)   Personal infection prevention support: distribution of cloth masks and face shields

    c)   Special measures for attendance management: introduction of a partial flex time system

(2)   Work from Home and Remote Support

Prior to the return of the experts, a set of action criteria from Plan A to Plan C was drawn up, depending on the infection situation and the level of governmental restrictions on movement envisaged. Based on these criteria, a phased transition to working from home was made from the end of March 2020[50]. At the beginning of April, when the partial work-from-home began, the project set up a system of remote work and remotely providing expert's support, as follows.

    a)   Combined use of email, file sharing in the cloud, web conferencing and telephone

- The file sharing between staff and counterparts, which had been carried out on a local server, was transferred to a cloud service.

- A common account for file sharing and web conferencing in the cloud was given to each work group, including counterparts, staff, and experts in charge.

- Introduction of remote helpdesk software.

    b)   Attendance management

- Moving the existing digitalised attendance sheets to the cloud.

    c)   Progress management

- Curriculum development: Continued to use the existing online schedule and progress sheets for each unit, with twice-monthly progress summaries based on these.

- Teacher Education: Counterparts' work was supported and monitored by relevant experts.

    d)   Financial management

- Approximately twice a month, the administration, accounting and IT staff come to the office to carry out a minimum of work.

- Once a month, all staff come to the office in shifts for salary payment.

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[50] Both counterparts and staff shifted to complete work-from-home in April due to a strict restriction on movements. Commuting was resumed in June according to the order for government officials to attend office, however, it was switched to shift-based work-from-home in September due to the spread of infection. In October, the team moved to a full work-from-home in response to a tightened governmental restriction on movement.

- Preparation of documents to ensure that procedures such as cash withdrawals from the bank could continue to be carried out in the absence of Japanese experts.

e) Assistance in coming to work while working from home

- Preparation of letters to pass through government checkpoints.

(3) Online "Training in Japan"

The training in Japan on textbook editing, which was scheduled for May 2020, could not be carried out as planned. However, the project deliberated alternatives to implement the training in a way that did not involve travel to Japan, and conducted the training online in August of the same year. In place of the school visits, there were lectures in which the lecturers and trainees observed Japanese school lessons on video and discussed them with each other, and lectures on the current situation of schools that had reopened under COVID-19. In addition, a lecture format was adopted that emphasized interaction with the trainees by allowing more time for questions and answers, which led to more active discussions than usual and resulted in a high level of satisfaction among the trainees.

In terms of management, the Japanese side made careful preparations in advance with the lecturers, as there were multiple locations. On the Myanmar side, since there were about 10 participants in one place, measures were taken to prevent infections and devised ways to set up the training venue, including video, audio and layout for discussions.

3.7 Project Management

3.7.1 Operational Management Structure for Implementation of Activities

As outlined in 1.3.2, the project was implemented mainly by the JCC consisting of JICA and Myanmar, with the implementation structure shown in Figure 1-1. The day-to-day activities were mainly carried out by the CDT, teacher education counterparts and DTP operators working in the project office at BERDC. The activities of these counterparts were guided by project experts and supported by project local staff, depending on the type of activity.

As the Myanmar members of the JCC who make important decisions on the implementation of the project were not stationed at the project office, project experts visited the Yangon office of the project manager, the Deputy Director General of DEPT (DERPT after reorganization), for meetings when necessary. Experts assigned for General Component also visited the MOE in Naypyitaw every two weeks to two months to hold discussions with the relevant director generals. In case of important reports or matters to be addressed, meetings with the Minister of Education in collaboration with JICA Myanmar Office were organized.

Meetings were held with the SWC, which reviews the curriculum mainly on a subject basis, and with the NCC, which is responsible for approvals at the management level. For urgent matters and during the final stages of the project, when there was no local or national travel for about a year due to COVID-19 restrictions, close communication was maintained by telephone, email and online meetings. In addition, as mentioned in 3.5.3, the project supervisors from both JICA and Myanmar visited the project office and activity sites as needed to exchange information and manage the project according to the actual situation.

3.7.2 JCC Meetings

The project held a total of five JCC meetings, as shown in Table 3-40 below.

Table 3-40: JCC Meetings

	Date	Main issues discussed
1	27th August 2015	• Revision of R/D (revision of PDM) • Progress report and discussion of issues related to the introduction of the new G1 curriculum • Management: securing the MOE budget, assignment of counterparts, cooperation between the CDT and teacher education counterparts, PR, selection of participants for training in Japan, maintenance of project office • Curriculum: Confirmation of fonts to be used in textbooks, confirmation of Myanmar language proof-readers, confirmation of approval process, confirmation of expected introduction in 2017 • Teacher Education: expected approval of curriculum framework for EC, training plan for introduction of new curriculum (in-service and EC), targeted training participants

	Date	Main issues discussed
2	10th March 2017	• Revision of R/D (revision of PDM) • Progress report and discussion on pending issues • Management: project timelines and cooperation periods, securing the MOE budget, assignment of counterparts, cooperation between the CDT and teacher education counterparts, PR, coordination with secondary curriculum revision, planning of assessment reform by the MOE • Curriculum: confirming the G2 curriculum development schedule and review procedures, confirming the approval status of the curriculum framework, confirming the distribution policy of G2 textbooks, textbook development guidelines, and determining the scope of the new G2 teacher's guide • Teacher Education: G2 training plan, assignment of a responsible person from the MOE for the training, how to reflect the new curriculum (EC training content) in the four-year curriculum of EC, how to monitor the introduction training (in-service)
3	21st December 2017	• Progress report and discussion of pending issues • Management: securing the MOE budget, assignment of counterparts, cooperation between the CDT and teacher education counterparts, PR, the MOE's plan for assessment reform, confirmation of textbook distribution policy • Curriculum: division of review roles in curriculum development, number of pages in textbooks, textbook specifications and fonts, G3 development schedule • Teacher Education: distribution of teaching materials at G2 training, schedule of training, how to use teaching materials developed by CREATE for subject pedagogy lessons at EC
4	20th September 2018	• Progress report and discussion on pending issues • Management: Confirmation of textbook distribution policy, assignment of counterparts, elimination of disadvantages for counterparts (CDT and teacher education counterparts), securing the MOE budget, distribution of teaching materials, textbook fonts, quality control of textbook printing • Curriculum: confirmation of the approval status of curriculum frameworks, planning assessment reforms by the MOE • Teacher Education: coordination between G3 and G6 in the implementation of training, confirmation of EC curriculum revision plan
5	9th December 2019	• Revision of the PDM (the main revisions were discussed at the mid-term review) • Progress report and discussion of pending issues • Management: assignment of counterparts, the CDT's participation in training in Japan • Curriculum: G5 development schedule and try-out classes, number of textbook pages, connection between G5 and G6 • Teacher Education: G4 training plan, development of teaching materials for subject teaching methods, capacity building of EC teachers, new PPTT curriculum

In the JCC meetings, the progress of the project activities and pending issues were shared and solutions to the problems were discussed. In addition, the JCC agreed on the changes described in section 1.2 at times when the PDM needed to be revised. The minutes of each JCC meeting are attached as Appendix 5 to 9.

The JCCs were held in conjunction with the Consultative Missions and Mid-Term Review conducted under the project (Table 3-41).

Table 3-41: JICA Missions during the Project

Type	Period	JCC	PDM change
Consultative mission	August 2014	None	None
Consultative mission	August 2015	1st	1st
Consultative mission	September 2016	None	None
Consultative mission	March 2017	2nd	2nd
Consultative mission	December 2017	3rd	None
Consultative mission	September 2018	4th	None
Consultative mission	February 2019	None	None
Mid-term review	June - July 2019	None	3rd
Consultative mission	December 2019	5th	Confirmation of 3rd change

3.7.3   Cooperation on Policy and Planning

The project was of great interest to the Minister of Education and other stakeholders at the policy level, and reports and discussions at meetings organized by the MOE were held in addition to the periodical meetings on project activities mentioned in 3.7.1.

(1)   Curriculum Development Progress Meetings Organised by the Minister of Education

At the initiative of the Minister of Education, regular meetings were held to report on the progress of the development of the new curriculum and to share concerns. Many of these meetings were organized jointly with the primary and secondary teams and progress reports were made by DERPT's Curriculum Section and SWCs, followed by comments from NCC, EYE, and CREATE. The CDT received encouragement from the Minister and also had the opportunity to directly discuss any difficulties they were facing. The meeting became a monthly event when G4 and G5 approvals approached, which demonstrated the high level of commitment of the MOE for curriculum revision.

(2)   Contribution to the Development of the MOE's Mid-term Plan

Technical support was provided in the development of the National Education Strategic Plan (NESP). The project drafted the curriculum chapters of the NESP, which were produced in November 2014, and after adding comments to the NESP report in July 2015, the project participated in the development of NESP 2 from August to December 2020 on both curriculum and teacher education chapters.

(3)   Participation in the Annual Report of the MOE

Members of the project participated in the Annual Performance Review and the Basic Education Forum organised by the MOE, and made presentations on the project's work as requested.

(4)   Coordination with the KG and Secondary Education Curriculum

Through participation in the KG Curriculum Review Meeting organised by the MOE and consultations with the KG and Secondary CDT, efforts were made to improve the connection between KG, Primary, and Secondary curricula.

(5)   Provision of information to the Parliament

At the request of the MOE, the project provided explanations and materials to the Education Promotion Committee of the Myanmar Parliament.

(6)   Policy Recommendations through Dissemination of Outcomes of the Project's Work

The project held a seminar for the Minister and senior officials of the MOE jointly with JICA's Education Policy Advisor. The project also reported on the results of its annual impact survey and shared information to contribute to policy formulation.

3.7.4   Aid Coordination

Aid coordination for the project as a whole was primarily handled by the Basic Education Improvement Advisor stationed at the project office from 7th September 2014 to 6th September 2017, and by the Project Formulation Officer for Education at the JICA Myanmar Office after the end of the Advisor's term. Technical coordination and inputs with the MOE, other development partners, and other stakeholders directly linked to project activities were conducted by the project team leader, component leaders, project coordinator, textbook development, assessment, teacher education and education planning experts, depending on the matter. Due to the wide range of stakeholders and the increased workload involved in coordination, efforts were made to improve efficiency, for example by involving the local staff in coordination meetings where interpretation was not available.

The overall framework for aid coordination in the education sector in Myanmar is coordinated by the Education Development Partners Coordination Group (EDPCG), which has established Sub-sector Working Groups (SSWG) for each sub-sector. The project participated mainly in the Curriculum & Assessment Sub-sector Working Group (C&A SSWG) and the Teacher Education & Management Sub-sector Working Group (TE&M SSWG), contributing to presentations at regular meetings and writing relevant parts of the planning and recommendation documents. The project participated in 11 meetings of the C&A SSWG and 10 meetings of the TE&M SSWG. JICA and the project played a leading role in the C&A SSWG. In addition to the SSWGs, other aid coordination forums in the field of teacher education included the Myanmar Teacher Education Working Group (MTEWG), a group of aid agencies and NGOs (international and local) involved in teacher education that meets four to five times a year. MTEWG is occasionally attended by officials from the MOE, making it a valuable forum for non-SSWG members to share information. Here, the project made presentations on the content and progress of the training for the introduction of the new curriculum as appropriate.

Examples of specific cooperation in the implementation of training for curriculum development are given in 3.2.2 (4), cooperation with UNESCO in the development of teaching materials for EC in 3.3.1, and cooperation in the COVID-19 response in 3.6.

Other examples of aid coordination activities undertaken are given in Table 3-42 below. In addition to the activities listed here, the project shared information with the CESR team, other development partners, other projects, advisors to the MOE, NGOs and the private sector, participated in conferences and seminars organised by other organisations, provided information for surveys carried out by other development partners, and provided advice to the MOE in the development of various plans supported by other development partners.

Table 3-42: Example of Aid Coordination Activities

Component	Date	Meeting and Activity
B	25th February 2015	Coordination meeting with UNICEF on KG and Life Skills subject
A	27th February 2015	Project briefing for other development partners
B	13th March 2015 30th March 2015 27th July 2016 9th-10th August 2016	Consultations with the Third Story Project (NGO for the development and dissemination of children's books) to gather information for the development of Myanmar language textbooks Discussions on the preparation of stories to be included in textbooks Participation in training courses on reading to children
B	30th November 2015	Seminar on disaster prevention jointly organised with SEEDS-Asia (Japanese NGO)
A	1st December 2015	Joint seminar for development partners with JICA's Education Policy Adviser
B	1st July 2016	Observation of a trial reproductive health lesson by JOICFP (Japanese NGO) for Life Skills textbook development
B	11th May 2017	Consultations with ADB Secondary Curriculum Development Experts
A, B	21st August 2018	Discussions with ADB EYE project on new curriculum awareness
C	August 2018-January 2019	Coordination with ADB EYE project on the programme and schedule of the training for the new curriculum introduction.

Note: Components are classified according to the classification in 1.3.
A: General Component
B: Curriculum, Textbook, and Assessment Component
C: Teacher Education Component

Chapter 4.   Achievement of the Project

This chapter describes the achievements of the project as identified during the project period. First, achievement against the indicators set in the PDM are summarised in section 4.1. This section mainly presents the results of the development, introduction and implementation of the new curriculum. In the following two sections, 4.2 and 4.3, the improvements made to the textbooks and teacher's guides, and the process of developing textbooks and teacher's guides are described respectively. Key findings from the impact survey on the effectiveness of the new curriculum implementation (albeit in limited areas) are presented in 4.4. Opinions of primary teachers are shown in section 4.5. The capacity of counterparts built and strengthened through technical cooperation is summarised in 4.6.

4.1   Achievement of PDM Indicators

In order to objectively measure the impact of the project's interventions, the project proposed to conduct an impact survey as described in 3.4. As explained in section 3.4, a total of 200 schools in four townships were selected as the target sites for the impact survey and the survey was conducted every year since the introduction of the new G1 textbook and teacher's guide. This section describes the degree of achieving PDM indicators using the findings of the impact survey and other information collected by the project.

4.1.1   Achievement of Overall Goal

The status of achievement of the indicators at the end of the project is as follows. What can be confirmed at this point is the progress for some grades and areas, but as far as the information is concerned, the indicators are generally close to being achieved.

Overall Goal: The new curriculum at primary level of basic education is implemented nationwide

Indicator	Status of achievement at the end of the project
1. 80% or more of schools receive the new textbooks and teacher's guides in time for the academic year	The project was responsible for the process of obtaining the final approval from the NCC and completing the official data of textbooks and teacher's guides. After the data and sample books are submitted by the project to the MOE, they are printed in cooperation with the MOE and the MOI and delivered to the district education offices across the country. After inspection at the district education offices, the books are delivered to each TEO. The teacher's guides are then distributed as one of the training materials at the training for the introduction of the new curriculum, and the textbooks are distributed to each school by June 1st when the new academic year begins. Each school picks up the required number of copies from the TEO.

The textbooks and teacher's guides for the new G1 were not printed and distributed in time for the training, so they were distributed at the start of the new academic year. The G4 textbooks were delivered to the TEOs and schools as usual, but because of the ongoing closure of schools due to COVID-19, the textbooks were not in the hands of the pupils by the end of the project.

In addition, the MOE currently plans to distribute textbooks for six of the ten subject areas to pupils in the lower grades (G1-G3), and for all ten subject areas in the upper grades (G4-G5). The distribution of textbooks for all lower grades will be implemented on a trial basis from the new academic year of 2021, but the detailed plan is not clear. |

Indicator	Status of achievement at the end of the project
	According to the impact study, of the 200 schools in the four townships surveyed, the following schools received textbooks for all six subjects before the new academic year, showing significant improvement throughout the project period.

Year of introduction	Grade of Newly introduced	Received before the start of the new academic year	
		No. of schools	Percentage
June 2017	G1	96	48%
June 2018	G2	162	81%
June 2019	G3	196	96%

Source: CREATE. *Report on the Impact Survey 3, 4, 5*

Indicator	Status of achievement at the end of the project
2. 80% or more of teachers provide lessons in line with the new curriculum	In the impact survey conducted in February 2020, teachers who were in charge of G3 were asked about the status of their math classes, and more than 80% of them indicated that they conducted their classes in line with the new curriculum. The following table shows the percentage of teachers who responded that they "quite often" or "very often" realised the following.

Item	Percentage of teachers who answered they do so frequently
I read textbooks carefully before class.	98.0%
I read teachers' guide carefully before class.	97.0%
I understand the focal points of the topic to teach before class.	96.1%
I follow math textbooks and teachers guide during class.	99.0%
I try to check the levels of comprehension of pupils during class.	98.1%
In math class, pupils work in pairs or groups for practicing lessons or learning activities.	97.1%
I ask pupils to use math textbooks during the class.	91.7%
To assess children's understanding I prepare assessment items and rubrics referring to what suggested in Teacher's guides or "Sample Exercise G3".	94.6%
I teach subjects according to the timetable.	98.0%

Source: CREATE. Report on the Impact Survey 5

Indicator	Status of achievement at the end of the project
3. 80% or more of teachers assess their students in line with the new assessment tools	According to the impact survey conducted in February 2020, all of the teachers (205 total) who were in charge of new G3 pupils in the 2019/20 academic year reported that they conduct formative assessments. They also indicated that they use a variety of methods, such as judging pupils' responses to questions, their engagement in activities, and their performance on exercises. In addition, all of the teachers reported that they use standardized assessment records to report to parents on their children's learning outcomes. About half of these teachers were using the Quarterly Record Card (QRC), which was developed with the support of the project. Some schools were using the old assessment tool (the Monthly Record Form (MRC)). As for the Comprehensive Personal Record (CPR), which is Myanmar's cumulative guidance record, it was confirmed that both new and old forms were used depending on the school. (CREATE. Report on the Impact Survey 5)

Indicator	Status of achievement at the end of the project
	As for the assessment tools such as the Sample Exercises and the Reference Book, they were actively distributed by the MOE during the project period. On the other hand, the MOE has yet to disseminate the assessment record form nationwide, despite repeated consultations between the project and the relevant authorities.
4. The new primary curriculum is reflected in new EC curriculum	The four-year EDC opened in December 2019, Specialization of primary teacher training and lower secondary teacher training is newly introduced in EDC. The Year 1 and Year 2 curriculum is common to both specializations: the primary curriculum is studied in Year 1 and the lower secondary curriculum in Year 2. Year 3 and Year 4 are divided between primary and upper secondary teacher training. Of these, the project provided the primary curriculum content to be included in the Year 1 and Year 3 curriculum in the form of lesson plans, lecture notes, and student handouts. The following table shows the percentage of materials used in the Year 1 textbooks and teachers' guides out all of the materials provided by the project for the Year 1.

Subject	No. of lessons developed	Used in EDC textbooks or teachers' guides	
		No. of lesson	Percentage
Myanmar Language	24	11	45.8%
English	12	3	25.0%
Mathematics	13	8	61.5%
Science	8	4	50.0%
Social Studies	13	7	53.8%
Morals and Civics	9	3	33.3%
Life Skills	15	8	53.3%
Physical Education	14	5	35.7%
Performing Arts	17	9	52.9%
Visual Arts	8	4	50.0%

For the Year 3 curriculum, the project has already provided teaching-learning materials from October to November 2020. As of the end of the project, the development of textbooks and teachers' guides is still ongoing with the support of UNESCO-STEM, and it is not possible to confirm the extent to which the materials provided by the project have been incorporated.

Note that the EDC started in December 2019, but due to COVID-19, only one semester has been implemented. In addition, online training for the revised PPTT course was being considered by the MOE, but this had not yet been realised at the end of the project.

4.1.2   Achievement of Project Purpose

Project Purpose: Educational activities in line with the new curriculum principles are introduced at the primary level of Basic Education Schools and EC.

Educational activities in line with the new curriculum have been initiated in schools since its introduction in the new academic year of 2017. Textbooks and teacher's guides developed based on the new curriculum were continuously introduced in the new G1 in 2017, the new grade 2 in 2018, and the new G3 in 2019. In the 2020 academic year, primary schools have been closed since before the start of the academic year due to COVID-19, and textbooks have been delivered to the TEOs and schools, but not to the pupils. In addition, due to the turmoil caused by the political change that occurred in February 2021, the extension of the academic year of 2020 and the school schedule for 2021 had not been determined by the end of the project. Below is the level of achievement and the evidence for each indicator of the Project Purpose.

Indicator	Degree of achievement	Rationale
1. New school timetable is introduced according to the curriculum implementation plan	Achieved	The new primary curriculum was introduced with new textbooks and teacher's guides as planned each year starting in 2017; the introduction for G5 in 2021 was not confirmed by the end of the project. In addition, the curriculum is being implemented in each school based on the annual number of class hours listed in the curriculum framework. 180 school head teachers (89%) in the survey conducted in February 2019 and 170 (85%) in the survey in February 2020 indicated that they always or almost always conduct classes based on the time table. [51]
2. 80% or more of targeted primary teachers attend in-service training for introduction of the new curriculum	Achieved	According to data from the DBE, the number of participants in the training for the introduction of the new curriculum as a percentage of the total number of government primary school teachers were as follows.

Newly introduced grade	No. of training participants	No. of government primary school teachers	Percentage of total
G1	112,060	226,676 (As of March 2017)	49.4%
G2	209,665	248.294 (As of March 2018)	84.4%
G3	257,507	243,068 (As of March 2019)	105.9%
G4	231,596	239,986 (As of March 2020)	96.5%
G5	To be implemented after project completion		

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[51] CREATE. *Report on the Impact Survey 4 and 5*

Indicator	Degree of achievement	Rationale
3. 80% or more of teachers use new textbooks for lessons	Achieved	When teachers in charge of the new academic year were asked if they owned and used math textbooks and teacher's guide, the results were as follows. Source: CREATE. *Report on the Impact Survey 3, 4, 5*
4. 80% or more of teachers have access to assessment materials prepared by the project	Achieved	The results of checking with head teachers in the surveyed areas regarding the distribution of assessment materials were as follows. Source: CREATE. *Report on the Impact Survey 4, 5*
5. 80% or more of targeted EC students attend training for introduction of the new curriculum	Achieved	According to data from the DHE, all students in the 2nd year of Diploma in Teacher Education (DTEd) and PPTT courses participated in G3 training (G4 training for students were not conducted during 2020 due to COVID-19, but it was reported that the training was conducted in April 2021).

Table within Indicator 3:

Newly introduced grade	No. of teachers who own textbooks (%)	No. of teachers who own teacher's guide (%)
G1	180 (86 %)	205 (99 %)
G2	79 (38 %)	204 (99 %)
G3	205 (100 %)	205 (100 %)

Table within Indicator 4:

Assessment materials	Schools that own (%)	No. of materials distributed per school
Assessment Record Forms	199 (99 %)	Average of 1 book
G1 Sample Exercise	198 (99 %)	Average of 1-2 books
G2 Sample Exercise	199 (99 %)	
G3 Sample Exercise	200 (100%)	
NAP for Basic Education	198 (99 %)	Average of 5-6 copies

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4.1.3   Achievement of Outputs

The following indicators have been set as project outputs: outputs related to primary education such as curriculum, textbooks and teacher's guide, and learner assessment; outputs related to the curriculum of EC; and outputs related to activities to disseminate the new curriculum to teachers and other related parties. Although some of the indicators have limited data to support them, they were generally achieved.

Output 1: The new curriculum framework is developed
Output 2: The new textbooks and teacher's guides are developed
Output 3: The new assessment tools are developed
Output 4: The new primary curriculum is disseminated to EC
Output 5: Dissemination activities of the new curriculum are introduced

Output 1: The new curriculum framework is developed

Indicator	Degree of achievement	Rationale
1-1. The new curriculum framework is proposed	Achieved	"The Basic Education Curriculum Framework (BECF)" was developed by CESR, which is also supported by JICA, and was approved by the Minister of Education in May 2015. Subsequently, the new NLD government inaugurated in March 2016 revised the above curriculum framework. For "the Curriculum Outline", the project developed and proposed a draft subject-wise curriculum outline covering G1 to G5 in 2015.
1-2. The new curriculum framework is finalised by NCC through the recommendations of the MOE	Achieved	BECF was formally approved in October 2019. The period of approval of "the Curriculum Outline" by the SWC and the NCC is shown below. <table><tr><td>Grade</td><td>Time of approval</td></tr><tr><td>G1</td><td>March 2016</td></tr><tr><td>G2</td><td>January 2017</td></tr><tr><td>G3</td><td>January 2018</td></tr><tr><td>G4</td><td>January 2019</td></tr><tr><td>Subject-wise curriculum outline for G1 to G5 (final version)</td><td>January 2020</td></tr></table>

Output 2: The new textbooks and teacher's guides are developed

Indicator	Degree of achievement	Rationale
2-1. The new textbooks and the new teacher's guides are proposed	Achieved	Development of textbooks and teacher's guides for G1-G5 has been completed and draft versions have been submitted to the SWC and the NCC.
2-2. The new textbooks and the new teacher's guides are finalised by NCC through the recommendations of the MOE	Mostly achieved	All textbooks for G1-G5 were approved by the NCC. The development of the G5 teacher's guides could not be finalised during the project cooperation period due to the political change in February 2021. This was due to the fact that the counterparts and the SWC were not available after February and could not be involved in the finalization process to review and incorporate the NCC's comments. Therefore, the teacher's guides at the end of the project is the final draft version that has not been reviewed by the counterparts.

Output 3: The new assessment tools are developed

Indicator	Degree of achievement	Rationale
3-1. Sample exercises are developed	Achieved	The sample exercises for G1-G4 were developed with the support of the project and approved by the MOE. The final draft of the G5 sample questions has been completed with the support of the project. (It is still possible that the sample exercises may need to be revised during the process of finalizing the G5 teacher's guide, as not all of the NCC comments on the teachers' guide have been received and the teachers' guide has not been fully finalised.) The status of the MOE's approval of the G1-G5 sample exercises and their distribution to schools is shown below. <table><tr><td>Grade</td><td>Date of approval by the MOE</td><td>Status of distribution</td></tr><tr><td>G1</td><td>19 April, 2018</td><td>Distributed</td></tr><tr><td>G2</td><td>10 September, 2018</td><td>Distributed</td></tr><tr><td>G3</td><td>26 June, 2019</td><td>Distributed</td></tr><tr><td>G4</td><td>11 September, 2020</td><td>Undistributed</td></tr><tr><td>G5</td><td>Unapproved</td><td>Undistributed</td></tr></table>
3-2. Reference book on classroom assessment at the lower primary level is developed	Achieved	The primary assessment reference book, initially including content for Grade 1 and 2, was developed with the support of the project and approved by the MOE on September 7, 2018. Subsequently, a revised version was developed with contents for Grade 3 to 5 added by the end of the project. The revised version has not yet been approved by the MOE.
3-2. Reference book on classroom assessment at the lower primary level is developed	Achieved	The Reference Book on Classroom Assessment at the Primary Level was developed with the support of the project and approved by the MOE on December 19, 2019. It was then distributed to schools across the country. Two samples were later added by March 2021 after the approval of the first version.

Output 4: The new primary curriculum is disseminated to EC

Indicator	Degree of achievement	Rationale
4-1. Teaching and learning materials and supplemental materials are developed	Achieved	The following number of teaching and learning materials on key aspects of primary curriculum instruction (one set consisting of lesson plans, lecture notes, and student handouts) were developed in the 3rd and 4th period of the project.

Subject	The 3rd contract year	The 4th contract year	Total number of sets
Myanmar Language	24	24	48
English	12	15	27
Mathematics	13	30	43
Science	8	28	36
Social Studies	13	25	38
Morals and Civics	9	8	17
Life Skills	15	12	27
Physical Education	14	14	28
Performing Arts	17	16	33
Visual Arts	8	18	26

Indicator	Degree of achievement	Rationale
4-2. Training for EC is conducted according to the government set schedule	Mostly achieved	For G1-G3, both EC teacher educators and EC students have attended the training. For G4, EC teacher educators have attended the training, but since the school was closed, the training for EC students has not been conducted in each EC; the status of the implementation of the training for EC is shown below.

Grade	Central training	For EC teacher educators	For EC students
G1	Batch 1: 29 May -2 June, 2017 Batch 2: 5-9 June, 2017 Batch 3: 12-16 June, 2017	During 19-30 June, 2017	During 3-31 July, 2017
G2	Batch 1: 15-19 Jan, 2018 Batch 2: 22-26 Jan, 2018 Batch 3: 29 Jan. – 2 Feb., 2018 (Same as the central training of in-service teachers.)	During February, 2018	PPTT students: June, 2018 DTEd 2nd year: July, 2018
G3	Batch 1: 21-25 Jan., 2019 Batch 2: 28 Jan. – 1 Feb., 2019 Batch 3: 4-8 Feb, 2019 (Same as the central training of in-service teachers.)	During the week of 25 February, 2019	PPTT students: June, 2019 DTEd 2nd year: July 2019
G4	Batch 1:17-19 Feb., 2020 Batch 2:24-26 Feb., 2020 Batch 3:3-5 March, 2020	Batch 1 subjects: 23-24 Feb. 2020 Batch 2 subjects: 3-4 March, 2020 Batch 3 subjects: 0-11 March 1, 2020	Not implemented due to the school closure
G5	To be implemented after the project		

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Output 5: Dissemination activities of the new curriculum are introduced

Indicator	Degree of achievement	Rationale
5-1. A training package is developed	Achieved	Training modules for G1-G5 and 50 lesson videos (and short video clips conveying teaching techniques) for use in the training were developed and produced with the support of the project.
5-2. Teacher training dissemination activities are conducted according to the government-set schedule	Mostly achieved	Training for the introduction of the new curriculum was conducted annually according to the following schedule: G4 training was rescheduled due to COVID-19, and G5 training was rescheduled due to the political change.

Grade	Training for managers	Training for in-service teachers
G1	Batch 1: 16-17 January, 2017 Batch 2: 19-20 January, 2017	[Central Training] Batch 1: 23 January – 7 February, 2017 Batch 2: 13-28 February, 2017 [State/Division Training]. 24 March – 8 April, 2017 [District Training] 26 April – 11 May, 2017 [Township Training] 13-26 May, 2017
G2	Batch 1: 14-15 December, 2017 Batch 2: 19-20 December, 2017	[Central Training] Batch 1: 15-19 January, 2018 Batch 2: 22-26January, 2018 Batch 3: 29 January – 2 February, 2018 [State/Division Training]. 30 March – 12 April, 2018 [District Training]. 19 April – 5 May, 2018 Township Training] 8 – 23 May, 2018
G3	Batch 1: 17 December, 2018 Batch 2: 20 December, 2018	[Central Training] Batch 1: 21-25 January, 2019 Batch 2: 28 January – 1 February, 2019 Batch 3: 4-8 February, 2019 [State/Division Training]. 1-10 April, 2019 [District Training] 22 April – 8 May, 2019 [Township Training] 13-28 May, 2019
G4	Batch 1: 9-10 December, 2019 Batch 2: 16-17 December, 2019	[Central Training] Batch 1: 14-24 January, 2020 Batch 2: 27 January – 6 Feb., 2020 [Trainer Training] 12-13 June, 2020 [Township Training] 15-20 June, 2020
G5	To be implemented after project completion	

4.2 Improvements in the New Curriculum

New textbooks and teacher's guides were developed based on BECF (issued in 2015 and revised in 2019) as already discussed in the previous chapters. The BECF is the first comprehensive curriculum document for Myanmar's basic education and the educational direction described in this document is significantly different from the previous educational practices. For example, this new BECF emphasizes balanced development of pupils and students with various abilities namely intellectual strength, physical strength, moral and ethical strength, social strength and economic strength, which are so-called the "Five Strengths." "21st Century Skills" are considered as necessary competencies for better living in the current global society, which includes both cognitive and non-cognitive abilities. It treats all subjects equally by abolishing the traditional way of distinguishing between subjects (a distinction between Compulsory, Additional and Optional Subjects, and another distinction between Core-Curriculum and Co-Curriculum). In addition, the BECF allows for a local curriculum in which the local education offices can design their own curriculum based on their local needs and implement it on their own. Local curriculum is not discussed in this report because it was out of the scope of the project.

There are several major characteristics of new textbooks and teacher's guides which were not observed in the old materials. These major characteristics are discussed below.

4.2.1 Binding and Design which Attract Pupils' Interests

Old textbooks and teacher's guides were basically black and white printing (Some textbooks including "Morals and Civics" and "Agriculture" were three-colour printing). They also had many pages with only limited illustrations and figures. In addition, these illustrations and figures in the old textbooks were of low resolution and could not be seen clearly. Therefore, the old textbooks were not attractive for primary school pupils, especially lower graders.

The project aimed to develop attractive textbooks that would prompt pupils to think "What is written in it?" and "I can't want to study with these textbooks at school!" New textbooks and teacher's guides are in full colour and they contain many clear and interesting illustrations and figures. Furthermore, larger fonts were used for lower graders (from G1 to G3) in order to help them read the texts easily. The example of textbook pages is shown in Figure 4-1.

Figure 4-1: Example of G1 Myanmar Textbook

Furthermore, illustrations, photographs and figures were not only to decorate textbook pages, but also to relate learning contents directly and to deeply understand the contents through carefully observing them. For example, the G1 textbook of Myanmar includes many illustrations on each page which significantly helps pupils learning, especially because they cannot read and write Myanmar letters yet.

4.2.2   Contents which Promote Pupils' Deep Leaning

In the BECF, the "Five Strengths" and "21st Century Skills" are emphasized as the necessary competencies that all pupils must attain. These competency models include not only intellectual ability, but also moral and ethical abilities and social ability. In addition, regarding intellectual ability, not only cognitive ability but also non-cognitive ability such as communication skills, collaboration skills with others, creative thinking and problem-solving skills are emphasized. Myanmar's old textbooks focused more on acquiring only knowledge and teachers pushed pupils to memorise the textbook description without deep understanding. In their mind, memorization and imprint textbook contents are the learning. However, new textbooks and teacher's guides take a completely different approach to learning and education and aim to change Myanmar' educational practices from memorization, to deep and active learning with pupils' initiative. The following issues are the major revisions in order to realise this innovation with Myanmar education.

(1)   Reconsideration of the Arrangement of Learning Contents

The project reviewed all learning contents of old textbooks from G1 to G5 carefully and analysed important curriculum dimensions such as (1) scope (range and depth of contents to be treated), (2) sequence (order and arrangement of the contents), (3) continuity (repetition of the contents to strengthen pupils' understanding), (4) integration (grouping of related knowledge), (5) articulation (relation between contents from different grades [vertical articulation], and relation between contents in different subjects of the same grade [horizontal articulation]), (6) balance (the harmony of each educational elements). As a result, learning contents in the old textbooks were rearranged in order for pupils to learn effectively and smoothly and to strengthen their comprehension with strong interests in learning. The degree of rearrangement varied greatly depending upon subjects. For example, Science, Physical Education and arts (Performing Arts and Visual Arts) had smaller degrees of rearrangement, but Mathematics, Morals and Civics and Life Skills had larger degrees of rearrangement. These degrees of rearrangement also varied from grade to grade.

(2)   Addition of New Learning Contents

In addition to the rearrangement of the learning contents, the project also added new content in order to keep consistency of the learning and to promote a smooth learning path for pupils. These additional contents can help pupils acquire deep learning skills, communication skills with others, and skills for building better relationships with others. Some examples are shown in Table 4-1 and Table 4-2.

Table 4-1: Comparison between the Old and the New Textbooks of G1 Science

Old Textbook (Grade-2 Natural Science)	New Textbook (Grade-2 Science)
1. Living things found in our environment	1. Observation of living and non-living things in our environment
2. Requirements of living things	2. Requirements of living things
3. Relationship between living things and their environment	3. Relationship between living things and their environment
4. Observation of objects around one's environment	4. Observation of objects inside the classroom
5. Comparing one object to another	5. Observation of the colour and shape of objects
6. Discrimination of objects in relation with type	6. Size
7. Description of heat emerging objects	7. Discriminating between hot and cold
8. Differentiation of the type of sound by listening	8. Listening to sounds
9. Light emerging objects	9. Differentiating light and dark
10. Magnet and electricity	10. Magnet and electricity
11. Observation of weather condition	11. Observation of weather condition of the day
12. Observation of the significant water with respect to its source	12. Observation of water in relation to its source
13. Observation of the colour and texture of soil in relation with region	13. Describing the objects seen in the sky in the day and night
14. Observation of the sun, the moon and the stars	

Note: The yellow parts show the significant changes between the old and new textbooks.

Table 4-2: Comparison between the Old and the New Textbooks of G4 Math

Old Textbook (Grade-4 Mathematics)	New Textbook (Grade-4 Mathematics)
1. Number fundamentals	1. Big numbers
2. Counting, reading and writing numbers up to 10,000	2. Line graphs
	3. Rules of calculations
3. Addition	4. Review exercise (1)
4. Subtraction	5. Angles
5. Geometrical fundamentals	6. Review exercise (2)
6. Multiplication	7. Round numbers
7. Division	8. Division
8. Myanmar currency	9. Review exercise (2)
9. Fraction	10. Area
10. Weight and scale	11. Various quadrilaterals
11. Time	12. Decimal number (2)
12. Length measurement	13. Review exercise (3)
13. All sides and areas	14. Line symmetry
14. Table, bar graph and illustrations	15. Calculation using round numbers
	16. Fraction (1)
	17. Fraction (2)
	18. British units of measurement
	19. Review exercise (4)
	20. Review exercise for G4

Note: The yellow parts show the significant changes between the old and new textbooks.

(3)   Realization of learning to think deeply

Because memorization was considered as learning in the old education curriculum, there was no learning activity in which pupils thought deeply about what the content meant. However, the new textbooks include many learning contents which promote pupils' critical thinking and problem-solving abilities based on an idea that the actual learning should push pupils to understand the deep concepts of the content. New textbooks changed descriptions of the contents and ways of presenting these. For example, new Science textbooks introduced a scientific process of thinking, such as finding a problem, anticipating a solution, and performing observations and experiments, which professional scientists usually follow to conduct their research. In other words, new Science textbooks promote pupils to think a phenomenon through a scientific approach and develop a "small scientist" mindset. This approach is known as "inquiry learning" that was advocated by Joseph Schwab, an American educator. Steps of inquiry learning adopted in Science is shown in Table 4-3 below.

Table 4-3: Inquiry Learning Adopted in Science Textbooks

Steps	Process of Inquiry
Step 1	**Key Question:** Motivation, how to introduce and link with previous knowledge, projecting the direction of the goal
Step 2	**Let's try:** Activity, how to develop Science process skills and how to learn
Step 3	**References:** Supporting learning lesson, expanding and relating to daily life
Step 4	**I understand !:** Thinking and expressing
Step 5	**Summary and exercises:** Generalizing and summative assessment

4.2.3   Ingenuity that Enables Lesson Practices from the Perspective of Pupils' Learning

New textbooks and teacher's guides were developed based on the constructivism in which pupils become interested in their learning, actively participate in learning activities, think problems through deeply, discuss these with others, and finally create new knowledge on their own. Therefore, lesson practices in the classroom can become completely different from old practices based on the old textbooks and teacher's guides. To realise such new practices, new textbooks and teacher's guides provide many necessary and important information to teachers. Here "Social Studies" and "Life Skills" are shown as good examples.

In Social Studies, new learning activities were introduced such as pair work, group discussion, reading a map and drawing a simple map, in order for pupils to understand local areas and the country that they live in. However, many teachers in Myanmar are not familiar with these learning activities and they do not know how to do these effectively during their lesson practices. So, new textbook and teacher's guide show illustrations in which pupils are discussing by group or pair. The teachers can visually understand how to organize such activities in their class at glance. In addition, the illustrations show what s pupils must discuss in their group or pair. The example shown in Figure 4-2 below is "Chapter 1 Our Town" in G3. In this chapter, pupils are supposed to learn a town, "Nyaung Don" as a case study. Students are supposed to discuss "Nyaung Don" in order to understand this town. To practice this learning activity easily, illustrations show various hints for teachers. For example, the teachers can organize six pupils in one group, ask them, "What do you want to know more about Nyaung Don?" and they can discuss about "What kinds of crops are produced in Nyaung Don?" "What jobs are people in Nyaung Don engaged in?" or "Why do vegetables and fruits grow well in Nyaung Don?". The Teacher's guide has more detailed descriptions and explanations about those.

Specific ideas about teacher's facilitation

Specific concepts that pupils must discuss in group

Specific idea of classroom arrangement

Important information about Nyaung Don to promote pupils' group discussion.

This information can help pupils understand Nyaung Don.
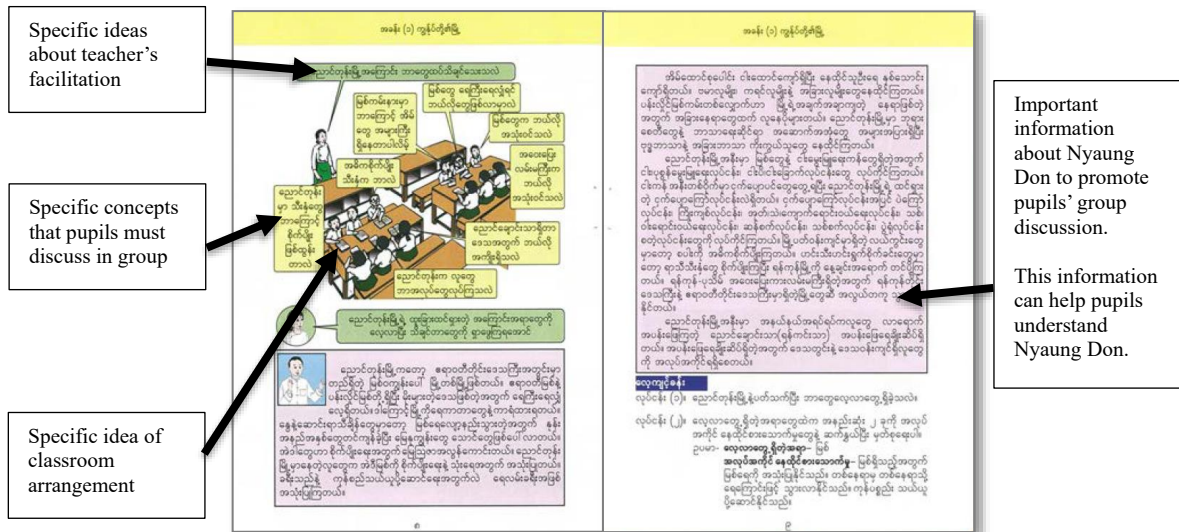
Figure 4-2: Example of G3 Social Studies Textbook

In Life Skills, some contents about "disaster prevention" were newly added, in which pupils are supposed to learn how to protect themselves when an earthquake, heavy rain, fire, thunder, landslide or flood occurs. It is important for pupils to not only know such natural disasters as general knowledge, but also to take quick actions when these happen, with being aware that these might happen around them someday. To do so, it is required to rethink what they learned in class, to share it with their family members, and to prepare for natural disasters. The following textbook page shown as Figure 4-3 is an example of G3 content whose title is "What we should do when the landslide happens." In this chapter, many illustrations are shown in order for pupils to understand what the landslide is. Teachers ask pupils, "What should we do when such a disaster happens in our neighbour" and then each pupil tries to start thinking about it sincerely. As a result, pupils can learn talking to their neighbours and escaping quickly and escaping in the opposite direction of where the landslide happened. They are also supposed to learn things to do on a daily basis such as "To find out in advance where there is a risk of landslides," "To check the landslide caution signboard in advance" and "To discuss with their family how to protect themselves from the danger of landslides." New textbooks and teacher's guides describe such series of learning process in details.

Specific instruction for teachers on how to facilitate this lesson

The dangerous situations happening by landslides are shown by using illustrations

Illustrations and texts show what pupils need to do in advance to prevent the risk of landslides.
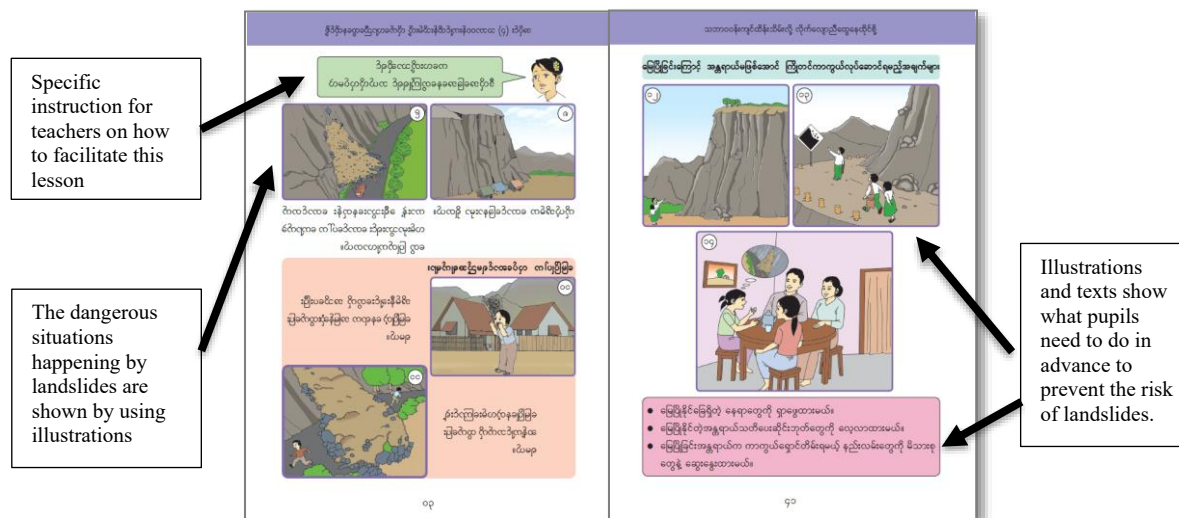
Figure 4-3: Example of G3 Life Skills Textbook

4.2.4   Emphasis on Formative Assessment and Promotion of Active Utilisation

In Myanmar's primary education, CETs, SETs and YETs have been practiced as assessment tools for a long time. All of these tests were conducted as summative assessment. The main objective was to evaluate pupil's achievements. After these tests, therefore, only test scores were used as feedback to individual pupils and they were ranked by these test scores.

However, the BECF emphasizes formative assessment rather than summative assessment so that teachers can understand individual pupils' learning situations and progress, and then pupils can better learn and achieve higher levels of comprehension. Therefore, the project has proposed to the MOE to continuously change the status of CET and SET from summative assessment to formative assessment.

As a specific strategy, the project introduced various exercises at the end of each chapter of textbooks, which teachers and pupils can use for reviewing the learning at the end of each chapter. Those exercises include various items from lower levels of Bloom's Taxonomy (Revised version by Anderson) "Remember" and "Understand", to upper level of "Apply." Figure 4-4 below shows an example of exercises suggested at the end of the unit.

Figure 4-4: Exercises at the End of "Unit 1: Family, Friends and I" in G3 English Textbook

In addition, the project developed booklets named "Sample Exercises" for each grade, which teachers can use to understand learning progress and achievement of individual pupils as formative assessment tools. These booklets also consist of a variety of exercises from basics to applied items.

4.3   Establishment of Curriculum Revision Process and Mechanism

As mentioned in "3.2.2 Textbooks and Teacher's Guides" and "3.2.3 Editing, DTP and Printing" of the previous chapter, the project developed all primary textbooks and teacher's guides from G1 to G5 over a 7-year period from May 2014 to May 2021. The procedure of developing textbooks and teacher's guides was basically the same in every year and repeated 5 times for each grade during the project period. Although the development of G1 textbooks and teacher's guides took approximately 2 years, the other grades took only one year. This procedure was roughly divided into two categories: 1) Developing and revising learning content, and 2) editing. Each category also broke down into seven and six smaller steps respectively. The process of developing and revising learning content was done by the CDT, who was trained on subject content and teaching and learning methodologies, with academic advice from the SWC. On the other hand, the process of editing was done by the operators, who were familiar with software called "InDesign" and have DTP skills, according to the modifications that the CDT came up with considering opinions of the SWC. The final drafts were submitted to and approved by the NCC. Then new textbooks and teacher's guides became the formal school education materials.

Thus, it can be said that a foundation of curriculum development system has been established in the MOE through a 7-year experience of the project, specifically a 5-time repetition of the whole process of developing textbooks and teacher's guides and editing and DTP work. In addition, the CDT, editing staff, the SWC and the NCC who worked with the project definitely acquired the necessary skills and techniques for managing this system with comprehension of this entire system. The project considers that the system and necessary human resources have been created through the project. The curriculum development process (or curriculum revision process) established in the project is shown in Table 4-4 below.

Table 4-4: Procedure of Curriculum Revision

Steps	Work	Work Category	Person in Charge
1st Step	Review the current textbooks	Developing learning contents Revising learning contents	CDT is the main SWC supports
2nd Step	Understand the new curriculum framework		
3rd Step	Develop subject objectives and leaning contents		
4th Step	Draft unit contents		
5th Step	Create new textbook design		
6th Step	Examine the effectiveness of new textbooks in local schools		
7th Step	Revise and finalise the new textbooks		
8th Step	Submit the first draft to the SWC	Edit	Operators edit CDTs specify the changes to be made SWC and DMNL cooperates
9th Step	Revise the draft and make the second draft		
10th Step	Submit the second draft to DMNL of the MOE		
11th Step	Revise the draft and make the third draft		
12th Step	Submit the third draft to the SWC		
13th Step	Revise the draft and make the final draft		
14th Step	Submit the final draft to the NCC and obtain Approval	Approval	NCC

This process currently works only as a procedure of textbooks and teacher's guides in the project. It has not been approved as the formal procedure of Myanmar's textbook and teacher's guides development and revision by the MOE. However, it is indispensable to reconsider and revise the curriculum periodically according to changes of the society and people's needs, and to recognize this process as the formal organizational procedure of textbook and teacher's guide development

by the government of Myanmar. In fact, the MOE is hoping that an organization called "Curriculum Center" would be established in the near future and this Center would be in charge of various work related to the curriculum from the development and periodical revision of the basic education curriculum to gathering information on and researching international trends in curricula.

Once again, curriculum development know-how has definitely been transferred to the Myanmar side through the project. There are human resources who can be leaders, although they are not yet sufficient enough in numbers. Therefore, it is important for Myanmar to consider how to legally establish a "Curriculum Center," and how to operate it, what additional human resources are needed to do proceed it etc.

4.4　Effects of Implementation of the New Curriculum – Findings from the Impact Survey

As described in section 3.4, five impact surveys were carried out between 2016 and 2020. The main results from these surveys showing the effects of the implementation of the new curriculum are described below. The key findings are extracted here from the project's *Summary Report on Impact Survey* (attached in Appendix 13). Detail findings of each impact survey are reported in Impact Survey Report 1-5.

4.4.1　Math Test Score

> **Main Results:**
> - The mean total scores of NG1, NG2 and NG3 pupils were significantly higher than those of OG1, OG2 and OG3 pupils, respectively.
> - The correct answer rate of both traditional-type and new-type questions were significantly higher for the pupils under the new curriculum than those under the old curriculum.

(1)　Total Math Test Score

Figure 4-5 shows the mean total score of pupils by grade for G1, G2 and G3 math tests. NG1, 2, and 3 refers to Grade 1, 2, and 3 under the new curriculum while OG1, 2, 3, and 4 refers to Grade 1, 2, 3 and 4 under the old curriculum.

The mean total scores of NG1, NG2 and NG3 pupils are significantly higher than those of OG1, OG2 and OG3 pupils ($p<.001$), respectively. Furthermore, in the G2 and G3 math tests, the mean total score of NG2 pupils is significantly higher than that of OG3 pupils ($p<.05$), and the mean total score of NG3 pupils is significantly higher than that of OG4 pupils ($p<.001$).

Even after adjusting the age structure of the pupils under the old and new curriculum, the mean math test score was significantly higher for the pupils under the new curriculum for all 3 grades.
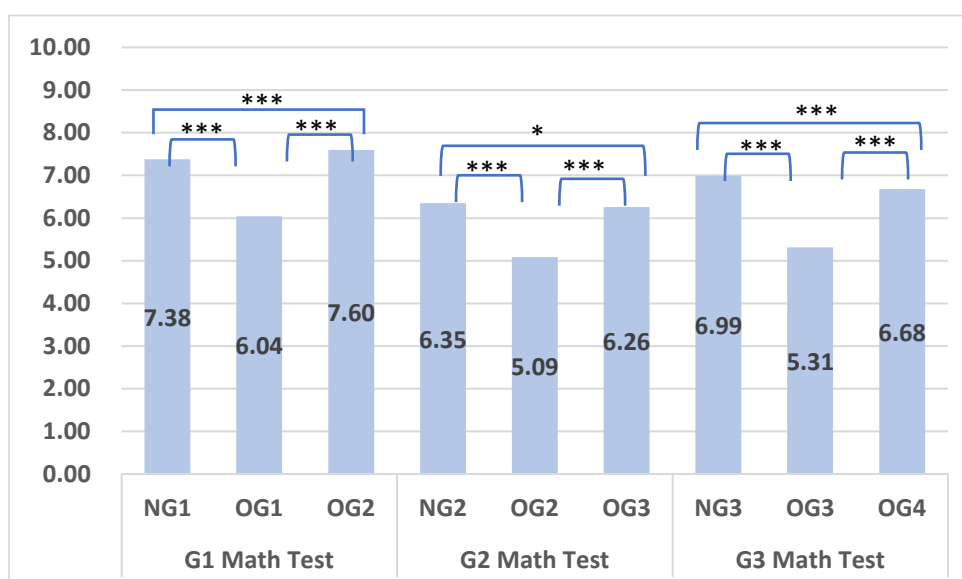
Significance level: * $p<.05$, ** $p<.01$, ***$p<.001$, ns=not significant

Figure 4-5: Mean Total Score of G1-G3 Math Test

(2)   Traditional-type and New-type Questions

The math tests consisted of traditional-type (T-type) questions, which focus on knowledge, understanding and basic skills, and new-type (N-type) questions, which require critical thinking and problem-solving skills. Figure 4-6 shows the correct answer rates of T-type and N-type questions of G1, G2 and G3 math tests.
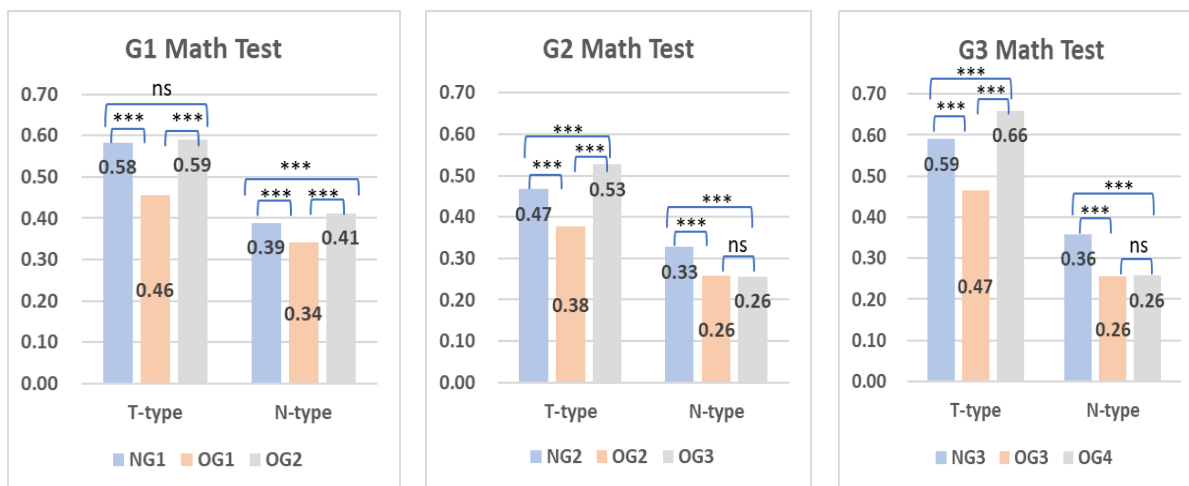
Significance level: * p<.05, ** p<.01, ***p<.001, ns=not significant

Figure 4-6: Correct Answer Rate of T-type and N-type Questions

For same grade pupils under the new and old curriculum, i.e., NG1 vs OG1, NG2 vs OG2, and NG3 vs OG3, the correct answer rates of both T-type and N-type questions are significantly higher for the pupils under the new curriculum than those under the old curriculum (p<.001).

4.4.2   Findings from Pupil's Questionnaire

> **Main results:**
> - A higher percentage of pupils, especially girls, under the new curriculum like math class than those under the old curriculum.
> - The combined percentage of pupils who study at home *every day* and *sometimes* is higher under the new curriculum than the old curriculum though the percentage of pupils who study at home *every day* is lower under the new curriculum.

(1)   Math Preference

Figure 4-7 shows the percentage of pupils who answered "*Yes, I like math*" and "*No, I don't like math*" to the question: *do you like math?* In each grade, a larger percentage of pupils under the new curriculum responded that they like math compared to those under the old curriculum. However, the difference is much greater at G1 and G2 than at G3. When looking at the data by gender, the percentages of girls who like math is 70.18%, 79.38% and 93.00% for OG1, OG2 and OG3, respectively while they are 90.06%, 94.87% and 95.14%for NG1, NG2 and NG3, respectively, showing a much bigger difference than boys.

From this finding, we may be able to assume that math class under the new curriculum has become more attractive to or enjoyable for pupils, especially girls, at least in the lower grades.

Do you like Math?

	NG1	NG2	NG3	OG1	OG2	OG3
No, I don't like Math	8.18%	5.81%	5.63%	20.06%	15.93%	6.22%
Yes, I like Math	91.82%	94.19%	94.37%	79.94%	84.07%	93.78%

New Curriculum | Old Curriculum
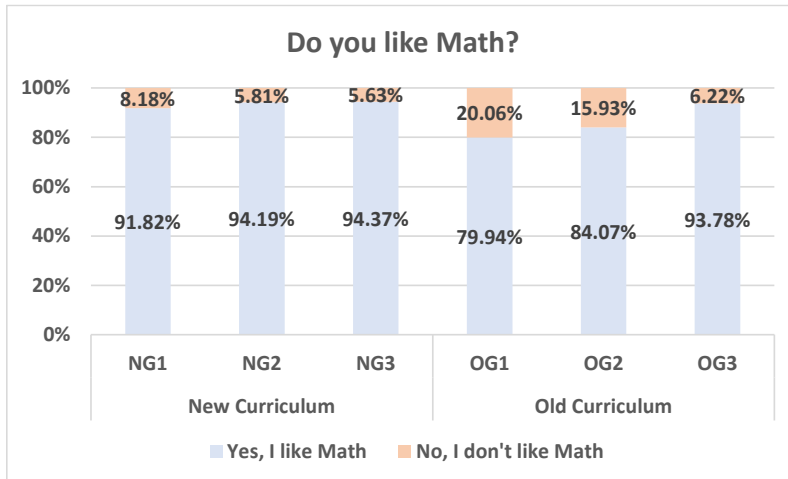
Figure 4-7: Pupils' Math Preference

(2)   Study Habits at Home

Figure 4-8 shows the percentages of pupils who answered *every day*, *sometimes* and *never* to the question: *do you study at home?* The percentage of pupils who study at home *every day* is lower in all three grades under the new curriculum than those under the old curriculum. However, the combined percentage of pupils who study *every day* and *sometimes* is higher in all three grades under the new curriculum.

Do you study at home?

	NG1	NG2	NG3	OG1	OG2	OG3
Never	7.98%	5.21%	3.47%	8.62%	6.99%	4.40%
Sometimes	31.67%	48.63%	59.87%	21.36%	28.92%	40.81%
Everyday	60.35%	46.16%	36.66%	70.02%	64.08%	54.79%

New Curriculum | Old Curriculum

■ Everyday   ■ Sometimes   ■ Never
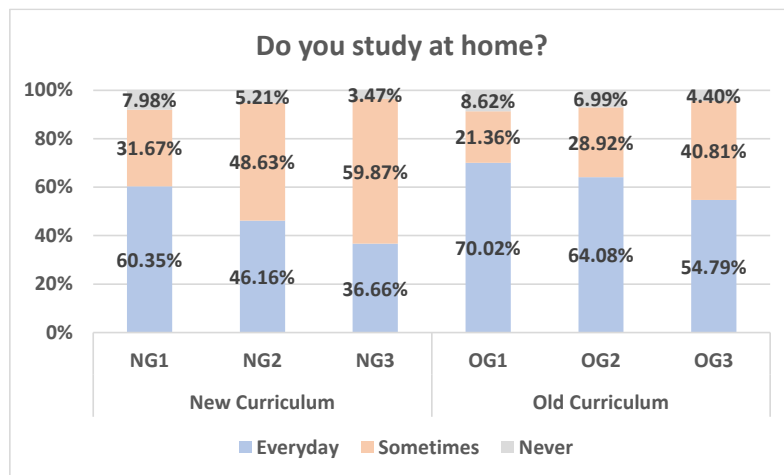
Figure 4-8: Frequency of Study at Home

136

4.4.3   Math Test Score and Pupil's Questionnaire

Main results:
- The mean math test score of pupils who *like math* is significantly higher than that of those who *do not like* math for all grades under both the old and the new curriculum.
- The mean math test scores of the pupils who study at home *every day* and *sometimes* are significantly higher than those of pupils who *never* study at home for all grades under both the old and the new curriculum.

(1)   Math Test Score and Math Preference

Figure 4-9 shows the mean math test scores of pupils on their responses to the question: *Do you like math?* The mean score of pupils who responded that *they like math* is significantly higher than that of those who answered that they do not like math for all grades of all tests (p<.001).
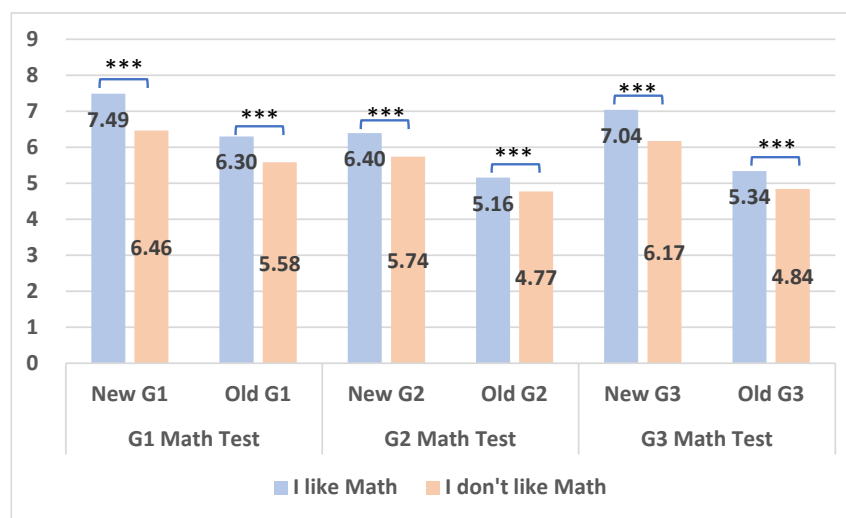
Significance level: * p<.05, ** p<.01, ***p<.001, ns=not significant

Figure 4-9: Math Test Score by Pupil's Preference

(2)   Math Test Score and Study Habits at Home:

Figure 4-10 shows the mean math test score of pupils on their answer to the question: *Do you study at home?*

The mean scores of the pupils who responded that they study at home *every day* and that of those who responded *sometimes* are not significantly different under the old curriculum, while the mean is significantly higher for the pupils who study *sometimes* than those who study *every day* under the new curriculum in G1 and G2, but that pattern is reversed in G3. Under both the old and the new curriculum the mean score of those who *never* study at home is significantly lower than that of those who answered *every day* or *sometimes*. From these findings, we may assume that increased percentage of pupils who study at home *every day* or *sometimes* is a factor for a higher math test score for the pupils under the new curriculum.
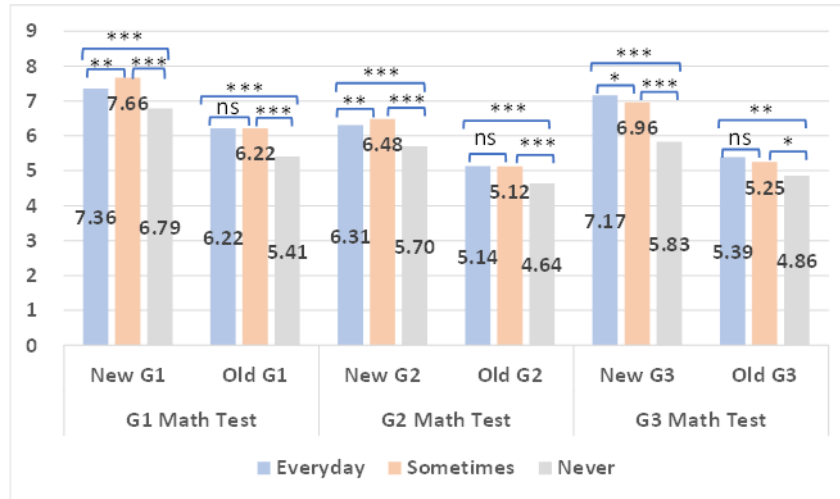
Significance level: * p<.05, ** p<.01, ***p<.001, ns=not significant

Figure 4-10: Math Test Score by Pupils' Study Habits

4.4.4   Results of Math Class Observation

Main Results:
- Classroom teaching and learning conditions under the new curriculum are significantly better than those under the old curriculum as a whole, as well as in five areas, i.e., Lesson Design Skill, Use of Teaching and Learning Materials, Teacher's Teaching Skill, Assessment Skill, and Students' Positive Attitude.

The project conducted 100 math class observations (64 classes under the old curriculum and 36 classes under the new curriculum).

(1)   Total Class Observation Score

The total class observation scores for 13 statements range from 13 to 52 in each class. The mean total observation scores for classes under the new curriculum and those under the old curriculum are 32.25 and 27.38, respectively, as shown in Figure 4-11. The mean total score of the new curriculum is significantly higher than that of the old curriculum (t=4.40, df= 98, p<.001). It can be assumed from this result that classroom teaching and learning conditions under the new curriculum are better than those under the old curriculum as a whole.

Significance level: * p<.05, ** p<.01, ***p<.001
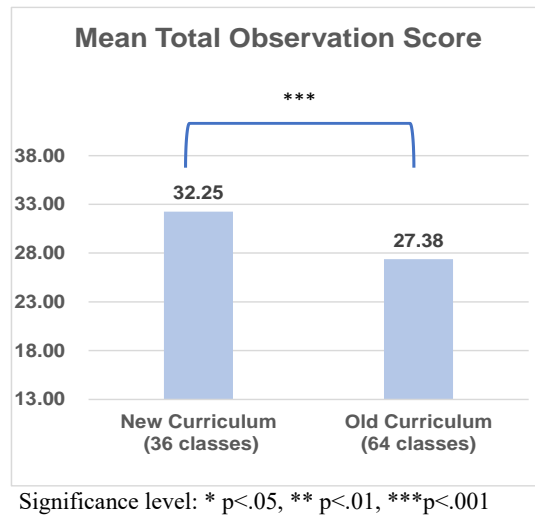
Figure 4-11: Mean Total Score in the New and the Old Curriculum

(2)   Changes in Six Observation Areas

The 13 statements were grouped into six areas, i.e., Lesson Design Skill, Use of Teaching and Learning Materials, Teacher's Teaching Skill, Assessment Skill, Teacher's Positive Attitude, and Students' Positive Attitude. Figure 4-12 shows the mean scores of the new curriculum and the old curriculum for the 6 areas with t-test result. For all six areas the mean score of the new curriculum is higher than that of the old curriculum, and the differences are statistically significant for 5 out of 6 areas.

Significance level: * p<.05, ** p<.01, ***p<.001, ns=not significant
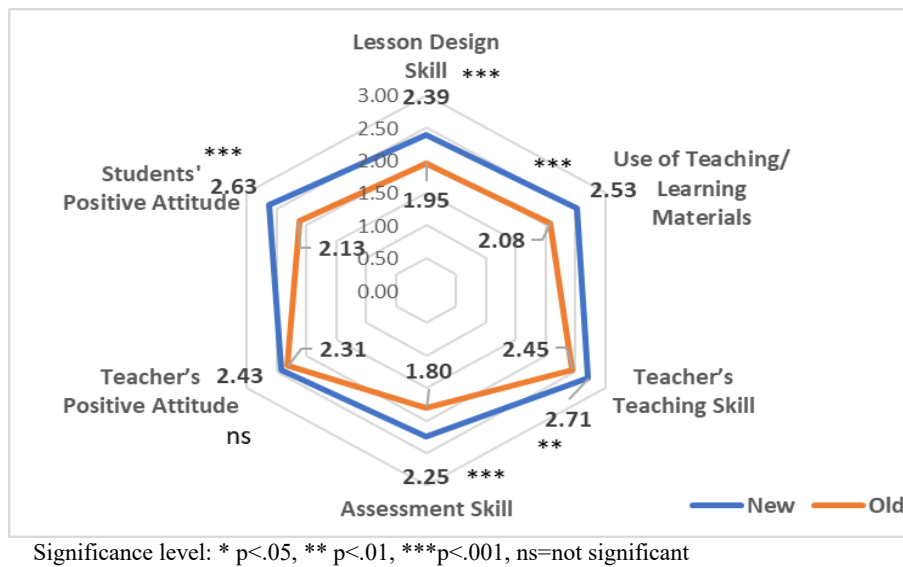
Figure 4-12: Mean Score of Six Areas under the New and the Old Curriculum

4.5   Effects of Implementation of the New Curriculum – Voices of Teachers

A survey was conducted on the changes in pupils' learning after the introduction of the new curriculum among the participants of the G4 training for in-service teachers (central training) which was held from January to February 2020. It was found that 95.6% of the respondents recognised that "positive changes have been seen in the children who are learning under the new curriculum" (226 valid responses).[52] In addition, more than 90% of the participants who answered that there were positive changes indicated specific changes in the free-text response section, indicating that they felt that there were concrete changes in primary pupils.

The most frequently cited responses were shown below:

- The classes were conducted in an enjoyable atmosphere and the children came to school with a good attitude;

- The children became more interested in the classes and actively engaged in the activities;

- The children were able to cooperate with their friends through pair and group learning;

- The children spoke up more in class and were able to express their ideas more confidently;

- The children took initiative in the activities and were able to think and solve problems individually and in groups.

These changes can be attributed not only to the attractiveness of textbooks and well-designed activities, but also the way in which learning content is presented has changed from one-way explanations by the teacher, to a focus on learning activities by the children, and that teachers have encouraged children to speak and discuss freely through the use of pair and group activities.

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[52] Three respondents reported no change, one responded that there was a negative change and six did not respond.

4.6   Capacity Development of Counterparts

In this section, it is mentioned how capacity development of counterparts are achieved in terms of knowledge, skills, and attitudes[53]. Counterparts which are mentioned in this section mean the CDT, who are in charge of textbook and teacher's guide development; computer operators, who are in charge of DTP; and counterparts for teacher education, who are in charge of teacher education and training. Expected knowledge and skills are varied depending on their assigned job.

4.6.1   Capacity Development of the CDT

(1)   Understanding of Scope and Sequence of Subject in Charge

Although there was some variation among subjects, most of the counterparts did not have any experience in curriculum development, textbook, or teacher's guides. Therefore, it was initially very difficult for them to understand the meaning of the scope and sequence itself, as well as to create a curriculum while considering the total picture. In order to understand the scope and sequences of the subjects they were in charge of, for example, on the Mathematics team an expert created a systematic chart of the content. By using these charts in the teacher's guides and in the new curriculum introduction trainings, the counterparts gradually deepened their understanding of the scope and sequence of the new curriculum, and were able to give appropriate explanations about it. Although it is clear that counterparts' understanding has improved significantly since the beginning, it is expected that there will be difficulties if the current counterparts have to conduct the next revision by themselves.

(2)   Understanding and Skills of Textbook/Teacher's Guide Development

As mentioned above, most of the counterparts had no experience in writing textbooks or teacher's guides, and did not understand the procedures and methods. As a result, the drafts prepared by the counterparts at the beginning looked like copies of old textbooks and teacher's guides. However, through various forms of input from experts, on-the-job training, advice among counterparts, and self-reflection through training and presentations, counterparts have become able to write textbooks and teacher's guides to some extent. These abilities were gradually developed through the long-term activities of the project and were not acquired immediately. Therefore, for the future revision of the curriculum, it is important that the CDT who learned the necessary skills in this project continue to be involved, and new human resources would be fostered under them.

(3)   Skills of Developing Child-Centered Lesson Plans

The public education that the counterparts had experienced in the past was based on traditional memorization and recitation. Therefore, even though they understood the importance of child-centered lessons in words, it was difficult for them to concretely visualise it as a practice in the classroom. For this reason, for example, in the try-out classes (in which counterparts were recommended to conduct the classes) to verify the draft textbooks and the lesson plans on teacher's guides, counterparts were requested to observe lessons from the viewpoint of the child-centered approach (i.e., whether the lesson plans contain learning activities that can attract child's interest, whether the lesson plans contain various learning activities that can encourage the children's active participation, whether perspectives that promote formative evaluation are described in the textbook or lesson plans, and whether the time allocation in the lesson plans is appropriate). As a result of such efforts, in some subjects, the counterpart's classroom practices have become more child-centered.

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[53] A questionnaire survey to the counterparts was initially planned, but due to the political changes that occurred in February 2021, communication with the counterparts became difficult. Therefore, this content is based on subjective information provided by project experts.

(4)   Understanding of Assessment and Skills of Creating Questions

At the beginning of the project, many of the counterparts could only come up with fill-in-the-blanks, matching (connecting options with lines), and multiple-choice (choosing the correct one) questions, or could not create any questions at all, when creating questions. However, while the experts introduced examples of various items and gave repeated advice, they have become able to create a variety of questions that would examine whether the pupils fully understood the subject matter, especially the concepts contained in it, and whether they fully grasped the connections with other subject matters. As for the rubric evaluation newly introduced in the new curriculum, it was extremely difficult for them to actually create the rubric because of the difficulty of understanding its basic concept. However, after several internal assessment seminars and opportunities to learn more about rubrics, the counterparts have become able to create rubrics on their own in some subjects. However, their ability to write questions is still far from satisfactory, and they need continuous technical advice.

(5)   Understanding of Contents and Design of Textbooks and Skills to Utilise it

At the beginning of the project, the draft textbooks prepared by the counterparts were almost the same as the content and design of the old textbooks. Not only did they not attract the interest of the pupils, but they also did not provide opportunities for the pupils to think and discover on their own. Through workshops on design to attract children's interest, and illustrations and descriptions to encourage children to think, and on-the-job training by experts, the understanding and skills of the pupils improved. As a result, they are now able to write and design textbooks not for the purpose of "teaching knowledge" but for the purpose of "creating opportunities for children to act and discover" to a certain extent. On the other hand, there are still some counterparts who have technical issues such as drawing and writing.

4.6.2   Capacity Development of Computer Operators

(1)   Skills of DTP

In addition to learning how to operate the applications necessary for DTP, the counterparts also acquired the knowledge and skills necessary for the tasks that operators are responsible for, such as procedures of submitting PDFs and other documents for printing, how to check the documents, and layout adjustments for binding. On the other hand, some counterparts still showed poor coordination of text and illustrations, insufficient resolution of photos. Project-employed operators were in charge of subjects that were difficult for counterparts to handle alone. Therefore, more support is still needed for enhancing the counterparts' capacities. Also, as it is expected that an application software will be upgraded and the IT environment will rapidly change in the future, it is necessary to enhance the ability to learn and acquire skills to cope with these daily changes.

(2)   Understanding of Printing Process

To contribute to the quality of the textbook as an operator, it is important to understand the printing process. Counterparts deepened their understanding of printing process through explanation at meetings by experts who visited a printing company for multiple times, and a video of the printing factory visit, which was made by experts for internal trainings.

4.6.3   Capacity Development of Teacher Education Counterparts

(1)   Skills of Training Material Development

Counterparts acquired skills in developing training modules by creating content according to the template of each module (with the help of experts) and organizing them. In the beginning, many counterparts did not know what to write in the lesson plans and teaching materials for EC, and wrote misguided or vague descriptions. Through discussing and formulating ideas with the

experts, and taking on the role of writing them down as lesson plans and lecture notes for teacher educators, this enabled them to draft some materials independently, although instructional improvements were still necessary.

In order for counterparts for teacher education to acquire the subject knowledge needed to develop teaching materials, subject specialists explained the contents of new textbooks and teacher's guides, and in some subjects, counterparts for teacher education were asked to write some units of the textbooks and teacher's guides, or invited to join meetings of CDTs and subject specialist to discuss how to edit a textbook. In addition, in order to deepen the understanding of teachers' abilities necessary for teaching with the new textbooks, the counterparts themselves taught classes at elementary school and conducted reflection using class videos.

(2)   Facilitation Skills

The aim of the new curriculum is not to transfer knowledge but to explore. A shift to an "inquiry" type of facilitation where participants create new knowledge through interaction rather than "transmission" is required of the trainers of the new curriculum. The counterparts improved their skills as facilitators by repeatedly trying out the training modules. The counterparts who tended to give more explanations and conduct lecture-based training were given time to reflect and discuss among themselves after the training, and the project experts also encouraged them to make the training more interactive. While the facilitation skills have improved and the opportunities for participants to discuss and present their opinions have increased, it is also common to think that the role of the facilitator is to convey the subject knowledge and instruction written in the modules through the interactive facilitation. It is necessary for the counterparts to accumulate various experiences for deepening their understanding as trainers who demonstrate the concept of the new curriculum.

4.6.4   Capacity Development of All Counterparts

(1)   Motivation

Compared to the beginning of the project, there was a significant change in the motivation of the counterparts. In the beginning, some counterparts said, "It is not possible to do such a thing in Myanmar." However, through daily on-the-job trainings, experts' support, and trainings in Japan, their motivation improved and we started hearing positive comments, such as "It may be possible to do it in Myanmar if we are creative. I will try."

(2)   Communication Skills

Initially, some counterparts could not explain well what they were doing at higher level meetings, or to local experts and other teams, etc., but they have since become able to explain the basic concepts of the new textbooks and the contents of the developed textbooks in a reasonable and precise manner. In order to improve these abilities, for example, in Myanmar Language, the team conducted training of explanations and peer evaluation, and in Science, one-on-one meetings were held where the experts asked "Why?" very often to encourage counterparts to explain why they developed their content in their own words.

(3)   Collaboration Among the Team

Some counterparts used to think that what they needed to do was develop only the parts they are assigned. However, through the project, the counterparts' mindsets have changed to that they create textbooks and teacher's guides together with the teams by discussing and checking each other. For example, in Science, a workshop-style discussion was held to review the textbook proposal with all the members, and in Life Skills, a regular meeting was set up once a week to give each member an opportunity to discuss what they were particularly worried about or

confused about. These efforts made it possible for them to work collaboratively. At the beginning of the project, they only expressed their opinions, and even if there were various opinions or objections to a certain issue, no discussion occurred. However, through opportunities mentioned above, they have become able to stop and consider important opinions and make decisions together.

Chapter 5.   Challenges Faced and Project's Responses

This chapter describes the factors that may have contributed to the project producing its results, the challenges in implementing the project, and the constraints due to changes in the external environment that were faced later in the project.

5.1   Factors that Contributed to Achieving Results

5.1.1   Facilitating Factors by the Myanmar Side

(1)   Clear Policy Position

The revision of the primary curriculum supported by this project was considered as one of the key issues in the CESR 2012-2014 and its basic framework was developed. It was also identified as a top priority in the NESP for 2016-2021, which was developed on the basis of the CESR analysis. This clear policy position has enabled the Myanmar government to secure the necessary human resources and budget for its activities for the curriculum reform.

(2)   Strong Leadership of the MOE

Various departments of the MOE were concerned with the project: DERPT (initially DEPT and DHREP), was responsible for the revision of the curriculum; DBE was responsible for curriculum implementation including in-service teacher training and textbook distribution; DHE (initially DEPT and DTET) for pre-service teacher training; and DME for assessment. The Minister of Education showed strong leadership in implementing the project. Since 2018 the Minister of Education hosted the Curriculum Progress Meeting, which brought together all those involved in the curriculum revision, including the NCC, the SWC, the CREATE members, and the ADB-supported secondary curriculum team. At the meeting, each team reported its progress and challenges, and discussed ways to address them. These meetings helped to create a common understanding of progress and challenges, and the necessary actions were taken quickly, which greatly improved the efficiency of textbook development. Although there were problems with counterpart transfers and shortages throughout the project period, the MOE continued deployment of counterparts, improved distribution of textbooks and teacher's guides, and provided over 200,000 teachers with the annual training managed and funded by the Myanmar government over the seven years. These were all made possible by the strong commitment of the Myanmar government.

5.1.2   Facilitating Factors by the Japanese Side

(1)   Project Formulation in the Face of Uncertainties

When the project began in 2014, curriculum revision was identified as a pillar of Myanmar's education reform, but the upstream policy documents (the National Education Law and the Basic Education law) needed for development of textbooks and teacher's guides had not been finalised. Although a draft of the BECF, prepared by the CESR, was available, it only provided a general framework without the subject-specific and grade-specific achievement targets and learning content. In fact, it took several years for the framework to be formally approved, during which time major changes were made, including the removal of subjects and changes to the number of lesson periods. In addition, the approval process and the approving body for the curriculum, textbooks and teachers' guides were yet to be determined.

Starting the project in this context has been a difficult and sometimes inefficient process[54]. However, in response to the project's request, the MOE developed the necessary processes for curriculum revision, and as a result, the project was able to make a significant contribution to the development of the various organisations and structures involved in curriculum revision. Although a number of development partners participated in the CESR, Only JICA initiated concrete support immediately after the CESR, except for ongoing projects, so the project actively disseminated information to other development partners who were considering providing support.

(2)   Ensuring Flexibility in Project Design

Related to the above point, the project started with a lot of uncertainties, so it was necessary to respond flexibly to various changes in the situation. It was not only necessary for the project team to be creative and hardworking, but also for JICA to be flexible in responding to changes in the project design and in providing the necessary budgetary support to resolve issues. For example, the introduction of G1 was delayed by one year from the planned date due to circumstances in Myanmar, JICA extended the project period by one and a half years to complete the textbooks and teacher's guides up to G5. In addition, budgetary measures were taken to ensure adequate local staffing to strengthen support to counterparts, a management structure that could respond quickly to changes, and appropriate project experts needed for technical support. This had a significant implication on the success of the project.

(3)   Comprehensive Support for the New Curriculum

This project was the largest of JICA's technical cooperation projects in the field of education. The project provided comprehensive support for the curriculum of all five grades of primary education and all ten subject areas, the development of textbooks and teachers' guides, textbook editing, assessment, curriculum introduction training, teacher education curriculum and other areas of activities necessary for curriculum revision. Such cooperation was particularly significant in the following aspects. It contributed to the improvement of learning, which was also confirmed by the impact survey conducted by the project.

- The development of all subjects with the same policy, the same view of academic achievement, and the same writing policy has minimized the gaps between subjects, clearly presented the importance of each of the ten subjects, and has resulted in the development of a systematic curriculum, textbooks, and teacher' guides.

- By using the same structure and process of development for all grades, it was possible to design education content that contribute to the development of the five key strengths and the 21st century skills that Myanmar's new curriculum aims to achieve.

- The development of the curriculum in order from G1 made it possible to design a systematic framework for the curriculum outline throughout the five years, and to associate learning contents between grades.

- By supporting the assessment reform along with the curriculum development, the risk of the conventional learning pattern focusing on examination preparation compromising the intention of the new curriculum was minimized.

- The new primary curriculum was efficiently and appropriately introduced to in-service teachers and ECs because the project that developed the new curriculum also supported the new curriculum introduction training and provision of materials to ECs.

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[54] For example, reduction of the number of pages of textbooks were often instructed in the middle of textbook development process.

As described above, through the development and dissemination of the new curriculum of all ten subjects of all five grades, the project did not only renew the content of the subjects but also imparted to the educational community the significance of the new curriculum of changing the view of academic ability, teacher's view of the children, the relationship between the teacher and the children, and the way in which the children learn. It also made it easier for teachers who teach all subjects to understand the intention and teaching method of the new curriculum, and enabled them to create new type of lessons despite the magnitude of the change in the concept of teaching and learning.

5.2   Challenges Faced and Project's Responses

5.2.1   Procedure for Developing the Upstream Part of the Curriculum

(1)   Background and Issues

As mentioned above, at the beginning of this project, there was no official document on the new curriculum, which included information on achievement targets and the structure of the subjects, necessary for the development of textbooks. In addition, the learning objectives and content for each grade level of each subject had not been examined. It was necessary for the project to study these contents before developing textbooks for this project.

(2)   Project's Response

By the time the BECF was approved, the subject structure and teaching time had changed, and the project responded to this by developing curriculum outlines for each subject that were consistent with BECF. Curriculum outlines for the five grades were drafted at the start of textbook development, and were revised each year to reflect the goals and content of the textbooks developed for each grade. The revised curriculum outlines were approved by the NCC each year and the complete curriculum outlines for five grades were developed at the end of the project. This ensured consistency between the curriculum framework, curriculum outlines and the textbooks.

This annual revision of the curriculum outline was a practical and effective way of developing the textbook when, as in this case, there was a lack of clarity of thought and policy within the counterparts and other stakeholders. As the content of the textbook and teacher's guides was being developed, the CDT/SWC/NCC gained a deeper understanding and were more receptive to new concepts and learning content. In the future, as the knowledge base within those stakeholders grows and the human resources and systems for regular curriculum revision are put in place, it may be desirable from the efficiency point of view to have the upper- level of curriculum ready before the development of textbooks.

5.2.2   Strengthening the CDT's Capacity

(1)   Background and Issues

The CDT in charge of developing textbooks and teacher's guides were a group of DERPT staff, EC teacher educators, and primary school teachers with different experiences, subject knowledge, and writing skills. A common problem among the members was that they tended to be weak in thinking about what skills children should acquire, what to teach using the learning materials, and what procedures and methods to be used in lessons. As a result, they were unable to come up with teaching approaches other than reading the textbook and asking questions to the children, resulting in the same pattern of lesson plans.

(2)   Project's Response

The project followed the steps shown in Figure 5-1 below with some variation between subjects. As the figure indicates, the CDT was the main actor of textbook development with guidance from the project experts. In addition to the various lectures and information provided by the project experts, the CDT's capacity building was particularly effective in the form of micro teaching and trial lessons. CDT conducted micro teaching and trial lessons which followed by the reflection in the team to discuss how they could improve lessons. It was a time consuming process, but it allowed the team to imagine what the actual class would be like and to examine learning materials and teaching approaches. Classroom observations at the pilot schools also helped them to capture the learners' attitudes more carefully.

It was particularly difficult for the CDT to get a clear picture of lessons to be developed for subjects that were rarely taught in the old curriculum such as Physical Education, Performing Arts, and Visual Arts and which objectives of the old and the new curriculum were very different. In such cases, the project experts showed them lesson videos and documentary films of classes in Japan and other countries and let the CDT be involved in practicing learning content.

In addition, the Curriculum Officers assigned to each subject by the project played an important role in facilitating communication between the subject and editorial experts of the project and the CDT, and between the CDT and other project counterparts such as operators and teacher education counterparts, as well as in supporting the CDT's activities in the absence of the project experts.
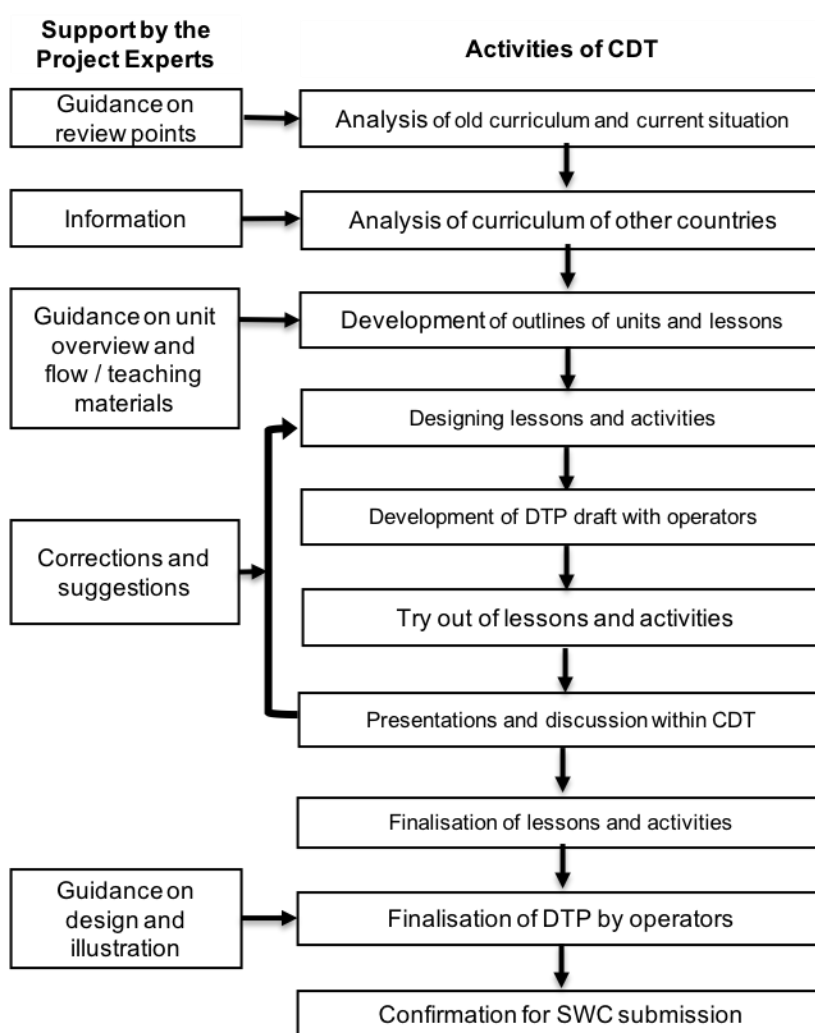
Figure 5-1: Textbook Development Process by the CDT

5.2.3   Building Relationships with the SWC and the NCC

(1)   Background and Issues

The SWC, which confirms and approves the content of textbooks and teacher's guides for each subject, was also made up of members from diverse backgrounds, including retired professors of the relevant subject from universities, teacher educators from UOE and EC, former officials of the MOE, and highly skilled people such as writers, painters and performers. As a result, the comments on the textbooks and teacher's guides covered a wide range of topics and were sometimes misguided. In particular, some of the members, who have a wealth of specialist knowledge but are not familiar with Pedagogical Content Knowledge (PCK), advised to include content that is too advanced for the children in the grade of the textbook.

In addition to the SWC, the NCC was formed in November 2016, which required another process of approval after the approval by the SWC. The NCC was supposed to check the content from a policy perspective, however, the NCC members, many of whom were former university professors with limited understanding of the 21st century skills, were more interested in their areas of expertise, and requested the project to make significant changes in the textbooks that were already approved by the SWC.

(2)   Project's Response

For the textbook development team, the first step was to build a relationship with SWC. This involved close communication particularly at the beginning stage of designing. The project and the SWC discussed and collaboratively developed curriculum outlines using examples of curricula from several countries. To ensure that the Chairperson of SWC had a good understanding of the new textbooks, close communication from the CDT and Curriculum Officers were maintained. In addition, the project experts of some subjects visited the Chairperson of the SWC every time they visited Myanmar to exchange information and participate in discussions with the SWC. In cases where it was difficult for the CDT to give opinions to the SWC members of higher rank and age, local subject advisors of the same rank and age as the original SWC members were recruited by the project to support discussion between the CDT and the SWC. All these efforts led to the establishment of very good relationships with SWCs in many subjects and the smooth development of textbooks and teacher's guides.

In terms of building a relationship with the NCC, the project shared information closely with the NCC members and held several workshops and study sessions on the abilities and skills of children that the new curriculum aims to develop, and how the textbooks should reflect this. In addition, NCC members were always invited to the annual kick-off meeting and presentation of the results of the textbook development, which was initially held with the MOE, so that information could be exchanged as necessary. As a result, NCC's understanding of the project and the new curriculum deepened, and the relationship became more friendly than it had been in the beginning. As a result, the draft textbooks approved by the SWC have gone through the NCC approval process more smoothly.

5.2.4   Development of Learning Materials for Pupils

(1)   Background and Issues

In the old curriculum that emphasized the "knowledge transfer," subject knowledge was presented in a way that was suitable for pupils, however, there was a lack of quality learning materials and activities designed for pupils based on the perspective of "what abilities of pupils shall be nurtured". For example, in the old Myanmar language textbooks, there were many moral or religious stories but those that attract pupils with curiosity, or explanatory texts that would

develop logical reading skills were lacking. Unavailability of Myanmar language dictionaries and reference materials including maps also hampered designing various learning activities.

(2)   Project's Response

The project responded to this issue by developing learning materials and included in the textbooks. In the case of Myanmar language, for example, the project asked the NCC, the SWC, and CDT to write stories that could be used as learning materials. It also requested children's literature authors to rewrite existing stories for the textbook. The project also arranged with Kyoiku Shuppan, one of the implementing agencies of the project and a textbook publishing company to obtain permission to use explanatory texts and photographs used in Japanese language textbooks, when it was difficult to find suitable explanatory texts in Myanmar. As the number of abstract words increased in the upper primary level, the problem of the absence of a Myanmar language dictionary for pupils became apparent. For this reason, the project in consultation with SWC, decided to add a dictionary function to the textbooks, mainly for difficult words and literary words, by adding a "word + glossary" at the back of each unit, and then creating a "word + page" list as an appendix at the end of the textbook. This way, pupils can read each textbook by themselves to some extent even without a dictionary, and when they encounter unfamiliar words in their daily life, they can find the meaning of the word in the appendix at the end of the book.

5.2.5   Cooperation between Textbook Development and Teacher Education Components

(1)   Background and Issues

In this project, the teacher education counterparts took the lead in introducing and disseminating the textbooks and teacher's guides developed by the CDT. This meant that teacher education counterparts needed to have a good grasp of the intentions of the textbooks and teacher's guides to reflect them appropriately in pre-service teacher education and in-service teacher training. Having a single team to carry out activities of both components was an ideal, but this was not practical given the workload of each component. The fact that the CDT was formed one year ahead of teacher education counterparts also contributed to the two components working separately.

(2)   Project's Response

In the beginning, the CDTs who were responsible for textbook development and teacher education counterparts who were in charge of teacher education activities were working separately, which made it difficult for them to understand each other's work. There were times when it was difficult to establish a good relationship, for example, when the CDTs complained about the fact that the teacher education counterparts took the initiative in conducting training for the new curriculum introduction. However, the relationship gradually improved through several approaches by both the subject experts and the teacher education experts of the project: both teams attended the same training in Japan and gained the same experience; the teacher education counterpart participated in textbook development work such as joining workshops and review meetings with the subject experts and partially involved in writing the teacher's guides, and the CDT was involved in preparation of the training and took part in the training as lecturers.

As a result of the cooperation of two components, both teams benefitted. The CDT was able to relate the descriptions in the textbooks and teacher's guides and the descriptions in the training modules from the perspectives of how teachers would use the textbooks and teacher's guides. The teacher education counterparts were able to select the necessary information and the way to present it in order to deepen the participants' understanding and motivate them to work on new lessons within the limited training time. In particular, they were able to help training participants

to understand features of textbooks and teacher's guides by introducing typical models of teaching and learning, together with a guide to time allocation to each activity.

5.2.6   Project Implementation Management System

(1)   Background and Issues

This project was a huge one with approximately 75 counterparts, 40 project experts and 35 local staff members, and involved a wide range of agencies, including the DERPT, DBE, DHE, DMNL, DME and other departments, as well as the SWC and NCC, which are approval agencies. In order to ensure smooth implementation of the work, a strong management was required, including proper management of the project office, adequate facilitation of communication among project stakeholders, and coordination and dissemination of information among the many parties involved.

(2)   Project's Response

The project management team consisted of a project experts who stayed in Myanmar for a long time (project team leader and project coordinator) and local senior project officer who communicated with the MOE. In addition, staff were hired to carry out various office functions, such as accounting, general affairs, PR and IT, to promote the division of labour and the appropriate transfer of authority. The IT staff were a great help to the CDT and operators who handled the textbook data, especially as the management of the large and highly secure data was an important task. Because the large volume of data was used in development of textbooks and teacher's guides, the project server was set up to serve the work in the office and cloud service for the work in remote from outside of Myanmar where the project experts stayed. This set up greatly helped the work condition under COVID-19 in the last year of the project.

In addition to the aforementioned Curriculum Officer, teacher education and curriculum experts were assigned to coordinate the entire subject matter, to coordinate between components, and to liaise with relevant stakeholders, which facilitated communication within and outside the project and improved the quality of work.

5.3   Changes in the External Environment and the Project's Response

5.3.1   Impact of COVID-19 on Project Operation

(1)   Background and Issues

As detailed in section 3.6, from March 2020 until the end of the project in March 2021, COVID-19 has resulted in the departure of experts from Myanmar, as well as the imposition of movement restrictions within Myanmar. It was therefore necessary for the project to switch to remote work and online technical assistance in stages.

(2)   Project's Response

A total of about 150 counterparts, local staff and project experts were involved in the remote operation. The introduction of remote operations proceeded in three stages. The first was a preparatory phase before the project experts gradually left the country by 21 March 2020, during which a plan for the transition to teleworking was drawn up and instructions given to the local staff. The second phase was a partial teleworking system, which was implemented from 26 March, following the outbreak of COVID-19 in Myanmar on 24 March. After the New Year holidays in April, the Myanmar government started imposing movement restrictions on 20 April. To enable remote operation, the file sharing between counterparts and staff, which was previously done on the project's server, was moved to a cloud service, which can be accessed from home. The project also introduced a remote helpdesk with IT staff to enable counterparts who were not familiar with web conferences.

Although it was difficult to produce video materials for COVID-19 response, as the team had to work with the technicians and edit the films remotely, the challenge was overcome by applying approaches that are different from conventional PR videos, such as modified setting for shooting and use of animation.

The relatively smooth introduction of remote operations was made possible by a number of factors, including the fact that the project had been digitising its operations and moving online before COVID-19 outbreak, the transfer of authority to local staff and the division of labour had been made, an interface that could be used by counterparts who were not familiar with computers were developed, and the project had taken action early and had prepared a response plan for each stage, despite the uncertainty of the future.

This system of home-based support for counterparts and local staff, as well as remote support by the project experts, enabled the project to proceed with the development of textbooks and teacher's guides without major delays in progress. However, the approval process for textbooks and teaching guides did not proceed as planned due to the lack of face-to-face meetings. The project experts had to leave the discussion with the SWC to the CDT and the Curriculum Officer, as it was difficult to have a detailed discussion with an interpreter when communicating through online meetings. The fact that some SWC and NCC members required face to face meetings and the hard copy of textbooks and teacher's guides for review also delayed the process of approval.

As a result, the textbooks were all approved by the end of December 2020, but the approval process of the teacher's guides was carried over until the end of the project. This delay also led to a delay in the finalisation of the modules for the new curriculum introduction training.

5.3.2   Impact of the Political Change in February 2021 on Project Operation

(1)   Background and Issues

On 1 February 2021, when the process of approving the teacher's guides was underway, the military announced seizing control of the government and local operation was suspended. Most of the counterpart work had come to a halt and some local staff took leaves. The local staff who stopped work for a while returned to work in March, but frequent internet interruptions and a sharp deterioration in the security situation greatly reduced the efficiency of the work.

(2)   Project's Response

Due to difficulties in continuing work by counterparts, it was not possible to respond to the SWC and NCC's comments for revisions on the teacher's guides. In addition, the review by the NCC was severely constrained as the security situation prevented the printing and submission of proof sheets in hard copies. Therefore, despite the best efforts of the local staff and the project experts, the project only submitted the final draft version of teacher's guides to the MOE, for it was not possible for the CDT and the SWC to make final checks and corrections, and for the NCC to make the final review. In addition, the G5 training for the new curriculum introduction which was delayed due to COVID-19, was also postponed until further notice, and the project submitted the final draft version of the training module to the MOE.

Chapter 6. Recommendations for a Systematic Revision of the Curriculum and Its Dissemination

The new primary curriculum, textbooks, teacher's guides, introduction training, and the EC teaching learning materials have built the foundation to realise Myanmar's curriculum reform. It is noteworthy that improvements have been already observed in the teaching by teachers and learning by students even before the complete introduction of the new curriculum. As the new curriculum is rooted in classrooms and further revision is made based on practice, it is expected to help enhance the quality, and eventually the effectiveness of education in Myanmar.

This chapter summarises the issues that need to be addressed in the revision of the curriculum and its dissemination, based on the experience of the project. Recommendations are divided into three categories: issues related to curriculum revision, issues related to the curriculum revision system, and issues related to curriculum implementation.

6.1   Recommendations for Future Curriculum Revision

The project supported a major reform of the primary education curriculum in Myanmar's educational history, which is the comprehensive curriculum reform including textbooks and teachers' guides, and was able to achieve visible results. This attempt to revise the curriculum was very different from the past revision processes that had been adopted in Myanmar by the Basic Education Curriculum, Syllabus and Textbook Committee, which was formed mainly by university professors. Under the guidance of the MOE, the curriculum revision process took a major step forward with the CDT, which is made up of a diverse group of people with a wealth of knowledge of the current situation at schools, including staff from the MOE's Curriculum Division, EC teacher educators, and teachers from primary and secondary schools. As such, for those involved in writing and reviewing the curriculum, it was often a challenge getting everyone on the same page, and communication between the various stakeholders was sometimes difficult. There were significant differences in concept, content and approach to the development of the curriculum, textbooks and teacher's guides, and although these are undoubtedly the best available at the time of development, there are still some areas for further consideration and improvement. In addition, curricula are improved in response to changes in social conditions and people's needs, and in this sense, regular revision is inevitable. This section discusses the remaining issues and recommendations for curriculum revision in the short and medium term (within 10 years) and in the long term (over 10 years). The detailed issues to be considered for each subject are explained in Appendix 16.

6.1.1   Curriculum Revision in the Short and Medium Term

Curriculum revisions in the short term are those that have not been fully addressed in the project and those that have been left unaddressed despite efforts to do so. It is hoped that these will be considered by the MOE and the NCC in the future.

(1)   Connection and integration of Content Between Related Subjects

The textbooks and teacher's guides for the ten subjects developed contain units on similar themes in each subject area. For example, in G4, the Myanmar language has a learning content of "12. General Aung San", and similar content can be found in G3 Social Studies. Life Skills are also highly relevant to multiple subject areas such as Morals and Civics, Social Studies, Science and Physical Education (Table 6-1). Such repetition can be effective if it is based on a spiral learning, but if it is just repetition, it can undermine the efficiency and effectiveness of learning. Once all the subjects have been developed, the content should be reviewed from a cross-curricular

perspective to make it more effective for learning. It will also be possible to add information on other related subjects in teacher's guides to make learning more organic.

Table 6-1: Examples of Similar Contents between Subjects

Name of Units/Chapters	Subjects and Grades
General Aung San	Myanmar (G4), Social Studies (G3)
Myanmar Heroes	Myanmar (G4), Social Studies (G1, 2 and 3)
Myanmar and Surrounding Countries	English (G4), Social Studies (G5)
Foods and Clothes	English (G4), Social Studies (G1), Life Skills (G2, G3, G5)
Numbers and Shapes	English (G2, G3), Mathematics (G1)
I (myself)	English (G3), Science (G1), Social Studies (G1) Life Skills (G1, G2, G3, G4, G5)
Weather	English (G1), Science (G2), Social Studies (G1), Morals and Civics (G1), Life Skills (G2, G3, G4)
Our Country	Social Studies (G4), Morals and Civics (G1)

(2)　Connection with the Secondary Education Curriculum

At the same time as the revision of the primary education curriculum by this project, the revision of the KG curriculum for pre-primary education and the secondary education curriculum for post-primary education was underway. One of the challenges was to ensure continuity and avoid duplication of learning content between the KG and secondary education curriculum.

The project obtained KG workbooks and developed primary textbooks and teacher's guides, taking care to avoid duplication. As regard to the secondary education curriculum, the project provided the primary curriculum outline and textbook information to the secondary curriculum development team in advance, and when developing G4/G5, the project obtained the textbooks for G6/G7, which had already been developed, to avoid unnecessary duplication. In addition, close communication with the SWC (which centrally monitors and approves the content of the primary and secondary curricula) has helped to ensure that the content of both primary and secondary education is aligned. However, the collaborative work of the separate development teams for primary and secondary has not been sufficient, and the continuity of learning between primary and secondary has been questionable in some areas. When the entire basic education curriculum is completed, problems with the sequence and the level of difficulty need to be revised.

(3)　Strengthening Child-Centered Approach (CCA)

The textbooks and teacher's guides for the ten subjects have been designed and developed with a view to enable educational practice based on CCA, with the intention of encouraging children's proactive participation in learning activities and the development of exploratory learning. However, this approach has been adopted with a little restraint, because it is considered that changing from the traditional memorization and recitation approach to CCA would make it difficult to implement in the classroom. However, as soon as the practice of CCA is understood and smoothly introduced throughout the country, it will be necessary to strengthen the approach and incorporate it further into textbooks.

(4)　Unification of Notation

In newly developed textbooks and teacher's guides, number notation and measurement unit notation are not fully unified. Specifically speaking, notation used in Mathematics and ones used in Science and Social Studies are not consistent, which are shown in Table 6-2 below. This is because each subject content was approved by the SWC who did not fully pay attention to other subject contents. Those inconsistent notations may confuse teachers and pupils, as to which notation should be used in general. It is necessary to unify those inconsistent notations as soon as possible.

Table 6-2: Example of Inconsistent Notations in Number and Measurement

Subjects	Numbers		Measurement
Mathematics	Myanmar numerals	၁ ၂ ၃ ၄ ၅	Myanmar
Science	Arabic numerals	1 2 3 4 5	Alphabet
Social Studies			

(5)   Ensuring Uniformity of Unit Division

Newly developed textbooks and teacher's guides have largely different numbers of units, partly because of the characteristics of the subjects as shown in Table 6-3. Since teachers think of teaching plans on a unit-by-unit basis, if the number of units differs from subject to subject, the timing and frequency of making teaching plans will also differ greatly. Therefore, it is desirable to have more uniformity in the division of units and the number of units, such as setting the average number of class hours per unit.

Table 6-3: Number of Units and Textbook Pages by Subject (G1)

Subjects	Number of Units	Number of Textbook Pages
Myanmar	11	155
English	10	113
Mathematics	23	160
Science	5	79
Social Studies	6	78
Morals and Civics	20	71
Life Skills	16	67
Physical Education	21	64
Arts (Performing Arts)	5	48
Arts (Visual Arts)	5	48

(6)   Appropriate Page Numbers in Textbooks and Teachers' Guides

As mentioned in 3.2.2, during the development of textbooks and teachers' guides, the MOE strongly requested a reduction in the number of pages. As a result, it was not possible to increase the number of pages in the textbooks, even though the number of teaching hours increases with the grade level. For example, in English subject, only half a page of textbook can be devoted to each lesson. In the next revision, the number of pages should be set in a way that is consistent with the number of hours of teaching. Dividing textbooks with a large number of pages into separate volumes should be also considered.

(7)   Review of Textbook Editing Methods in Line with the Textbook Distribution System

At the beginning of the project, the MOE had a policy of providing textbooks to the children. For this reason, the project assumed that children could use the textbooks as workbooks, writing in them. Later, however, when the distribution of textbooks for the lower grades was discussed, the lending system was also put on the agenda, and the project changed its approach to the development of textbooks based on the assumption that classes would be conducted without writing in the textbooks. However, some of the textbooks had been developed using the "workbook" system. It is necessary to review the editing method of the textbook and to explain in the teacher's guides the direction of the textbook distribution method in the future.

6.1.2   Curriculum Revision in the Long-Term

In the medium and long-term, there are a number of issues that need to be considered as Myanmar continues to develop educationally, socially and economically, and as it seeks to deepen its educational content and teaching methods in light of international trends. The following revision points are issues that have been continuously discussed and considered in the educationally advanced countries. It is hoped that curriculum research will be promoted in Myanmar in the future and improvements will be made based on practical research.

(1)   Integrating Subjects in the Lower Grades

BECF developed in 2015 introduced ten subjects through primary education from G1 to G5. However, it has been recognised that it is preferable for younger children to learn relevant knowledge in everyday life in a comprehensive and integrated way, rather than to have them learn specialised knowledge in separate subjects. Considering this global trend and the situation of schools in Myanmar, it is hoped that in the future the introduction of an integrated curriculum for the lower grades will be considered.[55]

(2)   Reduction in the Number of Units in the Lower Grades for Greater Flexibility in the Curriculum

Related to the above, the main purpose of education in Myanmar was traditionally been to provide knowledge, which has led to a tendency to have a large number of subjects, to have pupils study specialised knowledge in each subject, and to try to cram in a variety of knowledge in detailed units. As a result, it is difficult for teachers to give pupils enough time to think about a certain topic in an inquisitive and creative way. The textbooks and teachers' guides developed in the project have not altered this tendency. As teachers' competence improves, it is hoped that the number of units will be reduced in the future, and that the curriculum will be designed so that pupils can study selected units in more depth.

(3)   Linking Strands-Specific Content within Each Subject Area

The learning contents of each subject are divided into several strands. For example, Social Studies has "our living area," "Myanmar and the world" and "Myanmar history." Physical Education has "singing & dancing games," "fitness exercise," "group game" and "competitive game." Performing Arts has "singing," "traditional dance" and "musical instruments." Visual Arts have "drawing," "handicraft" and "appreciation." In fact, the links between strands within a subject are not always well developed. It is necessary to once again examine the links between these strands and make them more relevant in the curriculum in order for them to be studied as a single subject.

(4)   Deepening of the Content for the Development of 21st Century Skills in the Upper Grades

In order that pupils acquire the 21st Century Skills described in the BECF, it is highly necessary to implement lesson practices in which pupils take initiative, actively participate, use their full thinking skills and creativity. Although new textbooks and teacher's guides developed in the project promote such learning activities of pupils and provide detailed instruction for the teachers to realise such practices in class, this trend should be strengthened more in the future curriculum revision.

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[55] The old curriculum introduced a combination of subjects such as "Integrated Studies" in lower primary and "Social Studies" in upper primary grades. However, in reality, the former was divided into three subjects: Natural Science, Moral and Civics, and Life Skills, while the latter was divided into three subjects: Geography and History, Moral and Civics, and Life Skills. In order to rectify this, the new curriculum has temporarily abolished the integrated subjects, but this will need to be reintroduced once the understanding of integrated subjects has taken root in education practices.

6.2 Recommendations for Development of Curriculum Revision System

The support provided by the project has helped to clarify the process of revising textbooks and teacher's guides, as shown in 4.3, and has laid the foundations for a curriculum revision system. In order for this system to continue to operate, it is necessary for the MOE to recognise it as a formal system and to further improve it. Possible short-, medium- and long-term proposals at the moment are listed below.

6.2.1 Shor-Term Measures

(1) Quality Control in Printing and Binding

The process of printing and binding was outside the scope of the project and was under the jurisdiction of the MOE and the MOI, and therefore only provided point-to-point technical support, but it is one of the key processes in the curriculum revision system. In some cases, as was the case with the G1 textbooks, the sample textbook produced by the project and the textbook and teacher's guides distributed to each school after binding and printing differed significantly (in terms of colour calibration, size, placement of pages, etc.). Based on this experience, the project purchased and used a digital press to print samples of the textbooks and teacher's guides, and also enclosed samples of the imposition paper produced during offset printing so that the textbook printers could refer to them. The project also proposed a quality standard and a quality control sheet to be referred to by the inspection personnel at the delivery point, and provided a reference for the spot checks personnel at the printing company. It is hoped that these materials will be used to improve the skills of the quality control staff in the future which will be further enhanced by technological innovations in the printing industry.

In addition, a study conducted within the project revealed that the Myanmar government can greatly improve the quality of the textbook printing and binding by setting appropriate delivery dates and prices in line with market conditions. Setting appropriate prices, considering market prices, and to be wary of contractors who bid at unreasonably cheap prices is quite important. It should also be stressed that easy cost-cutting hinders the proper selection of materials and undermines the quality control mechanisms in textbook production.

(2) Securing Operators

Operators are not only required to be proficient in using DTP applications, but also to contribute to ensuring the quality of the textbook from the operator's point of view. They need to be able to adjust the colours of the images according to the quality of the paper, to process the layout according to the different binding methods for different numbers of pages, and to have the necessary knowledge of the subject matter for checking the submissions. The project trained operators assigned by the MOE, but also secured project-employed operators to provide editorial support. In order to retain and further develop the skills of the MOE operators, they need to be involved in the editing process on an ongoing basis and receive further training. In the event of major revisions, the use of private operators may be considered. The project has also compiled seven years of know-how on the editing and production process in the form of "Textbook and Teacher's Guide Development Guideline". It is expected that these guidelines will be used in the future, as the basic ideas will remain unchanged even if editing structures and methods change in the future.

(3) Continuous Professional Development of Textbook Writers

It is anticipated that the MOE's department in charge of curriculum will select resource persons, such as the counterparts in this project, to form a revision team for future revisions and their capacity will be further developed. In the short term, these project counterparts can act as resource

persons that will be able to maintain ongoing involvement in the curriculum revision by taking part in the surveys described in the later section to monitor curriculum practice, and by providing regular opportunities for them to incorporate feedback from school practice into the curriculum.

6.2.2   Medium and Long-Term Measures

(1)   Establishment of Curriculum Evaluation System

To carry out effective educational practices, it is greatly necessary to review the curriculum periodically and to revise it if necessary. This process is called "Curriculum Evaluation." When conducting the curriculum evaluation, there are two ways of thinking. The first is the curriculum evaluation based on formative evaluation and the another is one based on summative evaluation. To revise the curriculum effectively, people in charge of this work should understand these two ways and take them into account carefully.

Formative Evaluation of Curriculum

The formative evaluation of curriculum is a method of routinely evaluating whether or not teaching goals have been achieved through teaching practices, and the curriculum is improved based on the accumulation of the evaluation results. Figure 6-1 indicates the process of formative evaluation.
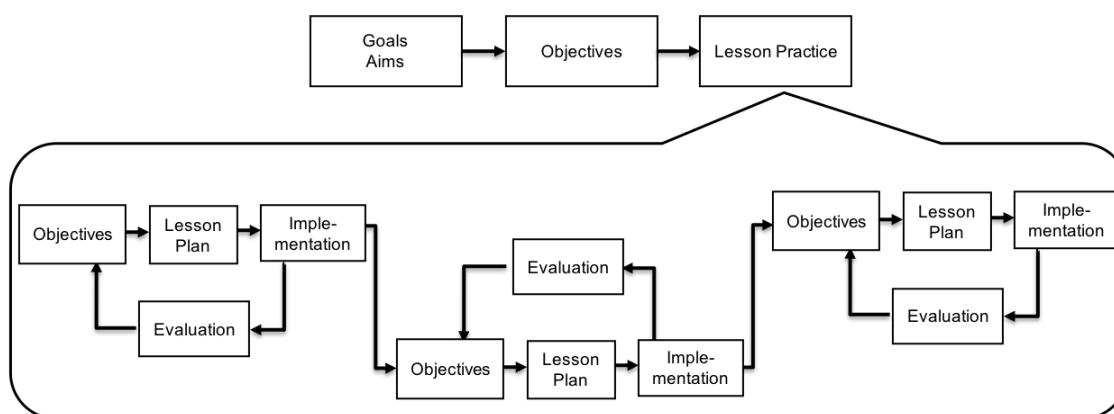
Source: Referring Tanaka (2005) "*Basic Knowledge for Curriculum Developmen*t" (original in Japanese). International Development Center of Japan (IDCJ) and Tanaka (2021) Basic Principle of Curriculum Development" (original in Japanese). IDCJ.

Figure 6-1: Formative Evaluation of Curriculum

Summative Evaluation of Curriculum

While the above formative evaluation is an evaluation that is performed continuously on a daily basis, summative evaluation is an evaluation that is performed after a certain period of time. In summative evaluation of the curriculum, it is evaluated whether or not the current curriculum achieves educational purposes and goals based on the results of academic tests implemented for pupils nationwide. In Myanmar, there are two academic tests targeting pupils nationwide: Primary Education Completion Examination (implemented in G5) and Students' Learning Assessment (sample-based examination). Through the analysis of these two examinations, it can be judged whether or not the current curriculum should be revised. If it is judged that the revising the curriculum is necessary, Myanmar's government should decide its direction and contents for revision.

In order to establish a curriculum management system, it is important to have a sold understanding of curriculum evaluation and to have a system and personnel that can be put it into practice. In the future, ideally this will be developed mainly by the MOE.

(2) Clarification of Organisation for Curriculum Revised

The next revision of curricula and textbooks will require the development of a consistent curriculum from pre-school education to primary and secondary education. It will be necessary to clarify the position and role of the Curriculum Development Centre, which is currently under consideration by the MOE, and to consider ways of securing human resources and a personnel system that can make use of basic education teachers and teacher educators of EDC and UOE.

(3) Training of Experts in Subject Pedagogy

In curriculum development and revision, there is a need for people who can integrate the objectives in the curriculum with the teaching materials and the actual situation of pupils, and who can conceptualise lessons and propose specific learning activities. In particular, Myanmar needs experts in subject pedagogy, PCK studies and assessment. In primary education, EDC's pedagogy faculty is currently the closest to this and played a key role in CREATE. However, as EDCs become a higher education institute, the lack of recognition of teaching experience in basic education schools and the weak links between EDCs and basic education schools have been identified as problems. It is also hoped that the SWC will include experts of subject pedagogy and PCK of basic education schools.

(4) Examination of the Writing and Editing System

In this project, the writing and editing of the textbooks and teacher's guides was done in collaboration between the CDT and the DTP operator, but editors[56], as they are called in Japanese textbook development, were practically non-existent in Myanmar. In the future, it will be necessary to train editors who understand both the subject content and its appropriateness as a textbook, especially those who have participated in the project as the CDT.

As done in the project, having all the writers (editors) and DTP operators working in one place would require a huge commitment of human resources and financial measures. In view of the regular revision of the curriculum, more efficient ways should be considered. For example, writers could be employed by the school or university, but work on curriculum revision in a dual role, exchanging views with the DTP operators at regular editorial meetings. The transition to this system, however, will require continuous improvement in the skills of both writers (editors) and DTP operators as writers need to exchange opinions and consult each other in order to ensure the quality of development. In addition to the securing and training of DTP operators mentioned in 6.2.1 (2), it is necessary to develop a medium- to long-term system with an aim to collaborate with the private sector.

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[56] An editor is a person who works for a textbook company, in collaboration with subject specialists and others, to produce textbook pages that take into account the various elements of textbook editing.

6.3   Recommendations for Strengthening Curriculum Implementation

This section contains recommendations to strengthen the implementation of the revised curriculum.

6.3.1   Short-Term Measures

(1)   Understanding of Curriculum Practices

As related to the curriculum evaluation system mentioned in 6.2.2, it is important to understand the current state of curriculum practice. The project confirmed the positive changes before and after the introduction of the new curriculum through the impact survey which identified the current situation of children and teachers, and children's academic performance in Mathematics. As the project was only able to carry out the impact survey up to G3, it is necessary to continue to monitor the situation at school and use this information to revise the curriculum, textbooks and teacher's guides. In the future, the following are some of the points that need to be investigated.

- The impact of this school closure, and subsequent changes to the school schedule on curriculum practices and children's academic performance as due to spread of COVID-19, schools were closed from March 2020 and children were deprived of learning opportunities for a year in many areas, except for those who were able to use HBL materials available online.

- The practice and impact of the implementation of the new curriculum in subjects other than Mathematics.

- Appropriateness of the language of teacher's guides for English subject.

- Review of the state of practice, with a focus on the new style of learning activities for the new G5, which was developed during the transition period of the education system, when there were no children in G5, and therefore, draft textbooks and teacher's guides could not be tried out thoroughly.

- Academic achievement and the level of understanding of the lessons by pupils whose mother tongue is not Myanmar language.

(2)   Realisation of the Distribution of Textbooks of Life Skills, Physical Education, and Arts in the Lower Grades

During the project period, textbooks for all subjects were developed for all grades, but textbooks for Life Skills, Physical Education, Performing Arts and Visual Arts were not distributed to the pupils of G1-G3. It is said that this is due to budgetary constraints and in consideration of the burden of commuting to school for younger children. However, the lack of textbooks in the hands of children makes teaching difficult and places a heavy burden on teachers. Especially in Physical Education and Arts, whose lessons were often skipped in the old curriculum, the illustrations and diagrams in the textbooks are very important for children's learning, for example, to confirm the movements of the body (Physical Education), to learn the lyrics and the fingering of the flute (Performing Arts) and to appreciate the works of the famous artists (Visual Arts). Many of Life Skills lessons are designed in a way that encourages pupils to come up with their ideas by looking at the illustrations in the textbook.

The project lobbied the MOE for the distribution of textbooks for the lower grades on various occasions. As a result, the MOE distributed posters showing important charts and tables from the textbooks and has indicated that a trial distribution of textbooks for lower grades will be carried out in 2021, after the end of the project. Now that the new textbooks up to G5 have been completed, the cost and method of the distribution of textbooks should be considered again. As the need for textbooks of the four subjects is as great as for other subjects, it is desirable to distribute them to all children in all

grades. If it is not practical to distribute textbooks every year, then it should be possible to consider the possibility of having a set of textbooks sufficient for one class in each school and lending them to the children only during class time with the intention of using the textbooks for multiple years.

(3)   Improved Distribution of Teaching-Learning Materials

In the development of the textbooks, the project tried to use teaching materials and tools that are easily available in Myanmar. In the event that teaching materials were not available, alternative solutions were provided (e.g. using a pet bottle and rope as substitutes for hurdles in Physical Education). As mentioned in 3.2.2, a list of minimum requirements for teaching materials and tools was drawn up and submitted to the MOE. The MOE distributes the items listed in the first year of the introduction of each new grade, but due to budgetary constraints, the quantity has been reduced. In the future, it will be necessary to check the status of availability and effective use of teaching materials and tools, as well as the implementation of the new curriculum, especially in rural schools.

(4)   Review of Teacher Education Curriculum based on Practice

The project supported the integration of the new primary curriculum into the new teacher education curriculum of the EDC, however, it cannot be said to have comprehensively reflected the content of the new primary textbooks and teacher's guide, partly because the revision of the teacher education curriculum was carried out in parallel with the revision of the basic education curriculum. The textbooks and teacher's guide for the first semester of the first year were introduced to EDC from December 2019 as planned[57]. The EDC were, however, closed for COVID-19 expansion after March 2020, and no further classes have been held since then, and the textbooks and teacher's guides for the second year cannot be validated through pilot classes and finalised. In order to continue producing teachers, it is unavoidable to implement a teacher education curriculum with insufficient trials as a transitional measure, but it is necessary to review and improve the teacher education curriculum once the revision of all grades of the basic education curriculum is completed.

On the other hand, the PPTT course, which provides eight months of training for bachelor's degree holders to qualify as primary teachers in parallel with the four-year programme at EDC, was to be continued and the MOE planned to train 6,000-7,000 teachers in this course by 2020[58]. The need to revise the curriculum of the PPTT course had been raised by the project and discussed in JCC meetings, but the MOE was not able to take quick actions. Since mid-2020, the DHE has selected three EDC teacher educators in charge of each subject to revise the textbooks of the PPTT course, removing inappropriate or outdated information and making use of some of the first year of EDC textbooks. the project's counterparts are involved in this task including CDTs in Mathematics, Performing Arts, Visual Arts, and Morals and Civics, as well as teacher education counterparts in Mathematics and assessment, but it would be preferable if all the subjects related to primary education are reviewed by the counterparts of CREATE.

(5)   Continuous Professional Development of Teachers

Capacity building of teachers needs to be continued in the short, medium and long term. In the short term, it is desirable to focus on capacity building directly related to the introduction of the new curriculum, to promote CPD in schools, and to continue additional training for personnel in

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[57] EC was formally upgraded in EDC as of 31st August, 2020.

[58] The start of four-year teacher education programme will double the time it takes to produce new teachers, and assuming the same capacity is kept as EC, the number graduating each year will be almost halved. Although primary school enrolments are close to saturation and the number of teachers required is decreasing, it will continue to be important to fill the teacher vacancies that occur each year and to address the shortage of teachers in remote areas. Thus the MOE does not see a problem with the coexistence of the two types of teacher education courses, EDC and PPTT.

the position of supervisors who support schools and teachers. It is also necessary to consider the need for and content of the future in-service teacher training in light of the revised teacher education curriculum, and the extent to which the EDC and the PPTT will continue to coexist.

6.3.2   Medium and Long-Term Measures

(1)   Continuous Improvement of Pre-Service Teacher Education Curriculum

In the same way that the basic education curriculum needs to be continuously revised in line with social developments, the teacher education curriculum also needs to be continuously improved in line with the revision of basic education. The points for revision of the basic education curriculum outlined in 6.1.2 should also be considered in teacher education programmes.

(2)   Development and Provision of Information for Use by In-Service Teachers

In addition to the website for the dissemination of the new curriculum established by the project in collaboration with the MOE, MDEP which contains textbooks, teachers' guides, and training materials is available. These could be further expanded to provide information that teachers could use on a daily basis in their teaching and learning, thereby improving their capacity and strengthening their practice. It would also contribute to the professional development of EDC teachers if, as a function of the EDC, they could work on the continuous development and improvement of the materials for the use of in-service teachers.

Appendices

Appendix 1

PDM

Project Design Matrix (PDM)

Project Title: The Project for Curriculum Reform at Primary Level of Basic Education

Duration: 5 Years and 5 months (January 2014 - May 2019)

Target Group: (Direct) Those who are involved in curriculum revision, primary school teachers, Education College (EC) Trainers

                (Indirect) Pupils at primary level, EC trainees

Target Subject: All subjects at Primary Level of Basic Education

Target Area: Nationwide

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Super Goal Pupils' learning performance is improved in line with the new curriculum principle.	Results of analysis of national exam	MOE Report	
Overall Goal The new curriculum at primary level of basic education is implemented nationwide.	(1) The new school timetable is in use. (2) The new textbooks are in use. (3) Lesson is conducted in line with new curriculum. (4) The new assessment system is implemented. (5) The new EC curriculum is implemented.	MOE Report	(1) Teacher's teaching capacity is improved through Continuous Professional Development (CPD).
Project Purpose Educational activities in line with the new curriculum principles are implemented at the primary level of Basic Education Schools and Education Colleges (ECs).	(1) New school timetable is introduced according to the curriculum implementation plan. (2) The new textbooks, including draft version, is introduced according to the curriculum implementation plan. (3) Lesson is introduced in line with the new curriculum, according to the curriculum implementation plan. (4) The new assessment system is introduced according to the curriculum implementation plan. (5) The new curriculum for EC is introduced according to the curriculum implementation plan.	MOE Report	Education Reform policy is maintained
Output1: The new curriculum framework* is developed.	(1) The new curriculum framework is proposed. (2) The new curriculum framework is finalized by MOE.	MOE Report	(1) Proposed related documents are endorsed by MOE and utilized at school level as planned. (2) All administrative officers
Output 2: The new textbooks and teacher's guides are	(1) The new textbooks and the new teacher's guides are proposed.	MOE Report	

developed.	(2) The new textbooks and the new teacher's guides are finalized by MOE.		work in cooperation with the Ministry of Education to expand new curriculum principle.
Output 3: The new assessment tools are developed.	(1) The question item bank (2) The guideline on how to utilize the question item bank	MOE Report	
Output 4: The new curriculum for EC is developed based on the new curriculum principle in line with teacher education policy.	(1) The new curriculum for EC is proposed. (2) The new curriculum for EC is finalized by MOE. (3) Increment in score of training evaluation, comparing between pre and post-test.	MOE Report	
Output 5: Dissemination activities of the new curriculum are introduced.	(1) A training package is developed. (2) Teacher training dissemination activities are conducted according to the government-set schedule.	Project report	

Activities	**Inputs**	(1) Appropriate number of counterparts continues to be assigned to the Project.

1-1. Provide technical support to the formulation of the new curriculum policy and strategy through CESR process and by other means.
1-2. Design a new course of study / a new set of areas of learning/ subject structure with clearly defined scope and sequence.
1-3. Formulate aims and objectives for each area of learning.
1-4. Select appropriate content (per grade) for each area of learning.
1-5. Identify appropriate teaching-learning strategies for each area of learning.
1-6. Adopt feasible assessment policy and guidelines and identify applicable strategies/techniques for assessing pupils' achievement.
2-1. Provide technical support to the formulation of new textbook and teacher's guide policy and strategy through CESR process and by other means.
2-2. Define the range of contents of textbook per grade based on the new curriculum framework.
2-3. Define development procedures of new textbooks and teacher's guides.
2-4. Edit new textbooks contents.
2-5. Layout the illustration of textbooks.
2-6. Proofread the textbooks.
	Inputs by the Japanese side
	  (a) Dispatch of Experts:
	    -Basic Education Development
	    -Chief Advisor
	    -Experts for "Curriculum, Textbooks, and Assessment Component"
	    -Experts for "Teacher Education Component
	    -Other experts (if necessary)
	  (b) Cost for activities of experts
	  (c) Cost for seminars and workshops for capacity development for both Components, other than regular meetings
	  (d) Cost for translation (English – Myanmar) other than cost for proofreading
	  (e) Provision of office equipment
	  (f) Training in Japan and third countries (if necessary)
	  (g) Input other than indicated above will be determined through mutual consultations between MOE and JICA during the implementation of the Project, as necessary.
	
	Inputs by the Myanmar side
	  (a) Assignment of Counterpart personnel for both Components
	  (b) Approval of final products to be developed by the Project
	  (c) Assignment of editing staff for textbook, teacher's guides and assessment tools
	  (d) Cost for regular meetings for both Components
	  (e) Assignment of a few primary schools and one EC for validation of new curriculum	

2-7. Edit contents of new teacher's guides.	(f) Cost for proofreading of final products such as textbooks, teacher's guides and all related documents in Myanmar language (g) Printing and distribution of final products of textbooks, teacher7s guides and all related documents to education offices, schools, and students. (h) Printing and distribution of final products of teacher training for the new curriculum. (i) Cost for implementation of dissemination activities for the new curriculum to schools including in-service teacher training (j) Project office with its running cost	
3-1. Provide technical support to the formulation of new assessment policy and strategy through CESR process by other means. 3-2. Develop a question item bank in line with the new curriculum principles, a part of which will be included in teacher's guide. 3-3. Develop the guideline on how to utilize the question item bank.		
4-1. Provide technical support to the formulation of new teacher education policy and strategy through CESR process and by other means. 4-2. Analyze consistency between the new curriculum framework and the current EC curriculum. 4-3. Draft the new EC curriculum (teaching methodology subjects) based on the analysis (described in the activity 4-2) and the on-going teacher education reform. 4-4. Revise EC textbooks. 4-5. Develop a training plan for EC trainers. 4-6. Conduct training for EC trainers. 4-7. Monitor and evaluate results of the training for EC trainers.		**Pre-Conditions** Curriculum reform policy is maintained.
5-1. Provide technical support to the formulation of dissemination strategy of the new curriculum through CESR process and by other means. 5-2. Develop a detail plan to disseminate the new curriculum through in-service teacher training. 5-3. Develop training/dissemination materials. 5-4. Promote the dissemination activities for the new curriculum.		

*Definition of "Curriculum Framework" will be confirmed later.

Appendix 2

PDM Ver.2

Project Design Matrix (PDM) Ver.2 (revised on August 2015)

Project Title: The Project for Curriculum Reform at Primary Level of Basic Education

Duration: 5 Years and 5 months

Target Group: (Direct) Those who are involved in curriculum revision, primary school teachers, Education College (EC) Trainers

                  (Indirect) Pupils at primary level, EC trainees

Target Subject: All subjects at Primary Level of Basic Education

Target Area: Nationwide

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Super Goal Pupils' learning performance is improved in line with the new curriculum principle.	Results of analysis of national exam	MOE Report	
Overall Goal The new curriculum at primary level of basic education is implemented nationwide.	(1) The new school timetable is in use. (2) The new textbooks are in use. (3) Lesson is conducted in line with new curriculum. (4) The new assessment system is implemented. (5) The new EC curriculum is implemented.	MOE Report	Teacher's teaching capacity is improved through Continuous Professional Development (CPD).
Project Purpose Educational activities in line with the new curriculum principles are implemented at the primary level of Basic Education Schools and Education Colleges (ECs).	(1) New school timetable is introduced according to the curriculum implementation plan. (2) The new textbooks, including draft version, is introduced according to the curriculum implementation plan. (3) Lesson is introduced in line with the new curriculum, according to the curriculum implementation plan. (4) The new assessment system is introduced according to the curriculum implementation plan. (5) The new curriculum for EC is introduced according to the curriculum implementation plan.	MOE Report	Education Reform policy is maintained
Output1: The new curriculum framework* is developed.	(1) The new curriculum framework is proposed. (2) The new curriculum framework is finalized by MOE.	MOE Report	(1) Proposed related documents are endorsed by MOE and utilized at school level as planned. (2) All administrative officers work in
Output 2: The new textbooks and teacher's guides are developed.	(1) The new textbooks and the new teacher's guides are proposed. (2) The new textbooks and the new teacher's guides are finalized by MOE.	MOE Report	

Output 3: The new assessment tools are developed.	(1) The sample test collection (2) The guideline on how to utilize the sample test collection	MOE Report	cooperation with the Ministry of Education to expand new curriculum principle.
Output 4: The revised curriculum for EC is developed based on the new curriculum principle in line with teacher education policy.	(1) The revised curriculum for EC is proposed. (2) The revised curriculum for EC is finalized by MOE. (3) Increment in score of training evaluation, comparing between pre and post-test.	MOE Report	
Output 5: Dissemination activities of the new curriculum are introduced.	(1) A training package is developed. (2) Teacher training dissemination activities are conducted according to the government-set schedule.	MOE Report	
Activities	**Inputs**		(1) Appropriate number of counterparts continues to be assigned to the Project.

1-1. Provide technical support to the formulation of the new curriculum policy and strategy through CESR process and by other means.
1-2. Design a new course of study / a new set of areas of learning/ subject structure with clearly defined scope and sequence.
1-3. Formulate aims and objectives for each area of learning.
1-4. Select appropriate content (per grade) for each area of learning.
1-5. Identify appropriate teaching-learning strategies for each area of learning.
1-6. Adopt feasible assessment policy and guidelines and identify applicable strategies/techniques for assessing pupils' achievement.
 	
2-1. Provide technical support to the formulation of new textbook and teacher's guide policy and strategy through CESR process and by other means.
2-2. Define the range of contents of textbook per grade based on the new curriculum framework.
2-3. Define development procedures of new textbooks and teacher's guides.
2-4. Edit new textbooks contents.
2-5. Layout the illustration of textbooks.
2-6. Proofread the textbooks.
2-7. Edit contents of new teacher's guides.
	Inputs by the Japanese side
	 (a) Dispatch of Experts:
	   - Basic Education Development
	   - Chief Advisor
	   - Experts for "Curriculum, Textbooks, and Assessment Component"
	   - Experts for "Teacher Education Component"
	   - Other experts (if necessary)
	 (b) Cost for activities of Experts
	 (c) Cost for seminars and workshops for capacity development for both Components, other than regular meetings
	 (d) Cost for translation (English – Myanmar) other than cost for proofreading
	 (e) Provision of office equipment
	 (f) Training in Japan and third countries (if necessary)
	 (g) Input other than indicated above will be determined through mutual consultations between MOE and JICA during the implementation of the Project, as necessary.
	
	Inputs by the Myanmar side
	 (a) Assignment of Counterpart personnel for both Components
	 (b) Approval of final products to be developed by the Project
	 (c) Assignment of editing staff for textbooks, teacher's guides and assessment tools
	 (d) Cost for regular meetings for both Components
	 (e) Assignment of a few primary schools and one EC for validation of new curriculum		

3-1. Provide technical support to the formulation of new assessment policy and strategy through CESR process by other means.	(f) Cost for proofreading of final products such as textbooks, teacher's guides and all related documents in Myanmar language	
3-2. Develop a sample test collection in line with the new curriculum principles, a part of which will be included in teacher's guides.	(g) Printing and distribution of final products of textbooks, teacher's guides and all related documents to education offices, schools, and students,	
3-3. Develop a guideline on how to utilize the sample test collection.	(h) Printing and distribution of final products of teacher training for the new curriculum.	
4-1. Provide technical support to the formulation of new teacher education policy and strategy through CESR process and by other means.	(i) Cost for implementation of dissemination activities for the new curriculum to schools including in-service teacher training	
4-2. Analyze consistency between the new curriculum framework and the current EC curriculum.	(j) Project office with its running cost	
4-3. Draft the revised EC curriculum (teaching methodology subjects) based on the analysis (described in the activity 4-2) and the on-going teacher education reform.		
4-4. Develop training materials and revised textbooks for teaching methodology subjects to adjust the primary curriculum reform.		
4-5. Develop a training plan for EC trainers.		
4-6. Conduct training for EC trainers.		
4-7. Monitor and evaluate results of the training for EC trainers.		
5-1. Provide technical support to the formulation of dissemination strategy of the new curriculum through CESR process and by other means.		**Pre-Conditions** Curriculum reform policy is maintained.
5-2. Develop a detail plan to disseminate the new curriculum through in-service teacher training.		
5-3. Develop training/dissemination materials.		
5-4. Promote the dissemination activities for the new curriculum.		

*Definition of "Curriculum Framework" will be confirmed later.

Appendix 3

PDM Ver.3

Project Design Matrix (PDM) Ver.3 (revised in April 2017)

Project Title: The Project for Curriculum Reform at Primary Level of Basic Education
Duration: 6 Years and 10 months
Target Group: (Direct) Those who are involved in curriculum revision, primary school teachers, Education College (EC) Trainers
                    (Indirect) Pupils at primary level, EC trainees
Target Subject: All subjects at Primary Level of Basic Education
Target Area: Nationwide

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Super Goal Pupils' learning performance is improved in line with the new curriculum principle.	Results of analysis of national exam	MOE Report	
Overall Goal The new curriculum at primary level of basic education is implemented nationwide.	(1) The new school timetable is in use. (2) The new textbooks are in use. (3) Lesson is conducted in line with new curriculum. (4) The new assessment tools are used. (5) The new primary curriculum is reflected in new EC curriculum.	MOE Report	Teacher's teaching capacity is improved through Continuous Professional Development (CPD).
Project Purpose Educational activities in line with the new curriculum principles are implemented at the primary level of Basic Education Schools and Education Colleges (ECs).	(1) New school timetable is introduced according to the curriculum implementation plan. (2) The new textbooks, including draft version, is introduced according to the curriculum implementation plan. (3) Lesson is introduced in line with the new curriculum, according to the curriculum implementation plan. (4) The new assessment system is introduced according to the curriculum implementation plan. (5) Disseminated teaching and learning materials and supplemental materials are used in ECs.	MOE Report	Education Reform policy is maintained
Output1: The new curriculum framework* is developed.	(1) The new curriculum framework is proposed. (2) The new curriculum framework is finalized by NCC through the recommendations of MOE.	MOE Report	(1) Proposed related documents are endorsed by NCC to MOE and utilized at school level as planned.
Output 2: The new textbooks and teacher's guides are developed.	(1) The new textbooks and the new teacher's guides are proposed. (2) The new textbooks and the new teacher's guides are finalized by NCC through the recommendations of	MOE Report	(2) All administrative

	MOE.		officers work in cooperation with the Ministry of Education to expand new curriculum principle.
Output 3: The new assessment tools are developed.	(1) The sample test collection is developed. (2) The guideline on how to utilize the sample test collection is developed.	MOE Report	
Output 4: The new primary curriculum is disseminated to ECs.	(1) Teaching and learning materials and supplemental materials are developed. (2) Training for ECs is conducted according to the government set schedule.	MOE Report	
Output 5: Dissemination activities of the new curriculum are introduced.	(1) A training package is developed. (2) Teacher training dissemination activities are conducted according to the government-set schedule.	MOE Report	

Activities	Inputs	(1) Appropriate number of qualified counterparts continues to be assigned to the Project.

1-1. Provide technical support to the formulation of the new curriculum policy and strategy through CESR process and by other means.
1-2. Provide technical assistance to finalize curriculum framework.
1-3. Formulate aims and objectives for each area of learning.
1-4. Provide technical assistance to develop subject-wise curriculum including contents per grade.
1-5. Identify appropriate teaching-learning strategies for each subject
1-6. Identify applicable strategies/techniques for assessing pupils' achievement.
 	
2-1. Provide technical support to the formulation of guidelines for new textbook and teacher's guide .
2-2. Define scope and sequences of contents of textbook per grade based on the new curriculum framework.
2-3. Define development procedures of new textbooks and teacher's guides.
2-4. Draft new textbooks and new teacher's guide.
2-5. Coordinate with SWC for developing and improving new textbooks and new teacher's guide.
2-6. Coordinate with NCC for finalizing new textbooks and new teacher's guide.
	Inputs by the Japanese side
	(a) Dispatch of Experts:
	   - Basic Education Development
	   - Chief Advisor
	   - Experts for "Curriculum, Textbooks, and Assessment Component"
	   - Experts for "Teacher Education Component"
	   - Other experts (if necessary)
	(b) Cost for activities of Experts
	(c) Cost for seminars and workshops for capacity development for both Components, other than regular meetings
	(d) Cost for translation (English – Myanmar) other than cost for proofreading
	(e) Provision of office equipment
	(f) Training in Japan and third countries (if necessary)
	(g) Input other than indicated above will be determined through mutual consultations between MOE and JICA during the implementation of the Project, as necessary.
	
	Inputs by the Myanmar side
	(a) Assignment of Counterpart personnel for both Components
	(b) Approval of final products to be developed by the Project
	(c) Assignment of editing staff for textbooks, teacher's guides and assessment tools
	(d) Cost for regular meetings for both Components
	(e) Assignment of a few primary schools
	(f) Cost for proofreading of final products such as textbooks, teacher's guides	

3-1. Provide technical support to the formulation of new assessment policy and strategy through CESR process and by other means. 3-2. Develop a sample test collection in line with the new curriculum principles, a part of which will be included in teacher's guides. 3-3. Develop a guideline on how to utilize the sample test collection. 3-4. Review and revise sample test collection and guidelines	and all related documents in Myanmar language (g) Printing and distribution of final products of textbooks, teacher's guides and all related documents to education offices, schools, and students, (h) Printing and distribution of final products of teacher training for the new curriculum. (i) Cost for implementation of dissemination activities for the new curriculum to schools including in-service teacher training (j) Project office with its running cost	
4-1. Provide technical support to the formulation of new teacher education policy and strategy through CESR process and by other means. 4-2. Analyze consistency between the new primary curriculum framework and the current EC curriculum. 4-3. Draft syllabi of teaching methodology subjects in ECs based on the analysis (described in the activity 4-2) and the on-going teacher education reform. 4-4. Develop teaching–learning materials and supplemental materials for ECs that reflect the new primary curriculum. 4-5. Develop a training plan and training materials for EC trainers. 4-6. Conduct training for EC trainers		
5-1. Provide technical support to the formulation of dissemination strategy of the new curriculum through CESR process and by other means. 5-2. Develop a detail plan to disseminate the new curriculum through in-service teacher training. 5-3. Develop training/dissemination materials. 5-4. Promote the dissemination activities for the new curriculum.		**Pre-Conditions** Curriculum reform policy is maintained.

*Definition of "Curriculum Framework" will be confirmed later.

Appendix 4

PDM Ver.4

Project Design Matrix (PDM) Ver.4 (revised in March 2020)

Project Title: The Project for Curriculum Reform at Primary Level of Basic Education

Duration: 6 Years and 10 months

Target Group: (Direct) Those who are involved in curriculum revision, primary school teachers, Education College (EC) Trainers

                    (Indirect) Pupils at primary level, EC trainees

Target Subject: All subjects at Primary Level of Basic Education

Target Area: Nationwide

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
Super Goal Pupils' learning performance is improved in line with the new curriculum principle.	Results of analysis of national exam	MOE Report	
Overall Goal The new curriculum at primary level of basic education is implemented nationwide.	(1) 80% or more schools receive the new textbooks and teacher's guides in time for the academic year (2) 80% or more teachers provide lessons in line with the new curriculum (3) 80% or more teachers assess their students in line with the new assessment tools (4) The new primary curriculum is reflected in new EC curriculum.	Impact Survey Report Impact Survey Report Impact Survey Report Impact Survey Report	Teacher's teaching capacity is improved through Continuous Professional Development (CPD).
Project Purpose Educational activities in line with the new curriculum principles are introduced at the primary level of Basic Education Schools and Education Colleges (ECs).	(1) New school timetable is introduced according to the curriculum implementation plan. (2) 80% or more of targeted primary teachers attend in-service training for introduction of the new curriculum. (3) 80% or more teachers use new textbooks for lessons. (4) 80% or more teachers have access to assessment materials prepared by the project. (5) 80% or more of targeted EC students attend training for introduction of the new curriculum.	Impact Survey Report DBE record Impact Survey Report Impact Survey Report DHE record	Education Reform policy is maintained
Output 1: The new curriculum framework is developed.	(1) The new curriculum framework is proposed. (2) The new curriculum framework is finalized by NCC through the recommendations of MOE.	MOE Report	(1) Proposed related documents are endorsed by NCC to MOE and utilized at school level as
Output 2: The new textbooks and teacher's guides are developed.	(1) The new textbooks and the new teacher's guides are proposed. (2) The new textbooks and the new teacher's guides are finalized by NCC through the recommendations of MOE.	MOE Report	

Output 3: The new assessment tools are developed.	(1) Sample exercises are developed. (2) Reference book on classroom assessment at the lower primary level is developed. (3) Guidebook on classroom assessment for the primary level is developed.	MOE Report	planned. (2) All administrative officers work in cooperation
Output 4: The new primary curriculum is disseminated to ECs.	(1) Teaching and learning materials and supplemental materials are developed. (2) Training for ECs is conducted according to the government set schedule.	MOE Report	with the Ministry of Education to expand new
Output 5: Dissemination activities of the new curriculum are introduced.	(1) A training package is developed. (2) Teacher training dissemination activities are conducted according to the government-set schedule.	MOE Report	curriculum principle.
Activities	**Inputs**		(1) Appropriate

1-1. Provide technical support to the formulation of the new curriculum policy and strategy through CESR process and by other means.
1-2. Provide technical assistance to finalize curriculum framework.
1-3. Formulate aims and objectives for each area of learning.
1-4. Provide technical assistance to develop subject-wise curriculum including contents per grade.
1-5. Identify appropriate teaching-learning strategies for each subject
1-6. Identify applicable strategies/techniques for assessing pupils' achievement.
 	
2-1. Provide technical support to the formulation of guidelines for new textbook and teacher's guide .
2-2. Define scope and sequences of contents of textbook per grade based on the new curriculum framework.
2-3. Define development procedures of new textbooks and teacher's guides.
2-4. Draft new textbooks and new teacher's guide.
2-5. Coordinate with SWC for developing and
	<u>Inputs by the Japanese side</u>
	(a) Dispatch of Experts:
	  - Basic Education Development
	  - Chief Advisor
	  - Experts for "Curriculum, Textbooks, and Assessment Component"
	  - Experts for "Teacher Education Component"
	  - Other experts (if necessary)
	(b) Cost for activities of Experts
	(c) Cost for seminars and workshops for capacity development for both Components, other than regular meetings
	(d) Cost for translation (English – Myanmar) other than cost for proofreading
	(e) Provision of office equipment
	(f) Training in Japan and third countries (if necessary)
	(g) Input other than indicated above will be determined through mutual consultations between MOE and JICA during the implementation of the Project, as necessary.
	
	<u>Inputs by the Myanmar side</u>
	(a) Assignment of Counterpart personnel for both Components
	(b) Approval of final products to be developed by the Project
	(c) Assignment of editing staff for textbooks, teacher's guides and assessment tools
	(d) Cost for regular meetings for both Components
	(e) Assignment of a few primary schools
	(f) Cost for proofreading of final products such as textbooks, teacher's guides and all related documents in Myanmar language
	(g) Printing and distribution of final products of textbooks, teacher's guides and all related
			number of qualified counterparts continues to be assigned to the Project.

improving new textbooks and new teacher's guide. 2-6. Coordinate with NCC for finalizing new textbooks and new teacher's guide.	documents to education offices, schools, and students, (h) Printing and distribution of final products of teacher training for the new curriculum. (i) Cost for implementation of dissemination activities for the new curriculum to schools including in-service teacher training (j) Project office with its running cost
3-1. Provide technical support to the formulation of new assessment policy and strategy through CESR process and by other means. 3-2. Develop a sample test collection in line with the new curriculum principles, a part of which will be included in teacher's guides. 3-3. Develop a guideline on how to utilize the sample test collection. 3-4. Review and revise sample test collection and guidelines	
4-1. Provide technical support to the formulation of new teacher education policy and strategy through CESR process and by other means. 4-2. Analyze consistency between the new primary curriculum framework and the current EC curriculum. 4-3. Draft syllabi of teaching methodology subjects in ECs based on the analysis (described in the activity 4-2) and the on-going teacher education reform. 4-4. Develop teaching–learning materials for ECs that reflect the new primary curriculum . 4-5. Develop a training plan and training materials for EC trainers. 4-6. Conduct training for EC trainers	
5-1. Provide technical support to the formulation of dissemination strategy of the new curriculum through CESR process and by other means. 5-2. Develop a detail plan to disseminate the new curriculum through in-service teacher training. 5-3. Develop training/dissemination materials. 5-4. Promote the dissemination activities for the new curriculum.	**Pre-Conditions** Curriculum reform policy is maintained.

Appendix 5

Minutes of 1st JCC Meeting

Meeting minutes for the Joint Coordination Committee (JCC) Meeting

Date and Time: 27th August, 2015 (Thursday)

Venue: 2nd floor, MOE Conference Room

I.   Opening Remarks

Dr. Soe Win, Permanent Secretary (PS), opened the meeting and addressed several issues as follows:

-    Welcoming JICA and CREATE team to the first Joint Coordination Committee (JCC) meeting and addressing the importance of curriculum reform and teacher education. He appreciated the Japanese experts and Myanmar counterparts for their hard work and also encouraged the responsible departments of Ministry of Education (MOE) such as Department of Myanmar Education and Research (DMER), Department of Teacher Education and Training (DTET) and Department of Basic Education (DBE) to collaborate together and to minimize any problems/issues by mutual understanding for all the students in Myanmar.

Ms. Ami Ikeda, representative of JICA Myanmar office, remarked on behalf of JICA that MOE and JICA has a long history in supporting education improvement in Myanmar of introducing Child Centered Approach (CCA) since 1997. She expressed gratitude to all the JCC members and participants for on-going efforts and fruitful discussion in the meeting.

II.   Amendment of the Record of Discussion (R/D)

Mr. Takeshi Matsuyama, Adviser, JICA Head Quarter, proposed draft amendment of the R/D in order to reflect updated timeframe of CREATE activities and implementation structure based on MOE restructuring.

1) As MOE restructured its departments in April 2014, implementation structure need to be changed. Project director should be the person who can oversee and coordinate two components of the project, and project manager should be the person who can manage each component. Therefore, it was proposed that project director shall be the PS and project managers shall be Director General (DG)

of DMER for curriculum and textbook component and DG of DTET for teacher education component. Deputy Directors of each department should work as secretariat of JCC for the smooth implementation of the project.

2) Plan of Operation should be updated to reflect new timeframe of introducing new Grade 1 textbooks based on new curriculum in June 2017 and wording also need to reflect actual situation and implementation schedule of the new curriculum.

The Amendment of R/D was agreed upon and signed by both sides.

III.   Presentations

1. Overall progress of CREATE Project by Dr. Norio KATO, Project Team Leader
   Overall progressed tasks and future tasks by mid-2016 of CREATE were explained and following issues were addressed:

   1-1 **Adequate budget allocation in FY 2016/17for new textbooks and Trainings:** Budget for (1) Textbook Printing & Distribution, (2) Teaching and Learning Materials (TLM), (3) Introduction training (G1) and (4) EC instructor training. Upgrading paper quality, binding and printing in the new textbooks. It was suggested to explore other resources especially for TLM at school level , such as "school grant"

   1-2 **Issues of Counterparts(CPs)**: (1) Insufficient No. of CPs and their subject knowledge and (2) necessary of appointing a manager of CPs at BERDC

   1-3 **Strengthening collaboration between Curriculum Development Team(CDT) and Teacher Education Team (TET) in all CREATE activities**

   1-4 **Importance of wider dissemination** of new curriculum to the public

   1-5 **Appropriate candidates nomination to JICA trainings** who can closely work with CREATE project

   1-6 **Operation and maintenance of BERDC building (CREATE office)**

2. Progress of Curriculum & Textbook Component by Mr. Yoshitaka Tanaka, Team leader (Curriculum)

   Detail progress and work schedule were explained: (1) curriculum framework and subject-wise curricula, (2) textbooks in G1, (3) teacher's guide and (4) assessment, and the following issues were addressed:

   2-1 **Confirmation of textbook font:** "Zawgyi" and "Win Innwa" are currently used in writing textbook. However there was a suggestion to use newly developed UNICODE by Yangon University professor.

   2-2 **Proofread of textbook**

2-3 **Approval process of textbook:** Need to clarify who should proofread of draft textbooks and approval process

2-4 **Approval process of teacher's guides**

2-5 **Approval process of Assessment guidelines and sample test collection**

2-6 **Introduction of new curricula:** Necessary of confirmation if new G1 will introduced from 2017

3. Progress of Teacher Education Component by Ms. Tomoko Masuda, Team Leader (Teacher Education)

Detail progress and future plan of teacher education component were explained: (1) policy discussion on teacher education; (2) Preparation for introduction training of new primary curriculum for in-service teachers and (3) EC curriculum and textbook revision reflecting the new primary curriculum and training for EC teachers, and following issues and requests were addressed:

3-1 **Approval process and timing of EC curriculum framework** (currently being drafted)

3-2 **Finalization of training mechanism for in-service teacher training and delivering instructions:** confirmation necessary by early 2016

3-3 **Inclusion of monastic school teachers and private school teachers as trainees:** which need to be budgeted in FY2016/17

3-4 **Finalization of training mechanism for EC training:** confirmation necessary if UDNR be included by early 2016

3-5 **Delivering of instruction for EC training:** by 1st EC training set on September 2016

IV.   Discussion

The following topics were discussed as listed on the Annex.

1) **Securing budget for new textbooks and Trainings**

The Myanmar side explained the process of budget approval: (1) budget proposal will be submitted to the Minister of MOE and submitted to the parliament, then the parliament has to decide in the next fiscal year. The Myanmar side replied that the Myanmar side will think of how to plan reasonable printing cost which will be submitted by responsible Department to the Minister of MOE.

2) **Issues of Counterparts (CPs)**

- The Myanmar side agreed to fulfill additional counterpart requests in CDT and TET.
- Regarding additional recruitment of computer operators, the Myanmar side explained the two options: (1) to assign computer operators from Department of Myanmar Examination (DME) and (2) Outsourcing. Both sides raised there should be confidential agreement in case of outsourcing and agreed to discuss further the two options.

3) **Timing of dissemination**

The Myanmar side emphasized the importance of dissemination of new curriculum to the public and suggested to use NESP consultation process and to conduct dissemination activities during the summer before 2016/17 school year started.

4) **Nominate appropriate candidates of JICA training**

- The Myanmar side assured that candidates of JICA trainings will be carefully selected with respective departments so that they will be able to effectively contribute to CREATE project.

- The Myanmar side would ensure selected participants in JICA trainings will be asked to sign the contract for their commitment until the end of the project period.

5) **Operation and maintenance of BERDC building (CREATE office)**

The Myanmar side replied that operation and maintenance of BERDC will be taken care of by DTET.

6) **Confirmation of textbook font**

The Myanmar side suggested that all departments shall use 'UNICODE'. The Japanese side shared the current situation of 'UNICODE' that it do not currently support some key softwares which are used in textbook editing. The Myanmar side will take it consideration this issue for clarification.

7) **Proofreading of textbook**

The Myanmar side confirmed that the contents should be checked by the Subject-Wise Committee, and the word appropriateness/spelling should be checked by the CDT. The draft final version will be sent to the Department of Myanmar and Language Education (DMLE). The Myanmar side will examine if DMLE has adequate available staff to proofread all the subjects.

8) **Approval process of textbook and teacher's guide**

The Myanmar side discussed approval process based on the National Education Law and past practices. The Myanmar side would confirm it at earliest possible time.

9) **Issues and request in Teacher Education**

The Myanmar side raised the issue of coordination related to EC curriculum framework between CREATE/JICA and UNESCO. The Japanese side clarified that CREATE will contribute to the intermediated reform of EC curriculum by responding primary curriculum revision and other minor improvement that are possible within the current system, while UNESCO will look at the EC curriculum framework base on the long-term vision.

Both sides agreed that remaining issues will be discussed continuously with responsible departments and discussed issues will be clarified and update accordingly.

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V.   Closing Remarks

Dr. khine Mye, DG DMER concluded the meeting by stressing on trying to do our best to achieve the project goal and also to continue all policies and implementing projects regardless of worrier of political situation.

Attendees:	**Ministry of Education and Yangon University of Education**
Myanmar Side	Dr. Soe Win, Permanent Secretary, MOE
	Dr. Khine Mye, Director General, DMER, MOE
	U Tin Myo Kyi, Director General, DTET, MOE
	U Aung Than Oo, Director General, DBE, MOE
	U Aung Htike, on behalf of Director General, Department of Myanmar Examination
	Dr. Zaw Myint, Director General, Department of Myanmar and Language Education (DMLE)
	Dr. Myo Win, on behalf of Acting Rector, Yangon University of Education (YUOE)
	Daw Tin Tin Shu, Director, Minister's Office
	Daw Ni Ni San, Director, DMER
	Daw Khin Thin Phyu, Deputy Director, DMER
	Daw Khine Pyone, Deputy Director, DMER
	Daw San San Myint, Deputy Director, DTET
	Dr. Aye Thida Soe, Assistant Director, DMER
	Daw Kay Thi Soe, Research Assistant, DMER
	Daw Moh Moh Thu, Research Assistant, DMER
	National Adviser
	Dr. Myint Thein National Adviser, CESR
	Dr. Win Aung National Adviser, CESR
Japanese Side	**JICA:**
	Ms. Ami Ikeda, Representative, JICA Myanmar Office
	Mr. Takeshi Matsuyama, Adviser, Basic Education Team 1, HRD, JICA HQ
	Daw Shwe May Kyaw, Secretary, JICA Myanmar Office
	CREATE Team:
	Ms. Yumiko Yamakawa, Basic Education Adviser
	Dr. Norio Kato, Project Team Leader
	Mr. Yoshitaka Tanaka, Team Leader (Curriculum)
	Ms. Tomoko Masuda, Team Leader (Teacher Education)
	Mr. Isamu Imahori, Mathematics Education Adviser 1
	Mr. Koji Takahashi, Mathematics Education Adviser 2
	Ms. Merle C. Tan, Science Education Adviser 2
	Ms. Hikari Miyahara, Project Coordinator
	U Thant Zin, Senior Project Officer
	Daw Khin Sein Win, Curriculum Development Adviser
	Daw Aye Aye Cho, Teacher Education Adviser
	Daw Ni Phyo San, Communication Officer
	U Zeyar Htun, Project Secretary (Admin, IT)
	Daw Moh Thwe Nyi, Project Secretary (Admin, Logistics)
	Daw Moe Thida Htwe, Interpreter

Annex: Issues, Questions and Decision made by MOE

1. Overall

		Agendas	Responsibility Bodies/Persons	Timing
1	Budget	Budget for (1)Textbook Printing & Distribution, (2) T & L Materials, (3) Introduction Training (G1) and (4) EC instructor Training.	DBE, DTET?	
2	CP Issues	- Recruit insufficient CPs - Quality of CP insufficient subject knowledge - Appoint a manager of CPs to BERDC	DMER DTET	By Dec 2015
3	Cross Cutting Issues	EC instructors (DTET) and teachers (DBE) need to work for all trainings and CREATE activities	Coordination (DTET, DBE, CREATE)	
4	Dissemination	When dissemination of new curriculum to public can be started		
5	CP trainings	Effective use of Overseas Training in Japan		
6	BERDC	Responsible Department of BERDC building		

2. Curriculum and Textbook

Category	No.	Agendas	Responsible Bodies / Persons	Timing
Textbooks	1	**"Zawgyi" and "Win Innwa"** are currently used in writing textbooks. There is a suggestion from Yangon University that UNICODE which is developed recently can be used due to appropriate expressions.		
	2	**Proofread** new textbooks for Grade 1	?	?
	3	**Approve** new textbooks for Grade 1	?	?
Teacher's Guides	4	**Approve** new teacher's guides for Grade 1	?	?
Assessment	5	**Approve** Assessment Guidelines and a Sample Test Collection	?	?
Introduction of New Curricula	6	New KG will be introduced from 2016, and **new Grade 1 will be introduced from 2017.**		

3. Teacher Education

Category	No.	Agendas	Responsible bodies / persons	Timing
EC Curriculum Framework	1	Approval of EC curriculum framework (currently being drafted)	?	the earlier, the better (latest by mid 2016)
Training	2-1	Finalization of training mechanism for in-service teacher training and delivering instructions	DBE	by early 2016
	2-2	Inclusion of monastic school teachers and private school teachers as trainees	DBE	by the time when the budget is prepared
	3-1	Finalization of training mechanism for EC training (inclusion of UDNR)	DTET	by early 2016
	3-2	Delivering of instruction for EC training	DTET	by the 1st EC training

Appendix 6

Minutes of 2nd JCC Meeting

Joint Coordination Committee (JCC) Meeting

Meeting minutes

Date: 10th March 2017 (Friday)
Venue: MoE Conference Room (Ground Floor)

I.   Opening Remarks

1.   Opening Remarks by Permanent Secretary

Dr. Soe Win, Permanent Secretary (PS), the Chairperson of JCC, opened the meeting and celebrated the successful completion and approval of G1 textbooks and teacher's guides by NCC. It is remarkable that Myanmar pupils will start using the new G1 textbooks from AY2017. He appreciated the efforts of CREATE team and for the training opportunities that CDTs and SWCs have had, including study tours in Japan. He noted that training to introduce the new curriculum to supervisors and in-service teachers (INSET) are under way and the INSET at the state/region, township, and school family levels will be conducted in coming months. He requested all stakeholders to collaborate further for development of G2 up to G5 textbooks.

2.   Opening Remarks by JICA Consultative Mission

Dr. Keiko Mizuno, Senior Advisor (Education), JICA HQ, the Leader of JICA Consultative Mission, congratulated the completion of G1 textbooks, teacher's guides, and assessment guideline. She noted that extensive work and devotion of stakeholders including SWCs made it possible, and commended the PS's leadership and professional support. She emphasized that although much has been accomplished for the curriculum reform, socialization of new curriculum and textbook still need to be promoted so that the community and parents are fully engaged in curriculum reform process. This meeting is meant to come to a consensus for the way to go, so that quality textbooks are developed within a very limited time. She closed her remarks by reiterating that JICA is honored to have the opportunity to take part in Myanmar's curriculum reform and look forward to further collaboration based on mutual trust.

II.   Presentations

1. Overall Progress of CREATE Project Activities

Dr. Kato, Project Team Leader of CREATE, explained the progress of the Project up to date, and raised overarching issues related to project implementation.

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- G1 textbooks and teacher's guides were completed. Assessment Guidelines and Sample Test Collection for G1 were completed.
- Supervisor training and central training for in-service teachers were completed. In-service training at other levels will be conducted by MoE by May 2017.
- EC training material for G1 was completed but could not conduct EC training due to the delay of G1 textbook approval.
- Due to delay of G1 textbook approval, the schedule of the Project is approximately one year behind the original plan. According to the current schedule, the **Project will finish up to draft of G4 textbook, and introduction training and EC support up to G3**.
- **Approval by MoE to implement a series of PR activities to inform the public about the new G1 curriculum** is sought.
- **Qualified CDT members need to be added**.
- **Cooperation between CDTs and Teacher Education Team (TET)** needs to be enhanced.
- **Appointment of in-charge person from MoE to manage CDT and TET at BERDC** is desirable.
- **Coordination mechanism between primary and secondary curriculum development** needs to be clarified.
- **MoE's plan for assessment reform** needs to be informed to CREATE.
- **Budget for G2 new curriculum implementation** needs to be confirmed.

2. Plan and Issues Concerned with Grade 2 Textbooks and Teacher's Guides Development

Mr. Yoshitaka Tanaka, Team Leader, Curriculum and Textbooks component of CREATE, presented the proposed schedule of G2 textbook development and issues to be clarified before its implementation.

- **The proposed schedule for G2 textbooks/teacher's guides development** should be agreed upon. According to the proposed schedule, draft G2 textbooks will be developed by collaboration of CDTs and SWCs. SWC will officially review twice, DMNL will proofread once, and NCC will review three times, out of which the first two times will be on partially developed drafts. Teacher's Guide development will follow, with five months overwrap.
- **Status of the National Curriculum Framework** needs to be clarified.
- MoE's plan as to the **distribution of G2 textbooks** needs to be shared so that development work can be adjusted.
- Basic direction of G2 textbook development should be set at an early stage. The Textbook Development Guideline was submitted from CREATE to MoE. After MoE's review, it shall be agreed by NCC and recognized as the **Primary Textbook Development Guideline**. The Guideline includes basic principles such as function of textbooks, description of chapter objectives, language form, size, font, basic design, and number of pages.
- **Coverage of textbook contents by G2 teacher's guides** need to be decided.
- **Review process** needs to be agreed upon.

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3. Progress and Next Step of Introduction Training

Ms. Tomoko Masuda, Team Leader, Teacher Education component of CREATE, explained about three kinds of training programs to introduce the new curriculum, and issues to be considered for upcoming teacher training activities.

- For G1 introduction, Training for Supervisors, Training for In-service teachers, and Training for EC (EC teacher educators and EC students) were planned. The result of self assessment indicated high understanding levels with a few exceptions.
- The Training for Supervisors informs the Supervisors about core concept of the new primary curriculum, training for in-service teachers, their roles in implementation of the new curriculum. **Whether to conduct the Training for Supervisors in 2018** needs to be decided.
- Training for In-service Teachers focuses on changing lessons. It is designed in a way that the trainees experience the new features themselves, and the same quality of training content is handed down to all levels. The result of self assessment indicated that the **last minutes' approval and changes affected the quality of the training**.
- **Person in charge from MoE should oversee the central level introduction training**.
- Need to consider **how to incorporate EC training content in the future 4-year EC curriculum**.
- **TEO, DEO, SEO need to be reminded of their role to monitor management of introduction training**, while CREATE monitors the technical aspects.

III.   Amendment of R/D

Ms. Yumi Tokuda, JICA HQ, explained referring to Annex 1 to 4, that the R/D that was revised in August 2015 needs to be revised again in order to reflect the actual updated situation, commonly used terminologies, and the new MoE structure. She also explained that JICA hopes to introduce a new project evaluation system from two times of evaluation during the project to submission of a monitoring sheet, which is to be prepared jointly by the Project and MoE, every six months. JICA will prepare M/M based on this meeting and sign the amended R/D, which will be sent to the PS to sign.

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IV.   Discussion

Dr. Soe Win facilitated the discussion. Issues raised during the presentations were discussed as follows:

- **PR activities**

It was agreed that all of the PR activities plan presented are appropriate and MOE will get a permission to develop PR contents from the Minister and inform the project by the end of next week. It was informed that the Minister has agreed that all subjects are important, is very interested in the PR materials, and hence he himself commented on the poster twice and the brochure is under review. Therefore, distribution of PR materials needs to await his permission. Introduction of the new curriculum will be included in NESP regional dissemination. MoE will proceed to obtain permission to organize a session focusing on the new curriculum in the dissemination.

- **CDT members**

Recruitment of additional CDT members is under way.

- **Appointment of in-charge person from MoE to manage CDT and TET**

Dr. Zaw Latt Htun is in charge of managing CDT and TET. Although TET is not under DERPT, he can coordinate with DG DHE. However, considering the range of responsibilities he bears, it was proposed that DERPT will rotate its senior officer to be stationed in BERDC and this proposal was accepted.

- **Coordination between primary and secondary curriculum development**

Considering the increasing importance of coordination once the secondary curriculum reform begins, DG DERPT is appointed to take charge of the coordination as a chair of Curriculum & Student Assessment Sub-Sector Working Group.

- **MoE's plan for assessment reform**

It was reminded that the Project has already shared the Assessment Guideline with MoE for review. It was clarified that the reform described in a newspaper article is a potential pilot, and the actual plan is still under discussion. MoE will notify the Project once the policy is set by the Minister.

- **Budget for G2 new curriculum implementation**

It was confirmed that most of the necessary budget for textbooks, teacher's guides, in-service teacher training and training for ECs has been secured. There is risk that some part is missing due to restructuring.

- **Project period**

MoE requested JICA to continue the assistance until G5 textbooks and trainings to be completed. JICA will take the request back to JICA HQ for consideration.

- **G2 development schedule**

NCC requested that the textbooks drafts are submitted for review portion by portion rather than after the whole textbook is drafted, and that the submission to NCC is made after proofreading by DMNL each time. It was clarified by the Project that the first two times of submission to NCC planned in May and July would be partial and for the purpose of reporting the progress. As a result of discussion, it was agreed that a) NCC's review should focus on the content but not the language, b) the submission to NCC shall be made according to the proposed schedule, and c) the proofreading by DMNL shall be done once the content is fixed.

- **Status of the National Curriculum Framework**

It is being reviewed and currently sixth draft. MoE intends to finalize it as soon as possible.

- **Distribution of G2 textbooks**

It was noted that MoE considers the decision for G1 textbook distribution as "all 10 textbooks" because the 4 textbooks are approved by the NCC and still distributed to teachers. MoE will inform the Project regarding G2 by the end of next week.

- **Primary Textbook Development Guideline**

The Project urged MoE to review the Textbook Development Guideline submitted by the Project, so that the approved version can be used as the national guideline for primary textbook development. MoE agreed to proceed with the review and then to submit to NCC.

The following discussion was made regarding the content of the Guideline:

- Size – Size of the teacher's guide is A4 because it needs to be larger than the textbook due to its design with a copy of the textbook in the center.
- Font – Agreed to use Winn Researcher for G2. Use of Unicode will be considered later because Unicode is not supported by design software.
- Language – Basically spoken language for G2. Text form can also be used depending on nature of subjects. A separate consideration needs to be made for English subject. It was advised that SWC should report in writing if there is a special request for different way of proofreading.
- Chapter objectives – To exclude from textbooks and include in teacher's guide.

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- **Coverage of textbook contents by G2 teacher's guides**

The importance of the teacher's guide to support teacher's capacity was stressed by MoE. On the other hand, covering 100% of the textbook content within the significantly shorter time frame may mean reducing the quality of textbooks. Considering the given situation, it was agreed that a) G2 teacher's guides will cover all content of textbooks, b) difficult-to-teach chapters with full-scale and relatively easy-to-teach chapters with simplified explanation, c) majority of existing CDT members will be maintained, and d) qualified CDT members will be added.

- **Review process**

Agreed as proposed.

- **Whether to conduct the Training for Supervisors in 2018**

It was confirmed that the MoE budget is planned and it should be conducted in 2018 .

- **Last minutes' approval and changes should be avoided**

MoE agrees in principle but sought understanding for unavoidable circumstances. The Project shared that the discussion for training planning should be started before approval of textbooks.

- **How to incorporate EC training content in the future 4-year EC curriculum**

MoE will facilitate discussion including DHE and UNESCO.

- **TEO, DEO, SEO need to be reminded of their role**

DBE will remind.

- **Revision of R/D**

All points are noted and agreed.

V.   Summary of Discussion and Closing Remarks

In consideration of time, MoE offered that the Summary of Discussion will be sent to the Project in writing. With this, the JCC meeting was officially closed.

Attendees

Myanmar side

Dr. Myint Swe, Chairperson, NCC

U Tin Hlaing, Member, NCC

Dr. Soe Win, Permanent Secretary, MOE

Dr. Win Tun, Director General, DERPT, MOE

Dr. Thein Win, Director General, DHE, MOE

Dr. Khine Mye, Director General, DBE, MOE

U Myo Nyunt, Director General, DME, MOE

Dr. Zaw Myint, Director General, DMEL, MOE

Dr. Aung Aung Min, Deputy Director General, DHE, MOE

Dr. Zaw Win, Deputy Director General, DBE, MOE

U Aung Kyaw, Deputy Director General, ETD

U Khaing Zaw Oo, Lecturer, Yangon University of Education

Daw Win Win Thein, Rector, Sagaing University of Education

Daw Nyein Ma Ma Khin, Head of Department, Methodology, Sagaing University of Education

Daw Khin San Tint, Professor, Department of Methodology, University for Development of National Races

Dr. Aung Myint Oo, Chairperson, Myanmar SWC

Dr. Naw Ju Paw, Chairperson, English SWC

Dr. Daw Win Kyi, Chairperson, Mathematics SWC

Dr. Ni Ni Than, Chairperson, Science SWC

Dr. Margret Wong, Chairperson, Social Studies SWC

Dr. Htun Ko, Chairperson, Social Studies SWC

Dr. Daw Htay Khin, Chairperson, Morality and Civics SWC

Daw San San Yee, Chairperson, Life Skills SWC

Daw Khin Myat Thet, Chairperson, Physical Education SWC

U Kyaw Myint, on behalf of U Bo Myint, Chairperson, Performing Arts SWC

U Aung Sithu Hlaing, Chairperson, Visual Arts SWC

Daw Tin Tin Shu, Director, Minister's Office

Dr. Zaw Latt Htun, Director, DERPT

Daw Khin Thin Phyu, Director, DERPT

Daw Myat Myat Maw, Assistant Director, DERPT

Japan Side

Mission Member:

Dr. Keiko Mizuno, Senior Advisor (Education), JICA HQ

Ms.Yumi Tokuda, Deputy Director, Basic Education Team 1, Human Development Department, JICA HQ

JICA Myanmar Office:

Mr. Nobuo Iwai, Senior Representative, JICA Myanmar Office

Ms. Kumiko Iwasawa, Project Formulation Advisor, JICA Myanmar Office

Daw Thet Su Kyi, Assistant Program Officer, JICA Myanmar Office

CREATE Team:

Ms. Yumiko Yamakawa, Basic Education Adviser

Dr. Norio Kato, Project Team Leader

Mr. Yoshitaka Tanaka, Team Leader (Curriculum)

Ms. Tomoko Masuda, Team Leader (Teacher Education)

Ms. Hikari Miyahara, Project Coordinator

U Thant Zin, Senior Project Officer

Daw Zin Min Lwin Tun, Project Secretary

Daw Aye Yu Zaw, Project Secretary

Appendix 7

Minutes of 3rd JCC Meeting

Joint Coordination Committee (JCC) Meeting

Meeting minutes

Date:	21st December 2017 (Thursday)
Venue:	MoE Bldg. 13 Conference Room (Ground Floor)

I.   Opening Remarks

1.   Opening Remarks by Project Director

Dr. Khine Mye, Project Director of CREATE project and Director General of Alternative Education (hereinafter referred to as PD), conveyed appreciation for the cooperation by CREATE Project supported by JICA. He stressed the importance of primary education that promotes 21st century skills necessary in the modern society, physical fitness, thinking, collaborative work, and joy of learning. He encouraged active discussion for further collaboration.

2.   Opening Remarks by JICA Consultative Mission

Dr. Keiko Mizuno, Senior Advisor (Education), JICA HQ, the Leader of JICA Consultative Mission, congratulated the completion of G2 textbooks, and reiterated the importance of effective implementation of the new curriculum, building capacity of in-service and pre-service teachers, and institutionalization of the capacity being strengthened through the work of curriculum reform.

II.   Presentations and Discussion

Presentations were made by CREATE Team Leaders, followed by plenary discussion facilitated by the PD.

1.   Overall Progress and Issues

Dr. Norio Kato, Project Team Leader of CREATE, explained the progress of the Project, and raised overarching issues.

- Appointment of qualified CDT and TE counterparts

DERPT is going to appoint two Visual Arts CDT (1 from Thingangyun EC, 1 from BEHS (3) Kyeemyindaing) shortly. DHE is searching one for Mathematics CDT. CREATE is not concerned about positions but would like to have persons with sound understanding of subject and/or teaching experience from either EC or UoE. DDGDERPT pointed out that the commitment for the work is important. DGDHE requested YUoE to see if their Mathematics lecturer from Methodology Department is able to join as a CDT member. MoE will inform the result within one week.

1

- Cooperation between CDT and Teacher Education counterpart (TE-CP)

CDT members had resentment because they wrote the new G1 textbooks and yet were not ones who taught them in the G1 training. It was reported that this year the relationship between CDT and TE-CP significantly improved partly due to CDT representatives' participation in Teacher Education training in Japan. MoE is ready to support in resolving issues that may arise.

- Assessment reform by MoE

DDGDERPT informed that National Assessment Policy is draft zero at present. MoE plans to hold a national assessment seminar shortly, after which assessment tools will be distributed.

- Distribution of Grade 3 textbooks

PD informed the Union Minister's decision as below:

Grade 1-3 6 subjects textbooks are to be distributed to students
4 subjects textbooks are to be distributed to teachers
Grade 4-5 All 10 subjects textbooks to be distributed to students

Different arrangement can be considered as the country develops and the situation changes.

- Budget and logistics for Grade 2 implementation

Bidding for textbooks is in process. There will be no budget issue for G2 introduction training. DGDBE requested CREATE to submit samples of teaching-learning materials. CREATE Team Leader responded that the materials can be submitted in one month.

- PR activities to understand new G2

MoE agreed with the PR activities proposed by CREATE. PD advised to bring the website to the Minister's Office. PD also stated that articles can be developed by MoE and sent to newspapers or included in education newsletters.

2. **Review of G2 Textbooks and Teacher's Guides Development & Proposed Development Process for G3**

Mr. Yoshitaka Tanaka, Team Leader, Curriculum and Textbooks component of CREATE, reported issues observed in the process of G2 textbook development, and presented the proposed schedule of G3 textbook development and issues to be clarified in prior to its commencement.

- Communication and recognition among CDT, SWC, and NCC

PD suggested to hold meetings to improve communication.

- Responsibilities of SWC and NCC

NCC Chairperson expressed that they prefer to review technical aspects of textbooks because of the members' background. They would like to make sure that the textbooks are flawless in terms of language used.

- Instructions to reduce number of pages so as not to overload students

DDGDERPT explained that in the course of advising reduction of number of pages, MoE considered relevancy for age and budget constraints while maintaining concept and process of the textbooks. The Union Minister would like the textbooks to be coherent and concise. He suggested that moving some content to teacher's guide can be an option where appropriate. He also stated that the number of pages should not be reduced if it can affect the quality of the

2

textbook. PD proposed that one way to assure the content while limiting the volume may be to develop supplemental materials. CREATE requested MoE to present maximum number of pages for each subject at G2 Review & G3 Kickoff meeting planned on 11th January 2018, and PD agreed to bring up the matter to the Union Minister.

- Textbook specification

Last year's example, where the schedule was delayed and the sizes varied, should not be referred as the model. The specification presented by JICA, which is the same as the tender specification, will be followed. Font issue will also be discussed at the meeting on 11th January 2018. CREATE informed that Myanmar Unicode font is not supported by Adobe thus cannot be used, and Win Researcher Truetype can not show all alphabets correctly.

- Proposed plan for developing G3 textbooks and teacher's guides

SWC Chairperson commented that feasibility of the proposed plan depends on CDTs. Another SWC Chairperson expressed concern that the burden on NCC may be heavier if the review of G3 and G6 have to be done at the same time. As a result of discussion, it was agreed that the proposed plan would be followed. NCC should review chapter by chapter rather than the whole book.

3. Progress and Next Steps of Teacher Education Component

Ms. Tomoko Masuda, Team Leader, Teacher Education component of CREATE, explained about progress of new curriculum introduction training (for in-service teachers and for ECs) and development of subject pedagogy materials for EC curriculum, and raised issues to be addressed for on-going and upcoming activities.

- On-time arrival of training materials for G2 training

DDGDHE requested DBE to make sure that Teacher's Guides are distributed to introduction training participants. She added that if it is not possible, at least copies of excerpt of TGs should be provided. DGDERPT explained that the arrival of books was late last year but it would be in time for G2 after approval by NCC. DDG-DERPT clarified that introduction training is not lead by JICA but by MoE and technically supported by JICA. NCC explained that the review took longer than expected because of the abrupt instruction to reduce number of pages that required adjustments at the final stage. Nevertheless, most of Teacher's Guides will be approved shortly.

- Appointment of supervisors for training

Supervisors have been appointed for In-service Training for new curriculum introduction.

- Arrangement of In-service teacher training (including approval for revised schedule)

The revised schedule was agreed as below:

Central: 15-19 Jan, 22-26 Jan, 29 Jan-2 Feb
State/Region: 30 Mar-12 Apr
Township: 19 Apr-5 May
School cluster: 8-23 May

- Utilization of already developed subject pedagogy materials for EC

DDGDHE requested CREATE to share the already developed subject pedagogy materials so that DHE can consider how to fit them in the new EC curriculum.

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III.   Summary of Discussion and Closing Remarks

PD repeated the importance and values of the work and expressed gratitude for the support by JICA/CREATE.

Signatures

Nay Pyi Taw, December 2017

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Mr. Nobuo Iwai
Senior Representative
Japan International Cooperation Agency
Myanmar office

_____

Dr. Khine Mye
Director General
Department of Alternative Education
Project Director of CREATE Project
Ministry of Education

_____

Dr. Norio Kato
Team Leader
CREATE Project

_____

Dr. Win Tun
Director General
Department of Education Research,
Planning and Training
Project Manager of CREATE Project
Ministry of Education

_____

Dr. Thein Win
Director General
Department of Higher Education
Ministry of Education

_____

Dr. Aung Naing Soe
Director General
Department of Basic Education
Ministry of Education

Attachment: List of Participants

Myanmar side

Dr. Khine Mye, Director General, DAE, MOE

Dr. Win Tun, Director General, DERPT, MOE

Dr. Thein Win, Director General, DHE, MOE

Dr. Aung Naing Soe, Director General, DBE, MOE

U Aung Htike, Deputy Director General, DME, MOE

(on behalf of U Myo Nyunt, Director General, DME, MOE)

Dr. Zaw Myint, Director General, DMNL, MOE

U Ko Lay Win, Deputy Director General, DERPT, MOE

Dr. Zaw Latt Tun, Deputy Director General, DERPT, MOE

Dr. May San Yee, Deputy Director General, DHE, MOE

U Khine Zaw Oo Lecturer, Yangon University of Education (YUOE)

U Tun Min, Assistant Lecturer, Yangon University of Education (YUOE)

Dr. Tin May Win, Professor/Head, Sagaing, University of Education (SUOE)

Dr. Soe Than, Professor/Head, Sagaing, University of Education (SUOE)

Dr. Cho Cho Mar, Pro Rector, University for Development of National Races

Dr. Wint War War Hlaing, Professor, Myanmar Department, Yangon University

(on behalf of Dr. Aung Myint Oo, Chairperson SWC, Myanmar)

Dr. Poe Poe, Vice-Chairperson, SWC, English

(on behalf of Dr. Naw Ju Paw, Chairperson)

Dr. K Thi Tin, Chairperson, SWC, Mathematics

Dr. Ni NI Than, Chairperson, SWC, Science

Dr Mo Mo Thant, Chairperson, SWC, Social Studies

Dr. Htun Ko, Chairperson, SWC, Social Studies

Dr. Daw Htay Khin, Chairperson, SWC, Morality and Civics

Daw Khin Mya Thet, Chairperson, SWC, Physical Education

U Bo Myint, Chairperson, SWC, Performing Arts

U Aung Sithu Hlaing, Chairperson, SWC, Visual Arts

Dr. Aye Mon Win, Director, Minister's Office

Daw San San Nu, Director, DHE

Daw Than Myint, Director, DBE

U Kyi Lin, Director, Education and Training Department, Ministry for Progress of Border Areas and National Races and Development Affairs

Observers

Dr. Myint Swe, Chairperson, National Curriculum Committee

Dr. Than Htut Oo, member, National Curriculum Committee

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Mission Member:

Dr. Keiko Mizuno, Senior Advisor (Education), JICA HQ

Ms. Yumi Tokuda, Deputy Director, Basic Education Team 1, Human Development Department, JICA HQ

JICA Myanmar Office:

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Ms. Thet Su Kyi, Assistant Programme Officer, JICA Myanmar Office

Ms. Su Sandar Myint, Secretary, JICA Myanmar Office

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Ms. Tomoko Masuda, Team Leader (Teacher Education)

Ms. Hikari Miyahara, Project Coordinator

U Thant Zin, Senior Project Officer

Daw Khin Sein Win, Advisor, Curriculum

Daw Myat Myat Khine, Advisor, Curriculum

Appendix 8

Minutes of 4th JCC Meeting

4th Joint Coordination Committee (JCC) Meeting

Meeting Minutes

Date: 20th September 2018

Venue: MOE Extension Building, Meeting Room (4th Floor)

I.   Opening Remarks

1.   Opening Remarks by Project Manager

Dr. Win Tun, Project Manager of CREATE project and Director General of Department of Education Research, Planning and Training, conveyed appreciation for the cooperation by CREATE Project supported by JICA for fruitful and effective results of new textbooks and teacher's guides development for primary education. He emphasized about JICA support for Grade 1 completion for academic year 2017-2018, Grade 2 completion for academic year 2018-2019, and upcoming Grade 3 completion for academic year 2019-2020.

2.   Opening Remarks by JICA Consultative Mission

Dr. Keiko Mizuno, Senior Advisor (Education), JICA HQ, the Leader of JICA Consultative Mission, appreciated the significant improvement of Grade 3 textbooks and teacher's guides that are close to finalization and approval by the collaboration between different departments and committees. She congratulated to all based on her findings during her school visit comparing the attitudes of students and teachers between those using the new and old textbooks. She hoped to get positive outcomes although more complicated coordination with the secondary team is now required for development and introduction of the new curriculum.

II.   Presentations and Discussion

Presentations were made by CREATE Team Leaders, followed by plenary discussion facilitated by Dr. Zaw Latt Tun, Deputy Director General, DERPT. The discussion points are as follows:

1.   Matters related to Management and Administration

a) Textbook distribution policy

The Myanmar side explained that while 6 textbooks are being distributed to the students and 4 textbooks are distributed to the teachers up to G3 at present, all textbooks will be distributed in G4 and G5 by reuse policy as instructed by Union Minister. There is a possibility to implement reused policy in all grades based on State Counsellor's guideline, however the details of wider implementation needs to be confirmed with the UM. Potential political consequence of stopping

the free distribution, EU indicator that requires free distribution, and storage of textbooks will be the issues to be considered.

b) Supplement of CDT and TE counterparts

DDGDERPT explained that new CDTs have been appointed as of September 14, 2018 and new CDT members for mathematics and visual arts have already joined the project. Remaining members have also been appointed. The Myanmar side informed that the assignment of one of Visual Arts CDT members to the TE Team may be arranged without an official order. The Myanmar side further stressed that the project counterpart personnel who have been trained locally and abroad are not allowed to return to their original places.

c) Incentives for CDT and TE counterparts

The Myanmar side explained that as a recognition of the efforts of CDTs and TE counterparts, Union Minister suggested to deliver certificates each year and that those members will not be left behind for promotion and scholarship.

d) Securing Budget

The Myanmar side confirmed that G3 Textbook printing and G3 introduction training budget is secured. DBE would like to have budget estimation for G4, based on the assumption to print all 10 books, by the end of October 2018.

e) Distribution of learning materials of G1 and G2

DBE informed that teaching learning materials for G1 have been distributed, and the materials for G2 will reach the district education offices on 23rd September and then in one or two weeks period they will reach the students. G1 materials were distributed based on school. For G2, vinyl printings will be distributed on school base and English flash cards and other teaching learning materials will be distributed on class base. DBE requested CREATE to submit the budget estimation for G3 learning materials as soon as possible, preferably before 1st October.

f) Current font cannot show some Myanmar letter correctly

Myanmar side noted that although the Union Minister would like them to use Myanmar 3 font, given the technical constraints and the fact that SWC, DMNL, and NCC accepted the current font for G3 textbooks, it is appropriate to continue using Win Researcher font with no modification.

g) Quality control of textbook printing

Myanmar side shared their concern about the variation in textbook printing and binding qualities. The Myanmar side agreed that presentation on quality control can be carried out with the Textbook Quality Control committee between 1st and 5th October, while asking the meeting to note that there remains a concern regarding the ability of the committee members in explaining the information to the printing houses.

2

2. Matters related to Curriculum Component

h) National Curriculum Framework (NCF) has not been formally approved yet

It is confirmed that the textbooks and teacher's guide are to be developed based on the current version of NCF. DERPT will re-check the primary level assessment section of the NCF 6th version and see to it that it will be modified to be in line with the already approved PLAF which states that there shall be no test from G1 to G3. The Japan side reiterated the understanding that assessment is part of teaching learning process and at primary level it is to be included but not necessarily in the form of tests.

i) National Assessment Policy (NAP)

Myanmar side informed that the National Assessment Policy is planned to be approved before the end of 2018 and all assessment will be conducted according to guidelines based on the NAP. National Consultation Meeting will be held by Department of Myanmar Examination during October in order to gather opinions of teachers and principals from primary, lower and upper secondary levels, and ATEOs.

3. Matters related to Teacher Education Component

j) Further coordination of G3 and G6 training is necessary

The Myanmar side agreed that further coordination is necessary to conduct G3 and G6 training that are scheduled to take place during the same period. The Myanmar side confirmed that supervisor training for G3 and G6 will be conducted consecutively and that the venue will be Htauk Kyant Training center.

k) Updates of EC curriculum according to BE curriculum reform schedule

The Japan side inquired how MOE considered the need and process of updating EC textbooks after the national roll out of 4-year EC from December 2019. The question was raised because the EC textbooks that are currently under development contain little information of basic education textbooks that have not yet been reformed. The Myanmar side responded that they will prepare the EC curriculum based on the new basic education curriculum outline, or the scope and sequence, to make it ready in time for the nation-wide roll-out in December 2019 at 24 ECs. The Myanmar side would like to coordinate so that the content of the remaining grades of new basic education curriculum will be reflected on the EC curriculum afterwards.

4. Other Issues

DDGDERPT called for discussion by SWC chairpersons.

- Textbooks in black market

Visual arts SWC chairperson asked about loss of textbooks by the students. DGDBE replied that extra copies of textbooks are available for loss as well as for disaster situation. They have a plan to take action against textbook printing and selling in the black market.

3

- Textbooks print quality

Vice Chairperson, Myanmar language SWC asked whether any expert member from Myanmar Printers and Publishers Association (known as Printing Association) are included for quality control of printing process. MOE responded that it is for MOI to decide whom to include as members of committees for textbook printing. While MPPA has more knowledge about printing, fairness needs to be considered since they also bid for tender.

III.   Closing Remarks

Dr. Win Tun delivered the words of appreciation for the active participation of all the attendees and thanked Government of Japan and the people, JICA and CREATE project for their support. He also mentioned that Union Minister compared the textbooks and praised that G3 textbooks and teacher's guides are very systematic. As the CDT members are being trained locally as well as abroad, CDTs become more enthusiastic to develop new textbooks. Finally, PM expressed his gratitude for the efforts of all CDT members, SWC and NCC.

Signatures

Nay Pyi Taw, September 2018

_____
Mr. Nobuo Iwai
Senior Representative
Japan International Cooperation Agency
Myanmar office

_____
Dr. Win Tun
Director General
Department of Education Research,
Planning and Training
Project Manager of CREATE Project
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Dr. Norio Kato
Team Leader
CREATE Project

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Dr. Thein Win
Director General
Department of Higher Education
Ministry of Education

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U Ko Lay Win
Director General
Department of Basic Education
Ministry of Education

4

Attachment: List of Participants

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Dr. Win Tun, Director General, DERPT, MOE

Dr. Thein Win, Director General, DHE, MOE

U Ko Lay Win, Director General, DBE, MOE

Dr. Zaw Latt Tun, Deputy Director General, DERPT, MOE

Dr. Thida Wai, Lecturer, Yangon University of Education (YUOE)

Dr. Khin Mar Ni, Lecturer, Yangon University of Education (YUOE)

Daw Moe Moe, Professor, University for Development of National Races (UDNR)

Dr. Aung Kyaw Moe, Vice Chairperson, SWC, Myanmar (on behalf of Dr. Aung Myint Oo, Chairperson SWC, Myanmar)

Dr. Htun Ko, Chairperson, SWC, Social Studies (Geography)

Daw San San Yee, Chairperson, SWC, Life Skills

Daw Khin Mya Thet, Chairperson, SWC, Physical Education

U Bo Myint, Chairperson, SWC, Performing Arts

U Aung Sithu Hlaing, Chairperson, SWC, Visual Arts

Dr. Aye Mon Win, Director, Union Minister's Office, MOE

Daw San San Nu, Director, DHE

Dr. Tin Yu Yu Aye, Director, DBE

Japan side

Mission Member:

Dr. Keiko Mizuno, Senior Advisor (Education), JICA Headquarters

JICA Myanmar Office:

Mr. Nobuo Iwai, Senior Representative, JICA Myanmar Office

Ms. Kumiko Iwasawa, Project Formulation Advisor, JICA Myanmar Office

Ms. Thet Su Kyi, Assistant Programme Officer, JICA Myanmar Office

Ms. Eii May Soe, Senior Secretary, JICA Myanmar Office

CREATE Team:

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Mr. Yoshitaka Tanaka, Team Leader (Curriculum Development)

Ms. Tomoko Masuda, Team Leader (Teacher Education)

Ms. Hikari Miyahara, Project Coordinator

U Thant Zin, Senior Project Officer

Daw Tin Tin Shu, Advisor, Curriculum Development and Teacher Education

Appendix 9

Minutes of 5th JCC Meeting

The Project for Curriculum Reform at Primary Level of Basic Education in Myanmar (CREATE)
Ministry of Education – Japan International Cooperation Agency (JICA)

5th Joint Coordination Committee (JCC) Meeting
Meeting Minutes

Date: 9th December 2019
Venue: MOE Building 13 (Extension), DHE Meeting Room (3rd Floor)

I.   Opening Remarks

1.   Opening Remarks by Project Manager

Dr. Win Tun, Project Manager of CREATE project and Director General of Department of Education Research, Planning and Training, informed that primary Grade 4 textbooks have been approved and Grade 4 teacher's guides are almost finished. He thanked all members from CREATE Project, NCC, SWC, CDTs and DERPT for carrying out the process. He also conveyed gratitude for sending (10) CDT members for study tour in Japan recently. The outcome and the progress is the approval of basic education curriculum framework by the cabinet. In order to inform and gather feedback about the new curriculum in all states and regions, Union Minister for Education has assigned the officials to visit various parts of the country. Some states and regions have been visited and some will be visited soon.

2.   Opening Remarks by JICA Consultative Mission

Dr. Keiko Mizuno, Senior Advisor (Education), JICA HQ, the Leader of JICA Consultative Mission, reported on the result of the Mid-term review by JICA Head Quarters. They confirmed that the project is being implemented smoothly according to the schedule and they are satisfied with the results. They made school visits outside Yangon and are very much encouraged to observe that new curriculum is being well accepted. Drastic change is also noticed giving a lot of effort for community promotion and nation-wide teacher training. Promotional activity includes training of teachers, and involvement of headmasters is also important. Introductory training for new curriculum is actually not enough and continuous training for implementation is necessary. Ways to improve teaching abilities of newly recruited teachers and education college students need to be discussed. The supplemental materials for education colleges being developed by CREATE is part of the effort. It is almost the first time to reform the primary curriculum and it is not the end as the curriculum reform needs to be continued periodically. The institutional capability that has been built in the course of the project should be further sustained. Two big issues are sustainability of the process of curriculum revision and sustainability of the supporting system for the teachers. She hopes to have fruitful discussion and find a good way.

1

II. Presentations and Discussion

Presentations were made by CREATE Team Leaders, and a representative from JICA HQ followed by plenary discussion.

1. Matters related to Management and Administration

(a) Supplement of CDTs

CREATE Team Leader requested that (12) CDTs who are promoted and transferred can work until the end of project. DG DHE replied that (10) are from DHE and (2) are from DBE, among which all are promoted and some are transferred at the same time. If those CDTs are needed to work full time for the project, recommendation letter from CREATE Project is necessary for Executive Committee meeting of Ministry of Education. Myanmar side will try to attach them to be in the project. CREATE Team Leader replied that the letter has already been sent.

Issue of shortage of CDTs (History (2), Morals & Civics (2)) was also discussed. DDG DERPT explained that SWC needs to send nomination and submitted to DERPT. They would like to have CVs for assignment of new CDT members so as to appoint the right person with relevant experience in the right place. Accommodation for CDTs from outside Yangon continues to be a challenge. Japan side mentioned about a CDT candidate for history subject from Yankin Education College. Myanmar side replied that permission of the head of the department is necessary. Required working time period per week for the CDTs is minimum three days per week but full time is desirable.

(b) Training of CDTs

DGDHE requested to send the attached CDTs of the project for further oversea training. CREATE Team Leader replied that all counterparts are included in the plan to send for study tour in Japan regardless of their mother departments.

2. Matters related to Curriculum Component

(a) Tryout lessons for G5 curriculum development

DDG, DME discussed about tryout lesson for G5 lessons and this can be carried out with limited number of students from G6 in the early stage of school opening period probably in June and July (or) before the opening of the schools. Japan side replied that according to the schedule, they have to submit textbook drafts by the end of June which leaves them with only one month to conduct try-out lessons. Myanmar side asked about required number of students for the try-out lessons and Japan side replied that it will depend on subjects. In Visual Arts, pictures of students' activities are to be included in textbook, therefore, more students are needed. For other subjects, 10 to 15 students will be fine for tryout lessons. Japan side explained that they will negotiate with CREATE pilot schools for tryout lessons with G6 students and requested support from MoE.

(b) Curriculum development for G5 and connection with G6

Director from DERPT requested CREATE to consider connection with the new G6 curriculum in developing the new G5 curriculum. CREATE Project Team Leader asked about availability of curriculum outline for G6 and Myanmar side replied that they would share the scopes and sequences of the new secondary curriculum.

(c) Textbook and Teacher's guide development

DDG, DME asked about the approval status of Teacher's guides of G4. CREATE Project replied that 8 subjects have been submitted to NCC.

3. Matters related to Teacher Education Component

(a) Training for EC

Myanmar side explained about new curriculum for PPTT. Curriculum for PPTT will be changed from April 2020 with a course of 10 months comprising of 4 months of face-to-face course, 4 months of practicum, and 2 months of assignment course. In the Year 1 of the new EC curriculum, as academic content is combined with methodology, many academic teachers would like to transfer to Arts and Science University. CREATE Teacher Education Team Leader discussed that it is of a very serious issue. Since not much of pedagogical instruction is included in the Year 1 curriculum, validity of using it as PPTT curriculum is questionable. If it is considered appropriate, CREATE may be able to provide with some contents for PPTT, utilizing the materials that are going to be developed for Year 3 and Year 4 of EC curriculum. She requested Myanmar side to consider whether such support is required.

4. Matters related to PDM

DG, DERPT said that there is no objection about the revision of PDM except for one correction.

(a) Correction of the output presentation

No. (2) of Output.　　Instead of Resource book, it should be Reference book.

5. Other issues

DDG, DERPT called for other discussion points including from SWC chairpersons.

- Primary and secondary curriculum

DDG, DME asked about the relationship between EYE project and CREATE project. CREATE Project Team Leader replied that there was some contact in the earlier stage of the projects. DDG, DERPT mentioned that all SWC chairpersons are working for both primary and secondary levels, therefore, they all have knowledge of both curricula that can be shared with CREATE project. SWC chairperson of Life Skills confirmed that she helps both primary and secondary CDTs have each other's scope and sequence.

- Curriculum of higher education

DG, DHE requested JICA to support higher education curriculum reform in the future, mentioning Yangon University and Computer Science University as examples. Senior Representative from JICA Myanmar Office replied that JICA is currently supporting technological universities and cannot give a definite answer at the moment.

- Training for Education Colleges

Director (Teacher Education), DHE asked about introductory training for education college. They would like to receive the training module about 2 months ahead.

- Curriculum of Universities of Education and training opportunities

Pro Rector of YUOE requested support for curriculum upgrading of University of Education and for training of upper secondary teachers. Pro Rector from SUOE said that teacher educators are produced at Education Universities, therefore, would like to have support for their training.

III. Summary of Discussion and Closing Remarks

DDG, DERPT summarized discussion points made during the meeting.

PM delivered the words of appreciation for the active participation of all the attendees and thanked Government of Japan and the people, JICA and CREATE project for their support.
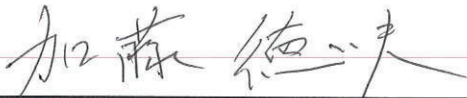
Signatures

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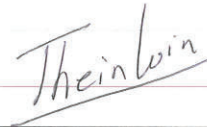
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Attachment: List of Participants

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Daw Nwe Ni, Deputy Director General, DHE, MOE

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Dr. Tun Aung Kyaw, Professor, Myanmar Department, Mandalay University

Vice Chairman SWC, (on behalf of Dr. Aung Myint Oo, Chairperson SWC, Myanmar)

Dr. Myat Kyaw Thu, Chairperson, SWC, Science

Daw San San Yee, Chairperson, SWC, Life Skills

Daw Khin Mya Thet, Chairperson, SWC, Physical Education

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Daw Ni Ni Tun, Union Minister's office

(on behalf of Dr. Hla Myo Kyi, Director (Policy), Union Minister's office, MOE)

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Dr. Tin Yu Yu Aye, Director (Academic), DBE

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Appendix 10

Plan and Actual Schedule of Operations

Plan of Activities

		Plan of Activities	Contract Year 1	Contract Year 2	Contract Year 3	Contract Year 4
			2014 / 2015	2016 / 2017	2018	2019 / 2020 / 2021

School Calendar in Myanmar — Long Holidays / △New Academic Year (repeated); Long Holidays→School closure due to COVID-19

A. General: Planning, Progress Management, and PR

No.		Activity
1	General	Development, explanation, and consultation on Work Plan/Establishment of implementation structure
2	General	Plan and implement PR and advocacy activities
3	General	Primary Education Curriculum Revision Wrap-up Seminar
4	General	Implement and analyse Impact Survey

B. Component1 : Curriculum, Textbook, and Assessment

【Curriculum and Textbook Development】

No.		Activity
1	Output1	Technical assistance for the development of the new curriculum framework through mechanisms such as CESR
2	Output1	Training in Japan for curriculum and textbook development and evaluation
3	Output2	Technical assistance for developing principles of the new textbooks and teacher's guides through mechanisms such as CESR
4	Output2	Investigation of printing capabilities and proposal of cost and procurement
5	Output2	Define the scope of the textbooks by grade and process of developing the textbooks and teacher's guides
6	Output2	Write and edit the new textbooks
7	Output2	Training in Japan for capacity development of writers and editors of the textbooks
8	Output2	Review and decide structure of the new textbooks
9	Output2	Final proofreading of the new textbooks
10	Output2	Support the approval of the new textbooks
11	Output2	Develop the new teacher's guides

【Assessment】

No.		Activity
12	Output1	Technical assistance for assessment
13	Output3	Develop and revise Reference Book on Classroom Assessment at the Primary Level, Guidebook on Classroom Assessment for the Primary Level, and Sample Exercises for G1-G5 based on the concept of the new curriculum
14	Output2,3	Information sharing seminar on textbooks, teacher's guides, and assessment

C. Component2: Teacher Education

【Technical support for teacher education policy】

No.		Activity
1	Output4	Confirmation on teacher education policy
2	Output4	Implement teacher education seminars
3	Output4	Proposal for teacher education system and program
4	Output4	Training in Japan

【Support to improve EC curriculum】

No.		Activity
5	Output4	Analyse the current EC curriculum
6	Output4	Draft new curriculum framework of EC and discuss with concerned parties
7	Output4	Plan trainings for EC teacher educators
8	Output4	Develop training materials
9	Output4	Implement trainings for EC teacher educators
10	Output4	Monitoring and evaluation of practice at EC and trainings for EC teacher educators
11	Output4	Develop teaching materials for EC
12	Output4	Finalize teaching materials for EC

【Support introduction of the new curriculum to school】

No.		Activity
13	Output5	Plan new curriculum introduction training through training for in-service teachers
14	Output5	Develop training materials
15	Output5	Support implementation of training for supervisors
16	Output5	Implement central training for in-service teacher training
17	Output5	Support monitoring and evaluation of training for new curriculum introduction
18	Output5	Support practice of new curriculum
19	Output5	Proposal for future trainings and practice of new curriculum at school

Reports: Work Plan △ / Progress Report 1△ / Progress Report 2△ / Completion Report △ (Phase 1) / Progress Report 3△ / Completion Report △ (Phase 2) / Completion Report △ (Phase 3) / Progress Report 4△

Legend:
- ▬ Implement in a fixed period of time (Original plan)
- ▪▪▪ Implement anytime during the period (Original plan)
- ▬ Implement in a fixed period of time (Actual)
- ▪▪▪ Implement anytime during the period (Actual)

Appendix 11

Textbook and Teacher's Guide Development Guideline

မြန်မာနိုင်ငံ အခြေခံပညာမူလတန်း ကျောင်းသုံးစာအုပ်၊ ဆရာလမ်းညွှန် ရေးဆွဲပြုစုရေး လမ်းညွှန်

(နောက်ဆုံးအကြိမ်)

၂၀၂၁ ခုနှစ် မတ်လ

JICA CREATE

နိဒါန်း
လမ်းညွှန်ရေးဆွဲရသည့် နောက်ခံအကြောင်းရင်း

CREATE စီမံချက်စတင်ခဲ့သော ၂၀၁၄ခုနှစ်တွင် ကျောင်းသုံးစာအုပ်အသစ်နှင့် ဆရာလမ်းညွှန် စာအုပ်ကို ရေးဆွဲပြုစုရာတွင် မည်ကဲ့သို့ရေးဆွဲမည်၊ မည်သည့်စကားကို အသုံးပြုမည် (အပြောစကား၊ အရေးစကား) ၊ စာမျက်နှာ မည်မျှက သင့်လျော်သည်၊ စာလုံးအမျိုးအစား၊ စာလုံးအရွယ်အစား၊ layout ကို မည်သို့ချမှတ်မည်၊ ပန်းချီပုံနှင့်ဓာတ်ပုံများကို မည်သို့ရယူမည် အစရှိသည် သင်ရိုးရေးဆွဲပြုစုရာတွင် လိုအပ်သည့် အခြေခံမူများနှင့် လုပ်ငန်းစဉ်များကို အစည်းအဝေးများတွင် နှုတ်ဖြင့် အသိပေးခဲ့သော်လည်း အကြောင်းအရာ တစ်ခုချင်းစီ၏ အသေးစိတ် အချက်အလက်များနှင့် စပ်လျဉ်းပြီး သင်ရိုးရေးဆွဲပြုစုသူ CDT များထံမှ မေးခွန်းများကို အမြဲတစေ လက်ခံရရှိခဲ့ပါသည်။

ထို့ကြောင့် အထက်ဖော်ပြပါ အခြေခံမူများနှင့် လုပ်ငန်းစဉ်များကို သင်ရိုးရေးဆွဲပြုစုသူအားလုံး သိရှိနားလည်နိုင်စေရန် ၂၀၁၄ ခုနှစ် ဂျူလိုင်လတွင် လမ်းညွှန်ကို စတင်ပြုစုခဲ့ပါသည်။ အစ ပထမတွင် သင်ရိုးရေးဆွဲပြုစုသူများက မေးမြန်းသည့် မေးခွန်းများ၊ မရှင်းလင်းသည့် အချက်များ ကိုသာ အဓိကထား ဖြေကြားသည့်ပုံစံဖြင့် လမ်းညွှန်ပါ အကြောင်းအရာများကို အတိုချုပ် ရေးသားခဲ့သည်။ သို့သော် ကျောင်းသုံးစာအုပ်နှင့် ဆရာလမ်းညွှန်စာအုပ် ရေးဆွဲပြုစုရင်း သင်ရိုးရေးဆွဲပြုစုသူများ မေးမြန်းသည့် မေးခွန်းများ ပိုမိများပြားလာပြီး ပိုမို အသေးစိတ် လာခဲ့သည်။ ထို့ကြောင့် ၃ လ သို့မဟုတ် ၆ လတွင်တစ်ကြိမ် ပြင်ဆင်ခြင်း၊ ဖြည့်စွက်ခြင်းများကို ပြုလုပ်ခဲ့သည်။

အခုတွင်မူ CREATE စီမံချက် ပြီးဆုံးသွားပြီဖြစ်သော်လည်း မြန်မာနိုင်ငံတွင် ယခုကဲ့သို့သော ကျောင်းသုံးစာအုပ်နှင့် ဆရာလမ်းညွှန် ပြင်ဆင်ခြင်း၊ ရေးဆွဲခြင်း လုပ်ငန်းများကို နောင်တွင်လည်း အစဉ်သဖြင့် လုပ်ဆောင်ရန် လိုအပ်သည်။ ထို့ကြောင့် နောင်အနာဂါတ် ကျောင်းသုံးစာအုပ် နှင့် ဆရာလမ်းညွှန် ပြင်ဆင်ခြင်း၊ ရေးဆွဲခြင်းပြုလုပ်ရာတွင် ကိုးကားသင့်သောစာအုပ်တစ်အုပ်အဖြစ် ဤလမ်းညွှန်စာအုပ်ကို ပြုစုခဲ့ခြင်း ဖြစ်သည်။

မာတိကာ

အခန်း (၁) ကျောင်းသုံးစာအုပ်၊ ဆရာလမ်းညွှန်ရေးဆွဲပြုစုရေးနှင့် စပ်လျဉ်းသော အခြေခံမူဝါဒ

၁။သင်ရိုးညွှန်းတမ်းအညွှန်း�‌�‌ဘောင်

ကျောင်းသုံးစာအုပ်နှင့် ဆရာလမ်းညွှန်စာအုပ်အသစ်သည် မြန်မာနိုင်ငံ၏ အခြေခံပညာ သင်ရိုးညွှန်းတမ်း တစ်ခုလုံး၏ ရည်မှန်းချက်များ၊ လမ်းညွှန်မှုများကို ဖော်ပြထားသော သင်ရိုးညွှန်းတမ်း အညွှန်းဘောင်ပါ အကြောင်းအရာများအပေါ် အခြေခံပြီး ရေးသားပြုစုထားပါသည်။ ထိုသင်ရိုး ညွှန်းတမ်းအညွှန်းဘောင်သည် ၂၀၁၄ခုနှစ် ဒီဇင်ဘာလတွင် ရေးဆွဲပြီးစီးကာ ၂၀၁၅ခုနှစ် မေလတွင် ပညာရေးဝန်ကြီးဌာနက အတည်ပြုထားသောသင်ရိုးညွှန်းတမ်း ဖြစ်သည်။ သို့သော် ၂၀၁၆ခုနှစ်တွင် ထိုအညွှန်းဘောင်ပါ အကြောင်းအရာများကို ပြန်လည်သုံးသပ်ပြင်ဆင်ပြီး ၂၀၁၉ခုနှစ်တွင် ထပ်မံ အတည်ပြုခဲ့သည်။

သင်ရိုးညွှန်းတမ်း အညွှန်းဘောင်တွင် မြန်မာနိုင်ငံအခြေခံပညာရေး၏လမ်းညွှန်ချက်များကို ရေးသားဖော်ပြထားသည်။ထိုဖော်ပြချက်များထဲမှ ပထမတစ်ချက်မှာ ဘက်စုံဟန်ချက်ညီဖွံ့ဖြိုးရေးကို ရည်ရွယ်ပြီး အထူးသဖြင့် ဉာဏ၊ ကာယ၊ စာရိတ္တ၊ မိတ္တ၊ ဘောဂဟူသော "ဗလငါးတန်"ကို ဟန်ချက်ညီမျှစွာ ဖွံ့ဖြိုးစေရန်ဖြစ်သည်။ ဒုတိယအချက်မှာ ယနေ့ခေတ်နိုင်ငံတကာ လူ့အဖွဲ့အစည်းတွင် ရှင်သန်နေထိုင်ရန် လိုအပ်သောစွမ်းရည်ဖြစ်သည့် "၂၁ရာစုနှစ်ဆိုင်ရာကျွမ်းကျင်မှုများ ဖွံ့ဖြိုးရေး" ကို အလေးပေးထားသည်။ တတိယအချက်သည် ဘာသာရပ်အားလုံးကို တန်းတူထားရှိခြင်း ဖြစ်သည်။ အထက်တွင်ဖော်ပြထားသော "ဗလငါးတန်" နှင့် "၂၁ရာစုနှစ်ဆိုင်ရာကျွမ်းကျင်မှုများ ဖွံ့ဖြိုးရေး" ကို အချိုးကျစွာပေါင်းစပ်ပြီး မြန်မာနိုင်ငံအခြေခံပညာရေး၏ ကျွမ်းကျင်မှုကိုအခြေခံသော ပညာရေးပုံစံကို ဖွဲ့စည်းတည်ဆောက်ထားသည်။ စတုတ္ထမြောက်အချက်မှာ တိုင်းဒေသကြီး သို့မဟုတ် ပြည်နယ်အစိုးရသည် သက်ဆိုင်ရာဒေသ၏ လိုအပ်ချက်အလိုက် ဒေသဆိုင်ရာသင်ရိုးများ သင်ကြားနိုင်ခြင်းကို အသိအမှတ်ပြုထားပါသည်။
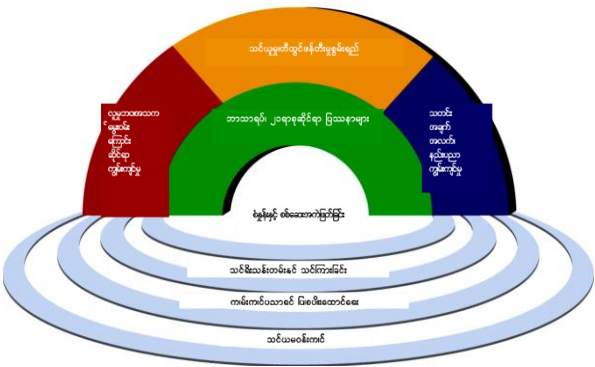
"ဗလငါးတန်" (ဗယ်) နှင့် "၂၁ရာစုနှစ်ဆိုင်ရာကျွမ်းကျင်မှုများ" (ညာ) ကိုဖော်ပြထားပုံ

သင်ရိုးညွှန်းတမ်း အညွှန်းဘောင်အပေါ် အခြေခံထားသော ကျွမ်းကျင်မှုပုံစံ

ကျွမ်းကျင်မှုရှိသော ကမ္ဘာသူ၊ကမ္ဘာသားများကို ပြုစုပျိုးထောင်ရန်				
၂၁ရာစု သင်ယူမှုတွင် အရေးပါသော ဗလင်းတန်				
ဉာဏ	**ကာယ**	**စာရိတ္တ**	**မိတ္တ**	**ဘောဂ**

အသိပညာကို အခြေခံသော တတ်မြောက်မှု
● ဘာသာရပ်ဆိုင်ရာ အသိ နှင့်ဆိုင်သော တတ်မြောက်မှု
  ■ ဘာသာစကားအသိ
  ■ သင်္ချာဆိုင်ရာအသိ
  ■ သိပ္ပံဆိုင်ရာအသိ
● သဘာဝပတ်ဝန်းကျင်ဆိုင်ရာ အသိ နှင့်ဆိုင်သော တတ်မြောက်မှု
 	
ကျွမ်းကျင်မှု
●ဘာသာစကားနှင့် သင်္ချာစွမ်းရည်
●ကိန်းဂဏန်းတွက်ချက်မှုစွမ်းရည်
●သိပ္ပံဆိုင်ရာတွေးတောနိုင်စွမ်း
●နည်းပညာ အသုံးပြုနိုင်မှုစွမ်းရည် စဉ်းစားတွေးခေါ်နိုင်မှု၊ တီထွန်ဖန်တီးမှု စွမ်းရည်
	အသိပညာကို အခြေခံသော တတ်မြောက်မှု
	●ကျန်းမာရေးအသိ နှင့်ဆိုင်သော တတ်မြောက်မှု
	
	ကျန်းမာရေးနှင့်ဆိုင်သော ကျွမ်းကျင်မှု
	●သန့်ရှင်းကျန်းမာသော ဝန်းကျင်ကို ထိန်းသိမ်းနိုင်သော စွမ်းရည်
		တန်ဖိုးကို အခြေခံသော တတ်မြောက်မှု
		●နိုင်ငံတကာနှင့် ဆိုင်သော အသိ၊နိုင်ငံသားတစ်ယောက်၏ စရိုက် လက္ခဏာများ
		● စာရိတ္တ ကျင့်ဝတ် ဆိုင်ရာ အသိ
			ကျွမ်းကျင်မှု
			●လူမှုဆိုင်ရာစွမ်းရည်၊ ငြိမ်းချမ်းရေးတည် ဆောက်မှု စွမ်းရည်၊ ဆက်သွယ် ပြောဆိုမှု စသည့် ပေါင်းသင်းဆက်ဆံ ရေး စွမ်းရည်
			●တစ်ဦးချင်းစီ ပုဂ္ဂလိက စွမ်းရည် (ဉပမာ မိမိကိုယ်တိုင်သင်ယူလို စိတ်၊
			ဘဝတစ်သက်တာ သင်ယူမှုကို လုပ်ဆောင် လိုစိတ်ရှိခြင်း စသည်)
				အသိပညာကို အခြေခံသော တတ်မြောက်မှု
				●ငွေကြေးဆိုင်ရာ အသိ
				●စီးပွားရေးဆိုင်ရာ အသိ
				●လုပ်ငန်းဆိုင်ရာ အသိ
				●အလုပ်အကိုင် နှင့်ဆိုင်သော အသိ
				
				ကျွမ်းကျင်မှု
				●အလုပ်အကိုင်နှင့် သင့်လျော်သော စွမ်းရည် အလုပ်ဝင်ရန် လိုအပ်သောစွမ်းရည်

နယ်ပယ်များကို ချိတ်ဆက်နိုင်သောကျွမ်းကျင်မှု၊ စွမ်းရည်				
● မြင့်မားသော တွေးခေါ်မှု ● စဉ်းစားတွေးခေါ်နိုင်စွမ်း၊ ပြဿနာ ဖြေရှင်းနိုင်စွမ်း ● ခေါင်းဆောင်နိုင်မှုစွမ်းရည်				

တဖန် သင်ရိုးညွှန်းတမ်း အညွှန်းဘောင်တွင် အခြေခံပညာမူလတန်း၏ သင်ယူမှုနယ်ပယ် (ဘာသာရပ်၊ ဒေသဆိုင်ရာသင်ရိုး၊ ဖွံ့ဖြိုးရေးလုပ်ငန်း အပါအဝင်) နှင့် သင်ချိန်ခွဲဝေမှုကို အောက်ပါ အတိုင်း သတ်မှတ်ထားသည်။

အခြေခံပညာမူလတန်းအဆင့် သင်ယူမှုနယ်ပယ်နှင့် သင်ချိန်ခွဲဝေမှု

သင်ယူမှုနယ်ပယ်	ပထမတန်း			ဒုတိယတန်း			တတိယတန်း			စတုတ္ထတန်း			ပဉ္စမတန်း		
	တစ်ပတ်သင်ချိန်	တစ်ပတ်သင်ချိန်နာရီ	တစ်နှစ်သင်ချိန်နာရီ	တစ်ပတ်သင်ချိန်	တစ်ပတ်သင်ချိန်နာရီ	တစ်နှစ်သင်ချိန်နာရီ	တစ်ပတ်သင်ချိန်	တစ်ပတ်သင်ချိန်နာရီ	တစ်နှစ်သင်ချိန်နာရီ	တစ်ပတ်သင်ချိန်	တစ်ပတ်သင်ချိန်နာရီ	တစ်နှစ်သင်ချိန်နာရီ	တစ်ပတ်သင်ချိန်	တစ်ပတ်သင်ချိန်နာရီ	တစ်နှစ်သင်ချိန်နာရီ
မြန်မာစာ	၈	၅နာရီ၂၀မိနစ်	၂၁၃နာရီ၂၀မိနစ်	၈	၅နာရီ၂၀မိနစ်	၂၁၃နာရီ၂၀မိနစ်	၈	၅နာရီ၂၀မိနစ်	၂၁၃နာရီ၂၀မိနစ်	၇	၄နာရီ၄၀မိနစ်	၁၈၆နာရီ၄၀မိနစ်	၇	၄နာရီ၄၀မိနစ်	၁၈၆နာရီ၄၀မိနစ်
အင်္ဂလိပ်စာ	၃	၂နာရီ	၈၀နာရီ	၃	၂နာရီ	၈၀နာရီ	၃	၂နာရီ	၈၀နာရီ	၅	၃နာရီ၂၀မိနစ်	၁၃၃နာရီ၂၀မိနစ်	၅	၃နာရီ၂၀မိနစ်	၁၃၃နာရီ၂၀မိနစ်
သင်္ချာ	၅	၄နာရီ၄၀မိနစ်	၁၈၆နာရီ၄၀မိနစ်	၅	၄နာရီ၄၀မိနစ်	၁၈၆နာရီ၄၀မိနစ်	၅	၄နာရီ၄၀မိနစ်	၁၈၆နာရီ၄၀မိနစ်	၆	၄နာရီ	၁၆၀နာရီ	၆	၄နာရီ	၁၆၀နာရီ
သိပ္ပံ	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၃	၂နာရီ	၈၀မိနစ်	၃	၂နာရီ	၈၀မိနစ်
လူမှုရေး	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၃	၂နာရီ	၈၀မိနစ်	၃	၂နာရီ	၈၀မိနစ်
စာရိတ္တနှင့်ပြည်သူ့နီတိ	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၃	၂နာရီ	၈၀မိနစ်	၃	၂နာရီ	၈၀မိနစ်
ဘဝတွက်တာကျွမ်းကျင်စရာ	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၃	၂နာရီ	၈၀မိနစ်	၃	၂နာရီ	၈၀မိနစ်
ကာယပညာ	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်
အနုပညာ (ဂီတ နှင့် ပန်းချီ)	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၂	၁နာရီ၂၀မိနစ်	၅၃နာရီ၂၀မိနစ်	၃	၂နာရီ	၈၀မိနစ်	၃	၂နာရီ	၈၀မိနစ်
စုစုပေါင်း	**၃၀**	**၂၀နာရီ**	**၈၀၀နာရီ**	**၃၀**	**၂၀နာရီ**	**၈၀၀နာရီ**	**၃၀**	**၂၀နာရီ**	**၈၀၀နာရီ**	**၃၅**	**၂၃နာရီ၂၀မိနစ်**	**၉၃၃နာရီ၂၀မိနစ်**	**၃၅**	**၂၃နာရီ၂၀မိနစ်**	**၉၃၃နာရီ၂၀မိနစ်**

ဒေသဆိုင်ရာသင်ရိုး	မူလတန်းအောက်ဆင့်တွင် တိုင်းရင်းသားဘာသာစကားနှင့်စာပေ ကိုသင်ကြားရန်	မူလတန်းအထက်ဆင့်တွင် ဒေသဆိုင်ရာ ပထဝီဝင်၊ သမိုင်း၊ စီးပွားရေး အခြေအနေ၊ စိုက်ပျိုးရေးလုပ်ငန်းများ စသည်တို့ကို ဒေသလိုအပ်ချက်နှင့်အညီ သင်ကြားရန်
	တစ်ပါတ်လျှင် သင်ချိန် ၅ ချိန် ၊ တစ်နှစ်သင်ချိန် ၁၂၀	
သင်ချိန်စုစုပေါင်း	မူလတန်းအောက်ဆင့်အတွက် သင်ချိန်နာရီ စုစုပေါင်း (၉၂၀)	မူလတန်းအထက်ဆင့်အတွက် သင်ချိန်နာရီ စုစုပေါင်း (၁၀၅၃ နာရီ ၂၀ မိနစ်)
ပညာရေးလက်တွေ့ဖွံ့ဖြိုးမှုလုပ်ငန်းများ	ကျောင်းစာသင်ချိန်ပြင်ပတွင်ဆောင်ရွက်သော ကျောင်းကောင်စီလုပ်ငန်းများ၊ ဝါသနာပါ အသင်းအဖွဲ့လုပ်ငန်းများအတွက် တစ်နှစ်လျှင်နာရီ (၆၀)	
	မူလတန်းအောက်ဆင့်အတွက် တစ်နှစ်လျှင်နာရီ (၉၈၀) နှင့် မူလတန်းအထက်ဆင့်အတွက် တစ်နှစ်လျှင် (၁၁၃နာရီ ၂၀ မိနစ်)	

၂။ သင်ရိုးညွှန်းတမ်းလမ်းညွှန် ရေးဆွဲပြုစုခြင်း

မြန်မာနိုင်ငံအခြေခံပညာရေးတစ်ခုလုံးကို ခြုံငုံဖော်ပြထားသောသင်ရိုးညွှန်းတမ်း အညွှန်းဘောင်ပါ အကြောင်းအရာများကို အခြေခံပြီး ဘာသာရပ်အသီးသီး၏ရည်ရွယ်ချက်၊ အတန်းလိုက်ရည်ရွယ်ချက်၊ အတန်းအလိုက် နှင့် သင်ယူမှုနယ်ပယ်အလိုက် အကြောင်းအရာများကို ဖော်ပြထားသော သင်ရိုးညွှန်းတမ်း လမ်းညွှန်ကို ရေးဆွဲပြုစုသည်။

ထိုလမ်းညွှန်တွင် ဖော်ပြထားသော ဘာသာရပ်ရည်ရွယ်ချက်များသည် သင်ရိုးညွှန်းတမ်း အညွှန်းဘောင်တွင် ချမှတ်ထားသော "ဘက်စုံဟန်ချက်ညီဖွံ့ဖြိုးမှု" ကို ထည့်သွင်းစဉ်းစားကာ သိရှိမှု၊ နားလည်မှုနှင့်ဆိုင်သော ရည်ရွယ်ချက်၊ စဉ်းစားတွေးခေါ်နိုင်မှုနှင့်ဆိုင်သော ရည်ရွယ်ချက်၊ ကျွမ်းကျင်မှုနှင့်ဆိုင်သော ရည်ရွယ်ချက်၊ သဘောထားနှင့်ဆိုင်သော ရည်ရွယ်ချက် စသည် ရှုထောင့် ၄မျိုးကို အခြေခံ၍ ချမှတ်ထားသည်။ အောက်တွင် သင်္ချာဘာသာရပ် သင်ရိုးညွှန်းတမ်း လမ်းညွှန်၏ တစ်စိတ်တစ်ဒေသကို သာဓကအဖြစ် ဖော်ပြထားပါသည်။

ဘာသာရပ် သင်္ချာဘာသာရပ်

ရည်ရွယ်ချက်

- ကိန်းများ၊ တိုင်းတာမှုများ၊ ဂျီဩမေတြီပုံများ၊ စာရင်းအင်း ဆိုင်ရာ ဖော်ပြချက်များနှင့် ပတ်သက်၍ သင်္ချာပညာဆိုင်ရာ အခြေခံအသိများနှင့် ကျွမ်းကျင်မှုများရရှိရန်။ (သိရှိမှုနှင့် နားလည်မှု၊ ကျွမ်းကျင်မှု)
- ပြဿနာဖြေရှင်းရာတွင် အကြောင်းအကျိုးဆက်စပ်တတ်ရန် (စဉ်းစားတွေးခေါ်မှု)
- ကျောင်းသားများ၏ နေ့စဉ်ဘဝပြဿနာများနှင့် သင်ယူမှုများတွင် သင်္ချာဆိုင်ရာ အသိနှင့် ကျွမ်းကျင်မှုများကို အသုံးချတတ်ရန်။ (သိရှိမှုနှင့် နားလည်မှု၊ ကျွမ်းကျင်မှု)
- သင်္ချာဆိုင်ရာ တွေးခေါ်မှုများကို သဘောကျနှစ်ခြိုက်လာရန် (သဘောထား)

အတန်းလိုက်ရည်ရွယ်ချက်

ပထမတန်း	ဒုတိယတန်း	တတိယတန်း	စတုတ္ထတန်း	ပဉ္စမတန်း
• ၀ မှ ၁၀၀ အထိ အပြည့် ကိန်းများကို အသုံးပြု တတ်ရန် • ပစ္စည်း၊ ကိန်းများ၏ အဆင်ပုံစံ (pattern) ကို ရှာတတ်ရန်	•၁၀၀၀ အထိ အပြည့် ကိန်းများကို အသုံးပြု တတ်ရန်	• ၁၀၀၀၀၀ အထိ အပြည့် ကိန်းများကို အသုံးပြု တတ်ရန်	• ၁၀၀၀ ၀၀၀ ၀၀၀ (၁၀၀ ကုဋေ) အထိ အပြည့်ကိန်းများကို အသုံးပြုတတ်ရန် • ကိန်းများကို နီးရာယူ သည့် သဘောကို ပုစ္ဆာ ဖြေရှင်းရာတွင် အသုံးပြုတတ်ရန်	•စုံကိန်းနှင့် မကိန်းကို သတ်မှတ်တတ်ရန် •အငယ်ဆုံး ဘုံဆတိုး ကိန်း နှင့် အကြီးဆုံး ဘုံဆွဲကိန်း သဘော ကို ပုစ္ဆာဖြေရှင်းရာ တွင် အသုံးပြုတတ်ရန်

အတန်းအလိုက်၊ နယ်ပယ်အလိုက် အကြောင်းအရာ					
	ပထမတန်း	ဒုတိယတန်း	တတိယတန်း	စတုတ္ထတန်း	ပဉ္စမတန်း
ကိန်းများ	• ကိန်းဆိုင်ရာ အခြေခံများ • အပေါင်းနှင့် အနုတ်	• ကိန်းဆိုင်ရာ အခြေခံများ • အပေါင်းနှင့် အနုတ် • အမြှောက် • အစား	• ကိန်းဆိုင်ရာ အခြေခံများ • အပေါင်းနှင့် အနုတ် • အမြှောက် • အစား • အပိုင်းကိန်းဆိုင်ရာ အခြေခံများ	• ကိန်းဆိုင်ရာ အခြေခံများ • အစား • တွက်နည်းလေးမျိုး • အပိုင်းကိန်းအပေါင်းနှင့် အနုတ် • ဒသမကိန်း အပေါင်းနှင့် အနုတ်	• ကိန်းဆိုင်ရာ အခြေခံများ • အပိုင်းကိန်း အပေါင်းနှင့်အနုတ် • ဒသမကိန်း အပေါင်းနှင့်အနုတ်
ဂျီသြမေတြီ	• ပဟုဂံများ • ထုပုံ	• ထောင့်များ • ပဟုဂံများ	• ပဟုဂံများ • စက်ဝိုင်း • ထုပုံများ	• မျဉ်းများနှင့် ထောင့်များ • ပဟုဂံများ • ခေါက်ချိုးညီခြင်း	• ပဟုဂံများ
အတိုင်းအတာ များ	• အလျား • အချိန်	• အလျား • အလေးချိန် • အချိန် • ထုထည်	• အလျား • အလေးချိန် • အချိန် • ထုထည်	• အလျား • ဧရိယာ	• ဧရိယာ • ထုထည်

၃။ ကျောင်းသုံးစာအုပ်၊ ဆရာလမ်းညွှန်ရေးဆွဲပြုစုရေးနှင့် စပ်လျဉ်းသော အခြေခံမူဝါဒ

အထက်တွင်ဖော်ပြထားသော သင်ရိုးညွှန်းတမ်း အညွှန်းဘောင်နှင့် သင်ရိုးညွှန်းတမ်းလမ်းညွှန်ပေါ် အခြေခံပြီး ကျောင်းသုံးစာအုပ်နှင့် ဆရာလမ်းညွှန်ကို ရေးဆွဲပြုစုပါသည်။ ထိုသို့ရေးဆွဲပြုစုရာတွင် အခြေခံမူဝါဒ ၃ ချက် နှင့် ချမှတ်ချက် ၂ ချက် ကိုသတ်မှတ်ပြီး ထိုအချက်များအပေါ်အခြေခံပြီး ကျောင်းသုံးစာအုပ်နှင့် ဆရာလမ်းညွှန်ကို ရေးဆွဲပြုစုပါသည်။

အခြေခံမူဝါဒ ၃ ချက်

အခြေခံမူဝါဒ ၁ ကျောင်းသုံးစာအုပ်နှင့် ဆရာလမ်းညွှန်ပါ အကြောင်းအရာများသည် စိတ်ဝင်စားဖွယ် အကြောင်းအရာများ ဖြစ်ရမည်။

ကျောင်းသုံးစာအုပ် ဟူသည်မှာ ကျောင်းသားများ၏ " သင်ယူလိုစိတ် " ကို လှုံ့ဆော်ပေးသော အရာ ဖြစ်ရမည်။ ထို့အတူ ဆရာလမ်းညွှန်သည်လည်း ဆရာများအတွက် သင်ကြားရမည့် အကြောင်းအရာ၊ သင်ကြားပုံနည်းလမ်းများ နှင့်သက်ဆိုင်သော အချက်အလက်များကို ပြည့်စုံစွာ ပေးအပ်ပြီး၊ အမျိုးမျိုးသော သင်ကြားပုံနည်းလမ်းများကို အသုံးပြု၍သင်ကြားသင်ယူမှု လုပ်ငန်းများ လုပ်ဆောင်နိုင်စေရန် အထောက်အပံ့ပေးသောအရာ ဖြစ်ရန်လိုအပ်သည်။ အထူးသဖြင့် အခြေခံပညာ မူလတန်းပညာရေးတွင် ထိုအချက်သည် လွန်စွာ အရေးပါသည်။

အခြေခံမူဝါဒ ၂ ကျောင်းသုံးစာအုပ်နှင့် ဆရာလမ်းညွှန်သည် အသိပညာ၏အရင်းအမြစ် ဖြစ်ရမည်။

ကျောင်းသုံးစာအုပ်သည် မှန်ကန်သောအသိပညာနှင့် အချက်အလက်များကို သင့်လျော်သော သင်ကြားပုံနည်းလမ်းများကို အသုံးပြုကာ ပေးအပ်သည်။ ထိုမှန်ကန်သောအသိနှင့် အချက်အလက် များကို ပေးအပ်ခြင်းသည် လူတစ်ဦးချင်းစီ၏ အသိပညာအခြေခံကို တည်ဆောက်ရာတွင် အလွန် အရေးပါသည်။ ထို့အပြင် ဆရာလမ်းညွှန်သည် အသိပညာများ၏ သီအိုရီများ၊ သဘောတရားများကို ရှင်းလင်းစွာဖော်ပြထားပြီး၊ ဆရာများ နာလည်ရလွယ်ကူသော ရှင်းလင်းချက်များ ဖြစ်ရန် လိုအပ်သည်။ ထိုသို့ပြုလုပ်ခြင်းဖြင့် တစ်ဦးချင်းစီ၏ အသိကို နက်နဲစေရုံသာမက ဆက်စပ်မှုရှိသော အသိပညာ များကို ချိတ်ဆက် အသုံးချနိုင်လာမည်။

အခြေခံမူဝါဒ ၃ ကျောင်းသုံးစာအုပ်နှင့် ဆရာလမ်းညွှန်သည် ဆရာနှင့် ကျောင်းသား နှစ်ဦးနှစ်ဖက်၏ စွမ်းရည်များကို တိုးမြှင့်ပေးသောအရာ ဖြစ်ရမည်။

ကျောင်းသုံးစာအုပ်သည် ကျောင်းသားများအတွက် အသိပညာနှင့်အချက်အလက်များကို ပေးအပ်သော အရေးပါသည့် သင်ထောက်ကူပစ္စည်းဖြစ်သည်။ ထို့အတူ ထိုအသိပညာနှင့် အချက်အလက်အပေါ် နက်နဲစွာ စဉ်းစားတွေ့ခေါ်ပြီး ဝေဖန်သုံးသပ်ခြင်းဟူသော လုပ်ငန်းများကို လုပ်ဆောင်ရန် လိုအပ်သည်။ ထိုအချက်သည် ယခင် မြန်မာနိုင်ငံတွင် သင်ကြားခဲ့သော အသိပညာများကို အလွတ်ကျက်မှတ်ခြင်း နှင့် ကွာခြားသောအချက်ဖြစ်သည်။ တစ်ဖန်၊ ဆရာလမ်းညွှန်သည် ဆရာအသီးသီးက စာသင်ကြားရာတွင် လိုအပ်သော အချက်အလက်များ ပေးအပ်ထားသောအရာဖြစ်သည်နှင့်အညီ သုံးသပ်ခြင်း၊ ခွဲခြမ်းစိတ်ဖြာခြင်း၊ ဝေဖန်သုံးသပ်ခြင်း၊ ပြဿနာ ဖြေရှင်းခြင်းစသည် သိပ္ပံဆိုင်ရာ သင်ယူမှုလုပ်ငန်းစဉ်များ လုပ်ဆောင်လာနိုင်စေရန် အထောက်အပံ့ပေးသောအရာ ဖြစ်ရန်လိုအပ်သည်။ ထိုအရာများသည် သင်ရိုးညွှန်းတမ်း အညွှန်းဘောင်ပါ " ၂၁ရာစုစွမ်းရည် " နှင့် နက်နဲစွာ ဆက်စပ်လျက်ရှိသည်။

ချမှတ်ချက် ၂ ရပ်
ချမှတ်ချက် ၁ ကျောင်းသုံးစာအုပ်သည် ကျောင်းသားနှင့်ဆရာ နှစ်ဦးနှစ်ဖက်အတွက် အသုံးဝင်စေရန် ဖန်တီးရမည်။

ကျောင်းသုံးစာအုပ်အသစ်သည် ကျောင်းသားများ၏ သင်ယူမှုလုပ်ငန်း၊ ဆရာများ၏ သင်ကြားမှုလုပ်ငန်းတွင် အသုံးဝင်ရမည် ဖြစ်သည်။ မြန်မာနိုင်ငံတွင် ယခင်က လမ်းပန်းဆက်သွယ်ရေးနှင့် ပို့နိုင်ခြင်းဆိုင်ရာ အခက်အခဲများကြောင့် အချို့ဒေသများတွင် ဆရာလမ်းညွှန်ကို ဖြန့်ဝေထားနိုင်ခြင်း မရှိသောကျောင်းများလည်းရှိသည်။ ထိုကျောင်းများတွင် ကျောင်းသုံးစာအုပ်သည်သာ တစ်ခုတည်းသော သင်ထောက်ကူပစ္စည်းဖြစ်သည်။ ထို့ကြောင့် ကျောင်းသုံးစာအုပ်သည် သင်ယူရမည့်အကြောင်းအရာများသာမက သင်ကြားရာတွင် လိုအပ်သော အချက်များကို ထည့်သွင်းထားရန် လိုအပ်သည်။

ချမှတ်ချက် ၂ ကျောင်းသုံးစာအုပ် နှင့် ဆရာလမ်းညွှန်တွင် စစ်ဆေးအကဲဖြတ်ခြင်း စံနှုန်းနှင့် နည်းလမ်းများကို ဖော်ပြထားမည်။

ကျောင်းသားများ၏ နားလည်မှုအဆင့်နှင့် တတ်မြောက်မှုအဆင့်ကို သင့်လျော်စွာ စစ်ဆေးအကဲဖြတ်နိုင်ရန် ကျောင်းသုံးစာအုပ်နှင့် ဆရာလမ်းညွှန်တွင် စစ်ဆေးအကဲဖြတ်ခြင်းစံနှုန်းနှင့် နည်းလမ်းများကို ဖော်ပြထားသည်။ မြန်မာနိုင်ငံတွင် ယခင်က ကျောင်းသားများကို စစ်ဆေးအကဲဖြတ်ရာတွင် ရေးဖြေစာမေးပွဲဖြင့် ကျောင်းသုံးစာအုပ်ပါ အကြောင်းအရာများကို မည်မျှမှတ်မိသိရှိသည်အပေါ် မူတည်ပြီး စစ်ဆေးအကဲဖြတ်ခဲ့ကြသည်။ ယခု ကျောင်းသုံးစာအုပ်နှင့် ဆရာလမ်းညွှန်စာအုပ် အသစ်တွင် ယခင်စစ်ဆေးအကဲဖြတ်ခြင်းပုံစံကို ပြောင်းလဲရန်ရည်ရွယ်ထားပါသည်။ ကျောင်းသားများသည် သင်ယူထားသော အကြောင်းအရာများကို မည်မျှနားလည်သည်၊ တတ်မြောက်ရမည့်စွမ်းရည်များကို မည်မျှတတ်မြောက်သည်၊ အတွေးအမြင်နှင့် စဉ်းစားပုံတို့ မည်သို့ပြောင်းလဲလာသည် အစရှိသည်တို့သည် စစ်ဆေးအကဲဖြတ်ခြင်း၏ စံနှုန်းအသစ် များ ဖြစ်ကြသည်။ ထို့ကြောင့် ကျောင်းသုံးစာအုပ်နှင့် ဆရာလမ်းညွှန်စာအုပ် အသစ်တွင် စစ်ဆေးအကဲဖြတ်ခြင်း စံနှုန်းနှင့် နည်းလမ်းများကို ရှင်းလင်းစွာ ဖော်ပြထားခြင်းဖြင့် ယခင် သင်ကြားသင်ယူမှုပုံစံများကို ပြောင်းလဲစေသော စစ်ဆေးအကဲဖြတ်ခြင်းပုံစံအသစ်များ အသုံးပြုလာမည်ဖြစ်သည်။

၄။ကျောင်းသုံးစာအုပ်၊ ဆရာလမ်းညွှန်ရေးဆွဲပြုစုရေး လုပ်ငန်းစဉ်

CREATEစီမံချက်တွင် ကျောင်းသုံးစာအုပ်နှင့် ဆရာလမ်းညွှန် ပြုစုခြင်း (ပြင်ဆင်ခြင်း အပါအဝင်) ကို အောက်ပါ အဆင့် ၁၄ ဆင့်ဖြင့် ဆောင်ရွက်ပါသည်။ ထိုအဆင့် ၁၄ဆင့် ၏ လုပ်ငန်းများကို အကြမ်းအားဖြင့် မူကြမ်းပြုစုခြင်း၊ ပြင်ဆင်ခြင်းအဆင့်နှင့် တည်းဖြတ်ခြင်း အဆင့် ဟု ၂မျိုးခွဲခြားနိုင်ပါသည်။

ကျောင်းသုံးစာအုပ်၊ ဆရာလမ်းညွှန်ရေးဆွဲပြုစုရေး လုပ်ငန်းစဉ်

အဆင့်	လုပ်ငန်းအကြောင်းအရာ	လုပ်ငန်းအမျိုးအစား	သက်ဆိုင်ရာ တာဝန်ရှိသူ
၁	လက်ရှိကျောင်းသုံးစာအုပ်ကို သုံးသပ်ခြင်း	မူကြမ်းပြုစုခြင်း၊ ပြင်ဆင်ခြင်းအဆင့်	ဘာသာရပ် သင်ရိုးပြုစုသူများက အမိ-ကပြုစုရေးသားပြီး ဘာသာရပ် သင်ရိုးညွှန်းတမ်းကော်မတီက ပံ့ပိုးကူညီသည်။
၂	သင်ရိုးညွှန်တမ်း အညွှန်းဘောင်ကို နားလည်ခြင်း		
၃	ဘာသာရပ်ရည်ရွယ်ချက်နှင့် အကြောင်းအရာကို ပြုစုခြင်း		
၄	သင်ခန်းစာအလိုက် သင်ယူရမည့် အကြောင်းအရာများ ပြုစုခြင်း		
၅	ကျောင်းသုံးစာအုပ် ဒီ		
၆	စမ်းသပ်သင်ကြားခြင်း		
၇	မူကြမ်း အပြီးသတ်ခြင်း		
၈	DTP တွင် ပထမမူကြမ်း ပြုစုပြီး ဘာသာရပ် သင်ရိုးညွှန်းတမ်းကော်မတီထံ တင်ပြခြင်း	တည်းဖြတ်ခြင်းလုပ်ငန်း	တည်းဖြတ်နှင့် DTP တာဝန်ရှိသူများက အမိ-က လုပ်ဆောင်မည်။ ဘာသာရပ် သင်ရိုးပြုစုသူများက ပံ့ပိုးကူညီမည်။ ဘာသာရပ်သင်ရိုးညွှန်းတမ်း ကော်မတီနှင့် မြန်မာတိုင်းရင်းသား ဘာသာစကားများ ဦးစီးဌာနတို့က ပူးပေါင်းကူညီမည်။
၉	ပထမမူကြမ်း ပြင်ဆင်ခြင်းနှင့် ဒုတိယမူကြမ်း ပြုစုခြင်း		
၁၀	ဒုတိယမူကြမ်းကို မြန်မာတိုင်းရင်းသား ဘာသာစကားများ ဦးစီးဌာနထံ တင်ပြခြင်း		
၁၁	ဒုတိယမူကြမ်း ပြင်ဆင်ခြင်းနှင့် တတိယမူကြမ်း ပြုစုခြင်း		
၁၂	တတိယမူကြမ်းကို ဘာသာရပ်သင်ရိုးညွှန်းတမ်း ကော်မတီထံ တင်ပြခြင်း		
၁၃	တတိယမူကြမ်း ပြင်ဆင်ခြင်းနှင့် နောက်ဆုံး မူကြမ်း ပြုစုခြင်း		
၁၄	နောက်ဆုံးမူကြမ်းကို အမျိုးသားသင်ရိုးညွှန်းတမ်း ကော်မတီသို့ တင်ပြခြင်း နှင့် အတည်ပြုခြင်း	အတည်ပြုခြင်း	အမျိုးသား သင်ရိုးညွှန်းတမ်း ကော်မတီ

အခန်း (၂) ကျောင်းသုံးစာအုပ် ရေးဆွဲပြုစုရေးနှင့် စပ်လျဉ်း၍

၁။အကြောင်းအရာပိုင်းနှင့် စပ်လျဉ်း၍

(၁) ကျောင်းသုံးစာအုပ်သစ်သည် "ကလေးငယ်များသင်ယူရန် ကျောင်းသုံးစာအုပ် " နှင့် "သင်ကြားသူ ဆရာများ အတွက် လမ်းညွှန်စာအုပ်" ဟူသော အရည်အသွေးနှစ်ရပ်ကို ပေါင်းစပ်ထားသည်။ ထို့ကြောင့် အောက်ပါ အချက်အလက်များကို သေချာစွာ ဂရုပြုရေးသားရမည်။

    (၁-က) သင်ခန်းစာတစ်ခုချင်းစီတွင် သင်ခန်းစာအမည်ကို ရှင်းလင်းစွာ ဖော်ပြထားရပါမည်။ (သင်ခန်းစာ အစတွင်)

    (၁-ခ) သင်ခန်းစာတစ်ခုချင်းစီတွင် သင်ကြား(သင်ယူ)သင့်သည့် အကြောင်းအရာများကို ရှင်းလင်းစွာ သိရှိရန်အတွက် သင်ခန်းစာ အတွင်းတွင် ရှင်းလင်းချက်၊ ဖော်ပြချက်များကို ဖန်တီးထားပါသည်။

    (၁-ဂ) သင်ကြားသူဆရာများ လက်တွေ့တွင် လွယ်ကူစွာသင်ကြားနိုင်စေရန် ဆရာများအတွက် မေးခွန်းများ၊ ကျောင်းသားများအတွက် မျှော်မှန်းအဖြေများ ပါဝင်သည့် သင်ကြားသင်ယူမှုလုပ်ငန်းများကို ရှင်းလင်းစွာ ရေးသားဖော်ပြထားသည်။
ဥပမာ။ ။မေးခွန်းအား ရှင်းလင်းစွာ သိရှိအောင် ပြုလုပ်ခြင်း ➤ ဖန်တီးခြင်း၊
အပြန်အလှန်သုံးသပ်ခြင်း၊ ပြီးဆုံးအောင်ပြုလုပ်ခြင်း ➤ အနှစ်ချုပ်ခြင်း အစရှိသည်ဖြင့်

    (၁-ဃ) သင်ကြားသူဆရာများ၏ သင်ကြားမှုဆိုင်ရာ ကြိုတင်ပြင်ဆင်မှုများကို အထောက်အကူ ပြုစေရန် သင်ကြား (သင်ယူ) မှုလုပ်ငန်းတွင် လိုအပ်သောဓာတ်ပုံ၊ ရုပ်ပုံများကို တတ်နိုင်သရွေ့ ကျောင်းသုံးစာအုပ် များတွင် ထည့်သွင်း ဖော်ပြထားသည်။

(၂)သင်ခန်းစာအကြောင်းအရာများကို ဆုံးဖြတ်အတည်ပြုရာတွင် သင်ရိုးရည်ရွယ်ချက် (ဘာသာရပ် ရည်ရွယ်ချက်) ပေါက်မြောက်ရန် အဆိုပါအကြောင်းအရာသည် လိုအပ်မှု ရှိ၊ မရှိ ဆိုသည့်အချက်ကို အခြေခံကာ စဉ်းစား သွားမည်ဖြစ်ပါသည်။ ဥပမာအားဖြင့် အချို့အကြောင်းအရာများ ထည့်သွင်း ရာတွင် ငှင်းအားသင်ယူရန်အတွက် လိုအပ်သော သင်ထောက်ကူပစ္စည်းများသည် ယခုလက်ရှိ မြန်မာနိုင်ငံရှိ စာသင်ကျောင်းများတွင် မရရှိနိုင်သဖြင့်၊ ငှင်းအကြောင်းအရာကို ထည့်သွင်းခြင်း မပြုလုပ်တော့ ဟုပြောဆိုသောဘာသာရပ်များရှိသော်လည်း၊ သင်ထောက်ကူ ပစ္စည်းများရှိခြင်း၊ မရှိခြင်း မှာ ပဓာန မဟုတ်ဘဲ၊ ရည်ရွယ်ချက်အား ဖော်ဆောင်နိုင်ခြင်း၊ မဖော်ဆောင်နိုင်ခြင်းမှာ အဓိက ဖြစ်သည်။ ငှင်းအခြေအနေတွင် အောက်ပါတို့ကို ထည့်သွင်း စဉ်းစားသင့်သည်။
    (၂-က) သင်ကြားသင်ယူမှု လုပ်ငန်းများတွင် လိုအပ်သော သင်ထောက်ကူပစ္စည်းများကို ကျောင်းသုံးစာအုပ် တွင် ထည့်သွင်းရေးသားခြင်းများ ပြုလုပ်နိုင်သည်။
    ဥပမာ။ ။ ပန်းချီတွင် ပုံဆွဲစာရွက်၊ ဂရပ်စာရွက်၊ ရုပ်ပုံဆွဲရန် လိုင်းချထားသောစာရွက် စသည်တို့ကို ကျောင်းသုံးစာအုပ်တွင် ထည့်သွင်းရန် လျာထားသည်။

    (၂-ခ) လက်ရှိအခြေအနေအရ ကျောင်းတွင် ချက်ချင်း မရရှိနိုင်သော သင်ထောက်ကူ ပစ္စည်းများ အသုံးပြုရန် လိုအပ်လာသည့်အခါတွင် ငှင်းကိုအသုံးမပြုသော်လည်း၊ အစားထိုး သင်ကြားနိုင်သော အစီအစဉ်များကို ဖော်ပြပေးရမည်။

၉

ဥပမာ။ ပန်းချီဘာသာရပ်တွင် ပုံဆွဲရန် သင်ထောက်ကူပစ္စည်းများနှင့်ပတ်သက်၍ oil pastel၊ plastic crayon၊ ရောင်စုံခဲတံများထဲမှ တစ်ခုခုကို အသုံးပြု၍ရကြောင်း ဖော်ပြမည်။

(၃) သင်ယူမှုတွင် ဘေးကင်းလုံခြုံရေးနှင့်စပ်လျဉ်း၍ သေချာစွာ ထည့်သွင်းစဉ်းစားရန် လိုအပ်သည်။ ဥပမာ။ သိပ္ပံဘာသာရပ်တွင် လက်တွေ့ပစ္စည်းများ အသုံးပြုမှု (Alcohol lamp ၊ အဝကျယ် ဖန်ခွက်ကြီး (beaker) စသည်) ပန်းချီဘာသာရပ်တွင် ဓား၊ ကပ်ကြေးစသည်ကို အသုံးပြုမှု။

(၄) မိမိဘာသာရပ် တစ်ခုတည်းသာမက အခြားဘာသာရပ်များ၏အကြောင်းအရာများနှင့် ဆက်စပ်မှုကို စဉ်းစားမည်။ ကလေးများ အခက်အခဲ မတွေ့စေရန်နှင့် ဆရာများ သင်ကြားရာတွင် ရောထွေးမှု မရှိစေရန် ဘာသာရပ်များကို ခြုံငုံကြည့်ရှုသောအမြင် ထားရှိရမည်။
ဥပမာ။ လူမှုရေးဘာသာရပ်၊ သိပ္ပံဘာသာရပ်တွင်အသုံးပြုသော ဂရပ်များကို သင်္ချာဘာသာရပ် နှင့်ဆက်စပ်ကာ စဉ်းစားရမည်။ မြန်မာစာ အကြောင်းအရာများကို စာရိတ္တနှင့်ပြည်သူ့နီတိစသည့် ဘာသာရပ်များနှင့် ဆက်စပ်မှုကို ထည့်သွင်းစဉ်းစားကာ ရွေးချယ်ရမည်။

၂။ ကျောင်းသုံးစာအုပ်၏ အရေးအသားနှင့်စပ်လျဉ်းသော အကြောင်းအရာ

(၁) မြန်မာစာတွင် အရေးဘာသာစကား နှင့် အပြောဘာသာစကား ဟူ၍ ၂မျိုးရှိပြီး၊ လက်ရှိ ကျောင်းသုံးစာအုပ် တွင် အရေးဘာသာစကားကို အသုံးပြုထားသည်။ သို့သော် လက်ရှိ မြန်မာ နိုင်ငံ၏ အခြေအနေ (မြန်မာဘာသာစကား၏ ခက်ခဲမှု အောက်ဆင့်အတန်းများတွင် သင်ယူမှု ရာနှုန်းနည်းပါးမှု ၊ တိုင်းရင်းသားကလေးများ၏ အခြေအနေ) စသည်တို့ကို စဉ်းစားကာ ကလေး၏နားလည်နိုင်စွမ်းကို တိုးမြှင့်စေလိုသောအချက်အရ မူလတန်း အောက်ဆင့်အတန်း (ပထမတန်းမှ တတိယတန်း) တွင် အပြောဘာသာစကားဖြင့် ရေးသားဖော်ပြရန် တိုက်တွန်း သည်။ သို့သော် ကျောင်းသုံးစာအုပ် တစ်အုပ်လုံး၏ ဖွဲ့စည်းပုံ၊ ရှေ့နောက် စာကြောင်းများကို စဉ်းစားကာ ဆုံးဖြတ် နိုင်သည်။ မူလတန်းအထက်ဆင့် (စတုတ္ထတန်း၊ ပဉ္စမတန်း) တွင် အရေးဘာသာစကားဖြင့် ရေးသားမည်။ ခြွင်းချက် အနေဖြင့် အပြောဘာသာစကားကို အသုံးပြုပါက ပိုမိုနားလည်ရ လွယ်ကူသော နေရာများတွင် အပြောဘာသာ စကားကို အသုံးပြုနိုင်သည်။

၃။ ဒီဇိုင်းပိုင်းဆိုင်ရာ အချက်အလက်များ

(၁) Lay out ကို အောက်ပါအတိုင်းပြုလုပ်ရမည်။ (နောက်ဆက်တွဲတွင်ကြည့်ရှုပါ။)

ဘာသာရပ်အားလုံး
- စာမျက်နှာ အရေအတွက်သည် အခြေခံအားဖြင့် ၄ ဖြင့်စား၍ပြတ်သည့် အရေအတွက် ဖြစ်ရမည်။ ၉၆ မျက်နှာ အောက်ရှိ စာအုပ်များတွင်လည်း ၄ ဖြင့်စား၍ ပြတ်သည့် အရေအတွက် သာဖြစ်ရပါမည်။ သို့သော် ၉၇ မျက်နှာ အထက်ရှိ စာအုပ်များတွင်မူ အရေအတွက် ကိုက်ညီအောင် ပြုလုပ်ရန် ခက်ခဲပါက ၄ ဖြင့် စား၍ မပြတ်လျှင် လည်း ခွင့်ပြုပါသည်။ နောက်ဆုံး စာမျက်နှာသည် အဖြူရောင် စာရွက်လွတ် မဖြစ်သင့်ပါ။ သို့သော် မဖြစ်မနေ ထည့်သွင်းရမည် ဆိုပါက အဖြူရောင်စာရွက်လွတ်ဖြင့် စာမျက်နှာအရေအတွက်ကို ချိန်ညှိနိုင်ပါသည်။

- ရုံးလုပ်ငန်းများတွင် အသုံးပြုလျက်ရှိသော Myanmar3 ဖောင့်သည် လက်ရှိ ဒီဇိုင်းပြုစုရာတွင် အသုံးပြုသော Software ဖြစ်သည့် In Design ၌ လက်ရှိ အခြေအနေတွင် အသုံးပြုရန် ခက်ခဲသည်။
- အင်္ဂလိပ်ဘာသာ မဟုတ်သည့် အခြားဘာသာများတွင် ယူနစ် အစရှိသော Alphabet ကို အသုံးပြုပါက အင်္ဂလိပ်စာ ကျောင်းသုံးစာအုပ်နှင့် ကိုက်ညီသော စာလုံးများဖြစ်သည့် Century Gothic ဥပမာ သင်္ချာတွင်အသုံးပြုသော ဂရမ် (g) ၊ Question Mark (?) ကို Arial နှင့် ပုံအညွှန်း စာလုံးကို Constantia ကို အသုံးပြုမည်။

ဘာသာရပ်အလိုက် Layout ဇယား ၁

		သင်္ချာ	မြန်မာစာ၊ ဘဝတွက်တာ ကျွမ်းကျင်စရာ၊ ဂီတ ၊စာရိတ္တနှင့် ပြည်သူ့နီတိ	သိပ္ပံ၊ လူမှုရေး၊ ကာယပညာ	ပန်းချီ	အင်္ဂလိပ်စာ
ပုံနှိပ်စာအုပ် အရွယ်အစား		H 9.5inch×W 6.875inch (241.3mm x 174.6mm)				
အရောင်		4C				
Format		19L		20L	21L	19L
စာသား *1*2*3*4*5	G1 ~ G3	စာသား ၁၇၊ ခေါင်းစဉ် ၂၀-၂၄၊ ခေါင်းစဉ်ငယ် ၁၈-၂၀၊ မှတ်စု ၁၆-၁၇				စာသား ၁၂၊ ခေါင်းစဉ် ၂၀၊ ခေါင်းစဉ်ငယ် ၁၈ မှတ်စု ၁၁-၁၂
	G4 ~ G5	အောက်ဖော်ပြပါသီးခြားဇယား ကို ကိုးကားရန်	စာသား ၁၆၊ ခေါင်းစဉ် ၂၀-၂၄ ခေါင်းစဉ်ငယ် ၁၆-၂၀၊ မှတ်စု ၁၃-၁၆			စာသား ၁၁၊ ခေါင်းစဉ် ၂၀၊ ခေါင်းစဉ်ငယ် ၁၆-၁၈၊ မှတ်စု ၈-၁၁
ဖောင့် *6	G1	Win Innwa Truetype				Century Gothic (အောက်ဖော်ပြ ချက်များမှအပ) ၊ Arial (Question Mark) ၊ လက်ရေးစာလုံး
	G2 ~ G5	Win Researcher Truetype				

လိုင်းများအကြား အကွာအဝေး	၁၈ - ၂၂
Margin	အပေါ်(၈-၂၀mm)၊ အောက် (၁၂-၂၀mm)၊ ဘယ်၊ ညာ (၁၂-၂၅mm)

စာသား*1	ဘာသာရပ်အားလုံးတွင် စာသားအပြင် အခြားသောမှတ်စု၊ စကားပြော၊ဂရပ်၊ ပုံစသည်တို့တွင် အသေးဆုံး ၁၂ pointကိုအသုံးပြုနိုင်သည်။
စာသား*2	ဂီတဘာသာရပ်နှင့် စပ်လျဉ်း၍ ဂီတသင်္ကေတများအကြားရှိ ကိန်းဂဏန်းသည် ၁၀-၁၁ point၊ သီချင်းစာသားအား ၁၂-၁၃ point ကို အသုံးပြုနိုင်သည်။
စာသား*3	သင်္ချာနှင့်စပ်လျဉ်း၍ ဇယားအတွင်းစာလုံးများမဝင်ပါက အနည်းဆုံး ၁၁ point အထိ အသုံးပြုနိုင်သည်။
စာသား*4	အင်္ဂလိပ်စာနှင့်စပ်လျဉ်း၍ဇယားအတွင်းစာလုံးများမဝင်ပါက အနည်းဆုံး ၈ point အထိ အသုံးပြုနိုင်သည်။
စာသား*5	လူမှုရေးဘာသာရပ်နှင့် စပ်လျဉ်း၍ ဇယားအတွင်းစာလုံးများမဝင်ပါက အနည်းဆုံး ၁၁ point အထိ အသုံးပြုနိုင်သည်။
ဖောင့် *6	Arial (＝) ခေါင်းစဉ်နှင့်စာသားအတွင်းရှိ ထင်ရှားစေလိုသောနေရာများတွင် Win Haka ကိုအသုံးပြုနိုင်သည်။ တစ်ဖန် မြန်မာနိုင်ငံတိုင်းရင်းသားဘာသာစကားများဦးစီးဌာန၏ ညွှန်ကြားချက်ရှိပါက အဆိုပါညွှန်ကြားချက်အတိုင်း လိုက်နာရပါမည်။

သင်္ချာဖောင့်အရွယ်အစား （G4-G5）

	စာသား (မြန်မာစာလုံး)	အမှတ်အသား	
		အင်္ဂလိပ်စာလုံးအကြီး	အင်္ဂလိပ်စာလုံးအသေး
		ဖောင့် Constantia	ဖောင့် Constantia Italic
ခေါင်းစဉ်	၁၆-၂၂	၁၄-၁၈	၁၄-၁၈
စာသား	၁၆	၁၄	၁၄
မှတ်စု	၁၄-၁၆	၁၂-၁၄	၁၂-၁၄
ရုပ်ပုံ(ပန်းချီနှင့်ဇယား)	၁၆	၁၄	၁၄

（၂） သင်ခန်းစာခေါင်းစဉ်၊ လေ့ကျင့်ခန်း၊ အနှစ်ချုပ်စသည်တို့၏ ခေါင်းစီးဒီဇိုင်းများကို ဘာသာရပ် တစ်ခုချင်းစီ အလိုက် ဖန်တီးမည်။

(၃) မျက်နှာဖုံးမှ အတွင်းစာသားအထိ စာမျက်နှာတည်ဆောက်ပုံကို နောက်ဆက်တွဲ ၁ အား မှီငြမ်းပါ။ သင်ခန်းစာ ၁ ကို ညာဘက်စာမျက်နှာမှ စတင်မည်။ အောက်ဆင့်အတန်းများတွင် ဒုတိယ သင်ခန်းစာ နှင့် နောက်ပိုင်း သင်ခန်း စာများကို အခြေခံအားဖြင့် စာအုပ်ဖွင့်လျက် အနေအထား စာမျက်နှာ ၂မျက်နှာ အနေအထားဖြင့် အသုံးပြုမည်။ အထက်ဆင့်တွင်လည်း ထိုနည်းတူပင် ဖြစ်သည်။

(၄) မျက်နှာဖုံးပုံဒီဇိုင်းကို အတန်းအလိုက် ဘာသာရပ်အသီးသီးတွင် တစ်နည်းအားဖြင့် အခြေခံပညာ မူလတန်း ကျောင်းသုံးစာအုပ် အားလုံးတွင် အမြင်အားဖြင့် တူညီမှု ရှိစေရန် လုပ်ဆောင်ရပါမည်။ ထို့ကြောင့် ဘာသာရပ် အသီးသီးတွင် အဖုံးဒီဇိုင်း ပြုလုပ်ပြီးချိန်တွင် အစည်းအဝေးကျင်းပ ဆွေးနွေးပြီး ဆုံးဖြတ်မည် ဖြစ်ပါသည်။

(၅) အကြောင်းအရာ၊ ရေးသားရာတွင် စာမျက်နှာအရေအတွက်သည် စုံဂဏန်းဖြစ်လိုက် ၊ မဂဏန်း ဖြစ်လိုက် ဖြစ်မနေစေရန် သတိထားရပါမည်။ တစ်နည်းအားဖြင့် သင်ခန်းစာတစ်ခုထဲတွင် ကလေးငယ်များက ကျောင်းသုံး စာအုပ်စာမျက်နှာ၏ နောက်တစ်မျက်နှာအား လှန်ကြည့်ရမည့် ကိစ္စမျိုးကို တတ်နိုင်သ၍ ရှောင်ရှားရပါမည်။

(၆) ကလေးငယ်များ၏ ဓာတ်ပုံများ၊ ရုပ်ပုံများနှင့်ပတ်သက်ပြီး အခြေခံအားဖြင့် ကျောင်းဝတ်စုံ (အဖြူရောင်အကျႆ နှင့် အစိမ်းရောင်ဘောင်းဘီ၊ စကဒ်) ဝတ်ထားသောပုံကို အသုံးပြုရမည်ဖြစ်ပြီး တောက်ပသော အဆင်တန်ဆာများ၊ မိတ်ကပ်များကို ရှောင်ရှားရမည်။

(၇) လူရုပ်ဓာတ်ပုံ၊ရုပ်ပုံများနှင့် ပတ်သက်၍ ကျား၊ မ အချိုးအစား၊စရိုက်အမူအကျင့်များတွင် တစ်ဖက်သတ် ဖော်ပြ မှုမျိုး မရှိစေရန် ထည့်သွင်းစဉ်းစားရပါမည်။ ထို့အပြင် ကလေးငယ်များ အပါအဝင် လူမျိုးစုံပါဝင်သည့်ရုပ်ပုံများ၊ နောက်ခံပတ်ဝန်းကျင်ရုပ်ပုံ အမျိုးမျိုးကိုလည်း ထည့်သွင်းဖော်ပြရပါမည်။ ထို့အပြင် ခွဲခြားဆက်ဆံဖော်ပြမှု မရှိစေရန် ရုပ်ပုံနှင့် ဓာတ်ပုံများကို ထည့်သွင်းရာတွင် အောက်ပါ အချက်များကို သတိပြုရပါမည်။ (အကြောင်းအရာပိုင်းတွင်လည်း ထိုနည်းတူပင်ဖြစ်သည်။)

    (၇-၁) မိသားစုဖွဲ့စည်းပုံ ⇒ လူတိုင်းတွင် [ပျော်ရွှင်ဖွယ်ကောင်းသောမိသားစုရှိသည်၊ မိသားစုဝင်များအားလုံး စုံညီစွာရှိသည်] ဟု၍ တစ်ထစ်ချမပြောနိုင်သည့်အတွက် ပြီးပြည့်စုံသော မိသားစုပုံရိပ်များကိုသာ ဇောင်းပေး ဖော်ပြခြင်း မပြုလုပ်ရ။

    (၇-၂) ဆင်းရဲချမ်းသာ ကွာဟမှု ⇒ အိမ်နှင့်ပိုင်ဆိုင်ပစ္စည်းများနှင့်ပတ်သက်၍ ငွေကြေးချမ်းသာသူ များသာ မဟုတ်ဘဲ လူတိုင်းပိုင်ဆိုင်နိုင်သည့် အရာများကို ဖော်ပြရန်။

    (၇-၃) ပုံသဏ္ဌာန် ⇒ မွေးရာပါ၊ အပြင်ပန်းပုံသဏ္ဌာန် စသည်တို့ကို Role Play လုပ်ခြင်း၊ ဆွေးနွေးခြင်း မပြုလုပ်ရန်။ မျက်နှာအနေအထား၊ စိတ်ခံစားချက်၊ လှုပ်ရှားမှုစသည်တို့ကို လုပ်ဆောင်နိုင်သည်။

(၇-၄) �‌ဘာသာရေး၊ လူမျိုး၊ ဓလေ့ထုံးစံ၊ နိုင်ငံရေး နှင့် အလုပ်အကိုင် ⇒ အဆိုးအမြင်ဖြင့် တင်ပြခြင်း မပြုလုပ်ရန်။

(၇-၅) နိုင်ငံခြားသား ⇒ ခန္ဓာကိုယ်၏ ထူးခြားချက်ကို အလွန်အမင်း ရေးဆွဲခြင်း မပြုရ။

(၇-၆) ရောဂါနှင့် ခန္ဓာကိုယ် မသန်စွမ်းသူများ ⇒ အဆိုးအမြင်ဖြင့် တင်ပြခြင်း မပြုလုပ်ရ။ အလွန်အမင်း ကိုယ်ချင်းစာစိတ်ဖြင့် မိတ်ဆက်တင်ပြခြင်း မပြုရ။

(၈) ဘာသာရပ်တစ်ခုထဲတွင် အသုံးပြုသော သင်္ကေတများ၊ ရုပ်ပုံများသည် တူညီမှု ရှိရမည်။

(၉) မဖြစ်မနေ အသုံးပြုသင်ကြားရမည့် အကြောင်းအရာနှင့် ကိုးကားစာပေများအား �‌ဘာင်ခတ်ပြီး သေချာစွာ ခွဲခြားရမည်။ ‌ဘာင်အရောင်အား အကြမ်းအားဖြင့် ၁၀% မှ ၃၀% အတွင်းထားရှိမည်။

(၁၀) အခြေခံအားဖြင့် ဆရာ၏စကားပြော(မေးခွန်းအစရှိသည်)အား အစိမ်းဖျော့ကို နောက်ခံ ထားကာ၊ အနက်ရောင် စကားလုံးဖြင့် ရေးသားမည်။ သို့သော် ဘာသာရပ်အလိုက် နောက်ခံအရောင်အား ပြောင်းလဲနိုင်သည်။

(၁၁) စကားပြောတွင် အသုံးပြုသောအကွက်နှင့်၊ တွေးတောရာတွင် အသုံးပြုသော အကွက်များ ၏ ပုံသဏ္ဌာန်များအား ကွဲပြားအောင် ပြုလုပ်ရမည်။

(၁၂) ထို့အပြင် ခေါင်းစဉ်၊ရုပ်ပုံအရောင်များနှင့်ပတ်သက်ပြီး စာစီမှုပြုလုပ်ပြီးနောက်တွင် Universal Design အမြင် အရ စစ်ဆေးမှုများ ပြုလုပ်၍ အရောင်စပ်တွဲမှုများ ပြောင်းလဲရန် တောင်းဆိုမှု များလည်း ရှိနိုင်သည်။

(၁၃) ပထမတန်းမှ တတိယတန်းအထိ ထိပ်စည်းပိုင်းတွင် ၂ နေရာအဖြစ်ထားရှိကာ၊ ဘာသာရပ် အလိုက် အရောင်ပြောင်းလဲသတ်မှတ်ထားခြင်းဖြင့်၊ ကလေးများက လွယ်အိတ်အတွင်းမှ စာအုပ်များ ထုတ်ယူသည့်အခါ လွယ်အိတ်အပေါ်မှ စာအုပ်အရောင်ကို ကြည့်ခြင်းဖြင့်မည်သည့် ဘာသာရပ် ဖြစ်ကြောင်း သိရှိနိုင်စေရန် ပြုလုပ် ပါမည်။ စတုတ္ထတန်းမှစတင်ကာ ထိပ်စီးအရောင်နေရာကိုအနည်းငယ် ချုံ့ထားပါသည်။
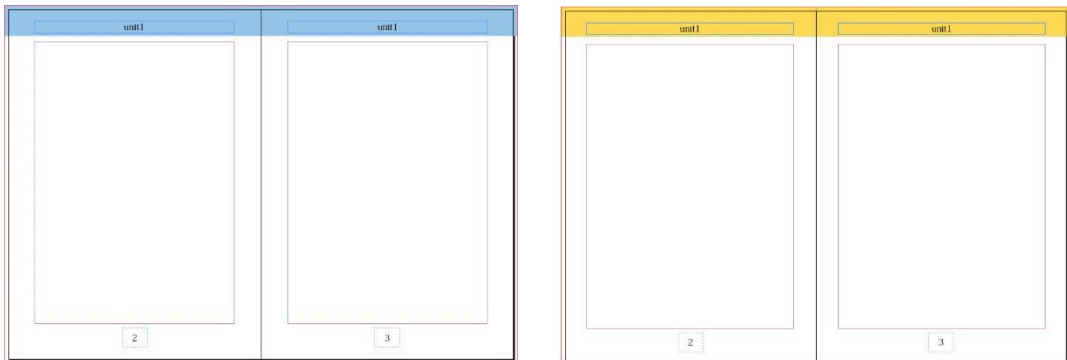
(၁၄) စာသားများအကြား ပန်းချီပုံနှင့် ဓာတ်ပုံများ ပါဝင်နေသော စာမျက်နှာများတွင် စာသားနှင့် ပန်းချီပုံ၊ ဓာတ်ပုံ အကြားတွင် နေရာလွတ် (2mm -3 mm) ထက်ပိုသော နေရာလွတ်ထားရှိရမည်။

(၁၅) သင်ယူမှုတွင် အထောက်အကူပြုစေရန် အောက်ပါအချက်များကို သတိပြု၍ ရှင်းလင်း လွယ်ကူသော ရုပ်ပုံ၊ ဓာတ်ပုံများကို ထည့်သွင်းမည်။

(၁၅-က) ပြသလိုသောအရာကို ရှင်းလင်းစွာ သိမြင်လွယ်ကူစေရန် အခြေအနေကို လိုက်၍ Photoshop ဖြင့် ထင်မြင်အောင် ပြုလုပ်မည်။

(၁၅-ခ) ပန်းချီပုံကို ပြောလိုသောအရာအား သိသာထင်ရှားစေရန် ရေးဆွဲထားရမည်။

(၁၅-ဂ) ပန်းချီပုံမှတစ်ဆင့် သင်ယူရသည့်အချက်များ များပြားသည့်အတွက် ပုံများတွင် အသေးစိတ် အချက်များကို မှန်မှန်ကန်ကန် ရေးဆွဲရမည်။

(၁၅-ဃ) နောက်ခံအရောင်နှင့် တူနေသောအခါမျိုးတွင် ခွဲခြားထားသည့်မျဉ်းအနားသားကို ထည့်ပေးရမည်။

(၁၅-င) လေ့ကျင့်သင်ကြားရာတွင် အရေးပါသည့် အပိုင်းများကို ပုံကြီးချဲ့ ဖော်ပြနိုင်သည်။

(၁၅-စ) မူပိုင်ခွင့်နှင့် ကိုက်ညီမှုမရှိသော အစိတ်အပိုင်းများကို photoshop ဖြင့် ဖျက်ရမည်။ Photoshop ဖြင့် ဖျက်ရာတွင် ပုံတွင်ပါဝင်သောသူများကို ထိခိုက်နစ်နာခြင်း မရှိစေရန် ဂရုပြုရပါမည်။

(၁၅-ဆ) ကျောက်သင်ပုန်းနှင့် နောက်ခံအရောင်သည် ပန်းချီပုံအား အနှောက်အယှက်မ ဖြစ်စေသော အရောင်ကို သုံးစွဲရမည်။

(၁၅-ဇ) စာကြောင်းရှည်များတွင် အဖြူရောင်စာလုံးများကို အသုံးမပြုရ။

၄။ ပန်းချီ၊ဓာတ်ပုံများအပ်နှံခြင်းနှင့် ပတ်သက်၍

(၁) ပန်းချီအပ်နှံရာတွင် သင်ရိုးပြုစုရေးအဖွဲ့၏ တည်းဖြတ်တာဝန်ခံ(CDT) (ဘာသာရပ်တစ်ခုစီတွင် တစ်ဦး) သို့မဟုတ် ဘာသာရပ် Curriculum officer မှတစ်ဆင့် ပန်းချီဆရာထံသို့ အပ်နှံရပါမည်။

(၁-က) ပန်းချီဆရာထံ အပ်နှံရာတွင် (ရုံးတွင်းရှိ ပန်းချီဆရာများ သာမက၊ ပြင်ပ ပန်းချီဆရာ များပါ) အပ်နှံသောစာရွက် (အောက်ပါပုံ) ကို အသုံးပြုအပ်နှံမည်။ ထိုသို့ အပ်နှံရာတွင် စာရွက်၏ အောက်ခြေပိုင်းတွင် ပုံကြမ်း သို့မဟုတ် အနီးစပ်ဆုံးပုံ၊ လိုအပ်သော ပုံအရွယ်အစား တို့ကို အတူပူးတွဲပေးရမည်။ သို့သော် လွယ်ကူရှင်းရှင်းသော ရုပ်ပုံများအတွက် မည်ကဲ့သို့သော ရုပ်ပုံဖြစ်သည်ဟု စာဖြင့် ဖော်ပြလျှင်လည်း ရသည်။ (ဥပမာ- ပထမတန်းကျောင်းသား ယောက်ျားလေး ၁ ယောက်နှင့် မိန်းကလေးဝယောက်က

မျက်နှာချင်းဆိုင် စကားပြောနေသော ပုံစံ စသည်ဖြင့်)။ သို့သော် အသေးစိတ်ပုံများကို အပ်နှံသည့်အခါ မိမိ စဉ်းစား ထားသည်နှင့် အနီးစပ်ဆုံးတူသောပုံအား အသေးစိတ် အချက်အလက်များဖြင့် မဖြစ်မနေ ပူးတွဲပေးအပ် ရမည်။

Illustration/Photo Request Record

Request No. _____ (To be filled up by the office)

Requested to – Name of illustrator/Photographer _____
(Insourcing/Outsourcing)

Requested by – Name _____   Team _____

Date requested – _____

Due date – _____

Purpose of the illustration/Photo– _____

Rough Sketch of the desired illustration/Photo –

(၁-ခ) ပန်းချီဆရာသည် CDT၏ညွှန်ကြားချက်အတိုင်း ကောက်ကြောင်းပုံကို ရေးဆွဲကာ CDT ထံသို့ ပြန်လည်ပေးအပ်ရမည်။ (အသေးစိတ်သည့်ပုံများကို ရေးဆွဲရာတွင် ဦးစွာ ပုံကြမ်း ရေးဆွဲပြီး CDT ထံ ပြသအတည်ပြုပြီးမှသာ အဆိုပါပန်းချီကို အချောသတ်ရမည်။) ပြုပြင်ရန် လိုအပ်ပါက ပြုပြင်ရေးဆွဲပြီး၊ ပြုပြင်ရန်မလိုပါက ရေးဆွဲပြီးသည့်ပုံအား အော်ပရေတာထံ အပ်နှံရမည်။ ပုံကို ပြင်ဆင်ရန် အပ်နှံရာတွင် အော်ပရေတာထံ မပေးအပ်မီပုံဖြစ်ပါက ပုံကို မိတ္တူကူးကာ မိတ္တူပေါ်တွင် အနီရောင်မင်ဖြင့် ရေးသား ပေးရမည်။ အော်ပရေတာထံ အပ်နှံပြီး နောက်ပိုင်း ပြင်ဆင်ရာတွင် ထိုပုံကို မိတ္တူကူးကာ မိတ္တူပေါ်တွင် အနီရောင်မင်ဖြင့် ရေးသားရပါမည်။
✴ ပန်းချီဆရာက ဆေးရောင်ခြယ်သ၍ အပြီးသတ်ခြင်းလည်း ပြုလုပ်နိုင်သည်။

(၁-ဂ) အော်ပရေတာသည် ပန်းချီပုံကို scan ဖတ်၍၊ အရောင်ခြယ်သရမည်။
✴ ပန်းချီပုံကို scan ဖတ်ရာတွင် resolution ကို 300dpi အထက်ဖြစ်အောင် ထားရှိရပါမည်။ scan ဖတ်ထားသည့် ပန်းချီ၏ အဖျူအမဲကိုထိန်းညှိပြီး အနက်ရောင်လိုင်းကို ပြတ်သားအောင် လုပ်ရမည်။
✴နောင်အခါတွင် ပန်းချီအရောင်ခြယ်ခြင်း၊ လိုင်းဆွဲခြင်းများကို ကွန်ပျူတာ၊ တက်ပလက်များဖြင့် လုပ်ဆောင် မည်ဖြစ်ပြီး၊ ပုံများကို ချူ၊ချဲ့ရာတွင်လည်း လိုင်းအထူအပါး ဖျောက်သည့်နည်းဖြင့် ပြောင်းလဲလုပ်ဆောင်ရန် စဉ်းစားမည်။

(၁-ဃ) scan ဖတ်ပြီးနောက်၊ပန်းချီပုံ (မူရင်း) အား စီမံချက်သို့ ပြန်လည်အပ်နှံရပါမည်။

(၂) ဓာတ်ပုံအပ်ရာတွင် တည်းဖြတ်တာဝန်ခံ CDT (တစ်ဘာသာ တစ်ယောက်) သို့မဟုတ် curriculum officer မှ အလုပ်အပ်နှံသည့်စာရွက် (အောက်ဖော်ပြပါ) ကို အသုံးပြုမည်။ ထိုသို့အပ်နှံရာတွင် စာရွက်၏အောက်ခြေ လွတ်နေသောနေရာတွင် ကိုယ်လိုချင်သောပုံနှင့် နီးစပ်သောဓာတ်ပုံ၊ ပန်းချီပုံ

သို့မဟုတ် အသေးစိတ် အချက်အလက် များကို စာဖြင့်ရှင်းလင်းခြင်း (ဥပမာ-ယောက်ျားလေးက ရှုံးစေးဖြင့် အရုပ်လုပ်နေသောပုံ) စသည်တို့ကိုရေးသားကာ တာဝန်ခံဝန်ထမ်းအား ပေးအပ်ရမည်။

ဓာတ်ပုံ/ဗီဒီယိုရိုက်ရန် အချိန်ဇယား

Production Tasks Planning Table
(-6- 2019) to (-6-2019)

Date	Tick						Description of requested task (*also attach photo/video request form if photo taking/video shooting)	Requested by (Name)	Deadline
	Photo taking	Photo editing	Video shooting	Video editing	Illustration coloring /	Document design			
Location (if outside office)									Signature (Task completed)
Monday AM									
PM									
Tuesday									

ဓာတ်ပုံ/ဗီဒီယိုရိုက်ရန်တောင်းခံလွှာ

■ဓာတ်ပုံ/ဗီဒီယို ရိုက်ရန် တောင်းခံလွှာ

【ဖြည့်သွင်းရန်နမူနာ】　　　　　　　　　　　　　　　　　　　　　　　　　　※ဓာတ်ပုံ/ဗီဒီယို မရိုက်ခင်တစ်ပတ်ကြိုတင်၍ဖြည့်သွင်းရပါမည်။

| ဖြည့်သွင်းသည့်ရက် | ဓာတ်ပုံ/ဗီဒီယို ရိုက်ရမည့် နေ့၊ စွဲ နှင့် အချိန် | တောင်းဆိုသူအမည် | ပုံအရေအတွက် | နေရာ | အရွယ်အစား | အရေးကြီးသည့်အချက် | နောက်ဆက်တွဲ ရှင်းလင်းချက် |
| 02-Aug-18 | 8/15 10နာရီ～12 နာရီပန်းကျောင် | Minamidate | 4 ပုံ | Indoor or (Outdoor) | (Big) or Small | လိပ်ပြာပါးစပ်အနေအထားကို နားလည်ရ လွယ်ကူ စေရန် ရိုက်ပေးပါ။ | မနက်ခင်းပိုင်းမှာပဲတွေ့ ရသည့်လိပ်ပြာကို ရိုက်ပေးပါ။ |

(၂-က) လူပုံရိုက်ကူးခြင်း

ရိုက်ကူးရေးတွင် CDT က ပါဝင်ရမည် ဖြစ်ပြီး ဓာတ်ပုံဆရာက ရိုက်ကူးမည်။ တစ်ဖန် ကျောင်းသား၊ ဆရာ တို့၏ ဓာတ်ပုံများရိုက်ကူးရာတွင် ကျောင်းနှင့်ညှိနှိုင်းပေးသူထံ အကြောင်းကြား၍ ကျောင်းမှ ခွင့်ပြုချက်ကို တောင်းခံရန် လိုအပ်သည်။ ဓာတ်ပုံတွင် ပါရှိသောသူ၏ ခွင့်ပြုချက်ကို မဖြစ်မနေ တောင်းခံ ရပါမည်။ (ကျောင်းနှင့်သက်ဆိုင်သူ၊ ကျောင်းသားများနှင့်စပ်လျဉ်းပြီး အဆိုပါကျောင်းမှတစ်ဆင့် ခွင့်ပြု ချက်ယူရမည်။) ထင်ရှားကျော်ကြားသူများ၏ ဓာတ်ပုံများကို အသုံးပြုသည့်အခါ ၎င်း၏ ဆုံးဖြတ်ချက်ဖြင့် လုပ်ဆောင်ခြင်း မပြုဘဲ အုပ်ချုပ်မှုပိုင်းဆိုင်ရာထံမှ အတည်ပြုချက်ရယူရပါမည်။ ထို့အပြင် စီမံချက် တွင်လည်း စာသင်ခန်း ပုံစံတူအခန်းကို ဖွဲ့စည်းထားပါသဖြင့် ထိုအခန်းကို ရိုက်ကူးရေးတွင် အသုံးပြုနိုင်သည်။

(၂-ခ) လူပုံမဟုတ်သောအခြားပုံများရိုက်ကူးခြင်း

ဓာတ်ပုံဆရာကို အကူအညီတောင်းခြင်း သို့မဟုတ် CDT ကပြင်ဆင်နိုင်သည်။

(၂-ဂ) ဓာတ်ပုံကို Agent ထံမှအခမဲ့ သို့မဟုတ် ဝယ်ယူ အသုံးပြုလိုပါက၊ ဘာသာရပ် ကျွမ်းကျင်သူ၏ စစ်ဆေးအတည်ပြုချက်ဖြင့် တာဝန်ခံဝန်ထမ်းက လုပ်ဆောင်မည်။ ဝယ်ယူမည်ဆိုပါက ဘာသာရပ် ကျွမ်းကျင်သူ၏ စစ်ဆေးအတည်ပြုချက်ဖြင့် ပြည်တွင်းဖြစ်ပါက ဘဏ္ဍာရေးတာဝန်ခံဝန်ထမ်း၊ ပြည်ပဖြစ်ပါက စီမံချက် Coordinator က လုပ်ဆောင်မည်။ ထို့အပြင် Photo Library များ ဖြစ်သော Amana ,Pixta, Aflo တို့မှ ဓာတ်ပုံများကို ဝယ်ယူအသုံးပြုလိုပါက စီမံချက် Coordinator မှတစ်ဆင့် ဂျပန်ရှိတာဝန်ရှိသူထံသို့ အကြောင်းကြားကာ ငှားရမ်းရမည်။

(၂-ဃ) ရလာသောဓာတ်ပုံအား ဓာတ်ပုံဆရာက Mail ဖြင့် ပုံ(ဆိုဒ်သေးထားသောပုံ) ကို ပူးတွဲပေးပို့မည်။ လက်ခံရရှိသော CDT နှင့် Curriculum Officer သည် ထိုပုံကိုဖွင့်ကာ စစ်ဆေးမည်။ ပြင်ဆင်ရန် လိုအပ်ပါက ပြင်ဆင်ရမည့်အချက်များကို ရေးကာ ပြန်ပို့မည်။

၅။ မူကြမ်းအပ်နှံခြင်း နှင့် အဆိုပါ Data Format နှင့်ပတ်သက်၍

မူကြမ်းအပ်နှံခြင်းပါ အဆင့်တိုင်းတွင် CDTထံသို့ ပြန်လည်စစ်ဆေးရန် ရောက်ရှိလာသည့် အခါတိုင်း CDT ၊ ပညာရှင်နှင့် အော်ပရေတာ တို့၏ စစ်ဆေးရန် အချိန်များကိုလည်း ထည့်သွင်း တွက်ချက်ရပါမည်။ DTP လုပ်ငန်းအသေးစိတ် နှင့်ပတ်သက်၍ နောက်ဆက်တွဲ ၄ တွင် ကိုးကား ကြည့်ရှုနိုင်ပါသည်။ NCC နောက်ဆုံး အတည်ပြုခြင်းအဆင့်မတိုင်မီ CDT ၊ ပညာရှင်၊ အော်ပရေတာ နှင့် IT အဖွဲ့၏ နောက်ဆုံးအဆင့် စစ်ဆေးရန် ရက်တစ်ရက် ထည့်သွင်းတွက်ချက် ထားရပါမည်။

(၁) မူကြမ်းအပ်နှံခြင်း

(၁-က) CDTက အော်ပရေတာထံသို့ ဒီဇိုင်းအပ်နှံရာတွင်၊ ဘာသာရပ်ဆိုင်ရာ ကျွမ်းကျင်ပညာရှင် များ၏ သဘောတူညီမှု ရမှသာပြုလုပ်ရပါမည်။

(၁-ခ) အော်ပရေတာထံသို့ မအပ်နှံမီ အကြောင်းအရာပိုင်းဆိုင်ရာ စစ်ဆေးခြင်း၊ စာလုံးပေါင်းသတ်ပုံ စစ်ဆေးခြင်း အစရှိသည်ဖြင့် ရေးသားထားသည်များ မှားယွင်းမှု ရှိ၊ မရှိ သေချာစွာ ပြုလုပ်ရမည်။

(၁-ဂ) မူကြမ်းကို စာရွက်ဖြင့်သာ အပေးအယူလုပ်ရန် အခြေခံ စည်းမျဉ်းအားဖြင့် သတ်မှတ်ထားပြီး၊ တည်းဖြတ်တာဝန်ခံ CDT (ဘာသာရပ်တစ်ခုစီတွင် တစ်ဦး) သို့မဟုတ် curriculum officer မှတစ်ဆင့် အော်ပရေတာထံသို့ အပ်နှံရမည်။ အခြားညွှန်ကြားချက်များ (စာကြောင်းအကွာအဝေး၊ စာကြောင်းအဆုံးကို ညီအောင်ညိုခြင်း၊ ဓာတ်ပုံအရောင် လင်းစေရန် ပြုလုပ်ခြင်း) စသည်တို့ ပြုလုပ်ရာတွင်လည်း စာရွက်တွင် ပြင်ဆင်ချက်ကို မင်နီဖြင့် ရေးသားကာ အကြောင်းကြားရမည်။ နှုတ်ဖြင့် ရှင်းပြမှ တစ်ခုတည်း ပြုလုပ်ခြင်းကို ရှောင်ကြည့်ရမည်။ တစ်ဖန် အခန်းအလိုက် ပန်းချီပုံအရေအတွက်၊ ဓာတ်ပုံအရေအတွက်နှင့် ပေးအပ်သည့် ရက်စွဲကို သတ်မှတ်ထားသော စာရွက်တွင် ဖြည့်သွင်းမည်။

(၁-ဃ) Curriculum officer သည် word ဖြင့် ရေးသားထားသော ကျောင်းသုံးစာအုပ် (မူကြမ်း) နှင့်အတူ ရုပ်ပုံဒေတာ (ဓာတ်ပုံပန်းချီ) များကို အော်ပရေတာအား ပေးအပ်/

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လက်ခံရန် သက်ဆိုင်ရာ ဘာသာ ရပ်၏ G4Server(M:) အောက်ရှိ Operator Folder တွင် သိမ်းဆည်း ရမည်။ ထိုသို့ သိမ်းဆည်း ရာတွင် ဓာတ်ပုံဖိုင်အမည်မှာ ဓာတ်ပုံသည် မည်သည့်နေရာတွင် ရှိသည်ကို နားလည်ရ လွယ်ကူစေရန် ဖော်ပြရမည်။

ဥပမာ ။ (စာမျက်နှာ ၁၄ ဘယ်အောက်) စသည်ဖြင့် မူကြမ်းစာရွက်တွင် မင်နီဖြင့် ပုံ ၁၊ ပုံ ၂ စသည်ဖြင့် ရေးသားထားပါက ၊ ဖိုင်အမည်ကို (၃-၁-၀၁) (အခန်း ၃ သင်ခန်းစာ ၁ ပုံ ၁) ဟူသည့်အဓိပ္ပာယ်

(၁-c) Curriculum officer သည် အော်ပရေတာထံ မူကြမ်းပေးပြီးသည့်အခါတိုင်း၊ server ထဲတွင်ရှိသော ဖတ်စာအုပ် တည်းဖြတ်မှုအချိန်ဇယားဖိုင် "DTP (W:)\Progress\03-G4_ textboox schedule.xlsx" တွင် ပေးအပ်သည့်ရက်စွဲကို ထည့်သွင်းရမည်။

(၁-စ) အော်ပရေတာသည် တည်းဖြတ်သူထံမှ လက်ခံရရှိသော ဒေတာများကိုအခြေခံ၍ Photoshop ဖြင့် သင့်တင့်သော ပြုပြင်မှုများပြုလုပ်ပြီးလက်တွေ့အသုံးပြုသော PSD data ကိုပြုလုပ်ရပါမည်။ အမှန်တကယ် အသုံးပြုသော ရုပ်ပုံ data သည်အော်ပရေတာမှ တာဝန်ယူပြီး သက်ဆိုင်ရာဘာသာရပ်၏ G4Server(M:) အောက်ရှိ Operator\Illustration Folder တွင် သိမ်းထားရပါမည်။

(၁-ဆ) DTP- Desktop publishing ပြီးစီးသွားပါက အော်ပရေတာသည် Curriculum officer မှတစ်ဆင့် CDT ထံသို့ စာမူကို ပြန်လည်ပေးအပ်ရမည်။ ထိုသို့ လုပ်ဆောင်ရာ တွင်လည်း အခြေခံ အားဖြင့် စာရွက်ဖြင့်သာ အပေးအယူ လုပ်ရပါမည်။ ဘာသာပြန်ဆိုရန်လိုအပ်ပါက PDF file ဖြင့် အပေးအယူ လုပ်နိုင်သည်။ ထိုသို့ လုပ်ဆောင်ရာတွင်လည်း သတ်မှတ်ထားသော သက်ဆိုင်ရာ ဘာသာရပ်၏ G4 Server (M:) အောက်ရှိ Operator\PDF Folder ကို အသုံးပြုရပါမည်။

(၁-ဇ) အော်ပရေတာသည် DTP ပြီးစီးထားသောမူကြမ်းကို CDT ထံ ပြန်လည်ပေးအပ်သည့် အခါတိုင်း ၊ ပြန်လည်ပေးအပ်သည့် ရက်စွဲကို အော်ပရေတာမှ server ထဲရှိ ကျောင်းသုံး စာအုပ် တည်းဖြတ်မှု ပြီးဆုံးခြင်း အချိန်ဇယားဖိုင် DTP (W:) ၏ Progress\G4_textbook schedule.xls တွင် ထည့်သွင်းရမည်။

(၁-ဈ) စာမူစိစစ်ခြင်းကို ပထမအကြိမ် ၊ ဒုတိယအကြိမ် ၊ တတိယအကြိမ် စသည်ဖြင့် ၃ ကြိမ် လုပ်ဆောင် ရပါမည်။ အကြိမ်အသီးသီးတွင် လုပ်ဆောင်ရမည့် နည်းလမ်းများမှာ အခြေခံအားဖြင့် တူညီသော်လည်း ပြင်ဆင်မှုများပြုလုပ်ရာတွင် စာရွက်ပေါ်တွင်ရေးသားမှု လုပ်ဆောင်ပြီး နှုတ်ဖြင့် ညွှန်ကြားမှု ပြုလုပ်ခြင်းကို ရှောင်ကြည်ရမည်။

ပထမအကြိမ် မူကြမ်းစစ်ဆေးခြင်း ပြီးစီးသည့် အဆင့်တွင် ဘာသာရပ် သင်ရိုးညွှန်တမ်း ကော်မတီ (SWC) ထံတွင် စာမူပါ အကြောင်းအရာများကို စစ်ဆေးအတည်ပြုပြီး ဖြစ်ရပါမည်။ မူကြမ်းစစ်ဆေးသူ၏ လုပ်ငန်း အခြေနေပေါ် မူတည်ပြီး SWC ထံ ပေးအပ်ရမည်ဖြစ်ပြီး၊ တစ်ကြိမ်လျှင် စာမျက်နှာ၂၀ မှ ၃၀ ခန့်ဖြင့် အခန်းအရေတွက်ကို သက်ဆိုင်ရာ ဘာသာရပ် အလိုက် ဆုံးဖြတ်ရမည်။

ဒုတိယအကြိမ်မူကြမ်းစစ်ဆေးခြင်း ပြီးစီးသည့်အဆင့်တွင်မူ မြန်မာတိုင်းရင်းသား ဘာသာစကားများ ဦးစီးဌာနထံတွင် မြန်မာဘာသာနှင့် စာလုံးပေါင်းသတ်ပုံများကို

စစ်ဆေးအတည်ပြုပြီး ဖြစ်ရပါမည်။ Curriculum officer သည် စစ်ဆေးမှုအဆင့်တိုင်းတွင် တာဝန်ခံစစ်ဆေးသူ (CDT) နှင့် ကျွမ်းကျင်ပညာရှင်တို့အပြင် ဘာသာရပ် သင်ရိုးညွှန်းတမ်းကော်မတီနှင့် မြန်မာတိုင်းရင်းသားဘာသာစကားများ ဦးစီးဌာန တို့၏ မှတ်ချက်များကို အားလုံးကို စုပေါင်း၍ ပြင်ဆင်ချက်ကို မင်နီဖြင့်ရေးကာ အော်ပရေတာထံ ပေးအပ်ရမည်။

တတိယအကြိမ် တည်းဖြတ်ခြင်း ပြီးဆုံးပါက အမျိုးသားသင်ရိုးညွှန်းတမ်းကော်မတီ (NCC) က အကြောင်း အရာများကို နောက်ဆုံးစစ်ဆေးမည်။

(၁-ည) မူကြမ်းစစ်ဆေးခြင်းကို ၄ ကြိမ်နှင့်အထက် ပြုလုပ်ရန်လိုအပ်လာပါက Curriculum officer သည် ဖတ်စာအုပ် တည်းဖြတ်မှုပြီးဆုံးခြင်း အချိန်ဇယားဖိုင်တွင် ဇယားကိုထပ်မံ ဖြည့်သွင်းနိုင်ပါသည်။

(၂) မူကြမ်းအပ်နှံချိန် Data Format နှင့်ပတ်သက်၍

(၂-က) ရုပ်ပုံကို အခြေခံစည်းမျဉ်းအနေဖြင့် AI သို့မဟုတ် PSD fomat ဖြင့် သိမ်းဆည်း ရပါမည်။
*PSD အရောင်ပုံစံကို RBG ဖြင့်အသုံးပြုနိုင်ပြီး အော်ပရေတာသည် CMYK ဖြင့် သိမ်းဆည်းပါမည်။

(၂-ခ) ဓာတ်ပုံအသုံးပြုရာတွင် resolution မြင့်ပါက(PSD သို့ပြောင်းပြီး 300dpi ဖြစ်ရန် အရွယ်အစား) RAW format ဖြင့်လည်းအသုံးပြုနိုင်သည်။ CDT များမှ ဓာတ်ပုံရိုက်ယူခြင်း ဖြစ်ပါက RAW format ဖြင့် သိမ်းထားရပါမည်။ထိုအပြင် ဓာတ်ပုံကို ပုံကြီးချဲ့၍ အသုံးပြုမည် ဆိုပါက resolution ကို 300dpi အထက် ထားရမည်။ ဓာတ်ပုံဆရာက ရိုက်ယူခြင်း ဖြစ်ပါက RAW နှင့် JPG နှစ်မျိုးစလုံးဖြင့် ပြုလုပ်ရန် တောင်းဆို ရပါမည်။ CDTများက ယခင် ရိုက်ယူ ထားသော ဓာတ်ပုံများသည် JPG ဖြစ်ပါက ရင်းအတိုင်း အသုံးပြု နိုင်ပါသည်။ (operator က ပြုပြင်ပြောင်းလဲရန် လိုအပ်ပါသည်)

(၂-ဂ) သံစဉ် (Music Notes) ဒေတာများ ထည့်သွင်းသည့်နည်းလမ်းနှင့်ပတ်သက်၍ ပန်းချီဂီတအဖွဲ့ (Performing Art)သည် Music Notes များကို အောက်ပါနည်းလမ်းဖြင့် လုပ်ဆောင်ရပါမည်။ MusicNotes ကို CDT က Mus2 2.1 ဖြင့် ရေးသားထုတ်ရမည်။ အော်ပရေတာ၏ ကွန်ပျူတာတွင် လည်း အဆိုပါ ဆော့ဖ်ဝဲလ်ကို ထည့်သွင်းထားသဖြင့် အော်ပရေတာထံတွင် MusicNotes ကို CDT မှတစ်ဆင့် AI ဒေတာသို့ ပြောင်းလဲပြီး၊ DTP လုပ်ငန်းများကို လုပ်ကိုင်ပါမည်။ သီချင်းစာသား ဒေတာများကို MS Word ဖိုင်ဖြင့် လက်ခံပါမည်။ အော်ပရေတာသည် Layout ညွှန်ကြားချက်အတိုင်း MusicNotes တွင် သီချင်း စာသားကိုထည့်သွင်းမည်။

(၃) မူရင်းစာအုပ်နှင့်နောက်ဆုံးဒေတာ ပြုစုခြင်းနှင့် သိမ်းဆည်းခြင်း

(၃-၁) CDTသည် NCC က အတည်ပြုထားသော အကြောင်းအရာများ ပါဝင်သည့် မူရင်းစာအုပ်ကို သိမ်းဆည်းထားရမည်။ ယင်းနောက်ပိုင်း ပြင်ဆင်ရမည်များကို

ထိုမူရင်းစာအုပ်တွင် ရေးမှတ်ထားမည်။ ထိုသို့ ပြုလုပ်ရာတွင် ပြင်ဆင်ချက်များသည် မည်သည့်နှစ်တွင် ပြင်ဆင်သည်ကို ရေးသားခြင်း။ ဥပမာ (၂၀၁၇ ခုနှစ်မှ စတင်ပြင်ဆင်ခြင်း) စာရွက်ကပ်ခြင်း (သို့) အရောင်ခွဲခြားခြင်းဖြင့် ခွဲခြားသိရှိနိုင်အောင်ပြုလုပ်မည်။ ၄င်းအပြင် အဆိုပါ မူရင်းသည် ဘာသာရပ်အသီးသီးမှ CDT များအနက် နောက်ဆက်တွဲ ၃ တွင် ဖော်ပြ ထားသော Editorial Staff က တာဝန်ယူ သိမ်းဆည်းထားရမည်။

(၃-၂) အတည်ပြုပြီး အချက်အလက်များကို ပြင်ဆင်ရာတွင် မူရင်းစာအုပ်တွင် ရေးသားထားသော ပြင်ဆင်ရမည့် အချက်များကို အခြေခံပြီး ဇယားပြုစုကာ ပရောဂျက်တွင်းစစ်ဆေးခြင်းနှင့် ဝန်ကြီးဌာနမှ အတည်ပြုခြင်းကို ရယူရမည်။ ပုံနှိပ်တိုက်မှ ရရှိသည့် နမူနာစာအုပ်ကို CDT က စစ်ဆေးရာတွင် ပုံနှိပ်ထားသည့် အကြောင်းအရာများကို စစ်ဆေးရန်ဖြစ်ပြီး၊ ပြင်ဆင်တည်းဖြတ်မှု ပြုလုပ်ရန်မလိုအပ်ပါ။

(၃-၃) အတည်ပြုပြီးဒေတာအား ပြင်ဆင်မှုပြုလုပ်ခြင်းသည် အောက်ပါအချက် ၆ ချက်အနက် တစ်ချက်ချက်ဖြင့် ကိုက်ညီသည့်အခါတွင်သာ ပြုလုပ်ရမည်။
(က) သတ်ပုံမှားယွင်းခြင်း၊ စာလုံးကျန်ခြင်း
    သတ်ပုံ၊ စာလုံးကျန်ခြင်း စသည်များကို ပြင်ဆင်ခြင်း။
ဘောင်အကွပ်၏ အထူး၊အရောင်၊ ယူနစ်များ၏ ဖော်ပြချက် mL mℓ သည်များ တူညီမှု ရှိ၊ မရှိတို့ ပါဝင်သည်။

(ခ) အချက်အလက်များမှားခြင်း
    အတည်ပြုပြီးနောက် အချက်အလက်မှန် နှင့် ကိုက်ညီမှုမရှိသည့် မှားယွင်းသော အချက်အလက်များကို ပါဝင်နေသည်ကို တွေ့ရှိခြင်း။ (ပုံ အပါအဝင်)

(ဂ) အဖြစ်အပျက်များ ပြောင်းလဲမှုကြောင့် မှားယွင်းသွားသော အကြောင်းအရာများ
    ဥပမာ။ ယူဂိုစလားဗီးယား ဟူသောတိုင်းပြည် မရှိတော့ခြင်း၊ ပလူတိုဂြိုလ်သည် ဂြိုလ်မဟုတ်တော့ခြင်း။

(ဃ) သင်ကြားရာတွင် အခက်အခဲဖြစ်စေသော အကြောင်းအရာများ ပါဝင်ခြင်း
    မှားယွင်းနိုင်သော အကြောင်းအရာများ၊ ခွဲခြားဆက်ဆံခြင်းကို ဖြစ်ပေါ်စေနိုင်သော အကြောင်းအရာများ ပါဝင်ခြင်းများတွေ့ရှိ၍ ပြင်ဆင်ခြင်း။

(င) အချက်အလက်များ ပြင်ဆင်ခြင်း၊ စာရွက်စာတမ်းများ ပြင်ဆင်ခြင်း
    စာရွက်စာတမ်း (ဒေတာ)အဟောင်းများကို အခြေခံထားသော ကိန်းဂဏန်းများ၊ ဂရပ် စသည်တို့ကို ပြင်ဆင်ခြင်း။

(စ) ပြောင်းလဲသင့်သည့် သင့်လျော်သည့်ပုံစံ
    Layout ကို အနည်းငယ်ပြောင်းလဲပြီး၊ဓာတ်ပုံအရွယ်အစားအားအကြီးချဲ့လိုခြင်း စသည်ဖြင့်။

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(၃-၄) ပြင်ဆင်ချက်ဇယားကို ဝန်ကြီးဌာန၏ အတည်ပြုချက်ရပါက CDT သည် ထိုအကြောင်းအရာများနှင့် မူရင်းစာအုပ်ကို ပြန်လည်စိစစ်ပြီး၊ အတည်ပြုထားသော အကြောင်းအရာများသည် မူရင်းစာအုပ် တွင် မှန်ကန်စွာ ပါဝင်နေခြင်း ရှိ၊ မရှိ စစ်ဆေးမည်။ ပြင်ဆင်ရန် လိုအပ်ပါက မျဉ်းနှစ်ကြောင်းဖြင့် ဖျက်ကာ ပြင်ဆင်မည်။ ပြင်ဆင်ထားသော မူရင်းစာအုပ်ကို အခြေခံကာ အော်ပရေတာက In Design တွင် ပြင်ဆင် ရမည်။ ပြင်ဆင်ရမည့် အကြောင်းအရာများကို CDT က တာဝန်ယူကာ ပြင်ဆင်ရမည်။ တစ်ဖန် အော်ပရေတာသည် ထိုဒေတာများကို overwrite မပြုလုပ်ဘဲ မည်သည်နှစ်တွင် ပြင်ဆင်ထားသည့် ဒေတာ ဖြစ်သည်ကို ဖိုင်အမည်တွင်ရေးကာ အခြားဖိုင်တစ်ခုဖြင့် သိမ်းဆည်းရမည်။

၆။ မူကြမ်းအပ်နှံရမည့် အချိန်ဇယား

လုပ်ငန်းအဆင့်ဆင့်		ပထမတန်း ကျောင်းသုံးစာအုပ်	ဒုတိယတန်းမှ ပဉ္စမတန်း ကျောင်းသုံးစာအုပ်
(၁) စာမူစိစစ်ခြင်း၊ မူကြမ်းအပ်နှံခြင်း		၂၀၁၅ခုနှစ် စက်တင်ဘာလ	နှစ်စဉ် ဇူလိုင်လလယ်
(၂) ပထမအကြိမ်မူကြမ်း	မူကြမ်း ပေးအပ်ခြင်း	၂၀၁၅ခုနှစ် အောက်တိုဘာလ	နှစ်စဉ် ဇူလိုင်လကုန်
	ပြန်လည်ရရှိခြင်း	၂၀၁၅ခုနှစ် အောက်တိုဘာလ	နှစ်စဉ် သြဂုတ်လဆန်း
(၂) ဒုတိယအကြိမ်မူကြမ်း	မူကြမ်း ပေးအပ်ခြင်း	၂၀၁၅ခုနှစ် နိုဝင်ဘာလ	နှစ်စဉ် သြဂုတ်လကုန်
	ပြန်လည်ရရှိခြင်း	၂၀၁၅ခုနှစ် ဒီဇင်ဘာလ	နှစ်စဉ် စက်တင်ဘာလဆန်း
(၃) တတိယအကြိမ် မူကြမ်း	မူကြမ်း ပေးအပ်ခြင်း	၂၀၁၆ခုနှစ် ဇန်နဝါရီလ	နှစ်စဉ် စက်တင်ဘာလကုန်
	ပြန်လည်ရရှိခြင်း	၂၀၁၆ခုနှစ် ဖေဖော်ဝါရီလ	နှစ်စဉ် အောက်တိုဘာလဆန်း
နောက်ဆုံးမူကြမ်း		၂၀၁၆ခုနှစ် မတ်လ	နှစ်စဉ် နိုဝင်ဘာလ

၇။ Print ထုတ်ရန်အတွက် Data ပေးအပ်ခြင်းနှင့် စပ်လျဉ်း၍

(၁) Data မပေးအပ်မီ အရောင်သည် RGB မဟုတ်ဘဲ CYMK ဖြစ်နေပါသလား၊ Link ပျောက်နေပါသလား။ layer တွင် ဖျောက်ထား၊ မထား စိစစ်မည်။

(၂) (၉၆မျက်နှာအထက်) ကော်ကပ်စာအုပ်ချုပ်ရန် data ဘေးတွင် 3mm အကျယ်ရှိ breed ကို ထားရှိရမည်။ (၉၆ မျက်နှာအောက်) တွင် မလိုအပ်ပါ။

(၃) data ထည့်သွင်းရာတွင် စာမျက်နှာတစ်မျက်နှာချင်းအလိုက် PDF data ပြုလုပ်မည်။ ထိုသို့ ပြုလုပ်ရာတွင် စာများကို outline တွင်ထားကာ နေရာသတ်မှတ်သော အဝိုင်းကို ဖျွတ်ထားမည်။

(၄) data ပေးရာတွင် နောက်ဆုံး PDF data စာရွက်ကို တွဲထားမည်။
(ပုံနှိပ်ရန် စိစစ်ခြင်းလုပ်ငန်း မရှိသည့်အတွက် ပုံနှိပ်ကုမ္ပဏီသို့စာရွက်နှင့်အရောင်တိုက်စစ်ဆေးခြင်း ၊ အကျယ်အဝန်း တိုက်ကာစစ်ဆေးခြင်း ကိုပြုလုပ်စေပါ။)

(၅) အသုံးပြုသော Software ၏ version ကို ရှင်းလင်းစွာရေးသွင်းထားမည်။(In Design ver 4, Illustrator ver 4, စသည်။)

၈။ Server ပေါ်ရှိ သာသနာရပ်အသီးသီးအတွက် Folder

(၁) Server ထဲတွင်ရှိသော မိမိတို့ဘာသာရပ်ဆိုင်ရာ "Curriculum" Folder (နောက်ဆက်တွဲ ၇ ကို ကိုးကားပါ) တွင် CDT နှင့် Curriculum Officer တို့၏ အသုံးပြုဆဲဖိုင်များကို သိမ်းဆည်းရမည်။

(၂) သက်ဆိုင်ရာဘာသာရပ်အတွက် Curriculum အောက်ရှိ Operator Folder သည် CDT, CO နှင့်အော်ပရေတာတို့အကြား ဖိုင်များကို ပေးအပ်/လက်ခံရန်အတွက် Folder ဖြစ်သည်။ Curriculum Officer သည် အော်ပရေတာထံသို့ DTP သုံးမူကြမ်း (သို့) ဓာတ်ပုံဖိုင်ကို ပေးအပ်/လက်ခံရန်အတွက် အသုံးပြုရမည်။ အော်ပရေတာမှ Curriculum Officer ထံသို့ DTP ပြီးစီးသည့် မူကြမ်းကို PDF ဖြင့် ပေးအပ်ရန်အတွက်လည်း အသုံးပြုနိုင်ပါသည်။

(၃) သက်ဆိုင်ရာ ဘာသာရပ်အတွက် Operator_Backup Folder သည် အော်ပရေတာထံတွင် DTP လုပ်ငန်းများလုပ်ကိုင်နေဆဲ ဖိုင်များကို သိမ်းဆည်းရပါမည်။

(၄) Sever ရှိ Operator_Backup ၏ "Textbook" ထဲတွင် အော်ပရေတာ၏ DTP လုပ်ငန်း ပြီးစီးသွားသည့် ပုံနှိပ်ရန်အဆင့်ရှိ အချောသတ်ဖိုင်များကို သိမ်းဆည်းရမည်။

၉။ DTP/ပန်းချီလုပ်ငန်းများ တိုးတက်မှု အခြေအနေကို အပတ်စဉ် စစ်ဆေးခြင်း

(၁) တစ်ပတ်လျှင်တစ်ကြိမ် Cloud ပေါ်ရှိ DTP illustration progressFile တွင် ဖြည့်သွင်းရမည်။ ရေးသွင်းရမည့်သူများမှာ အောက်ပါအတိုင်းဖြစ်သည်။

	တနင်္လာ	အင်္ဂါ	ဗုဒ္ဓဟူး	ကြာသာပတေး	သောကြာ
Excel ဖိုင်တွင်				နောက်တစ်ပတ် အတွက် worksheet အသစ်ကို coordinatorက ရေးဆွဲမည်။	CO က လက်ခံ ရရှိသည့် ပန်းချီ အရေအတွက် နောက်ဆုံးရ အချက်အလက်များ ကို ထည့်သွင်းမည်။

အော်ပရေတာ အခန်းတွင်းရှိ ကျောက်သင်ပုန်း တွင်	ဖိုင်ပေါ်ရှိ အချက်အလက်များ ကို စီမံချက် အတွင်းရေးမှူးက သင်ပုန်းတွင် ရေးပါမည်။				

(၁) တစ်ပတ်လျှင်တစ်ကြိမ် Cloudပေါ် တွင်ရှိသော Progress of textbook development ဖိုင်တွင် ဖြည့်သွင်းရမည်။ ရေးသွင်းရမည့်သူများမှာ အောက်ပါအတိုင်းဖြစ်သည်။

	တနင်္လာ	အင်္ဂါ	ဗုဒ္ဓဟူး	ကြာသာပတေး	သောကြာ
Excel ဖိုင်တွင်	Curriculum Development Coordinator က အတည်ပြုပါမည်။				CO က လက်ခံ ရရှိသည့် ကျောင်းသုံးစာအုပ် ပြုစုတိုးတက်မှု အခြေအနေကို ထည့်သွင်းမည်။

၁၀။ မူပိုင်ခွင့်နှင့်ပတ်သက်၍

(၁) မူပိုင်ခွင့်၏အဓိပ္ပါယ်

မူပိုင်ခွင့်ဆိုသည်မှာ ရေးသားဖန်တီးထားသော အနုပညာဖန်တီးမှုများအတွက် ရေးသားဖန်တီးသူ အား ပိုင်ဆိုင်ခွင့် ပေးအပ်ထားသော အခွင့်အရေးဖြစ်သည်။ ရေးသားဖန်တီးထားသော အနုပညာသည် ဉာဏပိုင်ဆိုင်ရာ ပိုင်ဆိုင်ခွင့်အနေဖြင့် ကာကွယ်ပေးထားပြီး တတိယလူ (တစ်ဦးတစ်ယောက်)က အသုံးပြုမည်ဆိုပါက ရေးသားသူ၏ခွင့်ပြုချက်ကို ရယူရမည့်အပြင် အခကြေးငွေလည်း ပေးဆောင် ရမည်။ ထို့ကြောင့် စာပေအနုပညာများအသုံးပြုရာတွင် ရေးသားသူ၏ခွင့်ပြုချက် သဘောတူညီမှု အား ရယူရပါမည်။ ထို့အပြင် သင့်လျော်သော စာပေမူပိုင်ခွင့် အသုံးပြုမှု အခကြေးငွေကိုလည်း ပေးဆောင်ရမည် ဖြစ်ပါသည်။

(၂) ကျောင်းသုံးစာအုပ်နှင့် စပ်လျဉ်း၍

မြန်မာစာ၊အင်္ဂလိပ်စာတို့တွင် စာပေများ၊ ဝေဖန်အကြံပြု စာပေများကို အသုံးပြုမှုများသည်။ ထိုသို့သော စာပေများအား အသုံးပြုပါက ရေးသားသူ၏ ခွင့်ပြုချက်ကို ရယူရမည်။ ထို့အပြင် အသုံးပြုခွင့် ဉာဏ်ပူဇော်ခကို ပေးဆောင်ရပါမည်။

သိပ္ပံ၊ ဝိဇ္ဇာ ဘာသာရပ်များ၏ ကျောင်းသုံးစာအုပ်တွင် ပန်းချီ၊ ဓာတ်ပုံများစွာကို အသုံးပြုရပါသည်။ ပန်းချီပုံများကို ပန်းချီဆရာများထံ အပ်နှံပြီး ဓာတ်ပုံများကိုမူ ဓာတ်ပုံဆရာထံသို့ ဓာတ်ပုံရိုက်ကူးရန် အပ်နှံခြင်းနှင့် Agent မှ ဝယ်ယူအသုံးပြုခြင်းတို့ ရှိပါသည်။ အလုပ်ခန့်အပ်ပြီး ရေးဆွဲ၊ ရိုက်ကူးစေသည့်

အခါတွင်ဖြစ်စေ၊ တစ်ဦးချင်း သို့မဟုတ် အဖွဲ့အစည်းထံမှ ဝယ်ယူသည့်အခါတွင်ဖြစ်စေ စာချုပ်ချုပ် ဆို၍ မူပိုင်ခွင့်သည် JICA နှင့် ပညာရေးဝန်ကြီးဌာနထံတွင် ရှိသည်။

တစ်ဖန် စီမံချက်တွင် မူပိုင်ခွင့်လိုအပ်သောစာပေများကို ထည့်သွင်းရာတွင် အောက်ဖော်ပြပါ အချက်များကို စိစစ်ပြီး၊ ကျောင်းသုံးစာအုပ်တွင် ရှင်းလင်းစွာ ရေးသားရမည်။ သို့သော် ထုတ်ဝေသောနှစ် သို့မဟုတ် ထုတ်ဝေရာနေရာအား မသိသောအခါတွင် (မသိ) ဟု ဖော်ပြနိုင်သည်။ ၎င်းအပြင် စာပေ စသည်တို့ကို တစ်ဆင့်ခံ အသုံးပြုပါက အောက်ပါအချက်များကို ထည့်သွင်းကာ စာအုပ်အမည်အား ရှင်းလင်းစွာ ဖော်ပြပါ။

-ရေးသားသူအမည်

-(စာအုပ်) အမည်

-ထုတ်ဝေသောနှစ် (အနုပညာပစ္စည်းများသည် ထုတ်ဝေသောနှစ်)

-ထုတ်ဝေသော နေရာ (အနုပညာပစ္စည်းများသည် ထိန်းသိမ်းထားသောနေရာ)

တစ်ဖန် ဘာသာရပ် ထူးခြားချက်များအရ အထက်ပါနည်းလမ်းများနှင့် မတူညီသော ဆုံးဖြတ်ချက်များလည်း ရှိနိုင်သည်။ ထိုသို့သော အချိန်တွင် SWC ၏ ဆုံးဖြတ်ချက်များကို လိုက်နာပါ။)

(၃) မူပိုင်ခွင့်များအသုံးပြုသည့်အခါ သတိပြုရမည့် အချက်များ

မူပိုင်ခွင့်တွင် အမျိုးအစား ၂ မျိုး ရှိသည်။

အထက်ပါ ဖော်ပြချက်များသည် အထူးသဖြင့် ပိုင်ဆိုင်မှုဆိုင်ရာ မူပိုင်ခွင့်ဖြစ်သည်။ (ဥပမာ-ဂျပန်တွင် ဖန်တီးသူ သေဆုံးပြီးနောက် နှစ်ပေါင်း ၇၀ အတွင်း အကျုံးဝင်သည်။) ထို့အပြင် စာပေ အနုပညာရှင်၏ ပုဂ္ဂလိကဆိုင်ရာ မူပိုင်ခွင့်ဟုခေါ်သော မူပိုင်ခွင့်လည်းရှိပြီး ယင်းမှာ အောက်ပါအတိုင်း ဖြစ်သည်။ထိုမူပိုင်ခွင့်သည်လည်း ဖန်တီးသူ သေဆုံးပြီးနောက် နှစ်၇၀ ကျော်လွန်သည့်တိုင်အောင် အကျုံးဝင်သည်။ (မြန်မာနိုင်ငံတွင် အနုပညာဖန်တီးမှုများ၏ မူပိုင်ခွင့်အကျုံးဝင်မှုမှာ နှစ်ပေါင်း ၅၀ဖြစ်သည်။ သို့ရာတွင် ထိုအချိန်ကာလ နောက်ပိုင်းတွင် ဂျပန်ကဲ့သို့ မူပိုင်ခွင့်ကို တောင်းခံရန်မလိုအပ်သော သတ်မှတ်ချက် ရှိ မရှိမှာ မသေချာပါ။)

(၃-က) အများပြည်သူသို့ ထုတ်ပြန်ခြင်းဆိုင်ရာ အခွင့်အာဏာ

စာပေရေးသားသူသည် မိမိ၏ စာပေအနုပညာအား အများပြည်သူသို့ထုတ်ပြန်နိုင်သည့် အခွင့်အာဏာ ရှိသည်။

(၃-ခ) အမည်နာမ ထုတ်ပြန်ခြင်းဆိုင်ရာ အခွင့်အာဏာ

ပုံနှိပ်ထုတ်ဝေသော ကုမ္ပဏီသည် မူပိုင်ခွင့်ဆိုင်ရာ စာပေအနုပညာကို အသုံးပြုလိုသည့်အခါ ရေးသားဖန်တီး သူ၏ အမည်နာမကို ထုတ်ဖော်ရေးသားခြင်း ပြုရပါမည်။

(၃-ဂ) ဂုဏ်သိက္ခာ ထိန်းသိမ်းမှု အခွင့်အာဏာ

မူလစာပေအနုပညာကို ပြောင်းလဲခြင်း မပြုရပါ။ သို့သော် အသေးစား ပြုပြင်ပြောင်းလဲမှုကိုမူ ပြုလုပ်နိုင် ပါသည်။ (အောက်ပါ နမူနာအား ကိုးကားပါ)။ တူညီမှုဆိုင်ရာ ထိန်းသိမ်းမှု အခွင့်အာဏာနှင့်ပတ်သက်၍ တရားစွဲဆိုမှု များစွာရှိသည်။ ကျောင်းသုံးစာအုပ်တွင် စာပေ

အနုပညာများ ထည့်သွင်းဖော်ပြရာတွင် ပြုပြင်ပြောင်းလဲမှု လုံးဝ မပြုလုပ်ရပါ။ ပြုပြင်ပြောင်းလဲမှု လိုအပ်ပါက ရေးသားဖန်တီးသူ၏ ခွင့်ပြုချက်အား ရယူရန် လိုအပ်သည်။ ဥပမာ။ ။အညိုရောင်( )။ ( )ထဲတွင်တိရစ္ဆာန်၏ အမည်ကိုရေးပါ။ (သတိပြုရန်- ———၏စာအုပ်တွင် အဖြေသည်(ခွေး)ဖြစ်သည်)

(၄) Project မှပြုစုထားသောစာရွက်စာတမ်းများ၏ မူပိုင်ခွင့်

  Project မှပြုစုထားသော ကျောင်းသုံးစာအုပ် ဆရာလမ်းညွှန်၊ ပန်းချီ၊ ဓာတ်ပုံ နှင့်အခြားသော စာရွက်စာတမ်းများ ၏ မူပိုင်ခွင့်အားလုံးသည် JICA နှင့် မြန်မာနိုင်ငံပညာရေးဝန်ကြီးဌာန ထံတွင်ရှိသည်။

(၅) မူပိုင်ခွင့်နှင့်ပတ်သက်၍သတိပြုရမည့်အချက်

  စီမံချက်က ရေးဆွဲပြုစုရာတွင် ပံ့ပိုးကူညီထားသည့် ကျောင်းသုံးစာအုပ်၊ ဆရာလမ်းညွှန်၊ စစ်ဆေးအကဲဖြတ်ခြင်း ဆိုင်ရာ ရည်ညွှန်းစာအုပ်၊ စစ်ဆေးအကဲဖြတ်ခြင်းနမူနာ၊ သင်တန်းလက်စွဲ၊ ပညာရေး ကောလိပ်ဆိုင်ရာ လက်စွဲ စာအုပ် စသည်ဖြင့် ပညာရေးဝန်ကြီးဌာနက ဖြန့်ဝေမည့် သို့မဟုတ် JICA မှတင်သွင်းမည့် စာအုပ် သို့မဟုတ် စာရွက်စာတမ်းများနှင့် ပတ်သက်ပြီး မူပိုင်ခွင့်ကို သတိပြုရပါမည်။ မူပိုင်ခွင့်နှင့် ပတ်သက်သည့် စစ်ဆေးခြင်းကို စာမူအား ဦးစွာပြုစုရေးသားသူ တနည်းအားဖြင့် ကျောင်းသုံးစာအုပ်နှင့် အကြောင်းအရာများကို CDT က လုပ်ဆောင်ရပါမည်။

အခန်း (၂) ဆရာလမ်းညွှန် ရေးဆွဲပြုစုခြင်းနှင့် စပ်လျဉ်း၍

၁။ အခြေခံဒီဇိုင်းနှင့်စပ်လျဉ်းသော အကြောင်းအရာများ

(၁) အရွယ်အစား 273.05 mm x 209.55 mm (10.75 inches x 8.25 inches)

(၂) ဖောင့် Win Researcher Truetype

 သို့သော် ခေါင်းစဉ် နှင့် စာကြောင်းတွင် ထင်ရှားသိသာစေသောနေရာများတွင် Win Haka ကို အသုံးပြုနိုင်သည်။

(၃) Big Title (20 pt.), Title (15 pt.), Text (13 pt.), Space between the lines (13~19 pt.), Page number (18 pt.)

(၄) Tracking ကို အနည်းဆုံး (-20) အထိသာအသုံးပြုနိုင်သည်။

(၅) ကျောင်းသုံးစာအုပ်စာမျက်နှာနေရာ အရွယ်အစားကို ဆရာလမ်းညွှန်စာအုပ် တစ်အုပ်လုံးတွင် အရွယ်အစား တစ်ခုတည်း တူညီစွာ အသုံးပြုရန်နှင့် ဘာသာရပ်အလိုက် အရွယ်အစား ကွဲပြားမှုရှိနိုင်သည်။

 (၆) အရောင် ၅ ရောင် (၄ ရောင် နှင့် အနီရောင် မှတ်ချက်စသည်တွင် အသုံးပြုသည်။)

၂။ မာတိကာနှင့် အကြောင်းအရာ

စာရွက်လွတ်	------------------------------------	၁
မူပိုင်ခွင့်	------------------------------------	၂
မာတိကာ	------------------------------------	၃
နိဒါန်း	------------------------------------	၄

 -ဆရာလမ်းညွှန် အသုံးပြုပုံ

 -ဘာသာရပ် တည်ဆောက်ပုံ (ပထမတန်းမှ ပဉ္စမတန်းအထိ အကြောင်းအရာ ချိတ်ဆက်မှု၊ သင်ယူရရှိမှုစွမ်းရည်)

 -၍အတန်းတွင် သင်ယူရရှိမည့် စွမ်းရည်

 -၍အတန်းတွင် အသစ်ထည့်သွင်းထားသော နယ်ပယ်များ

 -၍အတန်းတွင် ရရှိစေမည့် စွမ်းရည်များကို ပြုစုပျိုးထောင်ရန် လိုအပ်သော သင်ယူပုံနည်းလမ်းများ(သင်ကြားသင်ယူမှုပုံစံ)

 -အထက်ပါအကြောင်းအရာများနှင့်သက်ဆိုင်သည့် သင်ကြားရာတွင် သတိပြုရမည်အချက်များ

 -၍အတန်းတွင် စစ်ဆေးအကဲဖြတ်ခြင်းနှင့်သက်ဆိုင်သော သတိပြုရမည်အချက်များ

 -၍အတန်း၏ စာသင်ချိန် ခန့်မှန်းချက် ဇယားနမူနာ

၃။ အတွင်းစာသား၏ အခြေခံပုံစံ နှင့် အကြောင်းအရာ

အတွင်းစာသားတွင် အောက်ပါအကြောင်းအရာများကို ဖော်ပြမည်။

၁။သင်ခန်းစာတစ်ခုလုံး၏ မည်သည့်စာသင်ချိန် ဖြစ်သည်။

၂။သင်ယူမှုဦးတည်ချက်

၃။ သင်ကြားသင်ယူမှု အထောက်အကူပစ္စည်း

၄။သင်ကြားရာတွင် သတိပြုရမည့် အချက်များနှင့် သင်ကြားသင်ယူမှုလုပ်ငန်းစဉ်
(အကြောင်းအရာများရေးသားပုံသည် ဘာသာရပ်အလိုက် ကွဲပြားနိုင်သည်။)

၅။သင်ကြားရာတွင် အရေးကြီးသောအချက်များ ၊ လိုအပ်သော အထောက်အကူ ပစ္စည်းများ
နှင့်အခြား (အကြောင်းအရာများရေးသားပုံသည် ဘာသာရပ်အလိုက် ကွဲပြားနိုင်သည်။)

၆။လိုအပ်ချက်ပေါ်မူတည်၍ အောက်ပါအကြောင်းအရာများ ထည့်သွင်း ရေးသားနိုင်သည်။

ဥပမာ။ (က) အဖြေနမူနာ

　　　(ခ) သင်ကြားပုံ နမူနာ

　　　(ဂ) မြှား-စသည်ဖြင့်

၇။စစ်ဆေးအကဲဖြတ်ခြင်း ရှုထောင့်

　　　ဥပမာ။ ။ သင်ခန်းစာ၏နောက်ဆုံးတွင်လေ့ကျင့်ခန်းများထည့်သွင်းကာ
စစ်ဆေးအကဲဖြတ်ရမည့်မေးခွန်းများကို ထည့်သွင်းထားပါသည်။
စစ်ဆေးအကဲဖြတ်ခြင်း၏ အသေးစိတ်အချက်အလက်နှင့် စံနှုန်းများကို
အောက်ပါစာအုပ်များတွင် ကိုးကားနိုင်ပါသည်။

"National Assessment Guideline for Basic Education（NAP）"Department of Myanmar Examinations,
MOE, 2020.

"Reference Book on Classroom Assessment at the Lower Primary Level," JICA CREATE & MOE,
2021.

နမူနာ ၁

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(1)
(2)                    (6)  ကျောင်းသုံးစာအုပ်          (4)
(3)
                                                      (1)
(4)                                                   (3)
              (5)              (5)              (4)
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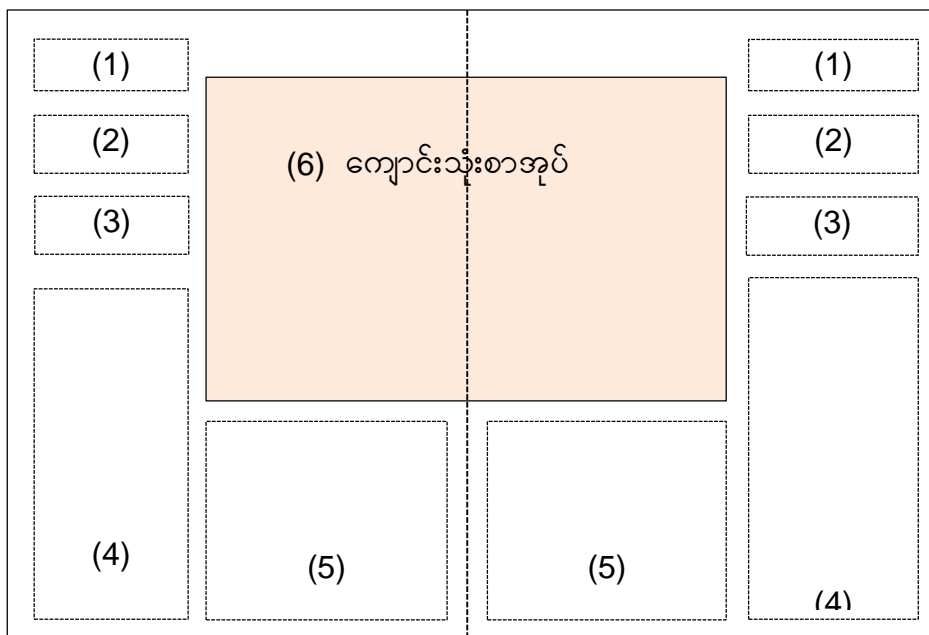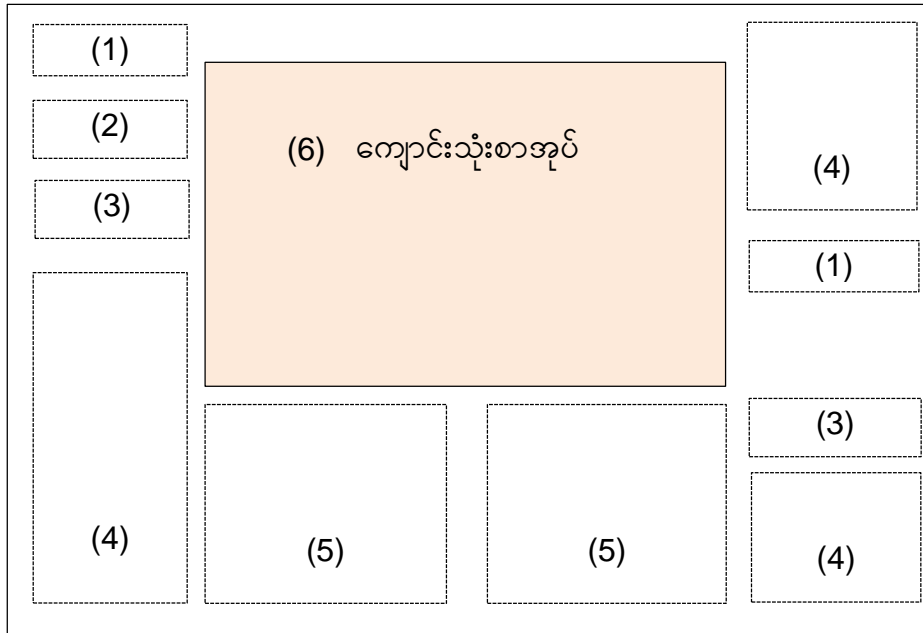
သို့သော်ပဉ္စမတန်းနှင့်ပတ်သက်၍ ကျောင်းသုံးစာအုပ်စာမျက်နှာနေရာ အရွယ်အစားမှာ (ကြီး)၊(ငယ်)၊(လတ်) ၃မျိုးရှိပြီး၊ အရွယ်အစား(ကြီး)အား လူမှုရေးဘာသာရပ်၊(ငယ်)အား ကာယပညာနှင့် (လတ်)အား မြန်မာစာ၊သင်္ချာ၊ သိပ္ပံ၊ စာရိတ္တနှင့် ပြည်သူ့နီတိ၊ ဘဝတွက်တာ ကျွမ်းကျင်စရာ၊ ပန်းချီနှင့် ဂီတဘာသာရပ်တို့တွင် အသုံးပြုပါမည်။

၄။အင်္ဂလိပ်စာ ဆရာလမ်းညွှန် နမူနာ

အင်္ဂလိပ်စာဆရာလမ်းညွှန်သည် အင်္ဂလိပ်စာ သင်ရိုးရေးဆွဲရေး အဖွဲ့နှင့် သင်ရိုးကော်မတီ ၏တောင်းဆိုမှုအရ သင်ခန်းစာ အသီးသီးတွင် လက်တွေ့သင်ကြားမှု ပုံစံများကို ထည့်သွင်း ထားသည်။ ထို့ကြောင့် အင်္ဂလိပ်စာ၏ ဆရာလမ်းညွှန်၏ format သည် အောက်ပါအတိုင်းဖြစ်သည်။

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ကျောင်းသုံးစာအုပ်              သင်ကြားမှုပုံစံ

                              (အဆက်)
သင်ကြားမှုပုံစံ
```

ဆရာလမ်းညွှန် နမူနာ ၁ (သင်္ချာဘာသာရပ်)

သင်ခန်းစာ ၂ (၂/၆)

သင်ခန်းစာ၏ ဦးတည်ချက်
- နေရာ အဆောင်ပြကိန်းများကို ပိုမိုအသုံးပြု တတ်ရန်။
- နေရာ အဆောင်ပြကိန်းများကို ပိုမိုအသုံးပြု တတ်ရန်။

ကြိုတင်ပြင်ဆင်ခြင်း
- ကြွေချက်နာရှိ တိရစ္ဆာန်များ ရုပ်ပုံကားချပ်
- ကြွေချက်နာရှိ တိရစ္ဆာန်များ ရုပ်ပုံကားချပ်
- ကြွေချက်နာရှိ တိရစ္ဆာန်များ ရုပ်ပုံကားချပ်
- ကြွေချက်နာရှိ တိရစ္ဆာန်များ ရုပ်ပုံကားချပ်

သင်ကြား/သင်ယူမှု လုပ်ငန်းစဉ်အဆင့်ဆင့်

(၁) ၁၀ အထိကိန်းများ

၁	၂	၃	၄	၅
တစ်	နှစ်	သုံး	လေး	ငါး

သင်ခန်းစာ ၁ (၁/၆)

ဆရာလမ်းညွှန် နမူနာ ၂ (သင်္ချာဘာသာရပ်)

သင်ခန်းစာ ၂ (၂/၆)

သင်ခန်းစာ၏ ဦးတည်ချက်

ကြိုတင်ပြင်ဆင်ခြင်း

(၁) ၁၀ အထိကိန်းများ

၁	၂	၃	၄	၅
တစ်	နှစ်	သုံး	လေး	ငါး

သင်ခန်းစာ ၁ (၁/၆)
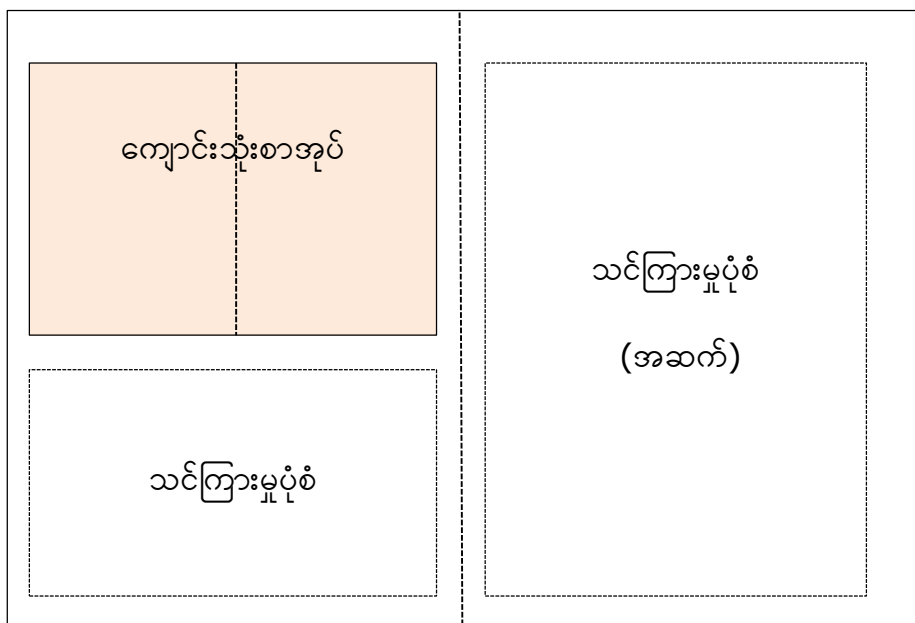
ဆရာလမ်းညွှန် နမူနာ ၃ အင်္ဂလိပ်စာ

Lesson 8	Parts of the Body(3)
1. Let's Listen and Try!	3. Let's play "Dice Game!"
2. Let's play "Keep Fit"!	

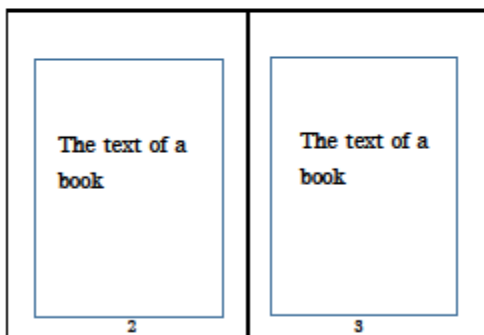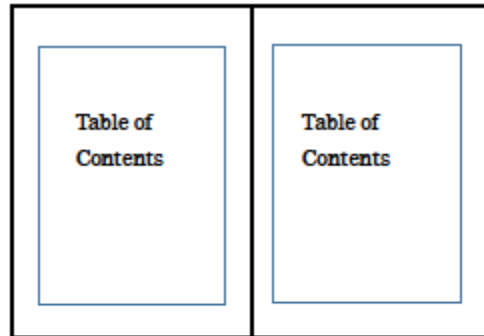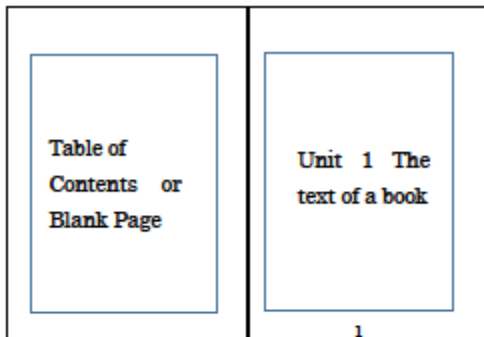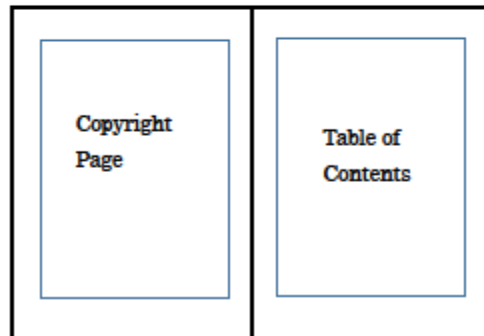| Stage and timing	Activities	Teacher's Tips
Warm up (3 minutes)	Sing a chant. E.g. Clap twice, touch your head/ shoulder/ etc. According to previous lesson.	
Presentation (6 minutes)	1. Let's listen and try! **Listen and watch only** Demonstrate and say: Leg(s), Knee(s) × 3 times. Listen, repeat and do. Demonstrate and say: leg(s), knee(s). Students repeat and do the actions. **Listen and watch out!** Demonstrate and say: Foot/Feet, Toe(s) × 3 times. Listen, repeat and do. Demonstrate and say: foot/feet, toe(s). Students repeat and do the actions.	
Controlled Practice (3 minutes)	Show gestures only: leg(s), knee(s), foot (feet) and toe(s). Students say the vocabulary. (the whole class)	
Controlled Practice (10 minutes)	**Listen and respond** Give the instructions. Touch your -. E.g. Touch your knees. Students obey the instructions. ss ⟶ ss (1) open pairs × 6 (cover front, middle, back of class)	
Less control practice (5 minutes)	One student gives an instruction, another student respond to the instruction. Students choose an instruction to give randomly. 2. Let's play "Keep Fit". Stand up Give instructions for keeping fit. E.g. Touch your toes and knees. Next time, give more and more instructions. E.g. Touch your eye, knee, shoulders, arm and toes. ss ⟶ ss (2) closed pairs Students give each other instructions and respond. Let students practice so they can improve fluency. Monitor and check pronunciation.	(a) Reinforce instructions with gestures.
Free practice (10 minutes)	3. Let's play "Dice game". Divide students into pairs. Make a dice or give one to each pair. Use a large-size dice to play the game with the whole class first. Draw an outline of a body and write the following on the board: A= knees, B=legs, C= feet, D= toes. Demonstrate the game by throwing the large-size and saying, A...B...C...D. It's C. Its feet. And draw feet in the textbook, page x. Students play the game as above. The first student to complete their picture wins. Monitor and make notes or join in. Praise if they have done the activity well.	
Feedback & summary (3 minutes)	Review the four parts of the body. Ask more than one student. Go over any Pronunciation problems. Say how well they did in class also.	
Homework/ follow up (minutes)		
Assessment	Teacher can check when students give instructions and do action. Monitor and check pronunciation. Monitor and make notes or join in.	

နောက်ဆက်တွဲ ၁ Page Segmentation

EX.1

Tititle Page

Copyright Page

Table of Contents

Table of Contents or Blank Page

Unit 1 The text of a book

1

The text of a book

2

The text of a book

3

EX.2

Tititle Page

Copyright Page

Table of Contents

Table of Contents

Table of Contents

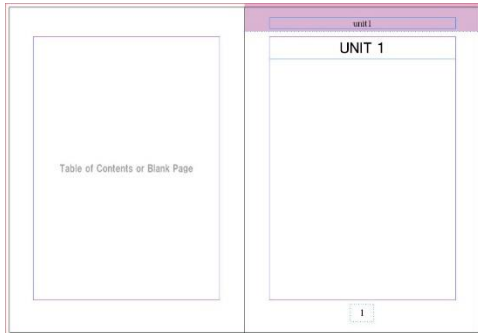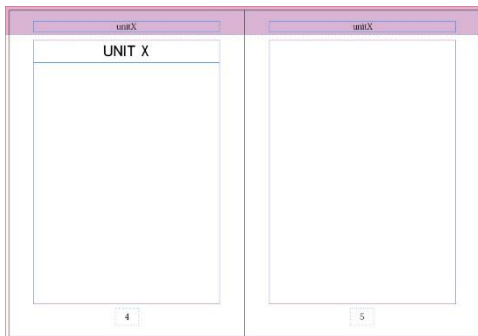Table of Contents or Blank Page

Unit 1 The text of a book

1
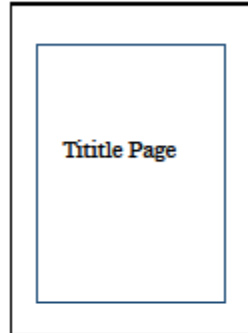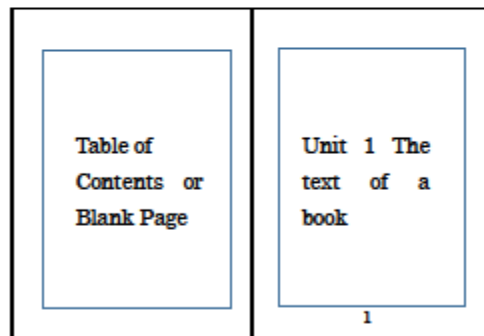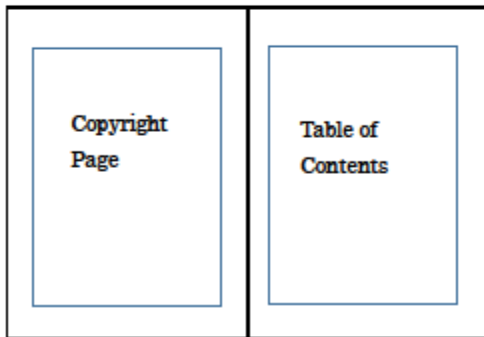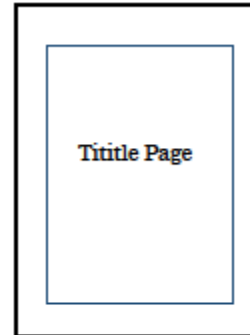
နောက်ဆက်တွဲ ၂ _ Textbook Format

မြန်မာစာ

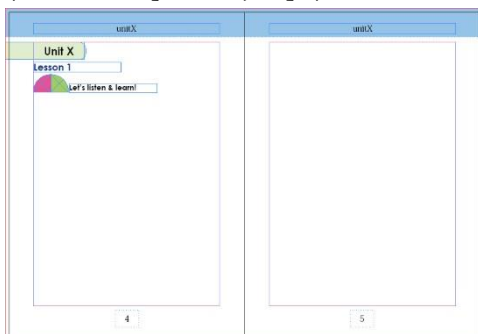သင်ခန်းစာ ၁
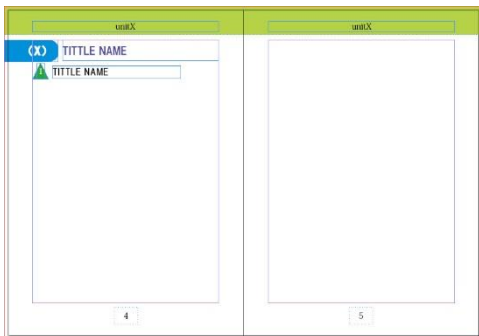

သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ဘယ်ဘက်ပိုင်းစာမျက်နှာ)

သင်ခန်းစာ ၂ အနောက်ပိုင်း
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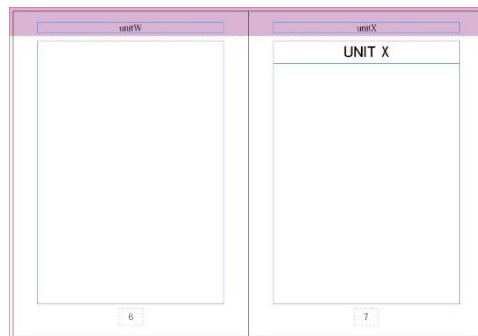
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သင်ခန်းစာ ၁
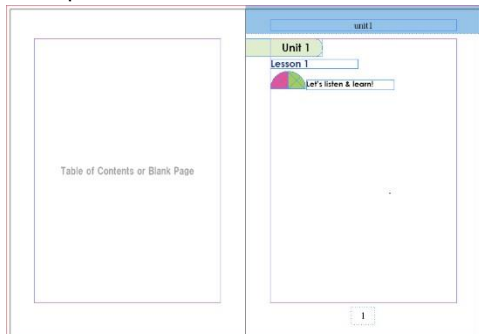
သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ဘယ်ဘက်ပိုင်းစာမျက်နှာ)

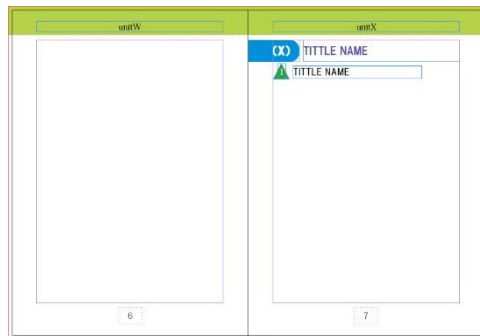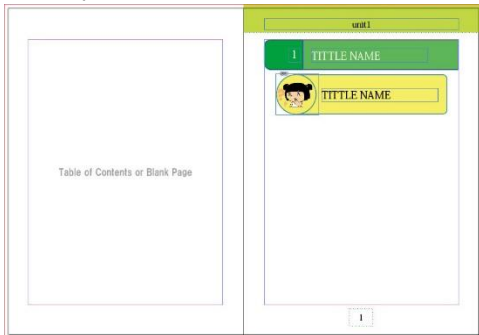

သင်ခန်းစာ ၂ အနောက်ပိုင်း
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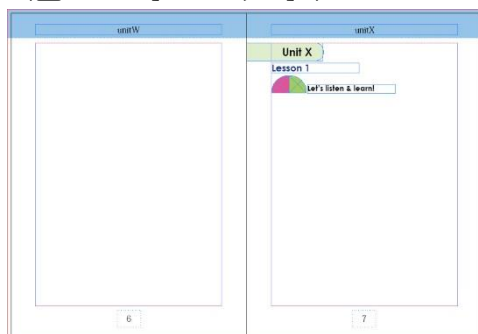
သချၤ်
သင်ခန်းစာ ၁
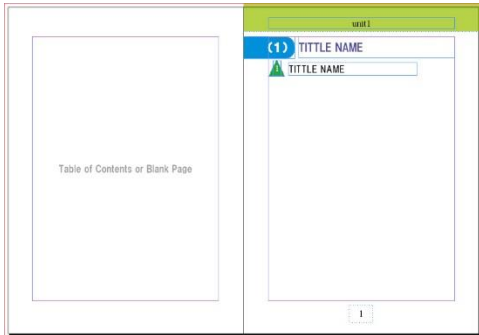
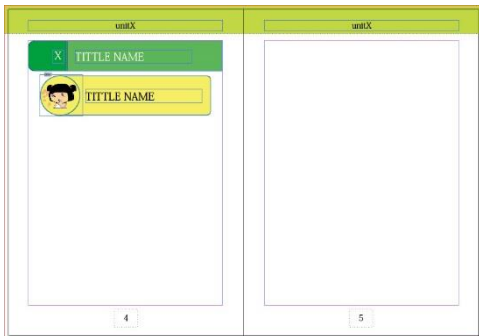သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ဘယ်ဘက်ပိုင်းစာမျက်နှာ)

သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ညာဘက်ပိုင်းစာမျက်နှာ)
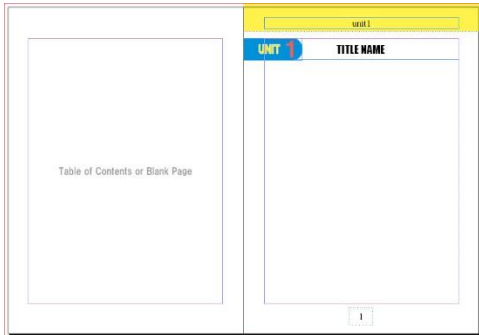

သိပ္ပံ
သင်ခန်းစာ ၁

သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ဘယ်ဘက်ပိုင်းစာမျက်နှာ)

သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ညာဘက်ပိုင်းစာမျက်နှာ)

လူမှုရေး
သင်ခန်းစာ ၁

သင်ခန်းစာ ၂ အနောက်ပိုင်း	သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ဘယ်ဘက်ပိုင်းစာမျက်နှာ)	(ညာဘက်ပိုင်းစာမျက်နှာ)

ဘဝတွက်တာကျွမ်းကျင်စရာ
သင်ခန်းစာ ၁

သင်ခန်းစာ ၂ အနောက်ပိုင်း	သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ဘယ်ဘက်ပိုင်းစာမျက်နှာ)	(ညာဘက်ပိုင်းစာမျက်နှာ)

ကာယပညာ
သင်ခန်းစာ ၁

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သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ဘယ်ဘက်ပိုင်းစာမျက်နှာ)

သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ညာဘက်ပိုင်းစာမျက်နှာ)

ပန်းချီ
သင်ခန်းစာ ၁

သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ဘယ်ဘက်ပိုင်းစာမျက်နှာ)

သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ညာဘက်ပိုင်းစာမျက်နှာ)

ဂီတ
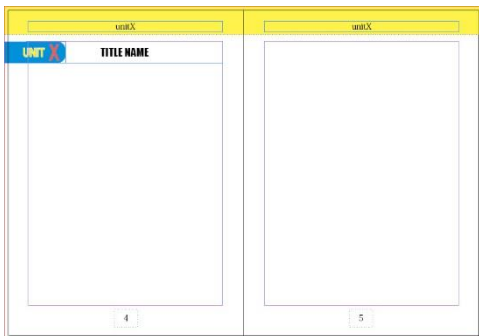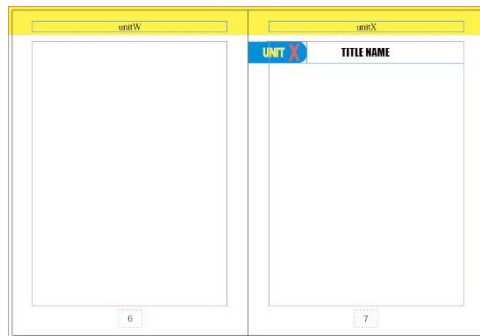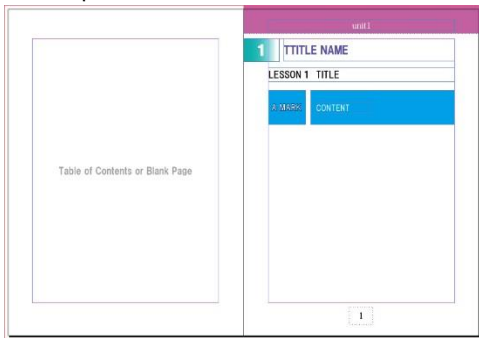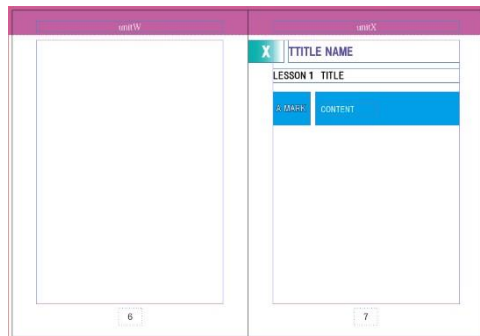သင်ခန်းစာ ၁

သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ဘယ်ဘက်ပိုင်းစာမျက်နှာ)

သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ညာဘက်ပိုင်းစာမျက်နှာ)

စာရိတ္တနှင့် ပြည်သူ့နီတိ
သင်ခန်းစာ ၁
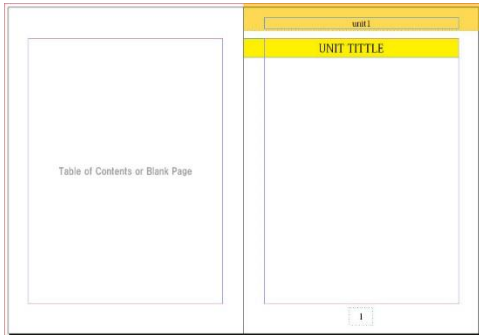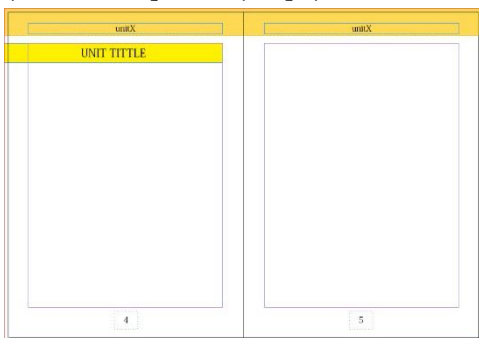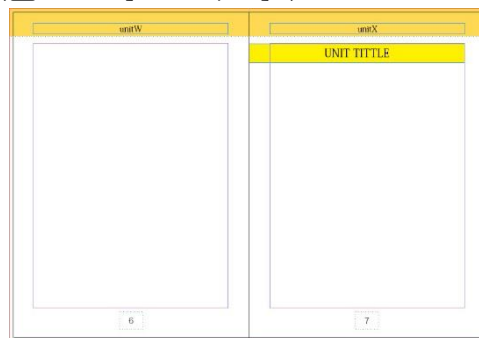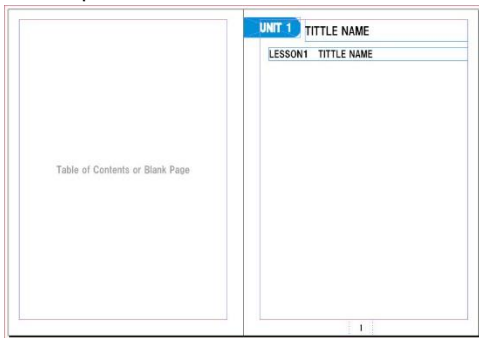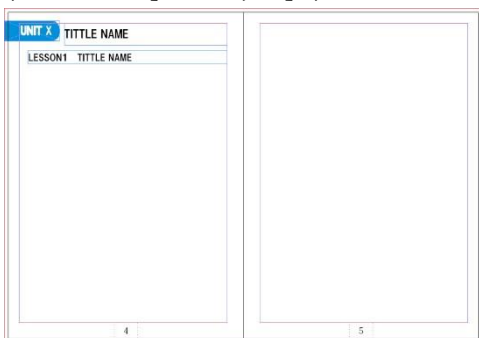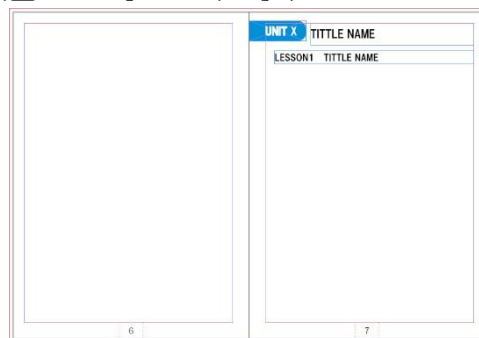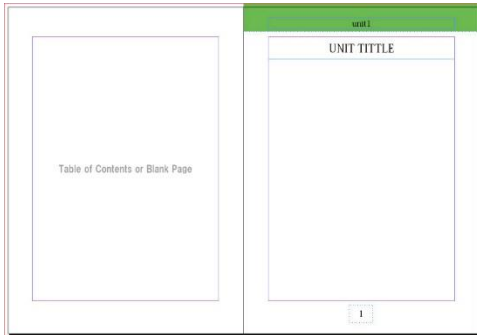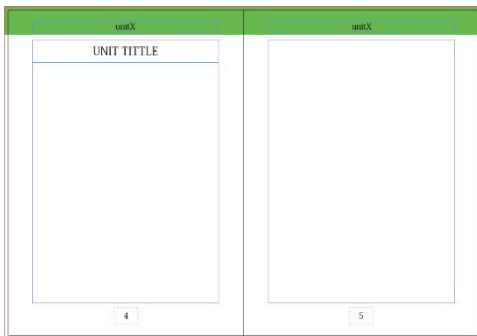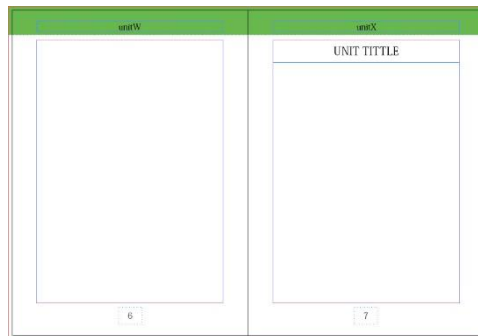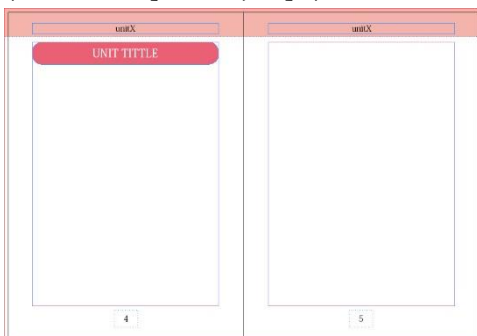

သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ဘယ်ဘက်ပိုင်းစာမျက်နှာ)

သင်ခန်းစာ ၂ အနောက်ပိုင်း
(ညာဘက်ပိုင်းစာမျက်နှာ)

နောက်ဆက်တွဲ ၃ တည်းဖြတ်ခြင်း

၁။စာစီစာပြင်ခြင်းအဆင့်

အတွင်းပိုင်းပြင်ဆင်မှု

အတွင်းပိုင်းပြင်ဆင်မှုသည် အော်ပရေတာကပြုလုပ်ရမည့် အမှားပြင်ဆင်ခြင်းဖြစ်သည်။ ပေးအပ်သော စာမူအတိုင်း ပြုလုပ်ထားခြင်း ရှိ၊ မရှိစစ်ဆေးရမည်။ စာမူနှင့် တိုက်စစ်ခြင်းများ ရှိသကဲ့သို့၊ အပေါ်ယံ ကြည့်ပြီး စစ်ဆေးရ သည်လည်း ရှိသည်။ အတွင်းပိုင်းပြင်ဆင်မှု ပြုလုပ်ပြီးမှသာ ပထမအဆင့် မူကြမ်းစာမူကို တည်းဖြတ်သူထံ ပေးပို့ ရပါမည်။

ပထမအဆင့်မူကြမ်းစစ်ဆေးခြင်း

ပထမအဆင့် မူကြမ်း စစ်ဆေးခြင်းသည် ပထမဦးဆုံး အမှားပြင်ဆင်ခြင်း ဖြစ်ပါသည်။ အတွင်း ပြင်ဆင်မှုတွင် ဖော်ပြထားသကဲ့လို အော်ပရေတာမှ ပေးပို့လိုက်သော စာမူနှင့် မူကြမ်းကို တိုက်ဆိုင် စစ်ဆေးခြင်းအား အဓိက ပြုလုပ်ရပါမည်။

ပထမအဆင့် မူကြမ်းစစ်ဆေးခြင်းလုပ်ငန်းများ

(၁) တိုက်ဆိုင်စစ်ဆေးခြင်း (စာမူနှင့်တိုက်စစ်ခြင်း)။ မူရင်းစာမူကြမ်းနှင့်အချောသတ်စာမူကို နှိုင်းယှဉ်ပြီး အချောသတ် စာမူ၏ အမှားများကို ရှာဖွေပြီးပြင်ဆင်ပါမည်။

(၂) မူကြမ်းတွင် ညွှန်ကြားထားသည့် Format အတိုင်း အော်ပရေတာက လုပ်ဆောင်ထားခြင်း ရှိ၊ မရှိ စစ်ဆေး ပါမည်။ ခေါင်းစဉ် Format (စာလုံးအရွယ် အစား၊ အကြောင်းအရာ၊ စာကြောင်းရေ၊ စာကြောင်း အနေအထား) ကိုစစ်ဆေးပြီး အမှားရှိပါက ပြင်ဆင်ပါမည်။

(၃) စာလုံး Format ကိုညွှန်ကြားထားသည့် အတိုင်း ဖြစ်၊မဖြစ် စစ်ဆေးပါမည်။ စာမျက်နှာတစ်ရွက်တွင်ပါဝင်ရမည့် စာကြောင်းရေ၊ စာကြောင်း အတွင်းပါဝင်သည့်စာလုံးရေ၊ စာကြောင်း အနေအထား (စာကြောင်းအကွာအဝေး)၊ စာရွက်အနေအထား၊ စာမျက်နှာနံပါတ်ကို စစ်ဆေးရပါမည်။

(၄) မူလစာပိုဒ် နှင့်ကွဲပြားနေသော နေရာကို ညွှန်ကြားထားသည့်အတိုင်း ဖြစ်၊ မဖြစ် ကိုးကား စာကြောင်း၊ ပုံကို ရှင်းလင်းထားခြင်း၊ ပုံနေရာ၊ သတိပြုရမည့် အချက်များကို စစ်ဆေးရမည်။

(၅) ကျောင်းသုံးစာအုပ် လမ်းညွှန်အတိုင်း လုပ်ဆောင်ခြင်း ရှိ၊ မရှိကြည့်ရပါမည်။ စာကြောင်းအစ၊ စာကြောင်းအဆုံး ၏သတ်မှတ်ချက်၊ ကွင်းစ၊ ကွင်းပိတ်အသုံးပြုပုံ၊ အင်္ဂလိပ်စာလုံး၊ ကိန်းဂဏန်း အသုံးပြုပုံတို့ဖြစ်သည်။

(၆) စာမူပါအမှားကို ပြင်ပါမည်။ ၍အကြောင်းအရာသည် ယခင် ရှင်းပြထားသည့်အတိုင်း ဖြစ်သည်။ သို့သော် ရေးသားသူ၏ အရေးအသားမှားခြင်း၊ နားလည်မှုလွဲမှားခြင်းဟုထင်ခဲ့လျှင်လည်း ချက်ချင်း မင်နီဖြင့်မရေးသေးဘဲ ဝေခွဲမရဒွိဟဖြစ်နေသောအချက်လက်များကို ခဲတံဖြင့် ရေးသားပြီး ရေးသားသူထံမေးမြန်းရပါမည်။ ရေးသားသူနှင့် စစ်ဆေးအတည် ပြုပြီးနောက်ဒွိဟဖြစ်နေသော အချက်များ မှန်ကန်နေပါက မင်နီဖြင့်ရေးသားရမည် ဖြစ်ပြီး၊ပြင်ဆင်ရန် မလိုအပ်ပါက ခဲတံဖြင့် ရေးသားထားသည်များကို ဖျက်ပစ်ရမည်။

(၇) လိုအပ်မှုရှိပါက ဓာတ်ပုံအား ပြင်ဆင်ရန်ညွှန်ကြားသည့်အခါလည်းရှိပါမည်။ သို့သော် အရောင်တောက်ပမှု (brightness)၊ contrast၊ အရောင်ပြင်ဆင်မှု အနည်းအကျဉ်းလောက်ကိုသာ၊ အော်ပရေတာ၏ ကျွမ်းကျင်မှုပေါ် မူတည်ပြီး တောင်းဆိုရမည်။ မပြင်ဆင်နိုင်သည့် (ဥပမာ-သခင်ကျ လွဲနေသည့် ဓာတ်ပုံ၊ brightness နှင့် Situration တို့ အမြင့်ဆုံးဖြစ်နေသည့် ဓာတ်ပုံ၊ ပြင်ဆင်မှု

အမြောက်အများ ပြုလုပ်ထားသည့် ရုပ်ပုံများ) ပါဝင်သည်။ ၄င်းတို့ကို ပြင်ဆင်ရန် အတင်းအကြပ် ညွှန်ကြားခြင်းမျိုး မလုပ်ဘဲ အသစ်တစ်ဖန် ပြန်လည်ရိုက်ကူးရမည်။ ဓာတ်ပုံ ဖြတ်တောက်မည့် နေရာကို ပြင်ဆင်ရန် လိုအပ်ပါက ညွှန်ကြားသည့် အခါတွင် ဖြစ်နိုင်ပါက ဖြတ်တောက်မထားသည့် နဂိုမူလ ဓာတ်ပုံကို print ထုတ်ပြီး မိမိလိုချင်သည့်အပိုင်းကို လိုင်းဆွဲပြီး တိကျစွာ ညွှန်ကြားရမည်။ ပုံကြီးချဲ့သည့် အခါတွင် resolution ကျသွားသည့်အတွက် ၃၀၀၆၈ ကို ထိန်းသိမ်းထားနိုင်သည့် အတိုင်းအတာ အတွင်း ပြုလုပ်ရမည်။

(၈) (၁)မှ(၇)အထိ ပြင်ဆင်ပြီးသောစာမူကို ရေးသားသူထံပေးပြီးအမိကအကြောင်းအရာ များကို စစ်ဆေးရပါမည်။ (၆)မှ သံသယရှိဟ အချက်အလက်များ ဖြေရှင်းခြင်းနှင့် ပညာရပ်ဆိုင်ရာ ဝေါဟာရများကို စစ်ဆေးရပါမည်။ အထက်ပါ လုပ်ငန်းစဉ်များအားလုံး ပြီးစီးပါက ပြင်ဆင်ပြီးသော စာမူကို အော်ပရေတာထံသို့ ပေးပို့ရပါမည်။

※ပထမအဆင့်မူကြမ်းစစ်ဆေးခြင်း နှင့် ဒုတိယအဆင့် မူကြမ်းစစ်ဆေးခြင်းနောက်ပိုင်း ပြင်ဆင်မှုတွင် မတူညီသော အချက်များ

ပထမအဆင့်မူကြမ်းစစ်ဆေးခြင်း (ရေးသားသူက စစ်ဆေးခြင်း) နှင့် ဒုတိယအဆင့် မူကြမ်း စစ်ဆေးခြင်း နောက်ပိုင်း ပြင်ဆင်ရာတွင် အမိက မတူညီသောအချက်မှာ ဒုတိယအဆင့် မူကြမ်းစစ်ဆေးရာတွင် စာလုံးပေါင်း အမှား၊ စာလုံးအကျများကို အမိကထားပြင်ဆင်ခြင်းဖြစ်သည်။ ပထမမူကြမ်းတွင် မတင်မကျ၊ မရှင်းလင်းသော အကြောင်းအရာများကို ဖြေရှင်းခြင်း၊ ရေးသားသူမှ စကားလုံး အသုံးအနှုန်း၊ အကြောင်းအရာကို စစ်ဆေးရမည် ဖြစ်ပါသည်။

※ရေးသားသူမှ ပြင်ဆင်ခြင်း

ရေးသားသူက ပြင်ဆင်ခြင်းမှာ စာမူကို ရေးသားထားသောသူက ပြင်ဆင်ခြင်းဖြစ်သည်။ ပထမအဆင့် မူကြမ်း ပြင်ဆင်ခြင်း၊ ပြင်ဆင်ချက် လျော့နည်းလာသော၊ ဒုတိယအဆင့် မူကြမ်းပြင်ဆင်ခြင်း၊ တတိယအဆင့် မူကြမ်းပြင်ဆင်ခြင်းတွင်လည်း ပြုလုပ်နိုင်ပါသည်။ ရေးသားသူဘက်မှ အမြင်ဖြင့် စစ်ဆေးခြင်းများ ပြုလုပ်ရပါမည်။

ဒုတိယအဆင့် မူကြမ်းပြင်ဆင်ခြင်း

မင်နီ ရေးသွင်းထားသော ပထမအဆင့်မူကြမ်း ပြန်ရလာပါက အော်ပရေတာက မင်နီဖြင့်ပြင်ထား သည့်အတိုင်း စာစီစာပြင်ခြင်းပြုလုပ်ပြီး၊ နောက်တစ်ကြိမ် ပြင်ဆင်ပြီးသောစာမူကိုပြန်ပေးရပါမည်။ ၄င်းကို ဒုတိယအဆင့် မူကြမ်း ပြင်ဆင်ခြင်း ဟုခေါ်ပါသည်။

ဒုတိယအဆင့် မူကြမ်းပြင်ဆင်ခြင်းလုပ်ငန်းများ

(၁) ပထမအဆင့်မူကြမ်းတွင် မင်နီဖြင့် ရေးသားထားသည်များကို ပြင်ဆင်ပြီးခြင်း ရှိ၊ မရှိ စစ်ဆေးပါမည်။ ဤလုပ် ဆောင်ချက်ကို မင်နီဖြင့် တိုက်ဆိုင်စစ်ဆေးခြင်းဟု ခေါ်သည်။ ထို့နောက် ပထမအဆင့် မူကြမ်းကို စစ်ဆေးပြီး ကြောင်း အမှတ်အသားအဖြစ် မင်ပြာဖြင့် အမှတ်အသားထည့်ပါမည်။ အမှား ပြင်ဆင်ခြင်း ပြုလုပ် မထားသော နေရာ၊ ပြင်ဆင်ထားသော်လည်း အမှားကျန်ရှိနေသေးသော နေရာများကို အမှန်ပြင်ပြီး မင်နီဖြင့် ဒုတိယအဆင့် မူကြမ်းတွင် ရေးသားပါမည်။

(၂) အားလုံးပြီးစီးပါက ဒုတိယအဆင့်စာမူကို ဖတ်ပါမည်။ အမှား ရှိ၊ မရှိ စစ်ဆေးပါမည်။ အမှား ရှိသေးပါက နောက်တစ်ကြိမ် မူရင်းစာမူကို စစ်ခြင်း သို့မဟုတ် ရေးသားသူကိုမေးမြန်းခြင်း ပြုလုပ်ကာ ဖြေရှင်းသွားရပါမည်။ ပြင်ဆင်ခြင်းမှုအနေနှင့်တိတိကျကျတိုက်ဆိုင်စစ်ဆေးခြင်း

ဖြစ်ပြီး၊ ရေးသားသူ၏ ရေးသားမှုအမှား၊ နားလည်မှု လွဲမှားခြင်းကိုပြင်ဆင်ခြင်း၊ ရေးသားသူ အများအပြားရှိခဲ့ပါက စကားလုံးအသုံးအနှုန်းများကို တစ်သမတ်တည်း ပြုလုပ်ခြင်းများကို လုပ်ဆောင်ရပါမည်။

※ ဒုတိယအဆင့်မူကြမ်းတွင်မင်နီနေရာနည်းလျှင် (စာမျက်နှာများတွင် ၁ နေရာ ၂ နေရာသာရှိပါက) မင်နီကို မြင်သာစေရန် ထိုဘေးပတ်လည်ကို အပြာရောင်မင်ဖြင့် ဘောင်ကြီးကြီးခတ်၍ လုပ်ဆောင်ခြင်းဖြင့် အမြင်လွှမ်းမှုကို ကာကွယ်နိုင်ပါသည်။ ထိုအချိန်တွင် ပြင်ဆင်ရမည့် စာမျက်နှာတွင် အမှတ်အသားစာရွက် ကပ်ထားပါ။

※ ဒုတိယအဆင့်မူကြမ်းကို ပြန်လက်ခံချိန်တွင် မာတိကာ၊ မူပိုင်ခွင့်များပါ ပါဝင်သည့်စာအုပ် တစ်အုပ်လုံး (Proof Sheet) ကိုတွဲပြီး အစမှအဆုံးတွဲချုပ်ကာ ပြန်ပေးရပါမည်။

※ ဒုတိယအဆင့် မူကြမ်းတွင် စာမျက်နှာအားလုံး ပါဝင်သည့်အတွက် စာမျက်နှာအားလုံးကို သေချာစွာ ဖတ်ရှုရန် လိုအပ်ပါသည်။ စာမျက်နှာအားလုံးကိုဖတ်ခြင်းဖြင့် 'သမာဆေ အမှား၊ စာမျက်နှာနံပါတ် စစ်ဆေးခြင်း၊ စာမျက်နှာနံပါတ် နှင့် မာတိကာ ကိုက်ညီမှု ရှိ၊ မရှိ စစ်ဆေးနိုင်ပါမည်။

တတိယအဆင့် မူကြမ်း သို့မဟုတ် နောက်ဆုံးမူကြမ်း
(တတိယအဆင့်မူကြမ်း သို့မဟုတ် နောက်ဆုံးမူကြမ်း၏ လုပ်ငန်းများ)

(၁) ဒုတိယအဆင့်မူကြမ်း ပြန်ရချိန်တွင် စာမူ၌ မင်နီအမှားနည်းခြင်းနှင့် ရှိလျှင်လည်း လွယ်ကူ ရှိုရှင်းသော အမှား ဖြစ်ပါက ပြင်ဆင်ရန်မလိုဟု သတ်မှတ်ပါသည်။

(၂) ဒုတိယအဆင့်စာမူတွင် မင်နီများနေခဲ့ပါက တတိယအဆင့်စာမူကို ထုတ်ရပါမည်။ သုံးခေါက်မြောက် စစ်ဆေးမှု ပြုလုပ်ရန် လိုအပ်ပါသည်။ တတိယအဆင့် မူကြမ်းလိုအပ် သို့မဟုတ် နောက်ဆုံးအဆင့် မူကြမ်းလိုအပ် ဟု ရှေ့ဆုံး စာမျက်နှာတွင် ရေးသားထားရပါမည်။ ဒုတိယအကြိမ် မူကြမ်းပြင်ဆင်မှု ပြီးစီးခြင်း ရှိ၊ မရှိ နောက်တစ်ကြိမ် စစ်ဆေး ရန် ဖြစ်ပါသည်။

(၃) အမှားလုံးဝမရှိပါက ပြင်ဆင်မှုပြီးစီး ဟု ရေးရပါမည်။ ၍အဆင့်တွင် ပြင်ဆင်မှု ပြီးဆုံးပါမည်။ တတိယအဆင့် မူကြမ်းပြန်ပေးရာတွင် ပြင်ဆင်ရန် လိုအပ်သောစာမျက်နှာကိုသာ ပြင်စေပြီး ပြင်ဆင်ရန် မရှိသော စာမျက်နှာကို ချန်ထားခြင်းများလည်း လုပ်နိုင်ပါသည်။ ၄င်းကို နောက်ဆုံး ထုတ်နုတ်ခြင်း ဟုခေါ်ပါသည်။

၂။ Plate making အဆင့်ဆင့်

ပထမအဆင့်မူကြမ်းစစ်ဆေးခြင်း

Plate making အဆင့်တွင် မူကြမ်းစာမူကို ပထမအဆင့် စစ်ဆေးခြင်းဖြစ်ပြီး ပုံနှိပ်ရန် အရောင် ပြင်ဆင်ခြင်း ဟုခေါ်သည်။ ၍အဆင့်တွင် အောက်ပါတို့ကို ပြုလုပ်မည်။

    (၁) စာမျက်နှာအထားအသို စစ်ဆေးခြင်း (နံပါတ်စဉ် မှန်ကန်ခြင်း ရှိမရှိ စစ်ဆေးခြင်း)

    (၂) Layout အဆင့် ပြီးဆုံးချိန်တွင် မင်နီဖြင့် မှတ်သားထားသည့်နေရာများ မှန်ကန်စွာ ပြင်ဆင်ထားခြင်း ရှိမရှိ စစ်ဆေးခြင်း

    (၃) အသံထွက် ရွှတ်ဖတ်ကာ မှားနေသည့် စာလုံးပေါင်းသတ်ပုံများကို စစ်ဆေးခြင်း

    (၄) ဓာတ်ပုံ၊ ပန်းချီ၊ မြေပုံများ၏အရောင် အနေအထား စသည်တို့ကို နောက်ဆုံးအနေဖြင့် စစ်ဆေးမှုပြုလုပ်ခြင်း

    ※ ပုံနှိပ်ရန် Data များ ပေးအပ်ပြီးနောက် စီမံချက်က ပါဝင်တော့မည် မဟုတ်သော်လည်း စာမျက်နှာ အထား အသိများ စစ်ဆေးရန် လိုအပ်သည်။

ဒုတိယအဆင့်၊ နောက်ဆုံးမူကြမ်း စစ်ဆေးခြင်း

အရောင်ပြင်ဆင်ခြင်းတွင် ပြင်ဆင်ရန် အရေအတွက်နည်းပါက ပြင်ဆင်ရန်မလို ဟုသတ်မှတ်နိုင်သော်လည်း ပြင်ဆင်ရန်နေရာများလျှင် သို့မဟုတ် ပြင်ဆင်ထားသည်များကို စစ်ဆေးချင်သည့်အခါ နောက်ဆုံးအဆင့် မူကြမ်းကို ထုတ်ကာ စစ်ဆေးပါမည်။ ပုံနှိပ်သူဘက်မှ စာမူရေးသားသူများ၏ ပြင်ဆင်ထားချက်များကို စစ်ဆေးပေးစေလိုသည့် အခါတွင်လည်း နောက်ဆုံးအဆင့် မူကြမ်းကို ထုတ်သည့်အခါများလည်းရှိပါသည်။

တည်းဖြတ်သူက ပြင်ဆင်ရန်မလို သို့မဟုတ် ပြင်ဆင်မှုပြီးစီးပါက ပုံနှိပ်စက်သို့ data ကို PDF ဖြင့် ပေးပို့မည်။ ဤအဆင့်ကို အဆုံးသတ် ပုံနှိပ်ရန်အဆင့် (ready for the press plate) ဟု ခေါ်သည်။

မူကြမ်းစိစစ်ရာတွင် စိစစ်ရမည့်အချက်များမှာ အောက်ပါအတိုင်း ဖြစ်သည်။ စိစစ်ရမည့် တာဝန်ခံများမှာလည်း အောက်ပါအတိုင်းဖြစ်သည်။

- ❖ အကြောင်းအရာ(ဓာတ်ပုံ၊ပန်းချီပုံများ အပါအဝင်)--------- CDT
- ❖ ရေးသားဖော်ပြချက်များ၊ စကားလုံး အသုံးအနှုန်း --------- CDT
- ❖ မူပိုင်ခွင့် --- CDT
- ❖ Proof Reading အဆင့် (ဖွဲ့စည်းပုံ) --------------------- Operator
- ❖ ယှဉ်တွဲ၍စစ်ဆေးခြင်း -------------------------------CDT,Operator
- ❖ DTP (အချက်အလက်များနှင့် proof reading ပြုလုပ်ရမည့် စာရွက်စာတမ်းများ) -...ICT တာဝန်ခံ

စိစစ်ရမည့်အချက်များအား အဖွဲ့သားအားလုံးဖြင့် စိစစ်ရန်မလို�‌ဘဲ အကြောင်းအရာအလိုက် တာဝန်ခွဲဝေ စစ်ဆေး နိုင်သည်။ (စိစစ်ရမည့် အချက်တွင် ပါဝင်သော မလိုအပ်သောအချက်များကို ဖျက်ကာ၊ လက်ရှိအခြေအနေနှင့် ကိုက်ညီအောင်ပြုလုပ်ပြီး စိစစ်အသုံးပြုနိုင်ပါသည်။)

ကျောင်းသုံးပုံနှိပ်စာအုပ်တည်းဖြတ်ရာတွင် စီစစ်ရမည့်အချက်များ

CDT မှစီစစ်ရမည့်အချက်

			စီစစ်ရမည့်အချက်	မူကြမ်း အဆင့်	စီစစ်ပြင်ဆင်ခြင်း အဆင့်	ပုံနှိပ်ခြင်း မပြုလုပ်မီ အပြီးသတ်စစ်ဆေးခြင်း
အကြောင်းအရာ (ဓာတ်ပုံ ၊ပန်းချီပုံများ အပါအဝင်)	1		စာမျက်နှာအရေအတွက် စစ်ဆေးခြင်း			
		①	စာမျက်နှာများ အစဉ်လိုက်ရှိခြင်း	☐	☐	☐
		②	စာမျက်နှာအရေအတွက်သည် သတ်မှတ်ချက်နှင့်ကိုက်ညီခြင်း (၉၆မျက်နှာအောက်စာ အုပ်များသည်စာမျက်နှာ ၄ မျက်နှာ ဖောင်ထက် ကျော်လွန်နေပါသလား၊ နှင့်ကိုသဘောတူထားသည့်စာမျက်နှာအရေအတွက် နှင့် အကြမ်းအားဖြင့် ကိုက်ညီရှဲလား)	☐	☐	
		③	စာအုပ်ချုပ်ပြီး ထွက်လာမည့် စာအုပ် Format အား စစ်ဆေးခြင်း (အဖွင့်စာမျက်နှာနှင့်ပတ်သက်ပြီး Unit1 သည် ညာဖက်တွင်ရှိနေပြီး၊ Unit2 နှင့်နောက်ပိုင်းသင်ခန်းစာများသည် ဘာသာရပ်အလိုက်သတ်မှတ်ချက်အတိုင်းဖြစ်ပါ ရှဲလား။ နောက်ဆုံးစာမျက်နှာသည် Guidline တွင် သတ်မှတ်ထားသည့်အတိုင်း ဖြစ်ပါရှဲလား။)	☐	☐	
		④	အခန်း၊သင်ခန်းစာ၊စာသင်ချိန်၊လုပ်ငန်းစသည့် နံပါတ်စဉ်များ မှန်ကန်မှုရှိခြင်း	☐	☐	☐
	2		အကြောင်းအရာပါ စာသားများ			
		①	အရေးအသားများစစ်ဆေးခြင်း(အရေးစာသား၊ အပြောစာသား စသည်ဖြင့်)	☐	☐	
		②	ပုံနှိပ်အမှားများစစ်ဆေးခြင်း	☐	☐	☐
		③	Chapter,Unit စသည့်ခေါင်းစဉ်များကို စစ်ဆေးခြင်း	☐	☐	☐
		④	အကြောင်းအရာနှင့် ဓာတ်ပုံ၊ ပန်းချီပုံများ ကိုက်ညီမှုရှိခြင်း	☐	☐	

			စိစစ်ရမည့်အချက်	မူကြမ်း အဆင့်	စိစစ်ပြင်ဆင်ခြင်း အဆင့်	ပုံနှိပ်ခြင်း မပြုလုပ်မီ အပြီးသတ်စစ်ဆေးခြင်း
		⑤	မေးခွန်း၊ အနစ်ချုပ်၊ ကိုးကားစသည်တို့ကို ဖော်ညွှန်းသည့် Logo Mark များ ကို စစ်ဆေးခြင်း	☐	☐	
	3		အကြောင်းအရာစာသားနှင့် ပူးတွဲအချက်အလက်များကို ယှဉ်တွဲစစ်ဆေးခြင်း			
		①	မာတိကာနှင့်ယှဉ်တွဲစစ်ဆေးခြင်း	☐	☐	☐
		②	「.......စာမျက်နှာမှာ သင်ကြားခဲ့သည့်အတိုင်း 」 စသည်ကဲ့သို့ ဖော်ပြချက်တွင်၊ စာမျက်နှာနံပါတ်များ မှန်ကန်မှုရှိခြင်း	☐	☐	☐
		③	Banner အပေါ်ရှိ သင်ခန်းစာအမည်မှန်ကန်ခြင်း		☐	☐
	4		ပန်းချီပုံ၊ ဓာတ်ပုံ			
		①	(ဌားရမ်းအသုံးပြုသည့် ဇယားနှင့်ဓာတ်ပုံများ အတွက်) အချက်အလက်များ စစ်ဆေးခြင်း (ဓာတ်ပုံရိုက်သည့်နေရာ၊ခုနစ်စသည်တို့ကို မေးမြန်းပြီး မှတ်သားထားပါသည်)	☐	☐	
		②	လူပုဂ္ဂိုလ်နှင့်သက်ဆိုင်သည့် အလုပ်အကိုင်၊ အဝတ်အစား၊ရာသီဥတုစသည့်ဖော်ပြချက်များသည် မှန်ကန်ကိုက်ညီမှု ရှိခြင်း	☐	☐	☐
		③	မူပိုင်ခွင့်ကို ချိုးဖောက်သည့်အရာများ ပါဝင်မှုရှိခြင်း(ဥပမာ- ဓာတ်ပုံမှာပါတဲ့သူတွေက အဲဒီဓာတ်ပုံကိုထုတ်ဝေဖို့ သဘောတူပါရဲ့လား။)	☐	☐	☐
		④	ဓာတ်ပုံများ Resolution ကိုက်ညီပါသည်။ အရောင်စပ်ရာတွင် မှောင်နေမှုရှိခြင်း	☐	☐	☐
		⑤	ဓာတ်ပုံဇောက်ထိုးဖြစ်မနေခြင်း (ဒေတာမူကြမ်းတွင် တမင်တကာဘယ်ညာလှည့်မထားသရွေ့ ဇောက်ထိုးမဖြစ်ပါ။ Negative,Positive ဖလင်ကို ဌားရမ်းသုံးစွဲသည့်အခါတွင်သာဖြစ်သည်)	☐	☐	☐

		စိစစ်ရမည့်အချက်	မူကြမ်း အဆင့်	စိစစ်ပြင်ဆင်ခြင်း အဆင့်	ပုံနှိပ်ခြင်း မပြုလုပ်မီ အပြီးသတ်စစ်ဆေးခြင်း
	5	�’ ဘာသာ၊ လူမျိုး၊ ကျားမ၊ မသန်စွမ်းမှု၊ ကိုယ်ဟန် အနေအထားနှင့်လူမှုစီးပွားရေးစသည့်နောက်ခံ အကြောင်းအရာများနှင့်ပတ်သက်ပြီး သာတူညီမျှရှိသည့် အကြောင်းအရာဖြစ်ခြင်း။ (တစ်ဖက်သက်ဖော်ပြမှု၊ ခွဲခြားဆက်ဆံဖော်ပြမှုများ မရှိပါ)	□	□	□
	6	ကလေးများ၏လုပ်ငန်း(Activity)များတွင် ဘေးအန္တရာယ် အပြည့်အဝရှိခြင်း။	□	□	□
	7	ကုမ္ပဏီ၊အဖွဲ့အစည်းများအားကြော်ငြာသလို ဖြစ်နေသည့်အကြောင်းအရာများ ပါဝင်မှုမရှိခြင်း။	□	□	□
	8	Color universal design:CUD အမြင်အရ ကာလာအရောင်ကိုစစ်ဆေးခြင်း(ပန်းချီ၊ ဓာတ်ပုံ၊ လိုင်း၊ Logo စသည့်ဖြင့်)		□	□
	9	လေ့ကျင့်ခန်းမေးခွန်းများအား စစ်ဆေးခြင်း			
		ခက်ခဲမှု(ခက်ခဲလွန်းခြင်း၊လွယ်ကူလွန်းခြင်းကင်း ပါရဲ့လား)၊ ကိန်းဂဏန်းများ အသုံးပြုရာတွင် ထပ်နေခြင်း၊ လွဲနေခြင်း(ဥပမာ ကိန်းဂဏန်းတူ၊ အလားသဏ္ဌာန်တူကိန်းဂဏန်းများကို ထပ်ကာထပ်ကာ အသုံးပြုထားသလားဆိုသည်ကိုစစ်ဆေးခြင်း)	□	□	
		မေးခွန်းနှင့် အဖြေများကို ယှဉ်တွဲစစ်ဆေးခြင်း၊ အဖြေများ ကိုက်ညီမှုရှိ/မရှိ စစ်ဆေးခြင်း	□	□	□
အမှတ်အသားလက္ခ ဏာများ စသည့်	1	သင်္ကေတပုံသဏ္ဌာန်များစစ်ဆေးခြင်း		□	□
	2	ကိန်းဂဏန်းအမှတ်အသားများကို စစ်ဆေးခြင်း	□	□	□
	3	ယူနစ်အမှတ်အသားများကို စစ်ဆေးခြင်း	□	□	□
	4	ပုဂ္ဂိုလ်၊ ဒေသအမည်များကို စစ်ဆေးခြင်း	□	□	□

			စိစစ်ရမည့်အချက်	မူကြမ်း အဆင့်	စိစစ်ပြင်ဆင်ခြင်း အဆင့်	ပုံနှိပ်ခြင်း မပြုလုပ်မီ အပြီးသတ်စစ်ဆေးခြင်း
	5		ပညာရပ်ဝေါဟာရ၊သင်္ကေတစသည့်တို့ အား ရှင်းလင်းဖော်ပြထားသည့်နေရာများမှန်ကန်မှုရှိ/မရှိ စစ်ဆေးခြင်း	☐	☐	☐
	6		ခရစ်သက္ကရာဇ်၊မြန်မာသက္ကရာဇ်များကိုစစ်ဆေးခြင်း	☐	☐	☐
	7		(တစ်နှစ်တစ်ခါ ပေါင်းစည်းပြင်ဆင်မှုပြုလုပ်သည့် အခါ) ပြင်ဆင်ထားသည့် အချက်အလက်အားလုံး မှန်ကန်မှုရှိခြင်း		☐	☐
မူပိုင်ခွင့်	1		အခြားသူများ၏မူပိုင်ပစ္စည်းကိုကောက်နှုတ် အသုံးပြုသည့်အခါ မူရင်းနှင့် ယှဉ်တွဲစစ်ဆေးခြင်း	☐	☐	☐
	2		အခြားသူများ၏မူပိုင်ပစ္စည်းကိုကောက်နှုတ် အသုံးပြုသည့်အခါအကိုးအကားဖော်ပြချက်များကို မှန်ကန်မှုရှိစေရန် စစ်ဆေးခြင်း။			
	3		သ�‌ဘောတူခွင့်ပြုချက်များကိုစစ်ဆေးခြင်း (အသစ်ချုပ်ဆိုခြင်း၊ သက်တမ်းတိုးခြင်းများ အပါအဝင်)	☐	☐	☐
	4		မျက်နှာဖုံးနှင့်ကျောဖုံး၏ Copyright များကို စစ်ဆေးခြင်း		☐	☐
Format	1		စာမျက်နှာများ အစဉ်လိုက်ရှိခြင်း		☐	☐
	2		စာမျက်နှာနေရာစစ်ဆေးခြင်း		☐	☐
	3		ပုံနှိပ်ပလိပ်ပြား၏ နေရာ၊ အတိုင်းအတာကို စစ်ဆေးခြင်း		☐	☐
	4		ဖောင့်အမျိုးအစားနှင့်အရွယ်အစားစစ်ဆေးခြင်း		☐	☐
	5		Line SpacingကGuidelineသတ်မှတ်ချက် အတိုင်းဖြစ်/မဖြစ်စစ်ဆေးခြင်း		☐	☐
	6		အထွေထွေစစ်ဆေးခြင်း			
		①	Logo, Markများ၏ အမျိုးအစားနှင့် နေရာ		☐	☐
		②	ခေါင်းစဉ်စာသားများ၏ တည်နေရာ၊ ဖောင့်၊ အရွယ်အစား၊အရောင်		☐	☐
		③	Column Format(မျဉ်းကြောင်း၊ WordSpacing,LineSpacingစသည်ဖြင့်)		☐	☐
		④	ရှင်းလင်းချက်၊ ကိုးကားချက်များ၏ပုံစံနေရာကိုစစ်ဆေးခြင်း		☐	☐

		စိစစ်ရမည့်အချက်	မူကြမ်း အဆင့်	စိစစ်ပြင်ဆင်ခြင်း အဆင့်	ပုံနှိပ်ခြင်း မပြုလုပ်မီ အပြီးသတ်စစ်ဆေးခြင်း
7		ပန်းချီပုံများတွင် အစွန်းအထင်း အပြစ်အနာဆာရှိ/ မရှိစစ်ဆေးခြင်း		☐	☐
8		စာမျက်နှာ၂ဖက်တိုက်ဆိုင်စစ်ဆေးခြင်း(ရုပ်ပုံ တစ်ပုံတည်းအား ဘယ်ညာစာမျက်နှာ၂ရွက်ဖြင့် တဆက်တည်းဖော်ပြထားပါက) ဘယ်ညာတည်နေရာအရွယ်အစားကိုက်ညီမှုရှိ/မရှိ စစ်ဆေးခြင်း		☐	☐
9		Formatနှင့်ပတ်သက်ပြီး ပြင်ဆင်ရန်ညွှန်ကြား ချက်နှင့် တိုက်ဆိုင်ယှဉ်တွဲစစ်ဆေးခြင်း		☐	☐

အော်ပရေတာမှစီစစ်ရမည့်အချက်

			စိစစ်ရမည့်အချက်	မူကြမ်း အဆင့်	စီစစ်ပြင်ဆင် ခြင်းအဆင့်	ပုံနှိပ်ခြင်းမပြုလုပ်မီ အပြီးသတ်စစ်ဆေးခြင်း
ယှဉ်တွဲ စစ်ဆေး ခြင်း	1		မူရင်းစာမူ (သို့) ပြင်ဆင်ထားသည့်စာမူပါ မင်းနီနေရာများကို တိုက်ဆိုင်စစ်ဆေးခြင်း		☐	☐
Format	1		စာမျက်နှာများ အစဉ်လိုက်ရှိခြင်း		☐	☐
	2		စာမျက်နှာနေရာစစ်ဆေးခြင်း		☐	☐
	3		ပုံနှိပ်ပလိပ်ပြား၏ နေရာနှင့် အတိုင်းအတာကို စစ်ဆေးခြင်း		☐	☐
	4		ဖောင့်အမျိုးအစားနှင့်အရွယ်အစား စစ်ဆေးခြင်း		☐	☐
	5		Line SpacingကGuidelineသတ်မှတ်ချက်အ တိုင်းဖြစ်/မဖြစ်စစ်ဆေးခြင်း		☐	☐
	6		အထွေထွေစစ်ဆေးခြင်း			
		①	Logo, Markများ၏ အမျိုးအစားနှင့် နေရာ		☐	☐
		②	ခေါင်းစဉ်စာသားများ၏ တည်နေရာ၊ ဖောင့်၊ အရွယ်အစား၊အရောင်		☐	☐
		③	Column Format(မျဉ်းကြောင်း၊ WordSpacing,LineSpacingစသည်ဖြင့်)		☐	☐
		④	ရှင်းလင်းချက်၊ ကိုးကားချက်များ၏ပုံစံနေရာကိုစစ်ဆေးခြင်း		☐	☐
	7		ပန်းချီပုံများတွင် အစွန်းအထင်း အပြစ်အနာဆာရှိ/မရှိစစ်ဆေးခြင်း		☐	☐
	8		စာမျက်နှာ ၂ဖက်တိုက်ဆိုင်စစ်ဆေးခြင်း(ရုပ်ပုံတစ်ပုံတည်းအား ဘယ်ညာစာမျက်နှာ ၂ရွက်ဖြင့် တဆက်တတည်းဖော်ပြထားပါက) ဘယ်ညာတည်နေရာအရွယ်အစားကိုက်ညီမှုရှိ/မရှိ စစ်ဆေးခြင်း		☐	☐
	9		Formatနှင့်ပတ်သက်ပြီး ပြင်ဆင်ရန် ညွှန်ကြားချက်နှင့် တိုက်ဆိုင်ယှဉ်တွဲ၍ စစ်ဆေးခြင်း			
DTP နှင့် ဆက်စပ်ပြီး	1		ပုံနှိပ်ဒေတာများသည် နောက်ဆုံးပိတ် ပြင်ဆင်ထားသည့် Updatedဒေတာ ဖြစ်ခြင်း		☐	☐
	2		အသုံးပြုရန်ရည်ရွယ်မထားသည့်စာလုံး ဖောင့်များ ရောထွေးပါဝင်နေမှုမရှိခြင်း		☐	☐

	3		စာလုံးများလျှံနေမှုမရှိခြင်း		☐	☐
	4		စာလုံးများပျက်နေမှုများမရှိခြင်း		☐	☐
	5		တစ်ခုနှင့်တစ်ခုထပ်ပြီးဖော်ပြထားချက်သည် အစီစဉ်မှန်ကန်မှုရှိခြင်း		☐	☐
	6		Outlineလုပ်ထားခြင်း			☐
	7		တူညီသည့်စကားလုံးများထပ်နေသည့်နေရာများ မရှိခြင်း		☐	☐
	8		ဓာတ်ပုံResolutionမှန်ကန်ခြင်း		☐	
	9		RGBမဟုတ်ပဲ CMYK ဖြစ်ခြင်း		☐	☐
	10		ဓာတ်ပုံ Link များပျက်မနေခြင်း		☐	☐
	11		ဓာတ်ပုံ Format များ အားလုံးတူညီခြင်း (Bitmapဓာတ်ပုံသည်PSD၊ Vectorဓာတ်ပုံသည်AIနှင့် တစ်မျိုးစားတည်း ရှိပါသည်။)		☐	☐
	12		အရောင်၄ရောင်ထပ်ရာတွင် အနက်ရောင် မဖြစ်ခြင်း (မင်ပမာဏအား အများဆုံး အနေဖြင့် CMYKစုစုပေါင်းသည် 390%မရှိသော်လည်း၊ ပုံနှိပ်တိုက်ပေါ်မူတည်၍ ၎င်းထက်ပိုမိုလျော့နည်းစွာ သတ်မှတ်ထားသည်များလည်းရှိပါသည်။)		☐	☐
	13		0.1mm မပြည့်သည့် လိုင်းကြောင်း၊ ပါးလွှန်းသေးလွှန်းသည့် Banner မပါရှိပါ။ (ဆရာလမ်းညွှန်ပါ ကျောင်းသုံးစာအုပ်ဖော်ပြထားသည့် နေရာနှင့်ပတ်သက်၍ 0.1mm မပြည့်သည့် လိုင်းကိုလည်း အသုံးပြုနိုင်သော်လည်း သင့်လျော်မှုမရှိပါ)		☐	☐

IT အဖွဲ့မှစီစစ်ရမည့်အချက် (ပြင်ဆင်မှုအား အော်ပရေတာမှ လုပ်ဆောင်ပါမည်)

			စိစစ်ရမည့်အချက်	မူကြမ်း အဆင့်	စိစစ်ပြင်ဆင် ခြင်းအဆင့်	ပုံနှိပ်ခြင်းမပြုလုပ်မီ အပြီးသတ်စစ်ဆေးခြင်း
DTPနှင့် ဆက်စပ်ပြီး	1		ပုံနှိပ်ဒေတာများသည် နောက်ဆုံးပိတ် ပြင်ဆင်ထားသည့် Updatedဒေတာ ဖြစ်ခြင်း			☐
	2		အသုံးပြုရန်ရည်ရွယ်မထားသည့်စာလုံး ဖောင့်များ ရောထွေးပါဝင်နေမှုမရှိခြင်း			☐
	3		စာလုံးများပျက်နေမှုများမရှိခြင်း			☐
	4		တစ်ခုနှင့်တစ်ခုထပ်ပြီးဖော်ပြထားချက်သည် အစီစဉ်မှန်ကန်မှုရှိခြင်း			☐
	5		Outlineလုပ်ထားခြင်း			☐
	6		တူညီသည့်စကားလုံးများထပ်နေသည့်နေရာများ မရှိခြင်း			☐
	7		RGBမဟုတ်ပဲ CMYK ဖြစ်ခြင်း			☐
	8		ဓာတ်ပုံ Link များပျက်မနေပါ			☐
	9		Print ထုတ်သည့်အခါ ပုံမှန်မဟုတ်သည့်နေရာများမရှိပါ။			☐

နောက်ဆက်တွဲ ၄ တည်းဖြတ်သူအဖွဲ့

Editor			Coordinator	Operator	Illustrator
Chief Editor	1 person		5 persons		
Managing Editor	1 person				
Subjects	Editorial Staff				
	CDT	Curriculum Officer	1 person	9 persons	2 persons
Myanmar	1 person	1 person			
English	2 persons	1 person			
Mathematics	2 persons	1 person			
Science	2 persons	1 person			
Social Studies	3 persons	1 person			
Moral & Civics	1 person	1 person			
Life Skills	2 persons	1 person			
Physical Education	2 persons	1 person			
Performing Arts	2 persons	1 person			
Visual Arts	2 persons	1 person			

နောက်ဆက်တွဲ ၅ _ Color Universal Design (CUD)

(Color Universal Design ကို ထည့်သွင်းစဉ်းစားခြင်း)

လူသားများ၏ မျက်လုံးအတွင်းရှိ အမြင်အာရုံဆဲလ်များတွင် အနီ၊ အစိမ်း၊ အပြာကိုခံစားသိရှိ နိုင်သော အမျိုးအစား ၃မျိုးရှိသည်။

C အမျိုးအစား : ဆဲလ် ၃မျိုးလုံး (Lအမျိုးအစား၊ Mအမျိုးအစား၊ Sအမျိုးအစား) စုံလင်စွာ ပါဝင်သည်။

P အမျိုးအစား : အနီကို ခံစားသိရှိသော ဆဲလ် အားနည်းသည်။

D အမျိုးအစား : အစိမ်းကို ခံစားသိရှိသော ဆဲလ် အားနည်းသည်။

T အမျိုးအစား : အပြာကို ခံစားသိရှိသော ဆဲလ် အားနည်းသည်။

A အမျိုးအစား : ဆဲလ် ၃မျိုးစလုံး အားနည်းသည်။

စသည်ဖြင့် အမျိုးအစား ၅ မျိုး ခွဲခြားနိုင်ကာ ၊ C အမျိုးအစားမှအပ အခြားသူများသို့ အရောင်ပိုင်းဆိုင်ရာ ထည့်သွင်းစဉ်းစားမှုများ လိုအပ်သည်။ ယေဘုယျအားဖြင့် အောက်ပါအချက် များကို ထည့်သွင်း စဉ်းစားမည်။

(၁) စာလုံးများသည် အဖြူရောင်အောက်ခံတွင် အမည်းဖြင့် ရိုက်နှိပ်ခြင်းကို အခြေခံအားဖြင့် အသုံးပြုမည်။

(၂) အရောင်ကို ကြည့်ကာ ဆုံးဖြတ်စေသောနေရာများတွင် ထည့်သွင်းစဉ်းစားရန် အထူးလိုအပ်သည်။

(၃) P အမျိုးအစားသည် အနီရင့်ရောင်နှင့် အမည်းကိုခွဲခြားရန် ခက်ခဲသည့်အတွက် အနီအစား လိမ္မော်ရောင်ကို အသုံးပြုခြင်း၊ အနီရောင် အပေါ်ရှိ အနက်စာလုံးများကို ထူထူပြုလုပ်ကာ အလယ်တွင် အဖြူဖောက်ထားမည်။

(၄) D အမျိုးအစားသည် အစိမ်းရင့်ရောင်နှင့် အမည်းကိုခွဲခြားရန် ခက်ခဲသည့်အတွက် အစိမ်းအစား အပြာရောင် များသောအစိမ်းကို အသုံးပြုခြင်း၊ အစိမ်းရောင် အပေါ်ရှိ အနက်စာလုံးများကို ထူထူ ပြုလုပ်ကာ အလယ်တွင် အဖြူဖောက်ထားမည်။

နောက်ဆက်တွဲ ၆ ဒစ်ဂျစ်တယ်ပုံနှိပ်စက် အသုံးပြုခြင်း

(၁) ဒစ်ဂျစ်တယ်ပုံနှိပ်စက်ကို CREATE Project နှင့် သက်ဆိုင်သော စာရွက်စာတမ်းများကိုသာ ပုံနှိပ်ခွင့်ပြုသည်။ CREATE Project နှင့် မသက်ဆိုင်သော စာရွက်စာတမ်းများကို လုံးဝ ပုံနှိပ်ခွင့်မပြုပါ။

(၂) ဒစ်ဂျစ်တယ်ပုံနှိပ်ခြင်း၏ တာဝန်ခံများမှာ ဦးသော်ဇင်ဝင်း နှင့် ဦးဝင်းမြင့်ဦး ဖြစ်ပါသည်။ ပုံနှိပ်ခြင်း လုပ်ငန်းများအတွက် ဦးသော်ဇင်ဝင်းက Myanmarsar, English, Mathematics, Performing Arts, Visual Arts, Teacher Education, PR ,General Materials နှင့် ဦးဝင်းမြင့်ဦးက Science, Social Studies, Physical Education, Morality & Civics, Life Skills   ဘာသာရပ်များကို အသီးသီး တာဝန်ယူကြမည်ဖြစ်သည်။

(၃) တာဝန်ခံများတစ်ဦးဦး မရှိသည့်အခါတွင် အိုင်တီဝန်ထမ်း (ခိုင်ဇော် နှင့် အေးယုဇော်) တို့က ဝင်ရောက် တာဝန်ယူရမည်။

(၄) Printer ရွေးချယ်ခြင်း
 စုစုပေါင်းစာမျက်နှာ ၁၀၀ ကျော်လွန်သည့်အခါ (စာမျက်နှာစုစုပေါင်း × မိတ္တူအရေအတွက် =စာမျက်နှာ ၁၀၀ အရွက်ရေ ၅၀) ဒစ်ဂျစ်တယ်ပုံနှိပ်စက်ကို ပုံနှိပ်တာဝန်ခံများကို အကြောင်းကြား၍ အသုံးပြုရပါမည်။

(၅) ပုံနှိပ်ရန်အကြောင်းကြားခြင်း
 သင်ရိုးညွှန်းတမ်းအရာရှိ (Curriculum Officer) က order date , time, due date, time အကြောင်းအရာ၊ စာရွက် စာတမ်းအမည်၊ စာမျက်နှာအရေအတွက် နှင့် မိတ္တူအရေအတွက်များကို Admin Secretary ၏ စားပွဲပေါ်ရှိ Print Order Form ဖြည့်စွက်ရပါမည် ။ ထို့ နောက် ပုံနှိပ်မည့် Data ကို G4 Project Server ပေါ်မှ CREATE_G4-Printing folder သို့ပေးပို့ပြီး သက်ဆိုင်ရာ ပုံနှိပ်တာဝန်ခံ ကို အကြောင်းကြားရပါမည်။

(၆)ပုံနှိပ်ခြင်းလုပ်ငန်းစဉ်
 ပုံနှိပ်တာဝန်ခံသည် Curricullum Officer ထံမှ Order လက်ခံရရှိသည်နှင့် ပုံနှိပ်လုပ်ငန်းကို ချက်ချင်း စတင် ရပါမည်။ ပုံနှိပ်စက်တွင် လက်ရှိပုံနှိပ်နေသော Print Job ရှိပါက Cancel လုပ်၍ ကြားဖြတ်   ပုံနှိပ်ခြင်းကို ခွင့်မပြုပါ။ တာဝန်ခံများသည် Print Order နှစ်ခုနှင့်အထက် လက်ခံရရှိသည့်အခါ Deadline နီးကပ်နေသည့် Order အား Print Order Form တွင်ကြည့်ရှု၍ ဦးစားပေး ပုံနှိပ်ပေးရမည် ဖြစ်ပါသည်။ အကယ်၍ deadline နီးကပ်နေသည့် Order များထပ်နေလျှင်၊ မည်သည့်အလုပ်ကို ဦးစားပေးရမည်ကို ဆုံးဖြတ်ရခက်သည့် အချို့ .သော အခြေအနေမျိုးတွင် ဒေါ်မြတ်မြတ်ခိုင်က ဘာသာရပ် တစ်ခုချင်းစီ၏ အခြေအနေအပေါ်တွင် အခြေခံ၍ ညှိနှိုင်း ပေးပါလိမ့်မည်။ ပုံနှိပ်တာဝန်ခံများက ပုံမှန်မဟုတ်သော ကိစ္စများအတွက် ဆုံးဖြတ်ချက်ချပေးမည် မဟုတ်ပါ။ တာဝန်ခံများက ပုံနှိပ်စက်ကို အသုံးပြုသည့်အခါတိုင်း Printer အသုံးပြုသည် Start Date,Time နှင့် End Date,Time တို့ကို Order Form number နှင့်တကွ ဖြည့်သွင်းရမည်။ Print Server ရှိ Imported job ၊ Completed job log နှင့် Error job log တို့ကိုလည်း Delete လုပ်ခွင့် မပြုပါ

(၇) စာအုပ်ချုပ်ခြင်း (Binding)
ဒစ်ဂျစ်တယ်ပုံနှိပ်စက်၏ pin binding function ကို အသုံးပြုပါ။ Side staple (ဘေးချုပ်) - စာရွက်၁၀၀/စာမျက်နှာ ၂၀၀ အထိ/ Saddle staple (အလယ်ချုပ်) - စာရွက်၂၀/စာမျက်နှာ ၈၀ အထိ အသုံးပြုရပါမည်။

(၈) စာအုပ်အဖုံးထည့်ခြင်း (Cover paper)
ပြန်လည်ဆန်းစစ်ခြင်းအတွက် အကြမ်းထုတ်သည့်အခါ သာမန်စက္ကူကိုသာ အသုံးပြုရန် နှင့် အတည်ပြုချက်အတွက် နောက်ဆုံးတင်သွင်းသောအခါမှသာ art card စက္ကူကို အသုံးပြုရပါမည်။ Transparent binding film အသုံးပြုခြင်းကို ဒစ်ဂျစ်တယ်ပုံနှိပ်စက်တွင် ခွင့်မပြုပါ။

(၉) Printer Error တက်သည့်အခါ (သို့မဟုတ်) ပြုပြင်ထိန်းသိမ်းရန်လိုအပ်သည့်အခါတိုင်းတွင် IT Department ကို အကြောင်းကြားရန်နှင့် Print Operator များ ကိုယ်တိုင်ပြင်ဆင်ခြင်းကို ခွင့်မပြုပါ။

(၁၀) အဆိုပါ စည်းမျဉ်းစည်းကမ်းများ နှင့် လုပ်ထုံးလုပ်နည်းများအား လိုအပ်ပါက ပြန်လည် ပြင်ဆင်ခြင်းများ ရှိနိုင်ပါသည်။

နောက်ဆက်တွဲ ၇ ဆာဗာ (sever) ဖွဲ့စည်းပုံ

Grade 4	Curriculum			
		00.All_Subjects		
		01.Myanmar	01.CDT	
			02.CO	
			03.Operator	01.Illustration
				02.Photos
				03.Layout
				04.Textbook_Design
				05.PDF
			04.Illustration&Photos	
			05.Trial_Lessons_Videos	
		02.English	01.CDT	
			02.CO	
			03.Operator	01.Illustration
				02.Photos
				03.Layout
				04.Textbook_Design
				05.PDF
			04.Illustration&Photos	
			05.Trial_Lessons_Videos	
		03.Maths	01.CDT	
			02.CO	
			03.Operator	01.Illustration
				02.Photos
				03.Layout
				04.Textbook_Design
				05.PDF
			04.Illustration&Photos	
			05.Trial_Lessons_Videos	
		04.Science	01.CDT	
			02.CO	
			03.Operator	01.Illustration
				02.Photos
				03.Layout
				04.Textbook_Design
				05.PDF
			04.Illustration&Photos	
			05.Trial_Lessons_Videos	
		05.SocialStudies	01.CDT	
			02.CO	
			03.Operator	01.Illustration
				02.Photos
				03.Layout
				04.Textbook_Design
				05.PDF
			04.Illustration&Photos	
			05.Trial_Lessons_Videos	

Grade 4	Curriculum			
		06.LifeSkills	01.CDT	
			02.CO	
			03.Operator	01.Illustration
				02.Photos
				03.Layout
				04.Textbook_Design
				05.PDF
			04.Illustration&Photos	
			05.Trial_Lessons_Videos	
		07.Morality & Civics	01.CDT	
			02.CO	
			03.Operator	01.Illustration
				02.Photos
				03.Layout
				04.Textbook_Design
				05.PDF
			04.Illustration&Photos	
			05.Trial_Lessons_Videos	
		08.Physical Education	01.CDT	
			02.CO	
			03.Operator	01.Illustration
				02.Photos
				03.Layout
				04.Textbook_Design
				05.PDF
			04.Illustration&Photos	
			05.Trial_Lessons_Videos	
		09.Visual Arts	01.CDT	
			02.CO	
			03.Operator	01.Illustration
				02.Photos
				03.Layout
				04.Textbook_Design
				05.PDF
			04.Illustration&Photos	
			05.Trial_Lessons_Videos	
		10.Performing Arts	01.CDT	
			02.CO	
			03.Operator	01.Illustration
				02.Photos
				03.Layout
				04.Textbook_Design
				05.PDF
			04.Illustration&Photos	
			05.Trial_Lessons_Videos	

Appendix 12

Monitoring Report on Training Workshop for Introduction of New Primary Curriculum (Grade 4) for In-service Teachers

**MONITORING REPORT
ON
TRAINING WORKSHOP FOR INTRODUCTION OF
NEW PRIMARY CURRICULUM (GRADE 4)**

FOR IN-SERVICE TEACHERS

September 2020

**THE PROJECT FOR CURRICULUM REFORM
AT PRIMARY LEVEL OF BASIC EDUCATION IN MYANMAR (CREATE)**

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Central Training (1st batch)

Central Training (1st batch)

Central Training (1st batch)

Central Training (1st batch)

Central Training (2nd batch)

Central Training (2nd batch)

PHOTOS

Central Training (2nd batch)

Central Training (2nd batch)

Township Training

Township Training

Township Training

Township Training

ABBREVIATIONS

CDT	Curriculum Development Team
CREATE	The Project for Curriculum Reform at Primary Level of Basic Education in Myanmar
DBE	Department of Basic Education
EC	Education College
G3	Grade 3
G4	Grade 4
G5	Grade 5
LS	Life Skills
MC	Morals and Civics
MEDP	Myanmar Digital Education Platform
MOE	Ministry of Education
NA	Not available
ND	North Dagon
PA	Performing Arts
PE	Physical Education
S/R	State or Region
SS	Social Studies
TB	Student's Textbook
TET	Teacher Education Team
TG	Teacher's Guide
TOT	Training of Trainers
TS	Township
VA	Visual Arts

1. **Framework of CREATE Monitoring for New Primary Curriculum Introduction Training (G4)**

1.1 Background

The new primary curriculum introduction is one of the major efforts of Myanmar education reform for the quality improvement in basic education. Comprehensive reviews and major revision have been carried out not only in subjects and contents design but also in pedagogical dimension at the primary level. This is the fourth school year of the new primary curriculum since its commencement in 2017/2018. The training program aims to introduce Grade 4 (hereinafter referred to as G4) curriculum prior to its introduction at school.

One of the major changes of this training from the Grade 3 (G3) curriculum introduction training was that the Ministry of Education (MOE) assigned primary school heads and teachers to perform as trainers in all layers of G4 training.

In addition, the modality of G4 introduction training was forced to be changed before conducting S/R training due to contingencies caused by Covid-19. Central training was implemented as planned, but S/R training and District level training were canceled. Instead, a week long self-study and 2 days online training of trainers (TOT) was conducted. The trained trainers implemented 6 days of face-to-face training at the Township level.

This report compiles results of the monitoring conducted by the Project for Curriculum Reform at Primary Level of Basic Education (CREATE), namely CREATE Monitoring, at the Central training, 2 days online TOT and Township training at North Dagon Township in Yangon Region to see the effectiveness of the training in terms of program and modality and to draw feedbacks for the training for Grade 5 (G5).

1.2 Objectives of CREATE Monitoring

CREATE Monitoring for G4 training had the following objectives:
- To confirm whether the new primary curriculum was delivered to the participants appropriately with respect to:
  - Implementation
  - Participants' understanding
  - Appropriateness of the contents, materials and method of the training
  - Appropriateness of the logistics of the training
- To find out any issues to be considered in the next year's training.

CREATE monitoring focused on effectiveness of the newly assigned trainers of S/R training, i.e., primary school heads and teachers, in comparison with EC teacher educator as S/R training trainers. Moreover, CREATE monitored effectiveness of the new modality of the training, i.e., online TOT followed by a face-to-face Township training.

1.3 Methodology of CREATE Monitoring

CREATE requested training participants to fill in an evaluation sheet including a post-test to identify the level of comprehension of participants (see Annex 1 for the evaluation sheet). Trainers and participants of North Dagon township training were also requested to

compare this year's training with the training in previous years. Moreover, CREATE Teacher Education Team (TET) conducted direct observation at the North Dagon township training. CREATE TET also had various reflection sessions on the Central training with CREATE Curriculum Development Team (CDT). All the data and information were compiled and discussed among TET members to draw lessons and issues for coming G5 training.

1.4 Modality of G4 Training (Planned and Implemented)

Participants in the Central training were changed from EC teacher educators to primary school heads and teachers, partly due to the busy schedule of EC teacher educators who acted as trainers in G3 training and partly due to relatively less experienced teacher educators are assigned as G3 trainers. The four-layer training was planned from the Central training, the S/R, District training and the Township training as previous years. Table 1 shows the planned G4 training modality, including trainers, participants, venues and schedule of each layer.

Table 1: Modality of G4 Training (Planned)

Training	Trainer	Participants	Venue	Schedule
Central (Layer 1)	CREATE TET and CDT members	Primary school heads and teachers selected in each S/R	Htauk Kyant Training center (Yangon)	January 14-24 or January 27-February 6 for 9 days covering 5 subjects in each batch
S/R (Layer 2)	Participants of the Central training	Primary school heads and teachers selected in each district	Appropriate venues in each S/R	March 23-April 8 for 14 days covering 10 subjects
District (Layer 3)	Participants of the S/R training	Primary school heads and teachers selected in each township	Appropriate venues in each district	April 20-May 6 for 14 days covering 10 subjects
Township (Layer 4)	Participants of the District training	All primary school heads and teachers teaching primary classes	Appropriate venues in each township	May 8-23 for 14 days covering 10 subjects

Source: CREATE

Central training was implemented as planned in two batches. The training for Group A was conducted from January 14 to 24, 2020, and that for Group B was from January 27 to February 6, 2020. However, due to Covid-19, the modality of following layers was changed. The training at S/R and district levels was canceled. Instead, a week long self-study and 2 days online TOT was conducted. Participants of online TOT were those who were supposed to be participants in S/R training and District training, and they were requested to study Central training videos edited and uploaded on the Myanmar Digital Education Platform (MDEP), as well as Student's Textbook (TB) and Teacher's Guide (TG) on MEDP before the 2 days online training. Then, 6 days face to face training was conducted at the township level. Since not all trainers of township training were able to participated in the TOT, they were requested to study in advance the recorded 2 days online TOT videos on MDEP. Table 2 shows the modality of the training that was actually implemented, including trainers, participants, venues and schedule of each layer. Table 3 shows the number of trainers, participants and supervisors at township training.

Table 2: Modality of G4 Training (Implemented)

Training	Trainer	Participants	Venue	Schedule
Central (Layer 1)	As planned	As planned	As planned	As planned
Online TOT (Layer 2)	CREATE TET members	Primary school heads and teachers selected from each township (The number of participants are not clearly known: approximately 300 training locations were used.	Online	May 21-: online self-learning using Central training lectures videos, TB and TG uploaded on MDEP
			Online	June 12 and 13: online TOT for 2 days covering 10 subjects
Township (Layer 3)	Participants of online TOT	All primary school heads and teachers teaching primary classes (total 206,567 teachers)	Online	June 13 and 14: online self-learning about recorded lectures of online TOT
			Appropriate venues in each township	June 15-20: face to face training for 6 days covering 10 subjects

Source: CREATE

Table 3: Participants of G4 Face to Face Township Training

No	State/region	Trainees	Trainer	Supervisor	Training staffs	Total
1	Kachin	7,049	1552	96	65	8,762
2	Kayah	2,621	272	136	38	3,067
3	Kayin	8,108	822	411	73	9,414
4	Chin	4,369	465	103	43	4,980
5	Sagaing	22,600	2,422	882	184	26,088
6	Tanintharyi	6,798	696	295	67	7,856
7	Bago (East)	9,678	2,065	516	77	12,336
8	Bago (West)	10,573	1,086	543	93	12,295
9	Magway	18,337	1,994	863	151	21,345
10	Mandalay	22,556	2,340	957	196	26,049
11	Mon	8,982	908	454	72	10,416
12	Rakhine	12,709	1,338	667	107	14,821
13	Yangon	14,464	2,884	721	154	18,223
14	Shan (South)	12,119	1,266	624	165	14,174
15	Shan (North)	8,865	957	296	90	10,208
16	Shan (East)	2,630	288	144	38	3,100
17	Ayerawaddy	30,028	3,106	720	219	34,073
18	NayPyiDaw	4,081	320	29	33	4,463
	Total	206,567	24,781	8,457	1,865	241,670

Source: DBE

1.5 Program of G4 Training (Implemented)

1) Central Training

Participants of Central training was divided by Group A and Group B, specializing 5 subject each. Group A participants learned Myanmar Language, English, Social Studies (SS), Morals and Civics (MC) and Performing Arts (PA) of the new G4 curriculum. Group B participants learned Mathematics, Science, Life Skills (LS), Visual Arts (VA) and Physical Education (PE). Both Group A and Group B studied "General sessions", including Pedagogy for G4 lessons, Assessment, school-based Continuous Professional Development (CPD) and preparation for the next layer of the training.

Within each group, participants are divided into 3 sections so that the number of participants in each section can be less than 40 to make the training more effective. Table 4 and 5 shows Group A and Group B programs respectively.

Table 4: Program of G4 Central Training Group A

Day (D)	Time	Session	Section 1	Section 2	Section 3
D1: Jan. 14	08:45-09:00		Opening		
	09:00-09:45		Orientation		
	09:45-10:30	Session 1	Pedagogy 1		
	10:45-12:15	Session 2	Pedagogy 2	Classroom Assessment	
	13:15-14:45-	Session 3	Classroom Assessment	Pedagogy 2	
D2: Jan. 15	9:00-10:30	Session 1	SS	Myanmar	MC
	10:45-12:15	Session 2	SS	Myanmar	MC
	13:15-14:45	Session 3	SS	Myanmar	MC
	15:00-16:00	Session 4	SS	Myanmar	MC
D3: Jan 16	9:00-16:00	Session 1-4	English	SS	Myanmar
D4: Jan 17	9:00-16:00	Session 1-4	PA	English	SS
D5: Jan 20	9:00-16:00	Session 1-4	MC	PA	English
D6: Jan 21	9:00-16:00	Session 1-4	Myanmar	MC	PA
D7: Jan 22	9:00-10:30	Session 1	Assessment 2		
	10:45-12:15	Session 2	Preparation for real lesson 1		
			English, MC	English, MC	English, MC
	13:15-14:45	Session 3	Preparation for real lesson 2		
			English, MC	English, MC	English, MC
D8: Jan 23	9:00-12:15	Session 1-2	Real lesson and reflection		
			English, MC	English, MC	English, MC
	13:15-14:00	Session 3-1	Preparation for S/R training (logistics)		
	14:00-14:45	Session 3-2	School-based CPD		
D9: Jan 24	9:00-10:30	Session 1	Preparation for training sessions		
			General session	MC, PA, Myanmar	English, SS
	10:45-12:15	Session 2	Preparation for training sessions		
			English, SS	General session	MC, PA, Myanmar
	13:15-14:45	Session 3	Preparation for training sessions		
			MC, PA, Myanmar	English, SS	General session
	14:45-15:15	Evaluation and Closing			

Source: CREATE

4

Table 5: Program of G4 Central Training Group B

Day	Time	Session	Section 1	Section 2	Section 3 3
D1: Jan 27	08:45-09:00	Opening			
	09:00-09:45	Orientation	Orientation		
	09:45-10:30	Session 1	Pedagogy 1		
	10:45-12:15	Session 2	Pedagogy 2 Classroom Assessment		
	13:15-14:45-	Session 3	Classroom Assessment	Pedagogy 2	
D2: Jan 28	9:00-10:30	Session 1	Mathematics	Science	PE
	10:45-12:15	Session 2	Mathematics	Science	PE
	13:15-14:45	Session 3	Mathematics	Science	PE
	15:00-16:00	Session 4	Mathematics	Science	PE
D3: Jan 29	9:00-16:00	Session 1-4	PE	Mathematics	Life Skills
D4: Jan 30	9:00-16:00	Session 1-4	Visual Arts	PE	Mathematics
D5: Jan 31	9:00-16:00	Session 1-4	Life Skills	Visual Arts	Science
D6: Feb 03	9:00-16:00	Session 1-4	Science	Life Skills	Visual Arts
D7: Feb 04	9:00-10:30	Session 1	Assessment (system, format) (P)		
	10:45-12:15	Session 2	Preparation for real lesson 1		
			Science, PE	Science, PE	Science, PE
	13:15-14:45	Session 3	Preparation for real lesson 2		
			Science, PE	Science, PE	Science, PE
D8: Feb 05	9:00-12:15	Session 1-2	Real lesson and reflection		
			Science, PE	Science, PE	Science, PE
	13:15-14:45-	Session 3	Preparation for State/Region training (logistics)		
D9: Feb 06	9:00-10:30	Session 1	Preparation for training sessions		
			General session,	Life Skills, VA, Mathematics	Science, PE
	1 10:45-12:15	Session 2	Preparation for training sessions		
			Science, PE	General session	Life Skills, VA, Mathematics
	13:15-14:45	Session 3	Preparation for training sessions		
			Life Skills, VA, Mathematics	Science, PE	General session
	14:45-15:15	Evaluation and Closing			

Source: CREATE

2) Online Self-learning by Online TOT Participants

MDEP platform opened on May 21, 2020 and G4 training videos, modules, TB and TG were uploaded for those who wished to study. According to the data provided by the Department of Basic Education (DBE) of MOE, 80,000 teachers were registered to the platform. Approximately 25,000 trainers of Township training, were requested to study those materials, but how many actually studied was not identified.

3) Online TOT

Approximately 25,300 Township training trainers attended

2 days online TOT was conducted on June 12 and 13, 2020. The online TOT was facilitated by CRATE TET members. The online training had approximately 300 connections (=training locations) and participants of the Central training were also invited to join the training. It is

not identified how many participants in total attended the on-line training. The online TOT program is shown in Table 6.

According to the information obtained by CREATE TET, 18 among 328 townships in the country could not attend the TOT due to the lack of internet facilities. As of September 2020, DBE does not have any specific plan and instructions for those townships. Most of the township without internet facilities are in the conflict or war area. Trainers of these areas are expected to study through self-learning of TB and TG, which were delivered in June 2020.

Table 6: Program of Online TOT

Day (D)	Time	Subject
D1: Jun. 12	9:00-9:50	Orientation, Pedagogy (1)(2), Assessment (1)
	10:00-10:50	Assessment (2), School-based CPD
	11:00-12:00	Myanmar
	13:00-13:50	LS
	14:00-14:50	SS
	15:00-16:00	Mathematics
D2: Jun. 13	9:00-9:50	MC
	10:00-10:50	VA
	11:00-12:00	PA
	13:00-13:50	Science
	14:00-14:50	PE
	15:00-16:00	English

Source: CREATE

4) Online Self-learning by Township Training Participants

Recorded online TOT lectures were uploaded on MEDP for Township training participants to study prior to the Township training. Studying Central training videos, TB and TG was not compulsory for Township training participants, but many teachers downloaded and became familiar with the contents before the Township training.

5) Township Training

Township training was conducted from June 15 to 20, 2020. The number of training days was reduced from 14 days to 6 days to minimize the contact hours of participants. The number of participants in a classroom was also reduced, but all the participants received face to face training with a greater number of trainers than planned. For example in North Dagon Township, participants were divided into 12 classrooms where 4 trainers each were assigned, totaling 48 trainers. Among 48 trainers, 47 attended online TOT and 1 had G1-G3 training experience.

Expected roles and responsibilities of trainers were reset due to insufficient time for preparation. Trainers were not expected to explain the information shown in the module nor answer all the questions that participants raised. Rather, trainers were expected to facilitate the discussion so that the participants find the answers by themselves. Trainers were also requested to pay careful attention to the safety and sanitation of the training environment and the way that activities were conducted. Since the length of training was reduced to 6 days, participants were expected to do homework to prepare for the next day and review the lesson for the day: Session 1 of the module of each subject needed to

be studied by participants prior to the training, and Session 2 and Session 3 were facilitated during the training. Table 5 shows Township training program.

Table 7: Program of Township Training

Day (D)	Time	Subject
D1: Jun. 15	9:00-9:15	Orientation
	9:15-10:15	Pedagogy for G4 Lessons (1)
	10:30-12:00	Pedagogy for G4 Lessons (2)
	13:00-14:30	Assessment (1)
	14:45-15:45	Assessment (2)
	15:45-16:15	School-based CPD
D2: Jun. 16	08:45-10:15	Myanmar: Session 2
	10:30-12:00	Myanmar: Session 3
	13:00-14:30	LS: Session 2
	14:45-16:15	LS: Session 3
D3: Jun. 17	08:45-10:15	Mathematics: Session 2
	10:30-12:00	Mathematics: Session 3
	13:00-14:30	MC: Session 2
	14:45-16:15	MC: Session 3
D4: Jun. 18	08:45-10:15	SS: Session 2
	10:30-12:00	SS: Session 3
	13:00-14:30	VA: Session 2
	14:45-16:15	VA: Session 3
D5: Jun. 18	08:45-10:15	Science: Session 2
	10:30-12:00	Science: Session 3
	13:00-14:30	PA: Session 2
	14:45-16:15	PA: Session 3
D6: Jun. 19	08:45-10:15	English: Session 2
	10:30-12:00	English: Session 3
	13:00-14:30	PE: Session 2
	14:45-16:15	PE: Session 3
	16:20-16:45	Training evaluation, Closing

Source: CREATE

2. Implementation of CREATE Monitoring

2.1 Selection of CREATE Monitoring Sites

Table 8 shows planned monitoring sites. Yangon Region, Yangon (East) District and North Dagon Township were selected to make careful, detail and continuous observation. Hpa-an State and its district and township were selected to see the effect of cascade training system.

Table 8: Monitoring Sites (Planned)

Training	Yangon Region	Hpa-an State
Central training	Htauk Kyant Training Center	
State/Region training	Yangon Region	Hpa-an State
District training	Yangon (East) District	Hpa-an District
Township training	North Dagon Township	Hpa-an Township

Source: CREATE

Due to the restrictions by Covid-19, however, CREATE monitored only Central training, online TOT and Township training in North Dagon Township.

2.2 Members Involved in CREATE Monitoring

CREATE TET members were assigned to conduct direct observation on all sessions of the Central training and North Dagon Township training. Moreover, an evaluation sheet was applied at the end of these training. Online TOT was facilitated and observed by CREATE TET members as well.

2.3 Analysis

Collected data and information were compiled and analyzed by CREATE. Findings from direct observation were discussed, and lessons and recommendations for G5 training were drawn by TET members. Data and information obtained from the evaluation sheet were entered into Excel sheet for analysis.

3. Results of CREATE Monitoring

3.1 Basic Information of Participants in Monitored Training Sites

Number of participants in the monitored training as well as several reference data are shown in Table 9. A few participants did not respond to the evaluation sheet, but the number was quite few, therefore, the report calls respondents as training participants. G4 Central training for EC teacher educators[1] and G3 North Dagon Township training are shown as reference in this analysis for comparison.

Table 9: Numbers Participants by Sex

| | G4 Central training (INSET) | | G4 ND TS training | | | | Reference | | | |
| | | | Trainers | | Participants | | G4 EC Central training participants | | G3 ND TS training selected participants | |
	F	%	F	%	F	%	F	%	F	%
Male	113	45.6	8	17.0	2	0.8	45	15.1	0	0.0
Female	124	50.0	39	83.0	256	97.3	241	80.9	36	94.7
NA	11	4.4	0	0.0	5	1.9	12	4.0	2	5.3
Total	248	100.0	47	100.0	263	100.0	298	100.0	38	100.0

ND: North Dagon, TS: Township
Source: CREATE

Figure 1 shows current position of the G4 training participants. As shown in the figure, more than 85% of G4 Central training participants are primary school heads, whereas North Dagon Township trainers were composed of primary school teachers and primary school heads.

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[1] Training for introducing the new G4 curriculum is conducted for EC teacher educators as well. The training program is similar to G4 central training for in-service teachers but target subject-wise teaching methodology teachers of Education Colleges.
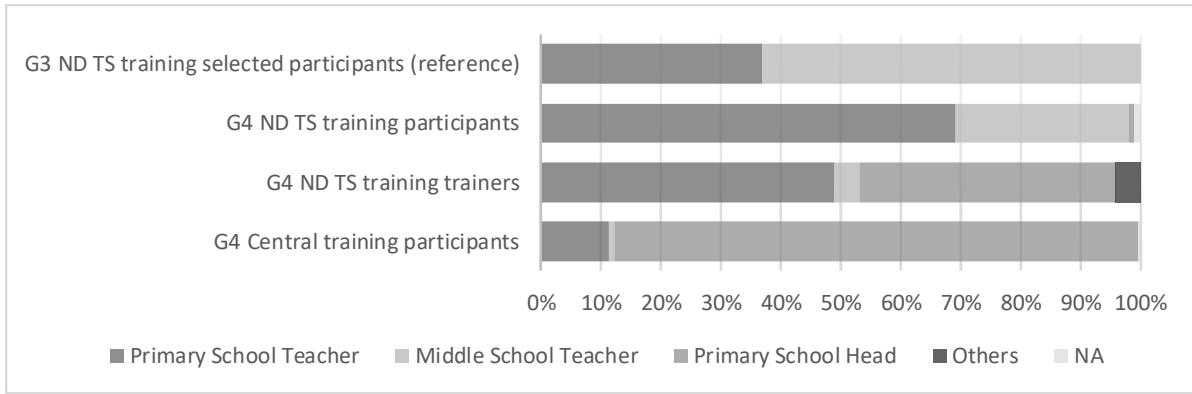
Note: The ratio of primary school teachers (PAT) and middle school teachers (JAT) is different between G3 and G4 ND TS training. The reason is that JAT who are working at primary schools were invited to attend G3 training last year, but they were invited to attend Grade 7 training this year in the monitored township.
ND: North Dagon, TS: Township
Source: CREATE

Figure 1: Current Position of Participants

Figure 2 shows experience in previous training of G4 participants. More than 70% of 248 G4 Central training participants, i.e., mostly primary school heads and teachers, had experience as trainers in G2 and/or G3 training[2]. On the other hand, only 2% of 298 EC Central training participants, i.e., selected EC teacher educators, were trainer in G3 training.
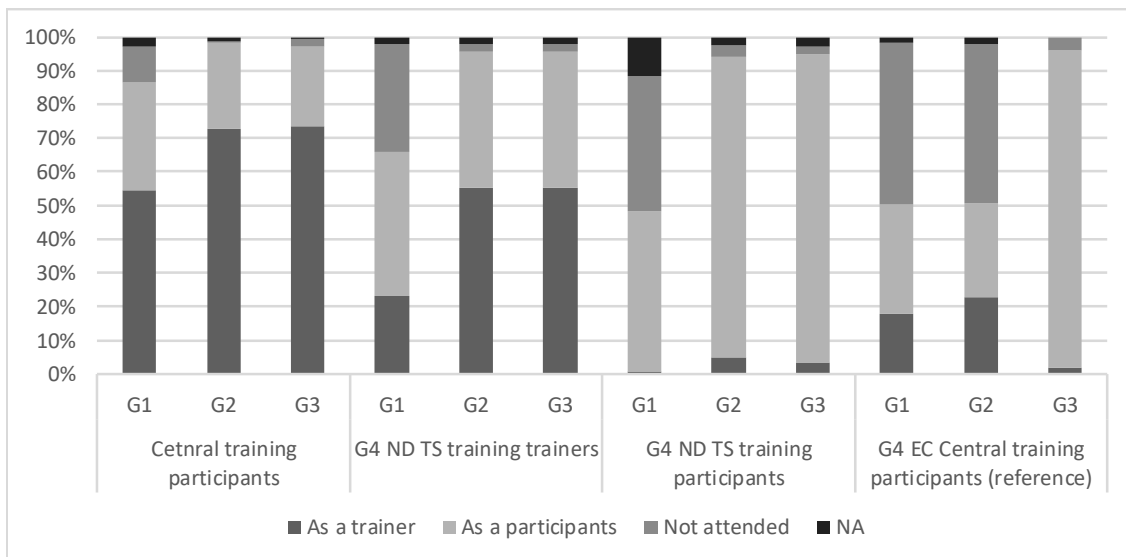
ND: North Dagon, TS: Township
Source: CREATE

Figure 2: Experience of previous training

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[2] Experience as trainer of G1 training was less because the target population for G1 training was mainly G1 teachers.

3.2 Participants' Understanding on the Training Contents

Participants' understanding on training contents were evaluated by a post-test. Some questions which were later found inappropriate were excluded from the analysis, yet, CREATE drew several issues to address for the next year using the results of 25 questions.

Firstly, the idea of equal treatment and importance of all subjects is not yet fully understood by participants. In fact, the result of G4 participants was worse than that of G3 training. In North Dagon Township, 84% of selected participants answered correctly in G3 training evaluation, but only 57% answered correctly in G4 training evaluation. A serious sensitization on the core concept of the curriculum is necessary.

Core curricula subjects are more important than co-curriculum subjects, so teachers can use the time of co-curricula subjects if students' achievement of core curricula subjects are not sufficient. (False: correct answer rate (%))

Category	Value
G4 Central training participants	72
G4 ND TS training trainers	66
G4 ND TS training participants	57
G4 EC Central training participants (reference)	75
G3 Central training participants (reference)	75
G3 ND TS training selected participants (reference)	84

ND: North Dagon, TS: Township
Source: CREATE

Figure 3: Participants' Understanding on equal treatment and Importance of all subjects

Secondly, understanding on subject contents by participants of G4 Central training for in-service teachers is lower than EC teacher educators. A typical example in science is shown in Figure 4.
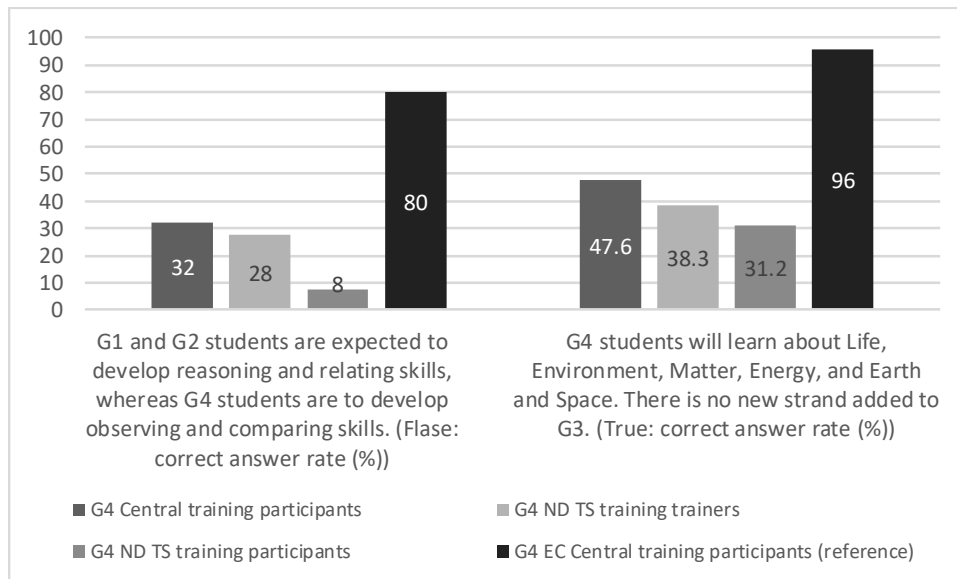
Note: 124 responses of Group B participants in G4 Central training for in-service teachers, and 25 responses of EC Central training participants in Science, all responces of G4 ND TS training for both trainers and participants were used for this analysis.

ND: North Dagon, TS: Township

Source: CREATE

Figure 4: Subject knowledge of Participants (Science)

The result is quite reasonable since EC teacher educators are specialized in one subject and participated in the training for one subject only. In addition, primary heads and teachers may not be accustomed with the conceptualized sentences that are used in the post-test. Having said that, the result of township training participants is worth attention. Primary teachers as well need to be familiar with basic terminology and to read and think carefully.

Thirdly, it seems that effects of training does not diminish at the township level, judging from little difference between the results of central training participants and township training participants as shown in Table 10. It reads the average correct answer rate of 25 valid questions of Central training participants is 75.9%, that of North Dagon Township trainers is 73.0% and that of North Dagon Township participants is 74.8%.

Possible reason that the lower layer participants learned nearly as much as upper layer participants are: 1) online materials such as Central training videos, TB, TG and online TOT lectures served significantly for better preparation and understanding among Township training trainers and participants; 2) most participants in G4 training experienced at least G2 and G3 training and they were already somehow familiar with the curriculum transformation; 3) Central training trainers gave lectures to Township training trainers in online TOT; 4) primary school heads and teachers tended to answer what they knew or experienced in their daily school life.

Table 10: Average Correct Answer Rate (%)

	G4 Central training participants	G4 North Dagon TS training		G4 EC Central training participants
		Trainers	Participants	
Number of subjects studied	5	10	10	1
9 questions for General sessions	85.3	80.4	81.9	84.4
16 questinos for Subject sessions	70.6	68.9	70.8	84.4
Total (25 questions)	75.9	73.0	74.8	84.4

ND: North Dagon, TS: Township

Source: CREATE

3.3 Self-evaluation by Participants

Not only Central training participants but also Township training trainers and participants showed their confidence in conducting the training or implementing new curriculum at school despite the shortened training period (see Figure 7). The results of self-evaluation by participants are shown in Annex 4.
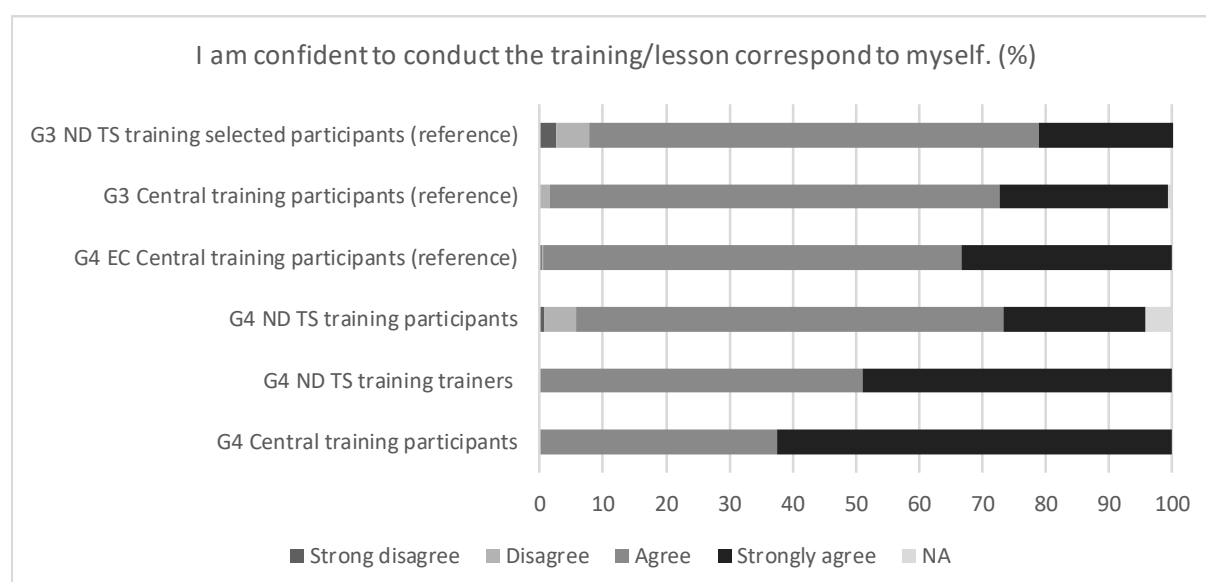
ND: North Dagon, TS: Township

Source: CREATE

Figure 5: Participants' Confidence to Conduct the Training/Lesson

3.4 Overall Evaluation on the Training by Participants

Overall evaluation on the training by participants confirmed both success and difficulties. Central training participants gave good marks on the training, especially on logistical arrangement, training venue, training hand-outs, videos, explanation of the trainers and learning activities. As compared with EC teacher educators' evaluation on both G3 and G4 training, there were not much but slightly better evaluation on the G4 training, except training venue about which many participants complained. The duration of the training sessions and the total number of training days have less scores than the other issues. However, 70% of trainers and 75% of participants agreed or strongly agreed that the

duration was sufficient, and 65% of trainers and 70% of participants agreed or strongly agreed that the total number of days was sufficient.

Table 11: Overall Evaluation of the Training by Participants

	G4 Central training participants	G4 ND TS training trainers	G4 ND TS training participants	G4 EC Central training participants (reference)	G3 Central training participants (reference)	G3 ND TS training selected participants (reference)
Logistical arrangement of the training was appropriate.	3.4	3.1	3.2	3.2	3.1	3.2
Training venue was appropriate for the training.	3.5	3.3	3.3	3.1	3.1	3.1
Duration of the training sessions were sufficient to understand each training contents.	3.1	2.9	2.9	3.0	3.0	3.1
Training hand-outs were clear to understand.	3.5	3.2	3.2	3.2	3.1	3.2
Videos used during the training was clear to understand.	3.4	3.1	3.0	3.2	3.2	3.2
Explanation of the trainers was clear to understand.	3.4	3.2	3.1	3.2	3.1	3.2
Learning activities (hands-on practices and simulation) were effective.	3.5	3.3	3.2	3.2	3.2	3.3
The total number of training days were sufficient.	3.1	2.9	2.9	3.1	3.0	3.3

Note: The number is the average score of participants' response, giving 4 to "Strongly agree", 3 to "Agree", 2 to "Disagree" and 1 to "Strongly disagree".

ND: North Dagon, TS: Township

Source: CREATE

3.5 Comparison with the training in previous years

The questions to compare G4 training with the training in previous years confirmed overall evaluation. North Dagon Township training trainers and participants considered that there was no difference between the training in previous years and G4 training. Rather, especially participants liked G4 training more than the training in previous years (see Figure 6).
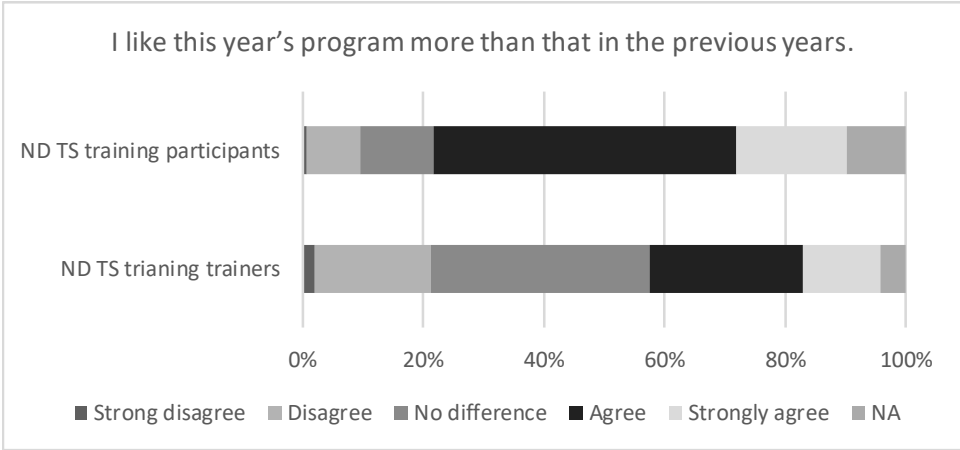
ND: North Dagon, TS: Township

Source: CREATE

Figure 6: Participants' Preference of the Training Modality

3.6 Direct Observation Results

Direct observation results in Central training, online TOT and North Dagon Township training were compiled and then discussed by CREATE TE members. Despite a considerable changes in the modality, no serious problems were observed in the training. Moreover, some lessons were drawn for the next year training. Table 12 summarizes the results of direct observation in G4 training. Details are shown in Annex 3.

Table 12: Suggestions Obtained from G3 Training and Findings in G4 Training

Topics	Findings in G4 training		
	Central	TOT	Township
Program	• Program was good in general. The length of the preparation session should be longer.	• The training was shortened to 2 days TOT training. Obviously 2 days training was not sufficient. The time for preparing for the TOT was not sufficient either.	• 6 days face-to-face training was conducted. Although preparation time was very limited, major training programs were kept by adding every day homework for participants
Delivery of Training Materials			• TB and TG were accessible for all participants in advance on MDEP. • In North Dagon Township, the modules were printed out on the day of the training. • Since the modules were uploaded online, both trainers and trainees could prepare for the training in advance.
Equipment	No serious issues were observed		• participants used their own mobile devices to watch video lessons, and it worked to a certain extent. However, the time management for watching lessons is difficult. Some places used lesson photos instead, which was very useful. • There were some problems in DVD materials, since training venues did not have sufficient equipment.
Trainers	• Compared to previous years, there were much less problems concerning the trainers. • Teachers with experience in the new curriculum through both training and Real lessons should be selected as trainers.		
Participants	• Participant selection for the Central training was appropriate. They were able to link		• Participants in the Township training were motivated, despite the changes in the modality of the training.

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Topics	Findings in G4 training		
	Central	TOT	Township
	training contents and real school practices.		
Training material contents			• The short version of modules, including homework for next days was effective. • Online evaluation sheets can be used in the future.
Real Lessons	• The Central training went well overall. Participants were able to make good observations because they were able to see the student reactions and facial expressions. • The objective of the Real lesson training was sometimes not clearly shared among trainers and participants.		• Township training participants were very willing to do Real lessons.
Technical Issues related to online training			• Several technical issues were observed due to the change of modality caused by Covid-19. • The CD/DVD materials were not compatible to the equipped in North Dagon Township training. Participants used their own mobile devices to watch the video lessons, and this caused some difficulties in time management. • Several problems were observed in the online meetings/trainings, such as low connectivity, low screen/audio quality, and some participants could not enter the meeting or accidentally left the meeting.

Source: CREATE

4. Conclusion and Lessons for G4 Training

CREATE TET members analyzed collected data and results of observation and concluded that despite unexpected changes in training modality, G4 training was successfully finished in general. Yet, several issues remain to be discussed and to be reflected to G5 training, which is the last training supported by CREATE. The followings points will be considered in preparation of G5 training and in designing the future CPD for primary teachers:

- The modality and duration of the training will be the biggest issue to be considered. Online training modality will probably be continued in G5 training and the mixture of face to face training may need to be considered at the township level.

- Technical problems experienced in G4 training should be analyzed and solved before G5 training. Who have access to online TOT, and what will be a backup system where and when internet access is not available need to be well thought.

- Training materials, including training modules, TB and TG, should be available either in softcopy or hardcopy before the training. Relatively large number of participants studied prior to the training in G4 training.

- Trainers should try to use CD/DVD materials prior to the training in each training center.

- Central training videos should also be online, as they served as significant resource materials for participants of the lower layer in G4 training.

- Homework sessions worked and can be included in G5 training, as they served for G4 Township training participants as well.

- Real lessons included in G1-G3 training was a popular training program for participants since it provides most practical experience to participants and many G4 township training participants were disappointed to see real lesson activities were omitted in the program. Activities like this should be included in the future CPD programs when the situation allows.

- Primary school heads and teachers can play a role of master trainers, judging from their performance in G4 training. However, their subject wise knowledge is less as compared with EC teacher educators. Training on more solid subject knowledge as well as the facilitation skills for the training may be necessary for primary school heads and teachers who are selected as trainers. This point may not be reflected in G5 training, due to the limitation of COVID-19 situation, but should be taken into consideration in designing CPD for longer term.

- In relation to the above, DBE is requested to select the appropriate resource persons for each subjects to support CPD at school level that is suggested in the training.

NO:

G4 Central Training Evaluation Sheet

A. Background Information

1. Are you a male or a female? Please circle the number that applies.

    1) Male.   2) Female

2. What is your current position? Please circle the number that applies.

    1) Primary School Teacher
    2) Middle School Teacher
    3) High School Teacher
    4) Primary School Head
    5) Middle School Head
    6) High School Head
    7) ATEO
    8) Deputy TEO
    9) Other: please specify (_____   )

3. If you are primary teachers, what subjects do you teach at your school? Please circle all the numbers that apply.

    1) Myanmar language   2) English   3) Mathematics

    4) Science   5) Social Studies   6) Morality and Civics

    7) Life Skills   8) Physical Education 9) Performing Arts

    10) Visual Arts

4. How many years of teaching experience do you have?   (Please circle one.)

    1) None   2) 1-5 years   3) 6-10 years

    4) 11-15 years   5) 16-20 years   6) 21-25 years

    7) 26-30 years   8) Over 30 years

5. If you are an education officer, for how many years have you served as an education officer?

    1) None   2) 1-5 years   3) 6-10 years

    4) 11-15 years   5) 16-20 years   6) 21-25 years

    7) 26-30 years   8) Over 30 years

6. Have you ever become a <u>trainer of any training for in-service teachers</u> before? Please circle the number that applies.

        0) Never

   YES -> 1) CCA.   2) CFS   3) SITE   4) KG   5) NFPE 6) HTT

        7) ECCD.   8) Life Skill   9) other

7. Did you attend G1 training for the new curriculum introduction as a trainer or trainee? Please circle the number that applies.

1) As a trainee
2) As a trainer
3) I did not attend

8. Did you attend G2 training for the new curriculum introduction as a trainer or trainee? Please circle the number that applies.

1) As a trainee
2) As a trainer
3) I did not attend

9. Did you attend G3 training for the new curriculum introduction as a trainer or trainee? Please circle the number that applies.

1) As a trainee
2) As a trainer
3) I did not attend

B. Understanding on the Training Contents

This section is to see the level of your understanding on the training contents. The results will be used for the improvement of the next year training.

1. The following statements are descriptive of <u>the New Primary Curriculum</u>. Are the followings true or false? Please circle either True or False.

1)	Through the basic education, students must be nurtured to achieve all round and balanced development and to develop the skills and knowledge to face the socio-economic challenges of 21st century.	**True**	**False**
2)	Core curricula subjects are more important than co-curricular subjects, so teachers can use the time of co-curricular subjects if students' achievement of core curricula subjects are not sufficient.	**True**	**False**

2. The following statements are descriptive of features of <u>the pedagogy of the New Primary Curriculum</u>. Are the followings true or false? Please circle either True or False.

A teacher should talk less and give brief instruction to student how to work on tasks and allocate enough time to student's learning activities during lessons.	**True**	**False**

2)	Students can explain newly learnt concepts in their own words even though they do not understand the concepts well.	**True**	**False**
3)	Group work can be conducted in a class with more than 50 students. Instead of the teacher shows demonstration, material are given to each group so that all students can do hands-on activities.	**True**	**False**

3. The following statements are descriptive of <u>the New Assessment</u>. Are the followings true or false? Please circle either True or False.

1)	National Assessment Policy (NAP) is a top tier of framework for the basic education assessment in Myanmar. NAP has been approved and enacted in 2019. Primary Student Learning Assessment Framework (PLAF) corresponds to the Guideline for the primary level.	**True**	**False**
2)	Periodic tests (Achievement Tests) are implemented at each school for 4 times a year on Myanmar, Mathematics, English, Science, and Social Studies.	**True**	**False**
3)	The results of formative assessment (Classroom Assessment) of all subjects/learning areas are included in quarterly assessment.	**True**	**False**

4. The following statements are descriptive of new features of each subject in <u>the New Primary Curriculum</u>. Are the followings true or false? Please circle either True or False. Please answer the questions related to the subject(s) that you attended.

[Myanmar]

1)	Organizing a text into a form of "table" is designed as a new learning method in G4 Myanmar Language.	**True**	**False**
2)	In G4, students' reading activities should be totally controlled by the teacher since they cannot do it by themselves.	**True**	**False**

[Performing Arts]

1)	G4 students are expected to understand many music notes and symbols so that students have to practice singing and playing instrument more than G3. Therefore, teacher should share more time for practice, not for appreciation of others.	**True**	**False**
2)	In G4 Performing Arts, students should perform by understanding image of a song. To understand image of the song, students should read lyric, music score and texture.	**True**	**False**

[English]

1)	In Grade 4, communicative activities are centered on the students providing and requesting information relevant to their own individual situations.	**True**	**False**

| | | The principal aims of Grade 1 to 4 English are to develop students understanding and learning of the skills according to the topics in the TB. Only in Grade 5, the aim is to give students real-world English skills. | **True** | **False** |

2)	The principal aims of Grade 1 to 4 English are to develop students understanding and learning of the skills according to the topics in the TB. Only in Grade 5, the aim is to give students real-world English skills.	**True**	**False**

[Social Studies]

1)	Although History of Myanmar strands has started in G1, G4 history is very different from the history in G1~3.	**True**	**False**
2)	According to the grade wise objectives and strands, to know the topographical feature of the region, temperature and rainfall graph are not yet requested in G4 using a new approach.	**True**	**False**

[Morals and Civics]

1)	Morals and Civics lessons are prepared to develop Moral feeling, Moral judgement, and Moral action of students.	**True**	**False**
2)	Any topics can be discussed in classroom meetings because it is important for students to practice the procedures of classroom meetings.	**True**	**False**

[Mathematics]

1)	Measuring degrees of angles with a protractor is newly introduced in G4. It is not included in the old primary curriculum.	**True**	**False**
2)	Recommended teaching learning process for Mathematics is to follow the textbook structure: 1) posing key question, 2) solving individually, 3) sharing ideas in class, 4) summarizing and confirming question.	**True**	**False**

[Physical Education]

1)	There is a change on learning strand in G4 Physical Education. "Singing and Dancing" strand is not taught in G4, but some ideas of "Singing and Dancing" strand are included in Fitness strand such as unit of "Aerobic exercise".	**True**	**False**
2)	As applying Teaching Games for Understanding model in G4 Physical Education lessons, students always need to play the game after skill practices, because students are not interested in skill practices if they are rewarded the game beforehand.	**True**	**False**

[Science]

1)	G1 and G2 students are expected to develop reasoning and relating skills, whereas G4 students are to develop observing and comparing skills.	**True**	**False**
2)	G4 students will learn about Life, Environment, Matter, Energy, and Earth and Space. There is no new strand added to G3.	**True**	**False**

[Visual Arts]

1)	Assessment viewpoints of Visual Arts are competencies, which are integration of Knowledge and Accuracy.	**True**	**False**
2)	Teachers need to prepare enough space to store students' artworks, which is unfinished, in case of consecutive but separate lessons (two lesson periods).	**True**	**False**

[Life Skills]

1)	In decision card students write their future action that they want to do by applying what they learned in the lessons.	**True**	**False**
2)	G4 Life Skills curriculum aims to develop students' competence for classroom discussion.	**True**	**False**

5. What is the required teaching-learning process to nurture 21st century skills of the students? Following narrative descriptions illustrate possible situations that teachers (and teacher educators) might face in day-to-day lessons. Read the description of cases and **select the most effective way** among A to D, considering what teachers are required to do in the New Primary Curriculum. Circle the number that is most appropriate.

1) A teacher tends to continuously explain the chapter contents to students (whole class). She/he sometimes asks questions to students for confirmation and students answer the questions all together with loud voice. But sometimes students are getting bored. And it is difficult to recognize the understanding level of each individual student. **What is the most effective way** to improve his/her teaching among the followings answers?

A. Teacher explains chapter contents with louder voice and instructs students to answer in louder voice.

B. Teacher instructs students to memorize more precisely about what a teacher explains, and instruct students to repeat many times.

C. Teacher explains how to solve the question and give the answer, and instructs students to try to solve similar problems individually.

D. Teacher assigns a task to students without explaining how to solve it. Then, teacher facilitates students to explore and find out how to solve it by them.

2) Students are observing ants and drawing illustration of their features. But their illustrations are very vague and missing important features of ants. **What is the most effective support** for students in this situation among the following answers?

A. Teacher draws an illustration of ants on a whiteboard. Students just copy what the teacher drew to their notebooks.

B. Teacher asks a student, who could draw a good illustration, to show his/her illustration to the class. The student explains the features of ants, and other students do not draw the illustration.

C. Teacher instructs students to copy good performing students' illustration to their notebook.

D. Teacher instructs students to stop drawing and instruct them to observe ants' body parts in

detail again in pair or in small group. And teacher supports students to be able to capture the features of ants.

C. Self-Evaluation by Participants

Please evaluate your understanding on the training contents. Please circle the number that applies.

Item	Strongly disagree	Disagree	Agree	Strongly agree
1. I fully understood the main features/strengths of new primary curriculum.	1	2	3	4
2. I fully understood the main features/strengths of new teaching learning process.	1	2	3	4
3. I fully understood the main features/strengths of new assessment.	1	2	3	4
4. I fully understood the main features/strength of the subject(s)	1	2	3	4
5. I am confident to conduct the training/ the lesson correspond to myself.	1	2	3	4
6. (Only for those who were trainers of G1, G2 or G3 training.) I am more confident to become trainers compared when I was a trainer at G1, G2 or G3 training.	1	2	3	4

D. Overall Evaluation on the Training

Please give your evaluation on the training course. Please circle the number that applies.

Item	Strongly disagree	Disagree	Agree	Strongly agree
1. Logistical arrangement of the training was appropriate.	1	2	3	4
2. Training venue was appropriate for the training.	1	2	3	4
3. Duration of the training sessions were sufficient to understand each training contents.	1	2	3	4
4. Training hand-outs were clear to understand.	1	2	3	4

Item	Strongly disagree	Disagree	Agree	Strongly agree
5. Videos used during the training was clear to understand.	1	2	3	4
6. Explanation of the trainers was clear to understand.	1	2	3	4
7. Learning activities (hands-on practices and simulation) were effective.	1	2	3	4
8. The total number of training days were sufficient.	1	2	3	4

9. Please give us your suggestion to improve the training in the next years:

This is the end of the training evaluation by participants.

Thank you very much for your cooperation.

Annex 2: Training Evaluation by Participants

A. Background Information

	Question	Options of answer	EC G4 (2020) Central		EC G3 (2019) Central	
			F	%	F	%
1	Are you a male or a female? Please circle the number that applies	1) Male	45	15.1	37	11.9
		2) Female	241	80.9	204	65.4
		NA	12	4.0	71	22.8
2	What is yourcurrent position? Please circle the number that applies.	1) EC principal	0	0.0		
		2) EC head of department	1	0.3		
		3) EC lecturer	126	42.4		
		4) EC assistant lecturer	130	43.8		
		5) Other	40	13.5		
3	What is your subject to teach in EC? Please circle the number that applies.	1) Mathematics teaching/academic	25	8.4		
		2) Science teaching/academic	25	8.4		
		3) Social Studies teaching/academic	37	12.4		
		4) Myanmar teaching/academic	25	8.4		
		5) English teaching/academic	25	8.4		
		6) Morality and Civics	20	6.7		
		7) Visual arts	22	7.4		
		8) Life Skills	18	6.0		
		9) Performing Arts	23	7.7		
		10) Physical Education	26	8.7		
		11) Education Theory	25	8.4		
		12) Education Psychology	25	8.4		
		13) Other	1	0.3		
		NA	1	0.3		
4	How many years of teaching experience do you have?	1) None	1	0.3		
		2) 1-5 years	56	18.8		
		3) 6-10 years	39	13.1		
		4) 11-15 years	74	24.8		
		5) 16-20 years	23	7.7		
		6) 21-25 years	19	6.4		
		7) 26-30 years	28	9.4		
		8) Over 30 years	58	19.5		
		NA	0	0.0		
5	If you are an education officer, for how many years have you served as an education officer?	1) None	137	46.0		
		2) 1-5 years	67	22.5		
		3) 6-10 years	35	11.7		
		4) 11-15 years	19	6.4		
		5) 16-20 years	14	4.7		
		6) 21-25 years	11	3.7		
		7) 26-30 years	3	1.0		
		8) Over 30 years	2	0.7		
		NA	10	3.4		
6	Did you attend G1 training for the new curriculum introduction as a trainer or trainee? Please circle numbers that applies.	1) As a trainee	97	32.6		
		2) As a trainer	53	17.8		
		3) I did not attend.	143	48.0		
		NA	5	1.7		
7	Did you attend G2 training for the new curriculum introduction as a trainer or trainee? Please circle numbers that applies.	1) As a trainee	83	27.9		
		2) As a trainer	68	22.8		
		3) I did not attend.	141	47.3		
		NA	6	2.0		
8	Did you attend G3 training for the new curriculum introduction as a trainer or trainee? Please circle numbers that applies.	1) As a trainee	280	94.0		
		2) As a trainer	6	2.0		
		3) I did not attend.	12	4.0		
		NA	0	0.0		

B. Understanding on the Training Contents

	Question	Options of answer	EC G4 (2020)		INSET G4 (2020)		EC G3 (2019)	
			Central		Central		Central	
			F	%	F	%	F	%
1	The following statements are descriptive of the New Primary Curriculum. Are the followings true or false? Please circle either True or False.							
1)	Through the basic education, students must be nurtured to achieve all round and balanced development and to develop the skills and knowledge to face the socio-economic challenges of 21st century.	TRUE	297	99.7	243	98.0	308	98.7
		FALSE	1	0.3	3	1.2	2	0.6
		NA	0	0.0	2	0.8	2	0.6
2)	Core curricula subjects are more important than co-curricula subjects, so teachers can use the time of co-curricula subjects if students' achievement of core curricula subjects are not sufficient.	TRUE	70	23.5	69	27.8	69	22.1
		FALSE	224	75.2	178	71.8	234	75.0
		NA	4	1.3	1	0.4	9	2.9
2	The following statements are descriptive of features of the pedagogy of the New Primary Curriculum. Are the followings true or false? Please circle either True or False.							
1)	A teacher should talk less and give brief instruction to student how to work on tasks and allocate enough time to student's learning activities during lessons.	TRUE	284	95.3	243	98.0		
		FALSE	12	4.0	5	2.0		
		NA	2	0.7	0	0.0		
2)	Students can explain newly learnt concepts in their own words even though they do not understand the concepts well.	TRUE	259	86.9	231	93.1		
		FALSE	38	12.8	16	6.5		
		NA	1	0.3	1	0.4		
3)	Group work can be conducted in a class with more than 50 students. Instead of the teacher shows demonstration, material are given to each group so that all students can do hands-on activities.	TRUE	226	75.8	209	84.3	284	91.0
		FALSE	69	23.2	39	15.7	26	8.3
		NA	3	1.0	0	0.0	2	0.6
3	The following statements are descriptive of the New Assessment. Are the followings true or false? Please circle either True or False.							
1)	National Assessment Policy (NAP) is a top tier of framework for the basic education assessment in Myanmar. NAP has been approved and enacted in 2019. Primary Student Learning Assessment Framework (PLAF) corresponds to the Guideline for the primary level.	TRUE	285	95.6	222	89.5		
		FALSE	7	2.3	13	5.2		
		NA	6	2.0	13	5.2		
2)	Periodic tests (Achievement Tests) are implemented at each school for 4 times a year on Myanmar, Mathematics, English, Science, and Social Studies.	TRUE	286	96.0	236	95.2		
		FALSE	8	2.7	11	4.4		
		NA	4	1.3	1	0.4		
3)	The results of formative assessment (Classroom Assessment) of all subjects/learning areas are included in quarterly assessment.	TRUE	222	74.5	160	64.5		
		FALSE	69	23.2	75	30.2		
		NA	7	2.3	13	5.2		
4	The following statements are descriptive of new features of each subject in the New Primary Curriculum. Select the most appropriate answer to fill the blank ( ) from the options in the right column. Choose the correct answer and cycle the number.							
1)		TRUE	21	84.0	107	86.3		

	Question	Options of answer	EC G4 (2020) Central		INSET G4 (2020) Central		EC G3 (2019) Central	
			F	%	F	%	F	%
	[Myanmar] Organizing a text into a form of "table" is designed as a new learning method in G4 Myanmar Language.	FALSE	3	12.0	11	8.9		
		NA	1	4.0	6	4.8		
2)	[Myanmar] In G4, students' reading activities should be totally controlled by the teacher since they cannot do it by themselves.	TRUE	7	28.0	44	35.5		
		FALSE	18	72.0	78	62.9		
		NA	0	0.0	2	1.6		
3)	[Performing Arts] G4 students are expected to understand many music notes and symbols so that students have to practice singing and playing instrument more than G3. Therefore, teacher should share more time for practice, not for appreciation of others.	TRUE	20	87.0	106	85.5		
		FALSE	3	13.0	18	14.5		
		NA	0	0.0	0	0.0		
4)	[Performing Arts] In G4 Performing Arts, students should perform by understanding image of a song. To understand image of the song, students should read lyric, music score and texture.	TRUE	22	95.7	101	81.5		
		FALSE	0	0.0	20	16.1		
		NA	1	4.3	3	2.4		
5)	[English] In Grade 4, communicative activities are centered on the students providing and requesting information relevant to their own individual situations.	TRUE	24	100.0	109	87.9		
		FALSE	0	0.0	12	9.7		
		NA	0	0.0	3	2.4		
6)	[English] The principal aims of Grade 1 to 4 English are to develop students understanding and learning of the skills according to the topics in the TB. Only in Grade 5, the aim is to give students real-world English skills.	TRUE	4	16.7	55	44.4		
		FALSE	20	83.3	67	54.0		
		NA	0	0.0	2	1.6		
7)	[Social Studies] Although History of Myanmar strands has started in G1, G4 history is very different from the history in G1~3.	TRUE	17	68.0	97	78.2		
		FALSE	8	32.0	24	19.4		
		NA	0	0.0	3	2.4		
8)	[Social Studies] According to the gradewise objectives and strands, to know the topographical feature of the region, temperature and rainfall graph are not yet requested in G4 using a new approach.	TRUE	1	4.0	32	25.8		
		FALSE	24	96.0	92	74.2		
		NA	0	0.0	0	0.0		
9)	[Morals and Civics] Morals and Civics lessons are prepared develop Moral feeling, Moral judgement, and Moral action of students.	TRUE	25	100.0	122	98.4		
		FALSE	0	0.0	2	1.6		
		NA	0	0.0	0	0.0		
10)	[Morals and Civics] Any topics can be discussed in classroom meetings because it is important for students to practice the procedures of classroom meetings.	TRUE	24	96.0	81	65.3		
		FALSE	0	0.0	39	31.5		
		NA	1	4.0	4	3.2		
11)	[Mathematics] Measuring degrees of angles with a protractor is newly introduced in G4. It is not included in the old primary curriculum.	TRUE	25	100.0	116	93.5		
		FALSE	0	0.0	7	5.6		
		NA	0	0.0	1	0.8		
12)	[Mathematics] Recommended teaching learning process for Mathematics is to follow the textbook structure: 1) posing key question, 2) solving individually, 3) sharing ideas in class, 4) summarizing and confirming question.	TRUE	23	92.0	89	71.8		
		FALSE	2	8.0	33	26.6		
		NA	0	0.0	2	1.6		
13)	[Physical Education] There is a change on learning strand in G4 Physical	TRUE	26	100.0	124	100.0		
		FALSE	0	0.0	0	0.0		

Question		Options of answer	EC G4 (2020) Central		INSET G4 (2020) Central		EC G3 (2019) Central	
			F	%	F	%	F	%
	Education. "Singing and Dancing" strand is not taught in G4, but some ideas of "Singing and Dancing" strand are included in Fitness strand such as unit of "Aerobic exercise".	NA	0	0.0	0	0.0		
14)	[Physical Education] As applying Teaching Games for Understanding model in G4 Physical Education lessons, students always need to play the game after skill practices, because students are not interested in skill practices if they are rewarded the game beforehand.	TRUE	20	76.9	87	70.2		
		FALSE	5	19.2	35	28.2		
		NA	1	3.8	2	1.6		
15)	[Science] G1 and G2 students are expected to develop reasoning and relating skills, whereas G4 students are to develop observing and comparing skills.	TRUE	5	20.0	81	65.3		
		FALSE	20	80.0	40	32.3		
		NA	0	0.0	3	2.4		
16)	[Science] G4 students will learn about Life, Environment, Matter, Energy, and Earth and Space. There is no new strand added to G3.	TRUE	24	96.0	59	47.6		
		FALSE	1	4.0	61	49.2		
		NA	0	0.0	4	3.2		
17)	[Visual Arts] Assessment view points of Visual Arts are competencies, which are integration of Knowledge and Accuracy.	TRUE	21	84.0	101	81.5		
		FALSE	3	12.0	21	16.9		
		NA	1	4.0	2	1.6		
18)	[Visual Arts] Teachers do not have to consider left-handed students in activities. Teachers should teach carefully, for example, how right-handed students should use scissors for safety reasons. (G3 content)	TRUE	2	8.0	29	23.4	1	3.8
		FALSE	21	84.0	94	75.8	25	96.2
		NA	2	8.0	1	0.8	0	0.0
19)	[Life Skills] In decision card students write their future action that they want to do by applying what they learned in the lessons.	TRUE	25	100.0	116	93.5		
		FALSE	0	0.0	7	5.6		
		NA	0	0.0	1	0.8		
20)	[Life Skills] G4 Life Skills curriculum aims to develop students' competence for classroom discussion.	TRUE	16	64.0	49	39.5		
		FALSE	9	36.0	74	59.7		
		NA	0	0.0	1	0.8		
5	What is the required teaching-learning process to nurture 21st century skills of the students? Following narrative descriptions illustrate possible situations that teachers (and teacher educators) might face in day-to-day lessons. Read the description of cases and select the most effective way among A to D, considering what teachers are required to do in the New Primary Curriculum. Circle the number that is most appropriate.							
1)	A teacher tends to continuously explain the chapter contents to students (whole class). She/he sometimes asks questions to students for confirmation and students answer the questions all together with loud voice. But sometimes students are getting bored. And it is difficult to recognize the understanding level of each individual student. What is the most effective way to improve his/her teaching among the followings answers?	A. Teacher explains chapter contents with louder voice and instructs students to answer in louder voice.	7	2.3	8	3.2	4	1.3
		B. Teacher instructs students to memorize more precisely about what a teacher explains, and instruct students to repeat many times.	4	1.3	1	0.4	0	0.0
		C. Teacher explains how to solve the question and give the answer, and instructs students	35	11.7	28	11.3	21	6.7

Question		Options of answer	EC G4 (2020)		INSET G4 (2020)		EC G3 (2019)	
			Central		Central		Central	
			F	%	F	%	F	%
		to try to solve similar problems individually.						
		D. Teacher assigns a task to students without explaining how to solve it. Then, teacher facilitates students to explore and find out how to solve it by them.	213	71.5	191	77.0	270	86.5
		NA	39	13.1	20	8.1	17	5.4
2)	Students are observing ants and drawing illustration of their features. But their illustrations are very vague and missing important features of ants. What is the most effective support for students in this situation among the following answers?	A. Teacher draws an illustration of ants on a whiteboard. Students just copy what the teacher drew to their notebooks.	11	3.7	1	0.4	4	1.3
		B. Teacher asks a student, who could draw a good illustration, to show his/her illustration to the class. The student explains the features of ants, and other students do not draw the illustration.	4	1.3	4	1.6	10	3.2
		C. Teacher instructs students to copy good performing students' illustration to their notebook.	8	2.7	3	1.2	17	5.4
		D. Teacher instructs students to stop drawing and instruct them to observe ants' body parts in detail again in pair or in small group. And teacher supports students to be able to capture the features of ants.	227	76.2	221	89.1	260	83.3
		NA	48	16.1	19	7.7	21	6.7

C. Self-Evaluation by Participants

	Question	Options of answer	EC G4 (2020) Central		EC G3 (2019) Central	
			F	%	F	%
1	I fully understood the main features/strengths of new primary curriculum.	Strong disagree	0	0.0	0	0.0
		Disagree	2	0.7	1	0.3
		Agree	229	76.8	226	72.4
		Strongly agree	66	22.1	83	26.6
		NA	1	0.3	2	0.6
2	I fully understood the main features/strengths of new teaching learning process.	Strong disagree	0	0.0	0	0.0
		Disagree	0	0.0	2	0.6
		Agree	236	79.2	223	71.5
		Strongly agree	61	20.5	85	27.2
		NA	1	0.3	2	0.6
3	I fully understood the main features/strengths of new assessment.	Strong disagree	0	0.0	0	0.0
		Disagree	8	2.7	2	0.6
		Agree	232	77.9	225	72.1
		Strongly agree	56	18.8	81	26.0
		NA	2	0.7	4	1.3
4	I fully understood the main features/strength of the subject(s).	Strong disagree	0	0.0	0	0.0
		Disagree	12	4.0	2	0.6
		Agree	230	77.2	223	71.5
		Strongly agree	53	17.8	84	26.9
		NA	3	1.0	3	1.0
5	I am confident to conduct the training/ the lesson correspond to myself.	Strong disagree	1	0.3	0	0.0
		Disagree	1	0.3	5	1.6
		Agree	197	66.1	222	71.2
		Strongly agree	99	33.2	83	26.6
		NA	0	0.0	2	0.6
6	(Only for those who were trainers of G1, G2 or G3 training.) I am more confident to become trainers compared when I was a trainer at G1, G2 or G3 training.	Strong disagree	2	0.7	2	0.6
		Disagree	4	1.3	8	2.6
		Agree	130	43.6	123	39.4
		Strongly agree	51	17.1	59	18.9
		NA	111	37.2	16	5.1

D. Overall Evaluation on the Training

	Question	Options of answer	EC G4 (2020) Central		EC G3 (2019) Central	
			F	%	F	%
1	Logistical arrangement of the training was appropriate.	Strong disagree	0	0.0	1	0.3
		Disagree	12	4.0	16	5.1
		Agree	222	74.5	238	76.3
		Strongly agree	57	19.1	51	16.3
		NA	7	2.3	6	1.9
2	Training venue was appropriate for the training.	Strong disagree	3	1.0	3	1.0
		Disagree	26	8.7	12	3.8
		Agree	203	68.1	231	74.0
		Strongly agree	61	20.5	62	19.9
		NA	5	1.7	4	1.3
3	Duration of the training sessions were sufficient to understand each training contents.	Strong disagree	0	0.0	1	0.3
		Disagree	40	13.4	47	15.1
		Agree	201	67.4	212	67.9
		Strongly agree	41	13.8	49	15.7
		NA	16	5.4	3	1.0
4	Training hand-outs were clear to understand.	Strong disagree	0	0.0	0	0.0
		Disagree	3	1.0	21	6.7
		Agree	231	77.5	230	73.7
		Strongly agree	59	19.8	58	18.6
		NA	5	1.7	3	1.0
5	Videos used during the training was clear to understand.	Strong disagree	0	0.0	0	0.0
		Disagree	4	1.3	4	1.3
		Agree	222	74.5	239	76.6
		Strongly agree	68	22.8	66	21.2
		NA	4	1.3	3	1.0
6	Explanation of the trainers was clear to understand.	Strong disagree	0	0.0	0	0.0
		Disagree	5	1.7	18	5.8
		Agree	228	76.5	229	73.4
		Strongly agree	59	19.8	61	19.6
		NA	6	2.0	4	1.3
7	Learning activities (hands-on practices and simulation) were effective.	Strong disagree	0	0.0	0	0.0
		Disagree	3	1.0	15	4.8
		Agree	227	76.2	218	69.9
		Strongly agree	62	20.8	77	24.7
		NA	6	2.0	2	0.6
8	The total number of training days were sufficient.	Strong disagree	1	0.3	3	1.0
		Disagree	38	12.8	47	15.1
		Agree	192	64.4	198	63.5
		Strongly agree	61	20.5	53	17.0
		NA	6	2.0	11	3.5

Annex 3

Reflection on G4 Training by CREATE Members

Annex 3-1: Central Training

Category	Findings/Suggestions in G3 Training	Reflection Question	Reflection
Program	• Use of TG should be promoted in EC teaching-learning process. • More time needed to be allocated for understanding TG in Central training if the new EC teacher educators will attend.	• Was the program of the G4 Central training adequate?	• Generally, the program was OK. However, some subjects such as Life Skills, VA, PE had too many subject contents. For example, VA had too many activities that took a lot of time and so did PE and Maths. • Program of English was satisfactory. Division of work among TE and CDT was also satisfactory. English CDT was satisfied with Section 4 and they explained TG answering inquiries of participants. • In general, it was OK in Myanmar. However, time allocation was not enough for subject session. In section 3, they only wrote the first and discussed in the class. Then, they could write the other 2 questions. • PA was satisfactory, but there was not enough time to cover video point. • In Social Studies, after reviewing the video, they wrote down 3 questions. Then, there was no problem. • Section 4 Science was dependent on requests of participants. However, it might be better to allocate specific activities in Section 4. • The participants seemed confused in Section 3. After reading expected answer, they could link their experiences to what they were requested. Section 3 was necessary to reflect what they learnt. Due to the section, participants could prepare themselves to be trainer. It can also be helpful for preparation of next layers. • Questions of Section 3.1 should be reviewed to be specific ones, if the participants would be the same as this year. If EC teachers would be participants of Central training, there would be no need to be reviewed. • Preparation for subject session was confusing. There was no time to prepare for 3 subjects in 90 minutes. • Section 4 was done by CDT. It was designed to solve any doubts, but in some subjects, it was to know subject contents and some participants complaint that it was redundant. • Section 4 is necessary if key points are presented.
Length	• The length should be the same in G4 training.	• Was the length of the G4 Central	• 9 days can be kept. However, it is necessary to give more time for preparation session. 45 min for 1 subject is necessary, though PE needs

Category	Findings/Suggestions in G3 Training	Reflection Question	Reflection
		training adequate?	· more time. · The way to modify the program is to extend some time in D8 or Day 7 preparation for S/R training and put the other preparation session on Day 8. · In general, PA was effective. Practices were OK. However, there was no enough time on the last day. · Preparation time will be crucial to be ready for the trainer of the next layer.
Participants	· The selection criteria should be those who have already participated in G1, G2 or G3 training, preferably. · Inclusion of Education theory and Education phycology teachers will be continued in G4 training.	· Was selection of participants at Central training, i.e., primary school principals and teachers as national trainers, successful?	· Selection was successful. · Participants were very satisfied with the training. · In G1, same kind of participants were selected, but they were not very satisfied with the training. The difference was that they were already familiar with the new primary curriculum. · In the middle of the training, participants should be reminded to become trainers. · Demonstration was just to follow the flow, but rehearsal is necessary.
Training Delivery - General session	· General session (Pedagogy and Assessment) can be divided into two groups and conducted the session alternately. · Video lesson can be used for case studies, or other activities can be prepared in the latter section.	· Was length of General session adequate? · Was time allocation in Pedagogy and Assessment adequate? · Were there any issues in General session?	· Assessment part had too much information. However, most of the information was already known. Some participants could link the contents with their previous knowledge. · Pedagogy and Assessment 1 was implemented in 3 classes successfully, so it should be arranged like this for G5 INSET. · If Assessment 2 is implemented in 3 different classes, it would be better. However, the explanatory part (regulation and formats) is familiar to participants (since they are primary teachers). Therefore, Assessment 2 session was smoothly conducted. · Pedagogy 1 & 2 session was successfully over because the contents and time allocation were well designed and perfect. · Participants accepted the contents of Assessment session in G4, whereas they did not accept in G3. This is because G3 participants would like to discuss as EC teacher educators, but this year's participants were school principals mostly, so that they could combine the theory and practice. They really appreciated the formats attached.

Category	Findings/Suggestions in G3 Training	Reflection Question	Reflection
Training delivery – Subject sessions	· It will be necessary to consider time allocation. Some subjects need more time in explanation session, but others need more in video points. · It will be better that TE members present video points.	· Was time allocation in a Subject session adequate? · Was time allocation of the lesson video adequate? · Were there any issues in Subject sessions?	· Time allocation of Section 1 was different among subjects. In LS, they had to compare between new and old curriculum. Myanmar needed to have more time for Section 1. · It should not be compared with the old curriculum, because participants were already aware of curriculum. · Many pedagogy issues and classroom management were taught. It was good, but at the same time, it might be necessary to organize the program. Some trainers just read the program and sequence. · According to a Japanese Maths expert, Session 3 was too abstract for Maths. And the team suggested that Session 3 and Session 4 need to be alternatively changed because the participants can reflect what they have acquired from the previous sessions. A Japanese science expert and PE team also have the same idea. · Preparation for subject reflection had some problems because of insufficient time. Therefore, the participants could not have a lot of chances to practice the video lessons and they could not review the contents as well as the rehearsal efficiently. If this session lasts for at least 45 mins or 1 hour, it would be enough. Last year, the trainers had about 3 hours for one subject. In the video lessons, the trainers had to do two parts, to play the computer/DVD players and to conduct the lessons. Most of the participants have less confidence in using the computer so that they need to have lots of practices. According to a TE expert suggestion, conducting video lessons can be facilitated by two trainers; one is for playing the computer/DVD player and another is to conduct the training. However, the situation could change according to the schools because some schools have operators, but some do not. · English CDTs want to join the process of the video editing process next time (G5). · Very impressed with subject session review because the curriculum developers could do the detailed explanation, which was very helpful for the participants. It was found out that the trainers needed more time. · Time allocation for subject session was generally fine for all subjects, but Maths needs more about 30 mins to accomplish the activities. Myanmar, English and Science need 2 days for subject sections.

Category	Findings/Suggestions in G3 Training	Reflection Question	Reflection
			• For VA section 2.2 and 4.1, it would be better to choose the activities that focus on the new learning instead of choosing two activities; one new and one old. • In VA session, it was very effective to allocate enough time for learning (reading and confirming) the TG by participants. It is recommended to other subject sessions to do in the same way. • Places for practicing PE and PA activities need to be carefully prepared/selected in advance.
Training delivery - Preparation for Real lesson (micro teaching)	• 2 micro teaching will be still necessary. Selection of lessons can be done more carefully. (Earlier lessons within a unit needs to be selected) • It is better to standardize the procedure to conduct micro teaching and reflection to avoid any confusion during the lower levels of training. Detail explanation in the module will be necessary. • In many cases, only demonstrator prepared teaching-learning materials and other did not support.	• Was the number of Real lessons, i.e., 2 lessons among 5 subjects, adequate? • Was selection of lessons adequate? • Was procedure to conduct Preparation for Real lesson (micro teaching) adequate? • Did all participants support demonstrator to prepare Real lesson?	• The lesson of each subject needs to be carefully selected for better practice. • CDTs of subjects such as PA and Social Studies, which were not selected for Real Lesson, feel sorry and have expectation to be included at G5 INSET. • Trainers (both TE-CP and CDT) need to encourage participants to have creativity to prepare lessons and provided some tips. However, time was quite limited this time. • It would not be very successful if the participants are disturbed or interrupted by CDT because it may block their ideas, for example; in Science. It is suggested that it would be better if CDT do not involve in that session. However, it was very successful in PE because the trainer from PE elaborated the participants' ideas first. And the trainer added the key points if the participants did not mention the main points, so it resulted greatly when the participants did the micro teaching. • Some CDT trainers (e.g. English) gave very detailed instruction on how to teach the lesson. The way limited participants' creativity or own ideas. Such way of instruction should be avoided at G5 INSET. The trainers intervened participant's preparation of Real lesson. • Therefore, sufficient information on how to conduct, observe, and reflect Real lesson need to be provided to CDTs before INSET implementation.
Training delivery - Real lesson and Reflection	• More time should be allocated for reflection.	• Was the procedure to conduct Real lessons adequate? • Were there any issues in Real	• This year, participants had very good observations because they could find out the students' learning and even the students' facial expressions. • CDT trainers have different purposes for joining the Real session. For example, English team joined the training because they would like the participants to get the right information. Also, Science CDT insisted the

Category	Findings/Suggestions in G3 Training	Reflection Question	Reflection
		lesson?	· answers when the participants made the mistakes. · However, PE CDT learned from the Real lesson and applied what they have learnt from the Real lesson. · In English, the selection of the Real lesson topic is based on new features and challenges. English CDT mentioned that the flow of the lesson is different though the same lesson is taught, so CDT suggested to take the lesson as a whole class in order to conduct the same flow of the lesson. However, it is impossible to do so at the S/R level because there are more than 5 different classes. · The main purpose of the training is to focus only on the new challenges of new curriculum, not to teach everything. CPD is responsible how to teach the lessons effectively. Therefore, headmasters and teachers are suggested to do the trainings and share what they have learnt in previous years within schools. · Subjects and lessons for Real teaching will be chosen particularly based on the challenges of the subjects. Perhaps, PA and PE may not be included for Real teaching next year. · It is important to confirm the objectives and situation of the lesson within their participants and facilitators. And controversial lessons should not be chosen. Throughout G1 to 4, G4 English lesson is the most satisfying though different problems appear every year.
Training delivery - Preparation for State/Region training	· If it is necessary to reduce the time, confirmation part can be reduced. · Detail time allocation should be specified in the module of rehearsal part of subject session preparation.	· Was the length of the sessions, 90 min. for logistics, 3 times 90 min. for training sessions, adequate?	· Time was limited so that there was not any time for practicing how to operate PC/DVDs and at least 60 mins is required to review each subject session. · The trainers didn't have enough time for explaining the video points. Some subjects have many video points to highlight, so the trainers had to manage to talk about the video points in a hurry, for example in VA. And some video points (e.g. Maths) needed to be done more than once because the points are not very simple and needed to be explained in detail. As a result, the next activity did not have enough time. And Social Studies had a similar situation too, because the video points highlight the new teaching methodology. · A TE expert suggested that methodology and pedagogy should be taken into consideration when making/shooting the video lessons because

Category	Findings/Suggestions in G3 Training	Reflection Question	Reflection
			some videos are a bit complicating.
			· It is also very important to choose the video topics. In Maths video lessons, using the projector seems confusing to students. TE Maths member mentioned that only 15 mins video lesson is also very suitable for participants because they can point out many facts from 15-min video lesson. Video editing by a Japanese TE member helps the lesson to be more successful.
			· TE Maths member suggested that using some slides or photos should be used instead of the attached lessons, which cannot be shown to the students in order to know the sequence of the lesson flow.
			· Myanmar CDT did not like "Egg lesson" a lot and they thought that it will not be very helpful to the participants, but the video lesson is very effective to the participants and helps them get a lot of benefits.
			· Also, the video lesson in English subject was very effective in facilitating the new features. And CDT realizes the benefits of the video lessons this year.
			· The participants (e.g., VA) are worried about how to give the training at the lower level. The trainers suggested that they can refer to the TG more carefully.
			· There is a suggestion for participant's selection. One person in charge of one subject in total 10 people instead of 4 people (or more) from each S/R. Or at least 1 person in charge of 3 subjects (instead of 5 subjects) is recommended. In this way, participants can learn each subject content more deeply.
Delivery of training materials	· Sufficient teaching materials and modules arrived on time in G3 Central training.	· Were there any issues in delivery of training materials?	· Quality of crayons for VA activity was not good.
			· At the next level, most schools do not have DVDs, TV or projectors, so the related lessons and videos should be uploaded on website, so the participants can use these by their phones.
			· According to the participants, there are more problems in S/R level concerning the materials especially TVs and projectors. However, there are some IT supports at District and Township level.
			· And, when TE members monitored the District level training in Taunggyi last year, it was found out that the participants from six rooms learnt the video lessons in a room, so the participants could not see the screen and

Category	Findings/Suggestions in G3 Training	Reflection Question	Reflection
			discuss the video points well and the facilitator could not conduct the video points effectively. Again, the trainers did the same way in the Township level training; where there were more participants. However, the participants knew the value of the video lessons this year, so they paid more attention. · And in PA, some schools cannot manage the banner in large size though it is told to use the large size. · According to last year experiences at the lower level training, some schools do not use the recommended materials because they have to buy the materials first and they get back the money after submitting the receipt · Last year, at the District level in Yangon, the materials did not arrive in time.
Equipment	· No serious problems were observed in G3 Central training.	· Were there nay issues in equipment?	· Blackout happened several times during the Central training program. However, using super long extension enabled to provide electricity supply.
Management	· Coordination between DHE and DERPT was very good in G3 Central training.	· Were there any issues in coordination or management?	· Generally, coordination with DERPT and DHE went quite well. · However, there are 2 participants from Chin State at the 1st batch came late due to the delay of information/invitation from DERPT to the state. · Last year in Taunggyi at District level, EC teachers who were supposed to conduct Assessment 2 did not come to the training because they thought that there was no training on that day. Therefore, a visiting TE member had to take some parts of Assessment 2. The communication between EC and DBE was not very strong enough. · The classrooms should be arranged in a proper way in accordance with the subjects. The weak coordination at S/R level, which happened last year, should not be repeated this year.
Others	·	·	· Primary teachers and principals have higher commitments than EC teachers to deliver training program to the lower cascades. · It is expected that problems of last year will not be repeated. There were many problems regarding trainers for G3 INSET program last year. Some trainers (EC teachers) did not come to the S/R level program. · Trainers of last year (G3 INSET) just made participants read video points first. Then, the trainers showed the video and read the video point out loud.

Annex 3-2: Central training by subject

Subject	Good Points	Point to be Improved
Life Skills	• CDT is satisfied with the participants. • And they also like the organization and structure of the training.	• CDT prefers practical work to theories. They think that the participants have already acquired basic knowledge of teaching theories at Education College, so it would be better for the participants to do many practical works instead of lectures and theories. • Life Skills need real teaching because the lessons should be applied in the real lives and reached in the students' mind. • In session 3, there are many contents to conduct, so the time is insufficient for the discussion. As a result, CDT finds that this part is not very effective for the participants. For example, the more practical work gets more decision cards that the participants do, the more confident they will be in conducting the training. • In session 4, some participants find that session is not very applicable because they are not going to conduct that training at lower level trainings. • More time is needed because new approaches and activities are included this year. • The time allocation spent at the central training should be same to S/R training.
English	• The structure and organization of the module is great in general. • The choice of the participants is appropriate. The procedure of the preparation of real lessons is very organized.	• The procedure of the preparation of real lessons is very organized. TG and the materials used at the training should be given to the participants in advance, so that they can learn before the training. • Real teaching should be done only in one classroom instead of conducting in separate classrooms. • It would be better to discuss the video points with curriculum developers before editing.
Mathematics	• The organization of the module is good because it is related to the TG. • Focusing on the activities is great. And the attached questions are very supportive to make the students get the concept more and the participants can reflect their knowledge and experiences when answering the questions. • New approaches include four strands; Numbers, Geometry, Measurement and Mathematical Relations.	• Time should be extended. • Next year, the participants should be the ones who really teach new curriculum. And the dean teachers and coordinating teachers are also possible.

Subject	Good Points	Point to be Improved
	• The participants are really interested in participating.	
Physical Education	• CDT is pleased with the organization and structure of the training. • In session 1.2 of step-3, CDT could solve the problems immediately. • It is good to share the different experiences since the participants are the primary teachers from different places. • The training is more effective because the participants can share their different background knowledge. • The facilitators are respected by the participants. • The participants talk about their difficulties, and these are solved by the facilitator and peers. Therefore, the participants should be primary headmasters as well as primary teachers.	• According to 21st century skills, the participants should get chances to do group work (4 people in one group) and they should have their roles successfully such as moderator, presenter, or observer. • More time is necessary for all sections. • There are some space difficulties while doing real teaching, if the real teaching is conducted by all groups at the same time at lower level trainings.
Visual Arts	• Participants are implementers at Basic Education Level. • Required teaching learning materials are received. • The design of Visual Arts module is convenient. • If participants cascade the module as they got at central training, training at regional level will be effective.	• The brand of crayons needs to be changed. The recommended brand is colokit (plastic crayons). • Visual arts should also conduct real teaching. • Participants could not find out linkages of G 3-5 curriculum and their reply is not related to what we want. So, they need to get the concept of the module more. • One part of training module should introduce each concept and competencies of the lesson.
Science	• G4 INSET training is the most satisfying among G1, G2, G3 and G4. • Not only simulation but also real teaching is supportive to the participants.	• Session 1.1, 10 mins should be extended, so it will be 35 mins instead of 25 minutes and in session 1.2, 10 mins should be reduced, so it will be 55 mins instead of 65 mins. • According to the comments of CDT, the inclusion of the theory and practical work should be balanced. • And there should be a suggestion box for the participants to ask the questions they would like to know every day.
Performing Art	• The CDT is pleased with the structure of the module. • The participants are great learners, so it is very effective to conduct the training. • Materials are very helpful to conduct the training. • The practical lessons such as flute lessons, dancing lessons are included so it supports the training a lot.	・ It is important to inform the participants at Central Training to bring the flutes. ・ It would be better if there were more time. ・ And participants need to learn G1, G2, G3 and G-4 TG and textbooks in advance. ・ It would be better if there were one day for theory and one day for

Subject	Good Points	Point to be Improved
		practice. ・ Although simulation part is included, micro-teaching and Real teaching should be included too. ・ Also, there should be some kinds of video lessons that support the participants to understand how to facilitate the participants, to conduct group work effectively. Moreover, the video lessons which indicate the essence of group work are suggested too.
Myanmar	・ The participants are great learners. ・ And it is also nice that some participants are primary headmasters because they can learn how to manage the teaching learning situation and think of the solutions when there are some challenges. ・ The organization of the module is satisfying because many practical works and activities are included. So, they can relate to theories.	・ Time is limited, so the participants don't have much time to discuss and present their ideas. ・ Therefore, it would be better to extend one more day for each subject. ・ CDT is also worried about the teachers who got no chances to join such kind of INSET trainings when they teach new curriculum lessons.
Moral and Civics	• Section 1-1 was very smoothly conducted (by CDT). The explanation was clearly done.	• It took more time than planned for Section 2-1 and 2-2 (making posters) due to long explanation. We needed enough rehearsal time. • Regarding selection of lesson for Real lesson, it was difficult to teach continuously from the previous lessons to the selected lesson and the connection in between. CDT and CO realized that the description in TG is about general learning value and not specific learning value. • The general learning value was not clear to the participants. • The description needs to be more clarified in TG. • Real Lesson needs to be selected carefully for G5. • "Appropriate topics" in Section 1-2 needs to be mentioned after showing video lesson. Many participants got confused with that part at that timing. • Section 3-1 tended to run out of time.
Social studies	・ CDT is very pleased with section-4 because they can give the information they would like to give.	・ In section 1-1, time should be extended. ・ If there is no Real teaching, there should be more activities in the module in order to help the participants get many experiences.

Annex 3-3: Online TOT

Category	Reflection Question	Reflection
Findings	• Based on the observation, what were the difference between this year's training and the training in previous years at township level? • Please list up not only bad points but also good points.	• 2 days online TOT was conducted instead of S/R and District face to face trainings. • There were only 2 days gap between online TOT and 6 days township face to face training which caused trainers to have very little preparation time for township level. • Preparation time was very limited for both trainers and training organizers. • Technical issues in both two days such as participants in several townships could not hear or see the screen, could not enter the meeting again after they accidently left. • Some townships could attend only half day some a whole day due to technical errors. • There are 18 townships among 328 which do not have internet facilities so they could not attend online TOT. • Training modules were not in hand of participants. They just had to listen to the training without module in hand. • Soft copy of modules was shared in the afternoon of training first day by CREATE and some participants downloaded and looked at those in the following day; mostly in soft copy. • According to DBE first plan, central level participants were supposed to share the selected participants for online TOT in advance. However, due to limited time and situation, online TOT included both central level participants and new selected participants together.
Suggestions for next year	• If this style of the training will be continued, what do you suggest for the next year's training?	• Online training should be arranged thoroughly and planned well in sufficient time. • The roles of concerned parties; who should do what kind of tasks; should be clear enough and informed in advance so that it will be more effective. • Test training (rehearsal) should be conducted before the real online training. • Online evaluation sheets can be applied next year.

Annex 3-4: Township training

Category	Findings/Suggestions in G3 Training	Reflection Question	Reflection
Difference from previous years		· Based on the observation, what were the difference between this year's training and the training in previous years at township level? · Please list up not only bad points but also good points.	· Training model is totally different. Instead of cascade 4 layers training, 2 days online TOT and face to face 6 days township level training were conducted due to Covid-19. **Limitations** · Preparation time is very limited for both trainers and training organizers. · Printed module availability is limited in most of the townships although some already downloaded from CREATE website in prior, 2 days before face to face training. · In North Dagon, modules of respective session were printed only in the morning of that day for both trainers and participants so they did not have time to study in advance. · Insufficient discussion time due to short version of module. · Video lesson CD format could not be opened with the outdated DVD devices since it was not compatible. Therefore, participants in North Dagon township could not watch the video lesson with the DVD. · Consequently, Video observation session was done with participants' mobile phones mostly. · Video point out session could not be done well in some classes since participants were using mobile phones and it was a bit challenging to manage to pause and play in certain scenes. · There was no real teaching in G4 Township face to face training. **Good points** · Due to this situation, most teachers can now use IT equipment and websites well essentially for recourses. · Consequently, teachers also rely on using the online sources including social media (Facebook) for their

Category	Findings/Suggestions in G3 Training	Reflection Question	Reflection
			• learnings, sharing and helping each other; for example, sharing PA sources and English learning materials. • Due to prior self-learning through online (MDEP website, CREATE website and Facebook), teachers already knew what to do and as a limitation, some of them did not do well in face to face training. • Some teachers prefer this short version of the training since they can learn things in a few days. • Concerned people or trainers' positive attitude towards this training can be obviously seen because our counterparts (both CDT and TE) received several calls from most townships concerning about the training and inquiring how the materials can be available and on forth.
Suggestion for the next year		• If this style of the training will be continued, what do you suggest for the next year's training?	• Allocate sufficient time for preparation and module adjustments/development. • Module availability in time is very important. • It would be better if DBE could arrange the module availability in time to the respective area. • Online evaluation sheets can be applied next year since some townships were asking whether they have to do evaluate.
Management	• Training was well-organized.	• How did TEO prepare for the training? If there are any good and/or bad practices, please note them.	**Limitations** • North Dagon Township trainers did not receive the first day online TOT due to technical issues. • Training module was mistaken with 14 days and printed out for 48 trainers when TE-CPs went monitoring on first day (miscommunication between DBE and TEO). **Good points** • Concerned people (also some TEOs and training in charge) tried their best to get the necessary materials for the face to face training. • A central level representative (primary head) was involved in the training and tried her best to give the information as much as she can to 48 trainers, e.g.

Category	Findings/Suggestions in G3 Training	Reflection Question	Reflection
			distributing audio and video files of Maths to all trainers in advance. She even tried to have reflection/preparation meeting every evening with those 48 trainers for next day. · Trainers' duties are well-assigned in the center for example, alternatively delivering the training in each class. · In each class, there are around 20 and 22 persons for Covid-19 prevention.
Delivery of training materials	· No training materials were prepared on time for participants from EC practicing schools and schools under social welfare department.	· Did trainers and participants have training modules, TG, TB, and other learning materials in hand? · Were materials prepared for all participants on time? · Were there any issues? If there were, please specify them.	· In North Dagon, modules of respective session were printed only in the morning of that day for both trainers and participants. · The short version modules included homework for next days and it was effective for participants. · Not only trainers but also participants prepared for the training by watching the videos from Central training and online TOT recorded lectures and downloading 6 days training module from CREATE website in prior. · TBs and TGs are distributed in advance to all participants. · Video CD format are not usable in their device and they did not have time to prepare.
Equipment	· Yangon (East) District used 20-inch TV and Taunggyi District and Township used one projector for all so that some participants could not watch the video well. In North Dagon Township, TV had to be set in a better way though the TV was big enough to watch.	· Were there any issues? If there were, please specify them.	· Participants used their own mobile devices for video lessons and it worked somehow. · However, the time management for video watching is a bit difficult to manage due to several devices. · Photo lessons session are very useful in that case.
Trainers	· Trainers who had experience in G1 and/or G2 training gave the training appropriately (in	· Did trainers attend the 2 days online training? (Please interview them.)	· All the trainers attended 2 days online training. · 48 trainers (for 12 classrooms)

Category	Findings/Suggestions in G3 Training	Reflection Question	Reflection
	North Dagon Township training). · Some trainers did not respect the flow of training. · Some trainer groups did not divide tasks well and one trainer was responsible for the whole day without discussing with other trainers, which affected the quality of training. · Several trainer's group were cooperative and prepared teaching material together. However, only responsible trainer prepared her teaching material and others were not supportive in several groups. · Some trainers explained the contents mostly in a teacher-centered way.	· How many trainers facilitate the training? · How did they divide the sessions? · Who were the trainers? · Was selection of trainers in Township training adequate? · If there were any issues such as the case in G3 training, please specify them and the way to solve them.	· 4 trainers per session and they tried to rotate to all class but not complete all rooms due to only 6 days. · Among 48 trainers, 47 trainers attended online TOT. Remained one trainer had G1-G3 training experiences. · Trainers did not satisfy much for delivering the training because they did not have enough time for preparation. · Even though trainers did not have enough time for preparation, they tried their best. · Some trainers explained the contents mostly in a teacher-centered way. · The selection of this year township level trainer is not much effective because most of them are primary head and they only have new curriculum experiences by training but not in Real teaching.
Participants	· Participants are motivated to learn in general. However, due to the extremely hot environment, participants tend to lose concentration towards the end of the training. · Several participants did not respect the time.	· Did all teachers, who were supposed to participate, attend the training? · Were there any issues? If there were, please specify them.	· All teachers who were supposed to participated attended the training except only one who is suffering from stroke. · Participants are motivated to learn in general except the first two days due to unavailability of module in advance. · Even some participants can conduct the activity just by reading the module. · Some trainers from last year participated as participants in this year. · Some participants are not familiar with the usage of ICT materials.
Length	· -	· The duration of G4 training was shortened. Was the length of the G4 Township training adequate? If there	· 14 days is still option for township. They want to do the real teachings with students and so on.

Category	Findings/Suggestions in G3 Training	Reflection Question	Reflection
		• were any issues, please specify them. • Please think of which was more adequate, the original one or shortened one and explain the reasons.	
Program	•	• The program was modified from the original version. Was the program of the G4 Township training adequate? If there were any issues, please specify them. • Please think of which was more adequate, the original one or shortened one and explain the reasons.	• Original one is still better. • For this shortened version, more time should be allocated in activities. • Participants wanted/expected to do activities because they have already watched the Central level training videos. • Giving homework to the prior of the concerned subjects is very effective for the experienced teachers. • However, some participants do not understand the purpose of giving homework. Trainers need to explain what to do in homework.
Training delivery in general	•	• Could participants follow the instruction written in module well and conduct activities by themselves? • Were there any difficult activities to be conducted (due to limitation of group work, etc.)	• It all depended on the trainers' flows. • Group work is a bit difficult for them. • More time should be allocated in online TOT because trainers for face to face training did not receive much information from online TOT. • For online TOT, not only central level participants but also S/R and district level participants were invited. They did not have sufficient time to share with central level participants so the latter participants are all new to the training program.
Training delivery - General session	• Participants questioned assessment policy. They would like to know how it could be linked with real situation in class.	• Was length of General session adequate? • Was time allocation in Pedagogy and Assessment adequate? • Were there any issues in General session?	• Time allocation was fine but there were not many responses from participants. • Assessment 1: participants did not get to watch the videos due to inadequate preparation on the very first day in some classes. Some classes watched the video with mobile phones.

Category	Findings/Suggestions in G3 Training	Reflection Question	Reflection
		· Please think of which was more adequate, the original one or shortened one and explain the reasons.	· Assessment 2: even though it was assigned as self-study session, trainers also explained the whole session as module. · Participants were a bit confused about the record format of formative assessment whether all lesson period should be recorded or not. · Formative assessment part needs to be explained more to understand. Therefore more time should be allocated.
Training delivery – Subject sessions	· In English, the trainer from observed classroom used mostly teacher-centered method and explain all the steps/ activities. · In Math, Myanmar, Science, some trainers prepared the teaching material, but it was too small for the students to observe in the class. · Some trainers just followed the module and did not let the participants think the situation.	· Was time allocation in a Subject session adequate? · Was time allocation of the lesson video adequate? · Were there any issues in Subject sessions? · Please think of which was more adequate, the original one or shortened one and explain the reasons.	· English subject: Central level activity conducting style is different from TB. e.g. Spelling game. It is a bit confusing for participants since the activity conducting way (language) is not consistent). · PE: Activity conduction is limited to the space. Micro teaching is not very convenient that only participants are conducting. Trainers did not get involved in doing that. Photo lessons were very useful. PE and English were on the last day, so there was not much issue. · Myanmar language: Confirmation part; participants could not relate to the expected answers and their experiences. Trainers could not do that as well. Micro teaching part, participants did well. The purpose of each activity was not delivered well. · LS: Similar to Myanmar language. · It can be regarded as these two subjects are delivered in the first two days. · MC: Not much issue, but time allocation was not sufficient in homework and the purpose of doing each activity was not delivered well. · Due to time allocation, they could not read TG well. In video session, the point out part is not very well. Participants could do the activity well. In some case, participants could do better than trainers.

Category	Findings/Suggestions in G3 Training	Reflection Question	Reflection
			· Science: Session went well. In video session, trainers did well for that part since the discussion was done well. In some cases, participants could do better than trainers. · PA: Most of the participants did not do well for flute lesson. Dancing and singing activity went well. · VA: Most of the participants could do the activity well, however, some of them could not catch the concept well and trainers could not deliver the concept as well. · Social studies: DLLK had to deliver the training. · Maths: Trainer did not attend the online training but she listened to the audio file of DAAT's lecture and she did well as the module's flow.
Training delivery - Real lesson	· In many cases, only demonstrator prepared teaching-learning materials and other did not support. · Participants manner were not good in some Real lessons and the trainer did not give any advices (in Yangon (East) District. · Observers were taking videos of Real lessons and did not observe it well.	· Was the procedure to conduct Real lessons adequate? · Were there any issues in Real lesson? · There was no Real lesson in G4 Township training. Please ask participants if there should be the Real lesson in G5 training and the reasons.	· No Real lesson was conducted, but the participants are very willing to do the Real lessons.
Others	·	·	· Training would be more effective if the preparation time is sufficient. · Trainers play an important role in face to face training even though trainers and participants used same modules.

Appendix 13

Summary Report on the Impact Survey

THE PROJECT FOR CURRICULUM REFORM AT PRIMARY LEVEL OF BASIC EDUCATION IN MYANMAR

SUMMARY REPORT ON THE IMPACT SURVEY

2021 March
JICA CREATE

LOCATION MAP
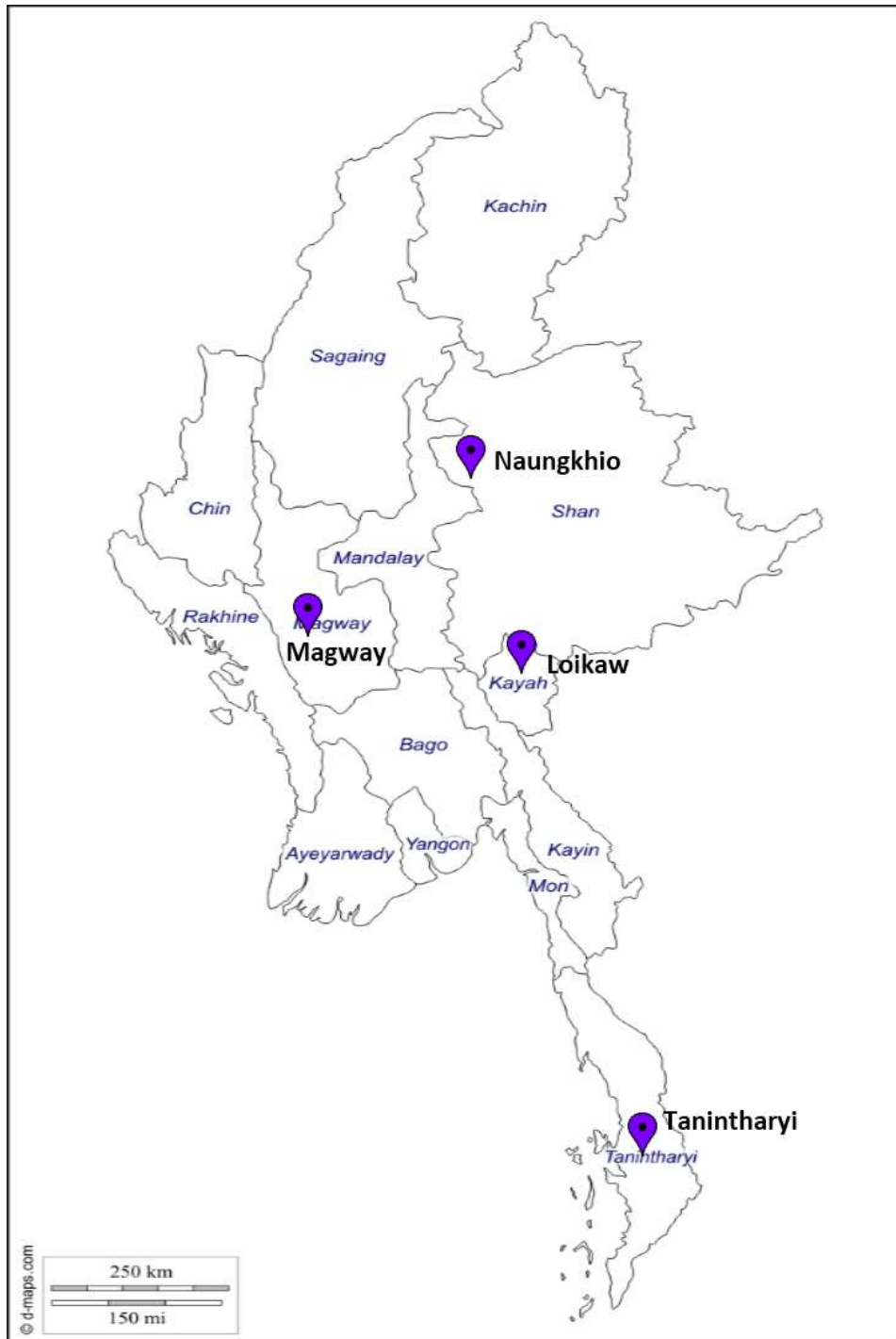
PHOTOS OF THE IMPACT SURVEY

Photo 1: Old G2 students taking a math test at BEPS Myaeigone, Loikaw (Survey 2)

Photo 2: A surveyor reading out a question to pupils at PPS Su Pyint San, Magway (Survey 3)

Photo 3: New G2 students taking a Math test at BEPS Naung Ball, Naungkhio (Survey 4)

Photo 4: New G3 students taking a Math test at BEPPS Yae Phyu, Tanintharyi (Survey 5)

Photo 5: Conducting a role play during the Surveyor Training, Loikaw (Survey 3)

Photo 6: Surveyors preparing for the survey implementation, Tanintharyi (Survey 5)

ABBREVIATIONS

ANOVA	Analysis of Variance
AY	Academic Year
BEMS, MS	Basic Education Middle School
BEMSB, MSB	Basic Education Middle School (Branch)
BEPPS, PPS	Basic Education Post Primary School
BEPS, PS	Basic Education Primary School
BEPSB, PSB	Basic Education Primary School (Branch)
BEHS, HS	Basic Education High School
BEHSB, HSB	Basic Education High School (Branch)
CREATE	The Project for Curriculum Reform at Primary Level of Basic Education in Myanmar
df	Degree of Freedom
DWT	Daily Wage Teacher
EC	Education College
G1, G2, G3, etc.	Grade 1, Grade 2, Grade 3, etc.
GW	General Worker
HT	Head Teacher
JAT	Junior Assistant Teacher
KG	Kindergarten
M&E	Monitoring and Evaluation
MoE	Ministry of Education
NG1, NG2, NG3	New G1, New G2, New G3
N-type	New Type
NA	Not available
OG1, OG2, OG3, OG4	Old G1, Old G2, Old G3, Old G4
PAT	Primary Assistant Teacher
PSH	Primary School Head
SAT	Senior Assistant Teacher
SD	Standard Deviation
STR	Student Teacher Ratio
TEO	Township Education Officer
T-type	Traditional Type
UDNR	University for the Development of National Races

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Executive Summary

The Project for Curriculum Reform at Primary Level of Basic Education in Myanmar (CREATE) was launched in May 2014 to implement educational activities in line with the principles of the new curriculum. The project, a joint initiative of the Myanmar Ministry of Education (MoE) and the Japan International Cooperative Agency (JICA), involved the revision and development of primary level curriculum and textbooks, and their dissemination to primary school teachers, supervisors, and Education College instructors nationwide.

A series of impact surveys were conducted to measure the impact of introducing the new curriculum and textbooks on students' learning outcomes. To that end, a math test was given to Grade 1, 2, and 3 students before and after the introduction of the new curriculum and textbooks. To analyze factors that may have affected students' test results, a questionnaire survey was also administered to students, teachers, and head teachers of 200 schools that were selected as the sample. In addition, math class observation was carried out at 12 schools from the sample before and after the introduction of the new curriculum and textbooks to assess classroom teaching and learning practices.

Altogether five impact surveys were conducted between 2016 and 2020, and a detailed survey report was prepared and submitted to the MoE and JICA after each survey. The last three reports, i.e., Impact Survey Reports 3, 4, and 5, also included a comparison of the results of Grade 1, 2, and 3 students under the old and new curriculum.

This report is a synthesis of the five Impact Survey Reports, outlining the survey framework, implementation structure, and the main results. It also includes main findings from additional analysis conducted recently.

The following are the main findings from the surveys:

- From the math test results, it was found that the mean math test score of the students under the new curriculum was significantly higher than that of those under the old curriculum for Grades 1, 2, and 3. Even after adjusting for the age structure of the students under the old and new curriculum, the mean math test score was still significantly higher for the students under the new curriculum for all three grades.

- The math test consisted of traditional-type (T-type) questions, which focus on knowledge, understanding, and basic skills, and new-type (N-type) questions, which require critical thinking and problem-solving skills. From the analysis of the test results, it was found that the correct answer rates of both T-type and N-type questions were significantly higher for the students under the new curriculum for all three grades.

- From the students' questionnaire, it was found that a higher percentage of students, especially girls, under the new curriculum *like* math class than those under the old curriculum. It was also found that under the old curriculum, the percentage of boys who *like* math was much higher than girls who did for G1 and G2, while the difference between boys and girls was quite small for all grades under the new curriculum. From this finding we may be able to assume that math class has become more attractive to or enjoyable for students, especially girls, under the new curriculum.

- It was also clear from the surveys that the mean math test score of students who *like* math was significantly higher than that of those who *do not like* math for all grades under both the old and the new curriculum. Considering this finding together with the previous result, we can assume that the increased percentage of students who *like* math may be one of the factors for the higher math test score of the students under the new curriculum.

- Another finding from the students' questionnaire was that the combined percentage of students who study at home *every day* and *sometimes* was higher under the new curriculum than the old curriculum though the percentage of students who study at home *every day* was lower under the new curriculum.

- From the math test scores and the students' study habit at home, it was found that the mean math test score of students who *never* study at home was significantly lower than that of students who study at home *every day* or *sometimes* for all grades under both the old and the new curriculum. Considering this together with the previous finding, we can assume that the increased percentage of students who study at home *every day* or *sometimes* is a factor for the higher math test score of the students under the new curriculum.

- From the analysis of the math test scores and the teachers' attributes, it was found that the mean math test score of students taught by teachers with university degrees was significantly higher than that of students taught by teachers without a university degree for most grades. In the sample, the percentage of teachers with a university degree increased from 69% during Survey 1 in 2016 to 85% during Survey 5 in 2020, which may be a factor for the higher math test score of students under the new curriculum.

- It was also found that the teachers with higher professional qualifications and longer years of teaching experience seemed to have a positive impact on students' math test scores though the results varied for different grades.

- From the class observation, it was found that classroom teaching and learning conditions are significantly better under the new curriculum than under the old curriculum in five areas, i.e., Lesson Design Skill, Use of Teaching and Learning Materials, Teacher's Teaching Skill, Assessment Skill, and Students' Positive Attitude.

- An additional analysis using a gender-sensitive class observation checklist indicated that the new curriculum, which employs more collaborative learning, seems to provide girls with opportunities to be more active in class and to stimulate their interest in math.

1. Framework of the Impact Survey

1.1 Objective of the Impact Survey

The objective of the impact survey was to verify the impact of the introduction of the new curriculum and the textbooks on students' learning outcomes.

1.2 Framework of the Impact Survey

To measure the impact on students' learning outcomes, a math test was given to Grade 1 (G1), Grade 2 (G2), and Grade 3 (G3) students before and after the introduction of the new curriculum and the textbooks. To analyze factors that may have affected the outcomes of the students' test results, a questionnaire survey was also administered to students, teachers, and head teachers (HTs). Along with the above-mentioned large-scale, quantitative data collection activities, we also conducted math class observation to assess classroom teaching and learning practices at a few selected schools.

1.3 Survey Methodology

1.3.1 Quantitative Data Collection

Math Test for Students
We developed a G1, G2, and G3 math test, where each test comprised 15 or 16 multiple-choice questions from the relevant grade with four answer options. Some questions were traditional type (T-type) questions, which focus on knowledge, understanding, and basic skills, and others were new type (N-type) questions, which require critical thinking and problem-solving skills.

Questionnaires for Students, Head Teachers, and Teachers
Together with the math test, students were given a multiple-choice questionnaire with questions on their preference for math and study habits as well as their basic information such as gender, age, and language. Separate questionnaires were used for HTs and teachers. The main content of the questionnaires for students, HTs, and teachers are shown in Table 1.3-1.

Table 1.3-1: Content of Questionnaires[1]

Students	Head Teachers	Teachers
Personal Information: - Age - Gender - Language used at home - Possession of motorcycle (economic status of family) Interest and habits: - Preference for math - Use of textbook	Personal Information: - Gender - Professional Qualification, Educational level - Current position - Teaching experience - Experience as trainer in teacher training School Information: - School type - Number of students - Languages spoken by students School Management:	Personal Information: - Gender - Professional Qualification, Educational level - Current position - Teaching experience - Experience as trainer in teacher training - Teaching grade Professional Development: - Participation in/satisfaction with teacher training - Experience regarding lesson observation Teaching practices, beliefs, and attitudes: - Number of students

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[1] Source of the tables and figures in this report is CREATE unless otherwise specified.

Students	Head Teachers	Teachers
in math class - Study at home - Family's support in studies - Family's interest in studies - Favorite subject	- HT's activities regarding management of their school - Satisfaction with teachers, students, school, community - Assessment Textbooks and Teacher's Guides: - Delivery of textbooks, teacher's guides, and teaching aids - Opinion on new textbooks	- Students' daily attendance in class - Access to math textbook/teacher's guide - Teacher's activities regarding math class - Satisfaction with HTs/teachers/students/school/community - Assessment Textbooks and Teacher's Guides: - Delivery of textbooks, teacher's guides, and teaching aids Comparison of students' behavior under old and new curriculum

1.3.2 Qualitative Data Collection

Math Class Observation

To assess classroom teaching and learning systematically, we developed a class observation sheet with 13 statements, which were divided into 6 areas, i.e., Lesson Design Skill, Use of Teaching and Learning Materials, Teacher's Teaching Skill, Assessment Skill, Teacher's Positive Attitude, and Students' Positive Attitude. During or after the class observation, the observer assessed the class by rating each statement on a 4-option scale ranging from "fully agree" to "completely disagree."

1.4 Sample Townships and Schools

Four sample townships were selected randomly—two from states and two from regions (except Yangon and Naypyidaw). In both sets, the urban population of one of the two townships was above the national average and the other's was below the national average.[2] Table 1.4-1 shows the selected townships. In each township, 50 schools were selected by stratified random sampling using the level of schools, i.e., high school, middle school, and primary school.

Table 1.4-1: Sample Townships

State/Region	District	Township	Urban Population
TANINTHARYI Region	Myeik	Tanintharyi	Below national average
KAYAH State	Loikaw	Loikaw	Above national average
MAGWAY Region	Magway	Magway	Above national average
SHAN State	Kyankme	Naungkhio	Below national average

In principle, each impact survey should have been conducted at the same 200 schools from the sample. However, before the 2nd impact survey, 37 schools in Naungkhio were replaced by other schools due to security issues in that area. In replacing the schools, the project, together with the Township Education Office (TEO), tried to maintain the representativeness of the school types in the original sample. For the math class observation, 12 schools[3] from among the 200 schools (3 schools in each township) were selected.

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[2] Townships were classified into two groups based on the percentage of urban population in the 2014 census data: equal to or above the national average of 29.2% and below the national average.

[3] Math class observation was conducted at 8 schools (2 schools in each township) for the 1st survey (AY2015/16), which increased to 12 (3 schools in each township) from the 2nd survey.

2. Survey Implementation

2.1 Survey Target Population and Schedule

The target population and schedule of the surveys are summarized in Table 2.1-1 below.

Table 2.1-1: Impact Survey Target Population and Schedule

Survey	Target and Schedule	Control Group (Before New Curriculum/ Textbooks Introduction)	Comparison	Treatment Group (After New Curriculum/ Textbooks Introduction)
1st Survey	Target population	G1 students (5 years old) and G2 students (6 years old) in AY2015/16*		
1st Survey	Schedule	February 2016 (at the end of AY2015/16) (after 1 year/2 years of current textbook use)		
2nd Survey	Target population	G2 students (6 years old) and G3 students (7 years old) in AY2016/17*		
2nd Survey	Schedule	January 2017 (at the end of AY2016/17) (after 2 years/3 years of current textbook use)		
3rd Survey	Target population	G3 students (7 years old) and G4 students (8 years old) in AY2017/18*		G1 students (6 years old) in AY2017/18
3rd Survey	Schedule	January 2018 (at the end of AY2017/18) (after 3 years/4 years of current textbook use)		January 2018 (at the end of AY2017/18) (after 1 year of new textbook use)
4th Survey	Target population			G2 students (7 years old) in AY2018/19
4th Survey	Schedule			January 2019 (at the end of AY2018/19) (after 2 years of new textbook use)
5th Survey	Target population			G3 students (8 years old) in AY2019/20
5th Survey	Schedule			January 2020 (at the end of AY2019/20) (after 3 years of new textbook use)

Note: Due to the age differences of G1, G2, and G3 students before and after the curriculum reform, data of students for both G1 and G2 in 2015/16, G2 and G3 in 2016/17, and G3 and G4 in 2017/18 were collected from the control group.

Table 2.1-2 shows the sample schools, target grade, and schedule of math class observation.

Table 2.1-2: Math Class Observation Target and Schedule

Township	School No.	School Type	Rural/ Urban	Survey 1 Feb 2016	Survey 2 Nov/Dec 2016	Survey 3 Nov/Dec 2017	Survey 4 Nov/Dec 2018	Survey 5 Nov/Dec 2019
Tanintharyi	120	BEPS	U	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	141	BEMSB	R	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	115	BEHS	R	-	OG2, OG3	OG3, OG4, NG1	NG2	NG3
Loikaw	217	BEPS	U	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	244	BEHS	R	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	228	BEPPS	R	-	OG2, OG3	OG3, OG4, NG1	NG2	NG3
Magway	301	BEHSB	U	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	337	BEPS	U	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	306	BEHSB	R	-	OG2, OG3	OG3, OG4, NG1	NG2	NG3
Naungkhio	421	BEMSB	U	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	426	BEMSB	R	OG1, OG2	OG2, OG3	OG3, OG4, NG1	NG2	NG3
	443	BEPS	R	-	OG2, OG3	OG3, OG4, NG1	NG2	NG3
So far, we have video recordings of the following: OG1: 8 classes, OG2: 20 classes, OG3: 24 classes, OG4: 12 classes, NG1: 12 classes, NG2: 12 classes, and NG3: 12 classes									

Note 1: BEPS=Basic Education Primary School, BEPPS= Basic Education Post Primary School, BEMSB= Basic Education Middle School (Branch), BEHSB= Basic Education High School (Branch), BEHS= Basic Education High School

Note 2: OG1, OG2, OG3, and OG4 are G1, G2, G3, and G4 under the old curriculum, and NG1, NG2, and NG3 are G1, G2, and G3 under the new curriculum.

2.2 Implementation Organization

The survey team was composed of two monitoring and evaluation (M&E) project members, one M&E project officer, and four researchers (one of them was the M&E project officer), who led the surveyor training and survey implementation in the assigned township. Normally in each township, 20 surveyors were selected by the TEO and trained by the survey team. Most of the surveyors were current or former HTs or teachers in the township. Math class observation and rating of the class was carried out by a national (Myanmar) project officer with extensive experience in teacher education, especially in the child-centered approach.

2.3 The Survey Reports

Since the start of the project, six survey reports have been prepared and submitted (Table 2.3-1).

Table 2.3-1: Impact Survey Reports Submitted

No.	Title	Date	Submission
1	Report on Impact Survey 1	Sept 2016	Appendix to Progress Report (PR) 3, March 2017
2	Report on Impact Survey 2	June 2017	Appendix to Project Completion Report (PCR) Year 2, March 2018
3	Report on Impact Survey 3	Aug 2018	Appendix to PCR Year 3, March 2019
4	Report on Impact Survey 4	June 2019	Appendix to PR 4, April 2020
5	Report on Impact Survey 5	April 2020	As a technical report, April 2021
6	Summary Report on the Impact Surveys	March 2021	Appendix to Final Project Completion Report, May 2021

3. Sample Schools and Respondents

3.1 Basic Information of Sample Schools

The data in this section is based on Survey 5 (AY2019/20) unless mentioned otherwise.

3.1.1 School Type

In Myanmar, there are seven types of schools under basic education, i.e., Primary School Branch (PSB), Primary School (PS), Post Primary School (PPS), Middle School Branch (MSB), Middle School (MS), High School Branch (HSB), and High School (HS), depending on the level (grade) of class, number of students and teachers, and available school facilities. The government upgrades schools, for example, from PSB to PS, when certain conditions are met. Therefore, among the 200 schools in the sample, there were some schools that had been upgraded during the five years from Impact Survey 1 to Impact Survey 5. Figure 3.1-1 shows the number of sample schools during Survey 1 (AY2015/16) and Survey 5 (AY2019/20) by school type and by township.
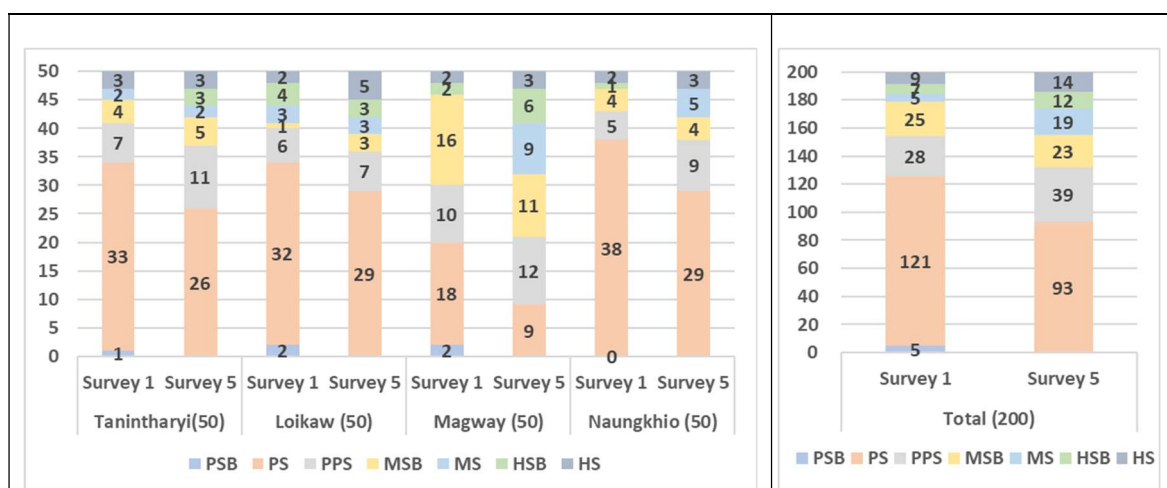

Figure 3.1-1: Number of Sample Schools by School Type by Township

3.1.2 Schools in Rural versus Urban Areas

Among the 200 schools in the sample, 181 were rural schools, located in villages or village areas, and 19 were urban schools, located in towns or wards. Table 3.1-1 shows the number of rural and urban schools by township. One school in Magway was in a military zone and classified as rural in this study. At the time of Survey 5, 67% of sample schools in the rural area were primary schools (PS and PPS) and only 12% were high schools (HSB and HS), while in urban areas, the proportions were 53% and 26%, respectively.

Table 3.1-1: Number of Sample Schools by Area

Township	Rural	Urban	Total
Tanintharyi	49	1	50
Loikaw	41	9	50
Magway	45	5	50
Naungkhio	46	4	50
Total	181	19	200

3.1.3 School Size

Among the 200 schools in the sample, the total number of students per school ranged from 15 to 2,392, with an average strength of 226. Figure 3.1-2 shows the number of schools by student number; the average student number is also shown. The two smallest schools with 15 students in total are both PS. The largest school is a HS in Magway with 3–8 classes of more than 40 students each from KG to G11. These figures are based on data at the time of Survey 5.
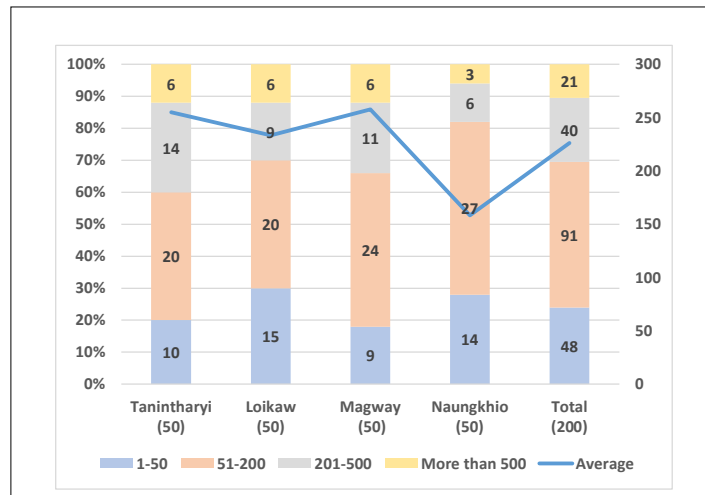

Figure 3.1-2: Number of Schools by Student Number by Township

3.1.4 Student-Teacher Ratio

Among the 200 schools in the sample, the student-teacher ratio (STR)[4] ranged from 2.5 to 67.2, with a mean value of 17.0. Figure 3.1-3 shows the number of schools by STR by township. The mean STR is the highest in Tanintharyi and the lowest in Loikaw. These figures are based on data at the time of Survey 5.
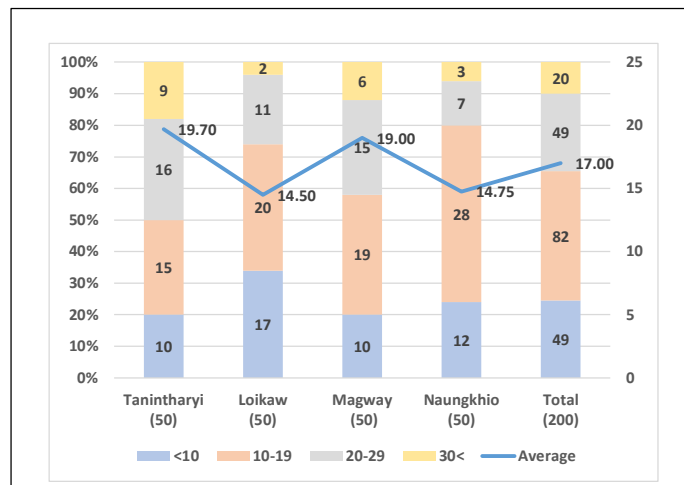

Figure 3.1-3: Number of Schools by STR by Township

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[4] The teachers' number used here includes the head teacher if he/she also taught classes.

3.2 Basic Information of Respondents

3.2.1 Students

Respondent Number

A math test and questionnaire were administered to all the students of the target grades at the 200 schools in the sample. Table 3.2-1 shows the number of students who took part in each impact survey.

Table 3.2-1: Number of Student Respondents

Survey	Year	OG1	OG2	OG3	OG4	NG1	NG2	NG3	Total
1	AY2015/16	4,554	4,503						9,057
2	AY2016/17		4,853	4,668					9,521
3	AY2017/18			4,774	4,670	5,441			14,885
4	AY2018/19						5,563		5,563
5	AY2019/20							5,565	5,565
Total		4,554	9,356	9,442	4,670	5,441	5,563	5,565	44,591

Respondent Number by Gender

Table 3.2-2 shows the number of student respondents in Survey 5. The number is high in Tanintharyi and Magway and low in Naungkhio, which corresponds to the presence of a greater number of larger sized schools in Tanintharyi and Magway and fewer in Naungkhio as described in 3.1.3. In terms of gender, there were slightly more boys than girls in each grade in all the surveys. In Survey 5, there were 2,965 boys (53.3%) and 2,600 girls (46.7%).

Table 3.2-2: Number of Students by Gender by Township

Township	Boys	Girls	Total
Tanintharyi	884	678	1,562
Loikaw	702	614	1,316
Magway	808	787	1,595
Naungkhio	571	521	1,092
Total	2,965	2,600	5,565

Respondent Number by Age Group

Under the old curriculum, the primary school starting age was 5 years, while under the new curriculum, it is 6 years. Therefore, the normal age group was 5–6 years for OG1, 6–7 years for OG2, 7–8 years for OG3, and 8–9 years for OG4. Under the new curriculum, the normal age group is 6–7 years for NG1, 7–8 years for NG2, and 8–9 years for NG3.

Table 3.2-3: Number of Students by Age

Test	Grade	Age							
		5 yrs	6 yrs	7 yrs	8 yrs	9 yrs	10 yrs or over	NA	Total
G1	OG1	1,643	1,645	513	195	99	77	382	4,554
Math	OG2	197	902	2,010	816	285	200	93	4,503
Test	NG1	262	1,255	2,526	817	301	185	95	5,441
G2	OG2	141	813	2,203	1,031	369	238	58	4,853
Math	OG3	30	48	775	2,162	1,125	517	11	4,668
Test	NG2	39	75	1,155	2,854	1,067	369	4	5,563
G3	OG3	43	50	968	2,228	1,054	425	6	4,774
Math	OG4	3	7	28	706	2,845	1,079	2	4,670
Test	NG3	13	8	46	1,129	3,143	1,224	2	5,565

Note: NA indicates no response or invalid response

However, according to the students' response, their age varied from 5 to 10 years or above as shown in Table 3.2-3. It is likely that some students responded incorrectly, especially when they indicated an age that was lower than the normal age group. The normal age group is shaded in green in the table.

3.2.2 Head Teachers and Teachers

Head teachers and teachers who taught math for the target grades were also asked to fill in the questionnaires. Table 3.2-4 shows the number of HTs and teachers who took part in the impact survey. Most of the sample schools have only one class per grade and, therefore, one teacher of the target grade took part in the survey. However, there are several schools with more than one class per grade and more than one teacher teaching math for the target grade. In those cases, all teachers who taught math for the target grade were asked to fill in the questionnaire.

Table 3.2-4: Number of Respondent HTs and Teachers

Survey	Year	HTs	Teachers (old curriculum)		Teachers (new curriculum)		Total
1	AY2015/16	195	OG1&OG2	406			601
2	AY2016/17	200	OG2&OG3	389			589
3	AY2017/18	200	OG3&OG4	394	NG1	207	801
4	AY2018/19	200			NG2	206	406
5	AY2019/20	200			NG3	205	405
Total		995		1,189		618	2,802

Table 3.2-5 shows the number of HTs and teachers in Survey 5 by township and by gender.

Table 3.2-5: Number of HTs and Teachers by Gender by Township

Township	Head Teachers			Teachers		
	Male	Female	Total	Male	Female	Total
Tanintharyi	18	32	50	8	42	50
Loikaw	8	42	50	9	42	51
Magway	15	35	50	13	39	52
Naungkhio	13	37	50	2	50	52
Total	54 (27%)	146 (73%)	200	32 (16%)	173 (84%)	205

In Myanmar, the majority of HTs and teachers are female, especially in primary schools. At the time of Survey 5, 73% of HT respondents and 84% of teacher respondents were female.

4. Main Results

4.1 Math Test

> **Main Results:**
> - The mean total scores of NG1, NG2, and NG3 students were significantly higher than those of OG1, OG2, and OG3 students, respectively.
> - The correct answer rates of both traditional-type and new-type questions were significantly higher for the students under the new curriculum than those under the old curriculum.

The G1, G2, and G3 math tests were composed of 15 or 16 multiple-choice questions of relevant grade with four answer options. About half of the questions were traditional type (T-type) questions, which focus on knowledge, understanding, and basic skills, while the rest were new type (N-type) questions, which require critical thinking and problem-solving skills.

Table 4.1-1 shows the full marks, the number of T-type and N-type questions, and the student groups that took part in each test.

Table 4.1-1: Summary of Math Test

Test	Full Marks	Question Type		Survey and Students			
		T-type	N-type	Old Curriculum		New Curriculum	
G1 Math Test	15	8	7	Survey 1	OG1, OG2	Survey 3	NG1
G2 Math Test	16	8	8	Survey 2	OG2, OG3	Survey 4	NG2
G3 Math Test	15	7	8	Survey 3	OG3, OG4	Survey 5	NG3

Due to the age differences of students under the old and the new curriculum, we collected the data of students for both G1 and G2 in AY2015/16, G2 and G3 in AY2016/17, and G3 and G4 in AY2017/18 under the old curriculum as shown in the above table.

4.1.1 Total Score

Figures 4.1-1 shows the mean total score of students by grade for G1, G2, and G3 math tests.
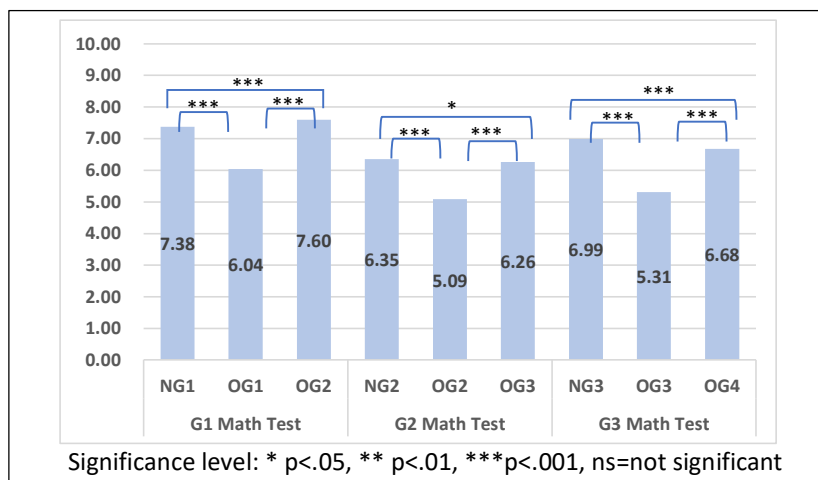

Figure 4.1-1: Mean Total Score

It can be seen that the mean total scores of NG1, NG2, and NG3 students are significantly higher than those of OG1, OG2, and OG3 students (p<.001), respectively. Further, in the G2 and G3 math tests, the mean total score of NG2 students is significantly higher than that of OG3 students (p<.05), and the mean total score of NG3 students is significantly higher than that of OG4 students (p<.001).

Total Score by Age:

Figures 4.1-2–4 show the mean test scores of students by students' age group[5] for the G1, G2, and G3 math tests, respectively.
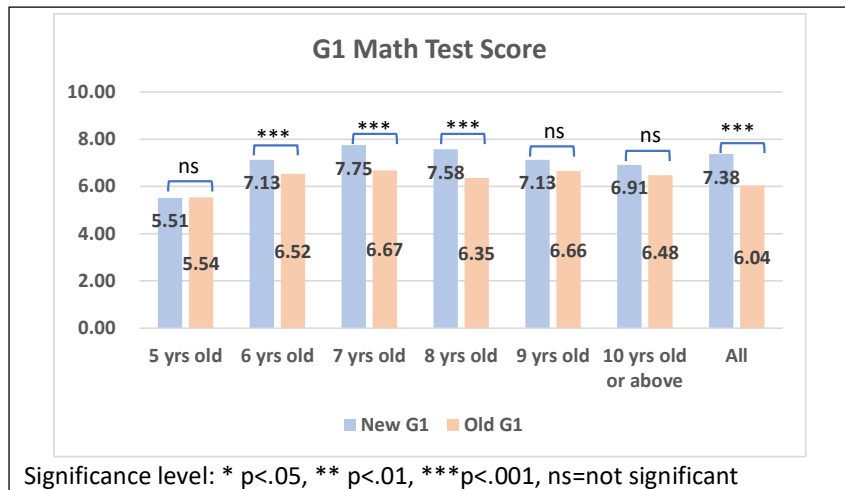
Figure 4.1-2: Mean G1 Math Test Score by Age (NG1 & OG1)

For the G1 math test, the mean score of 5-year-olds is quite low for both OG1 and NG1. In all the other age groups, the mean score is higher for NG1 than OG1 and the difference is significant for the 6-, 7-, and 8-year-old age groups. For the G2 math test, the mean score of the NG2 students is significantly higher than that of OG2 students for all age groups except 5-year-olds.
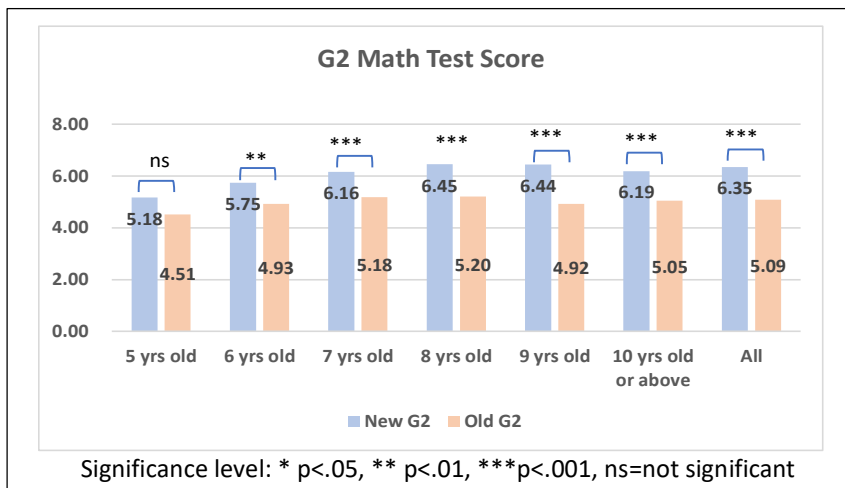

Figure 4.1-3: Mean G2 Math Test Score by Age (NG2 & OG2)

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[5] Age here is based on the response of each student.

For the G3 math test, the mean score of NG3 students is significantly higher than that of OG3 for 8-, 9-, and 10-year-old or above age groups. From these three graphs, it is clear that <u>the mean score of students under the new curriculum is higher than that of students of the same age group under the old curriculum.</u>
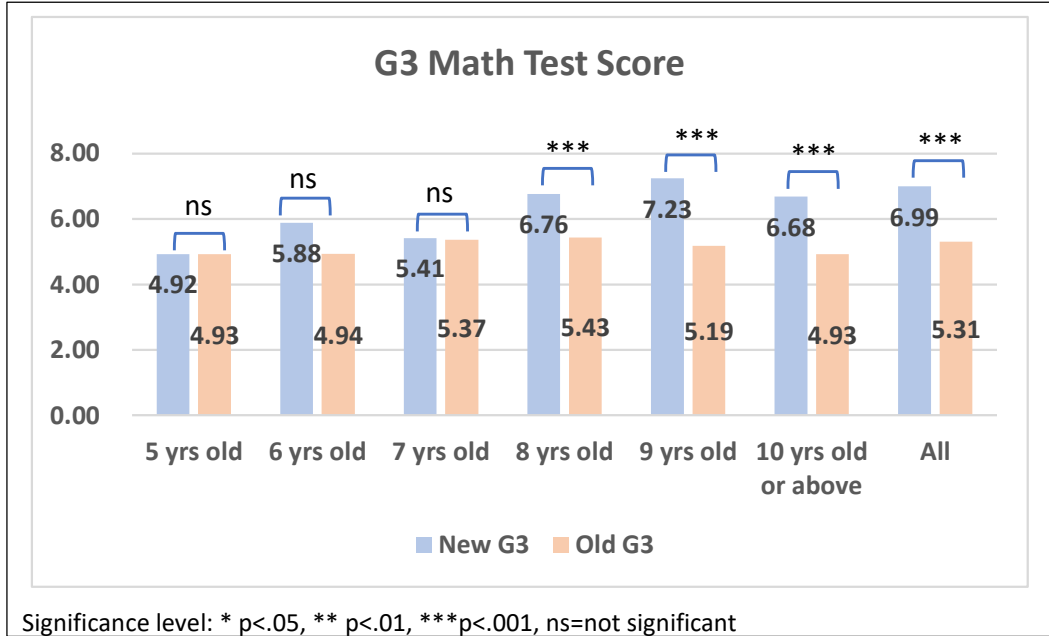

Significance level: * p<.05, ** p<.01, ***p<.001, ns=not significant

Figure 4.1-4: Mean G3 Math Test Score by Age (NG3 & OG3)

Total Score by Gender:

Figure 4.1-5 shows the mean math test score of boys and girls in the G1, G2, and G3 math tests. The mean score of girls is higher than that of boys for all cases but the difference is not significant for NG2 and OG3.
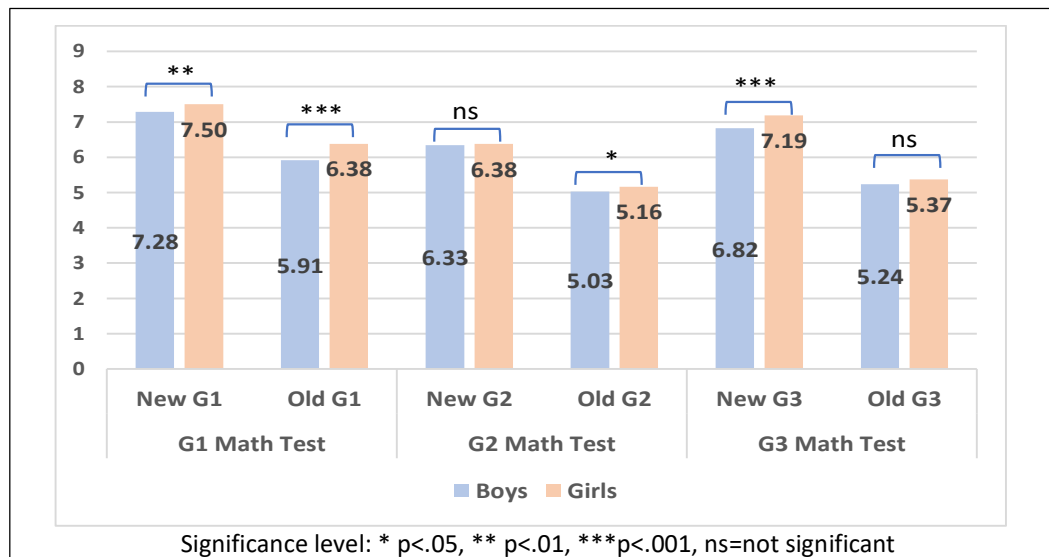

Significance level: * p<.05, ** p<.01, ***p<.001, ns=not significant

Figure 4.1-5: Mean Math Test Score by Gender

Total Score by Area

As explained in 3.1-2, the participant schools were classified into rural or urban based on their location. Out of the 200 schools, 181 (90.5%) were situated in rural and 19 (9.5%) in urban areas, though the proportion of students in rural and urban areas was roughly 80% and 20%, respectively, as many of the schools in the urban areas were quite large. Figure 4.1-6 shows the mean math test score of students by area for the G1, G2, and G3 math tests. The mean score of students in urban schools is significantly higher than that of students in rural schools for all grades in all tests (p<.001).
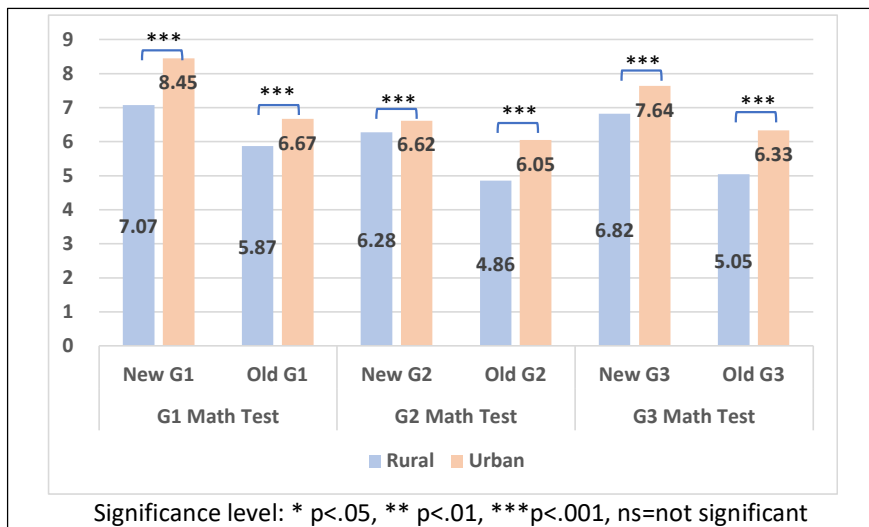

Figure 4.1-6: Mean Math Test Score by Area

Total Score by Economic Condition

To assess the economic condition of the students, the students were asked if there was a motorbike at home or not. We assumed that households with motorbikes are, in general, economically better-off than those without them, though it may not be true for some cases. Figure 4.1-7 shows the mean math test score of students with or without motorbikes at home for the G1, G2, and G3 math tests. The mean scores of students with motorbikes are significantly higher than those of students without motorbikes in all tests for all grades except NG1 students.
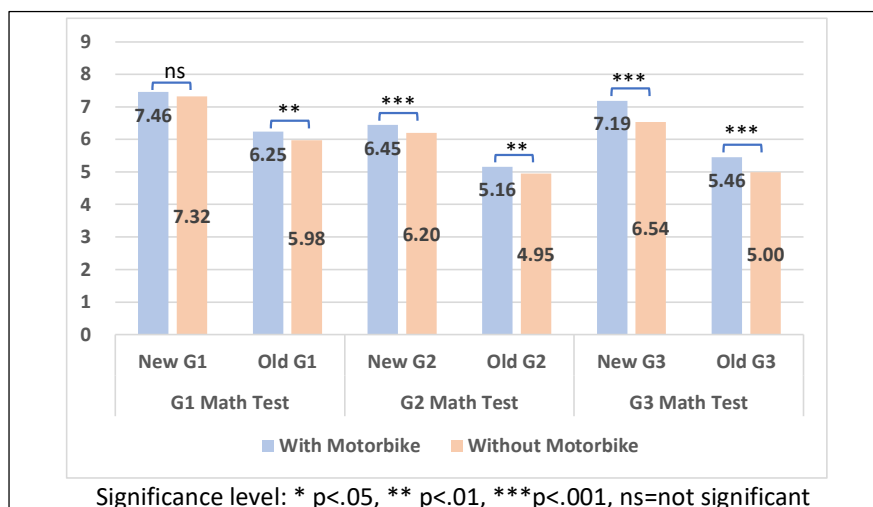

Figure 4.1-7: Mean Math Test Score by Economic Condition

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4.1.2 Traditional-type and New-type Questions

As explained previously, about half of the questions were traditional type (T-type) questions, which focus on knowledge, understanding, and basic skills, while the rest were new type (N-type) questions, which require critical thinking and problem-solving skills. Figure 4.1-8 shows the correct answer rates of T-type and N-type questions of the G1, G2, and G3 math tests. ANOVA followed by Bonferroni post hoc test found that the correct answer rates among the three groups were significantly different both for T-type and N-type questions for the G1, G2, and G3 math tests as indicated in the figure.
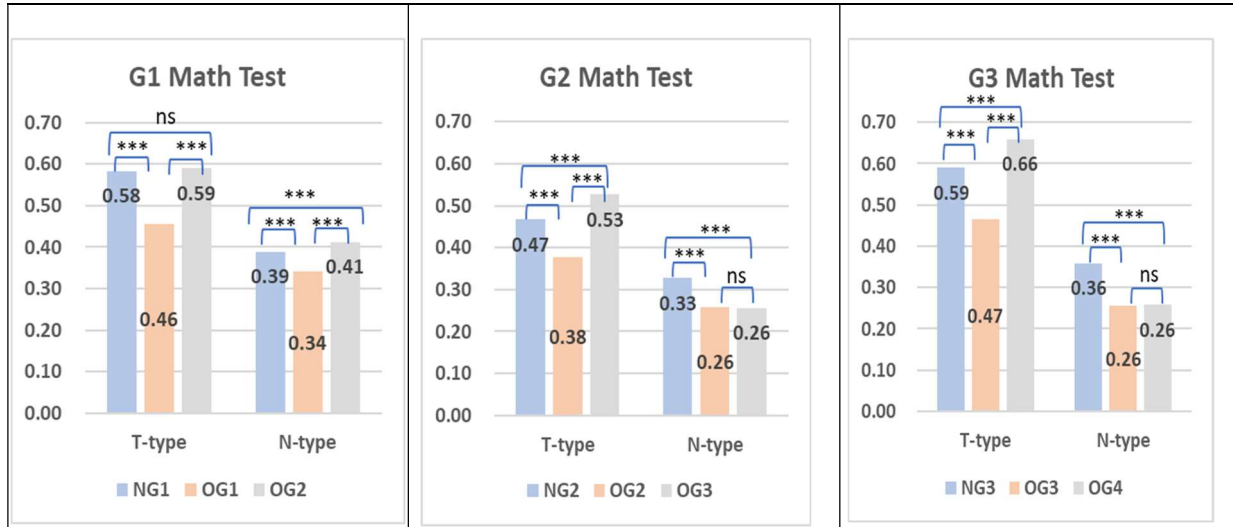
Significance level: * p<.05, ** p<.01, ***p<.001, ns=not significant

Figure 4.1-8: Correct Answer Rates of T-type and N-type Questions

For same grade students under the new and old curriculum, i.e., NG1 vs OG1, NG2 vs OG2, and NG3 vs OG3, the correct answer rates of both T-type and N-type questions are significantly higher for the students under the new curriculum than those under the old curriculum (p<.001).

Further, comparing the correct answer rate of the students under the new curriculum with that of the students who were one grade above under the old curriculum, i.e. NG1 vs OG2, NG2 vs OG3, and NG3 vs OG4, it was found that the correct answer rate for N-type questions was significantly higher for NG2 and NG3 students than OG3 and OG4 for the G2 math test and G3 math test, respectively.

4.2 Students' Questionnaire

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Main Results:
- A higher percentage of students, especially girls, under the new curriculum like math class than those under the old curriculum.
- The combined percentage of students who study at home *every day* and *sometimes* is higher under the new curriculum than the old curriculum though the percentage of students who study at home *every day* is lower under the new curriculum.

</div>

Together with the math test, a questionnaire was administered to the students. In addition to gathering details on the students' gender, age, and the language used at home, questions such as "Do you like Math?" "Do you study at home?" and "Does your family member help you with your studies?" were asked. The following sections summarize the main results of some of the main questions for G1, G2, and G3 students under the old and the new curriculum.

4.2.1 Students' Math Preference

The students were asked if they like math. Figure 4.2-1 shows the percentage of students in G1, G2, and G3 under the old and the new curriculum who answered "*Yes, I like Math*" or "*No, I don't like Math.*"

In each grade, a larger percentage of students under the new curriculum responded that they like math compared to those under the old curriculum. However, the difference is much greater in G1 and G2 than G3 where the difference is smaller. Between NG1 and OG1 ($\chi2=286.24$, $df=1$, $p<.001$), and NG2 and OG2 ($\chi2=279.41$, $df=1$, $p<.001$), the difference in the percentage of students who said they liked or did not like math was significant, while the difference between NG3 and OG3 ($\chi2=1.6147$, $df=1$, $p=.204$) was not significant. Under the new curriculum many students liked math class from G1 up to G3, while under the old curriculum, about 14% of students who did not like math in G1 came to like the subject as they advanced to the next grades and reached G3.
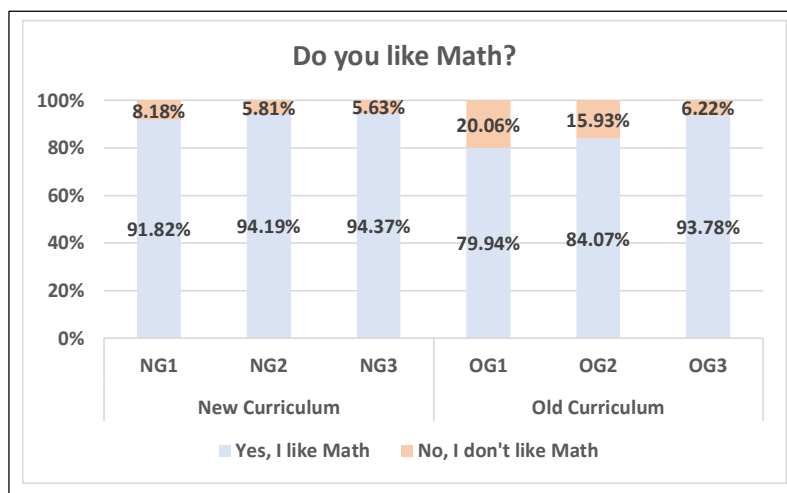

Figure 4.2-1: Math Preference

Figure 4.2-2 shows the same data by gender. Under the old curriculum, the percentage of boys who like math is much higher than that of girls in G1 and G2 but the difference is much smaller in G3. On the other hand, under the new curriculum, the difference between boys and girls is quite small in all grades. This graph also shows that the difference between the percentage of boys who like math under the old and the new curriculum is small (4.25 percentage points in G1 and 4.84 points in G2) while that of girls is larger (19.88 points in G1 and 15.49 points in G2).

From this finding we may be able to assume that math class under the new curriculum has become more attractive to or enjoyable for students, especially girls, at least in the early grades.
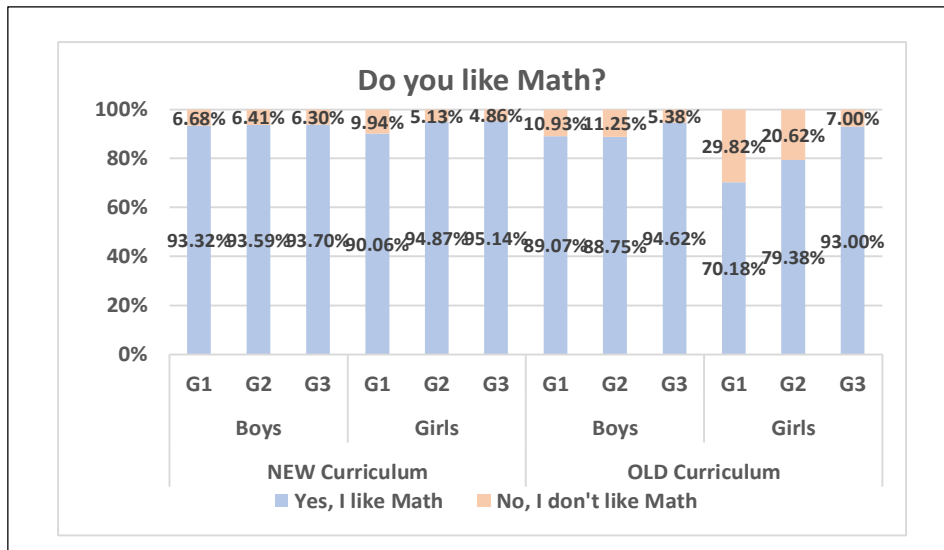

Figure 4.2-2: Math Preference by Gender

4.2.2 Study Habit at Home

The students were asked if they study at home. Figure 4.2-3 shows the percentage of students in G1, G2, and G3 under the new and old curriculum who answered *every day*, *sometimes,* or *never*. The percentage of students who study at home *every day* is lower in all three grades under the new curriculum than under the old curriculum. This may be because the MoE has instructed teachers not to give much homework to lower primary level students under the new curriculum. However, the combined percentage of students who study *every day* and *sometimes* is higher in all three grades under the new curriculum. In other words, the percentage of students who *never* study at home is lower in all three grades under the new curriculum than under the old curriculum. This graph also shows a gradual decline from G1 to G3 in the percentage of students who study at home *every day* and *never* but an increase in the percentage of students who study *sometimes* under both the old and the new curriculum.
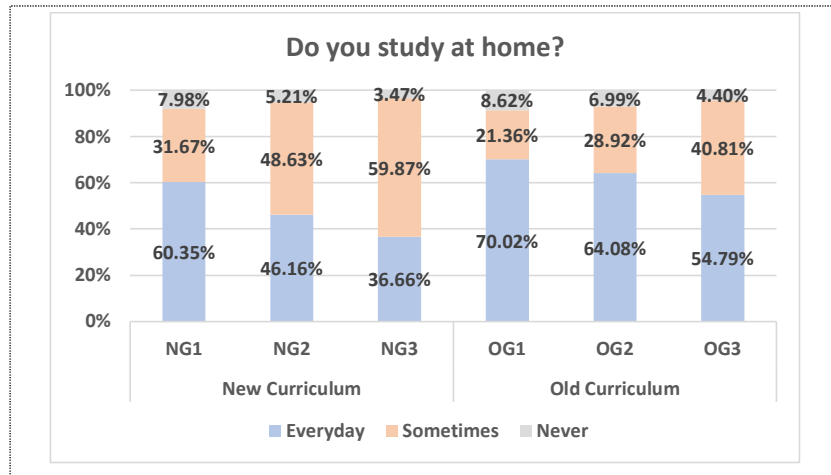
Figure 4.2-3: Frequency of Study at Home

4.2.3 Family's Support for Study

Students were asked if their family members help them with their studies, with the three answer options being *always*, *sometimes,* and *never.* Figure 4.2-4 shows the percentage of students in G1, G2, and G3 under the new and the old curriculum who answered *always*, *sometimes,* or *never*. The percentage of students whose family members *always* helped them with their studies is lower and that of those whose family members *never* helped is higher in all grades under the new curriculum than under the old curriculum. In other words, the data shows that family members help their children with their schoolwork less frequently under the new curriculum than under the old curriculum.
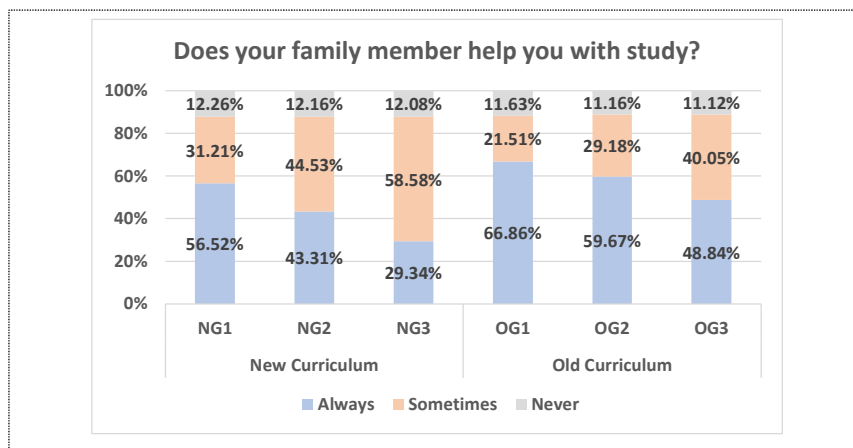

Figure 4.2-4: Frequency of Family's Help with Studies

The following are some possible reasons for this phenomenon. (1) As mentioned previously, teachers have been instructed by the ministry not to give much homework to young students under the new curriculum; thus, children do not study at home as much as they did under the old curriculum. (2) Some schools keep the textbooks at school, so parents are not sure how to help their children with their studies at home. (3) Parents are not familiar with the approach and the content of study under the new curriculum, and are therefore less able than before to help their children with their studies at home.

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4.3 Math Test Score and Students' Questionnaire Results

Main Results:
- The mean math test score of students who *like* math is significantly higher than that of those who *do not like* math for all grades under both the old and the new curriculum.
- The mean math test scores of the students who study at home *every day* and *sometimes* are significantly higher than those of the students who *never* study at home for all grades under both the old and the new curriculum.

4.3.1 Math Test Score and Students' Math Preference

Figure 4.3-1 shows the mean math test scores of students in the G1, G2, and G3 math tests based on their response to the question *Do you like Math?*

The mean score of students who responded that they *like* math is significantly higher than that of those who answered that they *do not like* math for all grades in all tests ($p<.001$). One of the important findings of this survey was that the students who like math have a higher math test score. As shown in Figure 4.2-1, higher percentages of students responded that they like math under the new curriculum than under the old curriculum. It may be one of the reasons for the higher math test score of the students under the new curriculum.
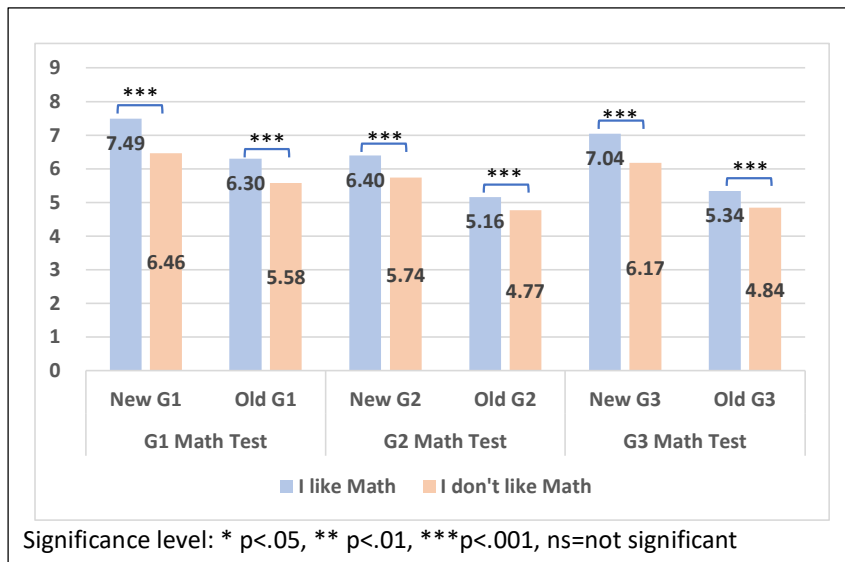

Figure 4.3-1: Math Test Score by Students' Math Preference

4.3.2 Math Test Score and Students' Study Habit at Home

Figure 4.3-2 shows the mean math test score of students in the G1, G2 and G3 math tests based on their answer to the question *Do you study at home?*

The mean score of the students who responded that they study at home *every day* and that of those who responded *sometimes* are not significantly different under the old curriculum, while the mean is significantly higher for the students who study *sometimes* than those who study *every day* under the new curriculum in G1 and G2, but that pattern is reversed in G3. Under both the old and the new curriculum, the mean score of those who *never* study at home is significantly lower than that of those who study *every day* or *sometimes*.
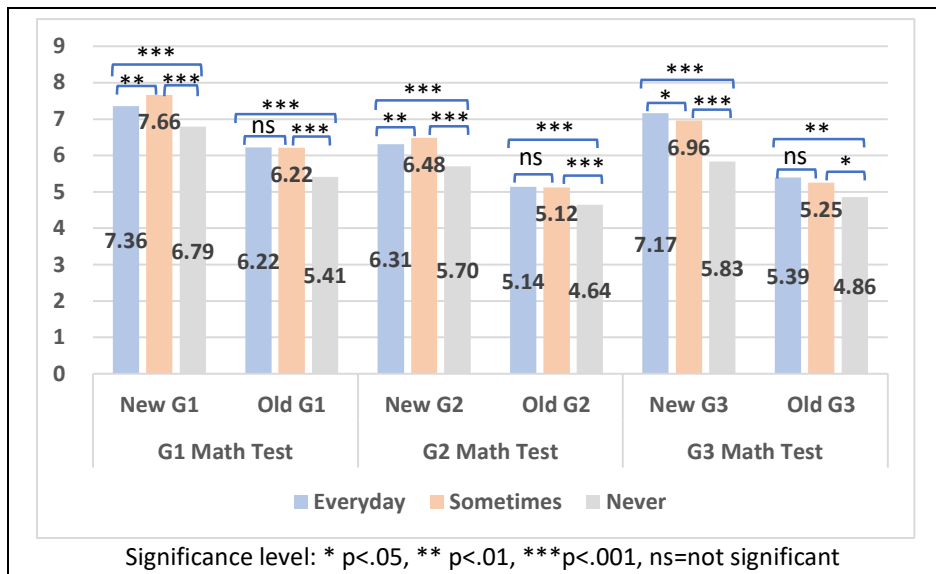
Figure 4.3-2: Math Test Score by Students' Study Habit

4.3.3 Math Test Score and Family's Support for Study

Figure 4.3-3 shows the mean math test scores of students in the G1, G2, and G3 math tests based on their response to the question *Does your family member help you with your studies*?
The mean scores of the students whose families *always*, *sometimes*, or *never* help them were not significantly different under the old curriculum. On the other hand, under the new curriculum, the mean score of the students whose family members *always* help them with their studies is significantly lower than that of the students who responded *sometimes* or *never*. It may be because the content as well as the approach under the new curriculum is unfamiliar to family members, and any effort that they may take to help their children might not be similar to the school's approach, which might confuse the children.
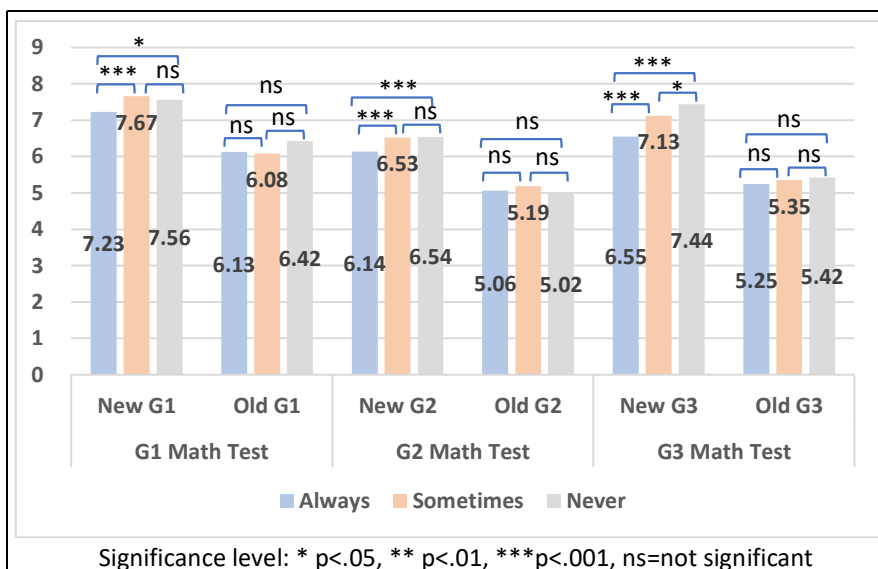

Figure 4.3-3: Math Test Score by Family's Support for Study

4.4 Math Test Score and Teachers' Attributes

Main Results:
- The mean math test score of students taught by teachers with university degrees was significantly higher than that of students taught by teachers without a university degree for most grades.
- Teachers with higher professional qualification and longer years of teaching experience have a positive impact on students' learning outcomes.

The following sections compare the math test score of students based on their teachers' response to questions such as their professional qualifications, length of teaching, and training experience. For the 1st survey (for OG1 students), the data between students and teachers were not linked, so we could not include the OG1 data in this section.

4.4.1 Teachers' Academic Qualification

The teachers were asked to state their highest academic qualification. Based on their response, teachers were categorized into two groups—those with a university degree and those without one. The percentage of teachers with a university degree (either from a regular or correspondence course) ranged from 69% (the 1st survey in 2016) to 85% (the 5th survey in 2020). Figure 4.4-1 and Table 4.4-1 show the mean math test scores of students taught by teachers with a university degree and those taught by teachers without a university degree for each math test.
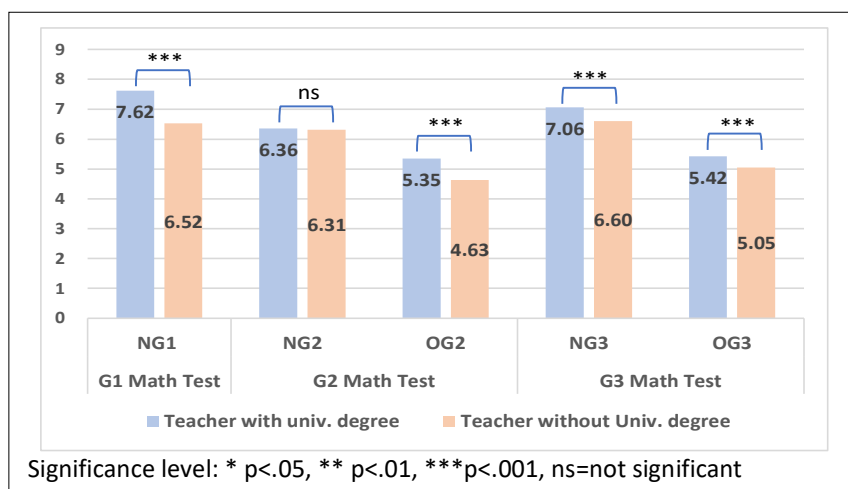

Significance level: * p<.05, ** p<.01, ***p<.001, ns=not significant

Figure 4.4-1: Math Score by Teachers' Academic Qualification

Table 4.4-1: T-test of Math Test Score by Teachers' Academic Qualification

Test	Grade	With univ. degree			Without univ. degree			t	df	Significance level
		N	Mean	SD	N	Mean	SD			
G1 Math	NG1	4241	7.62	2.94	1151	6.52	2.60	11.54	5390	with>without***
G2 Math	NG2	4396	6.36	2.27	1135	6.31	2.15	.56	5529	with>without ns
	OG2	3116	5.35	2.33	1737	4.63	1.80	11.06	4851	with>without***
G3 Math	NG3	4689	7.06	2.61	876	6.60	2.35	4.18	5563	with>without***
	OG3	3347	5.42	2.33	1340	5.05	2.08	5.06	4685	with>without***

Significance level: * p<.05, ** p<.01, ***p<.001, ns=not significant

As shown in Table 4.4-1, the mean score of students taught by teachers with university degrees is significantly higher than that of students taught by teachers without a university degree for all but NG2 students. From this finding we may be able to assume that teachers' academic background has some impact on students' learning outcomes.

4.4.2 Teachers' Professional Qualification

Teachers were asked to state their professional qualifications. Based on their response, teachers were divided into three categories, i.e. no qualification, primary school level qualification (Cert.Ed., PPTT, or PATC[6]), and middle school level qualification (DTEd, PGDT, DTEC, or JATC[7]). The respective proportions of these three categories among the participant teachers were 28%, 44%, and 28% in the 1st survey, while they were 3%, 66%, and 29% in the 5th survey, showing an increase in the percentage of qualified teachers in recent years.

Figure 4.4-2 shows the mean math test scores of students taught by teachers who fall in one of these three categories of qualifications, along with the results of Analysis of Variance (ANOVA) with Bonferroni post hoc test.
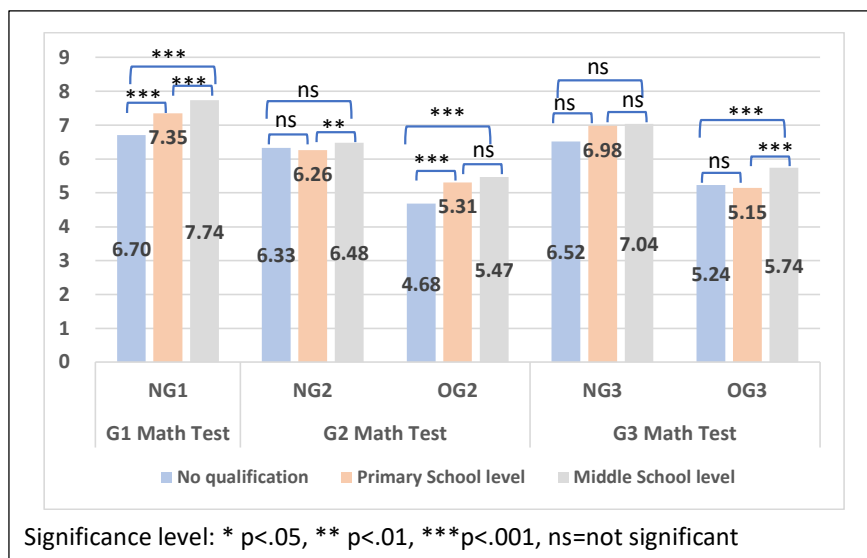

Figure 4.4-2: Math Test Score by Teachers' Professional Qualification

The mean score is the highest for the students taught by teachers with middle school level qualification for all grades, but some are not statistically significant. The mean score of the students taught by teachers without teaching qualification is significantly lower than those of other groups for NG1 and OG2 but not for other grades. From this finding we may be able to assume that teachers with a higher professional qualification have a positive impact on students' learning outcomes.

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[6] Cert. Ed=Certificate in Education, PPTT=Pre-service Primary Teacher Training, PATC=Primary Assistant Teacher Certificate

[7] DTEd=Diploma in Teacher Education, PGDT=Post Graduate Diploma in Teaching, DTEC=Diploma in Teacher Education Competency, JATC=Junior Assistant Teacher Certificate

4.4.3 Length of Teachers' Teaching Experience

Teachers were asked about their years of teaching. Based on their response, the teachers were classified into four groups, i.e., in the first year of teaching, 2–5 years of experience, 6–15 years of experience, and over 15 years of experience. Figure 4.4-3 shows the mean math test scores of students taught by teachers of these four groups.

As shown in the graph, the mean score of students taught by teachers with over 15 years of teaching experience is the highest for all grades. The result of ANOVA with Bonferroni post hoc test shows that these scores are significantly higher than those of the other three groups for all grades except NG2. For other groups, the results vary from grade to grade showing no clear pattern. From this finding we may be able to assume that teachers with long years of teaching experience have a positive impact on students' learning outcomes.
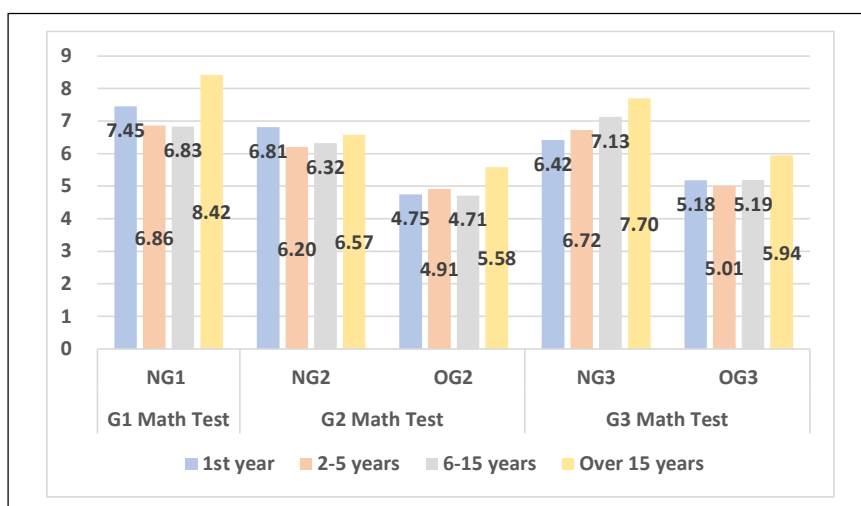

Figure 4.4-3: Math Test Score by Teachers' Teaching Experience

4.4.4 Teachers' Participation in Teacher Training

The teachers were asked about their participation in in-service training.

CCA Training

The percentage of teachers who responded that they attended Child-Centered Approach (CCA) Training ranged from 79% in the 1st survey in 2016 to 33% in the 5th survey in 2020. Figure 4.4-4 shows the mean math test scores of students taught by teachers who attended or did not attend CCA training. The graph shows that the mean score of students taught by teachers with CCA training is significantly higher than that of those taught by teachers without CCA ($p < .001$) for all grades. From this finding we may be able to assume that teachers with CCA training have a positive impact on students' learning outcomes.
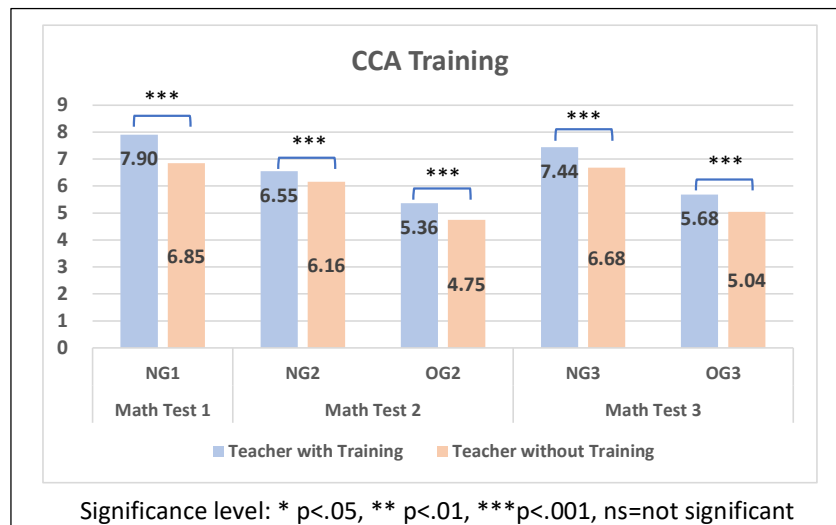
Figure 4.4-4: Math Test Score by Teachers with/without CCA

New Curriculum Introduction

MoE organizes several layers of training for new primary curriculum introduction for in-service teachers before introducing the new grade curriculum. Most, if not all, primary level teachers are supposed to take part in the training. In the sample of teachers in this study, 93% of NG1 teachers (3rd survey), 98% of NG2 teachers (4th survey), and 99.5% of NG3 teachers responded that they attended G1, G2, and G3 New Curriculum Introduction Training, respectively.

Figure 4.4-5 shows the mean math test scores of students taught by teachers who attended or did not attend the introduction training. The mean score of NG3 students taught by teachers who attended G3 introduction training was significantly higher ($p<.05$) than that of students taught by teachers who did not attend the training, while there was no significant difference for NG1 and NG2 students.

From this finding we cannot determine the impact that teachers' participation in the New Curriculum Introduction Training has on students' learning outcomes. However, we should keep in mind that the number of teachers who did not take part in the training was very small for all three grades and this imbalanced sample size of the two groups might have affected the results of the statistical analysis.
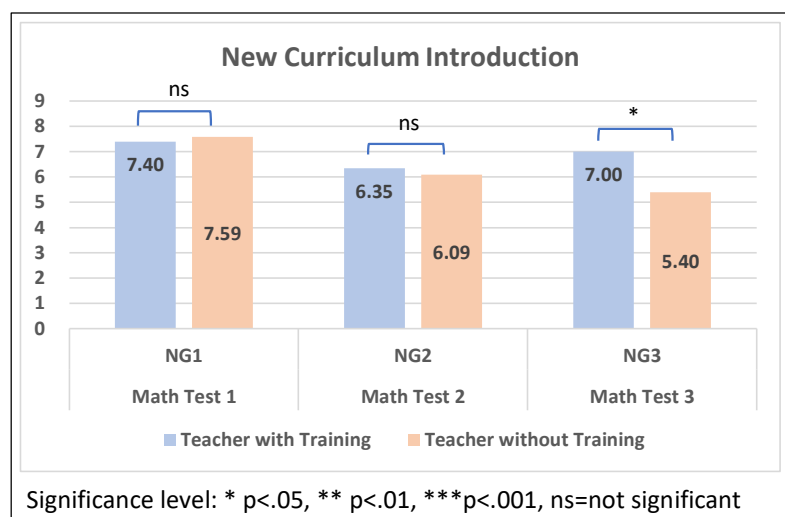

Figure 4.4-5: Math Test Score by Teachers with/without New Curriculum Introduction Training

4.5 Math Class Observation

Main Results:
- Classroom teaching and learning conditions under the new curriculum are significantly better than those under the old curriculum as a whole as well as in five areas, i.e., Lesson Design Skill, Use of Teaching and Learning Materials, Teacher's Teaching Skill, Assessment Skill, and Students' Positive Attitude.
- The new curriculum, which employs more collaborative learning, seems to provide girls with opportunities to be more active in class and stimulate their interest in math.

As described in Chapters 1 and 2, we conducted 100 math class observations (64 classes under the old curriculum and 36 classes under the new curriculum), the breakdown of which is shown in Table 4.5-1.

Table 4.5-1: Breakdown of 100 Math Class Observations

Survey	Observation Grade							Total
	OG1	OG2	OG3	OG4	NG1	NG2	NG3	
1 (AY2015/16)	8	8						16
2 (AY2016/17)		12	12					24
3 (AY2017/18)			12	12	12			36
4 (AY2018/19)						12		12
5 (AY2019/20)							12	12
Total	8	20	24	12	12	12	12	100

To assess classroom teaching and learning systematically, the project developed a Class Observation Sheet consisting of 13 statements, which were divided into 6 categories as shown in Table 4.5-2.

Table 4.5-2: Statements in Class Observation Sheet and Corresponding Area

Area	No	Statement
Lesson Design Skill	1	The teacher stimulates students' interest by linking the introduction to "students' experiences in their daily life," testing "students' prior knowledge," recapping "concepts from the previous lesson," etc.
	2	The teacher gives the students time to think independently/individually by posing key questions* to the whole class.
	3	The teacher instructs students to work in pairs or as a small group to promote mutual and collaborative learning.
Use of Teaching/ Learning Materials	4	The teacher clearly guides students on how to use/refer to textbooks during the lesson.
	5	The teacher uses appropriate teaching/learning materials** effectively to promote students' learning.
Teacher's Teaching Skill	6	The teacher facilitates the students' thinking process rather than teaching the right answers.
	7	The teacher does not spend too much time talking or letting students repeat the same things during the lesson.
Assessment Skill	8	The teacher observes the work of individual students during the lesson.
	9	The teacher lets students share what they have learnt during the lesson at the end of the class.

Area	No	Statement
Teacher's Positive Attitude	10	The teacher encourages students to express their ideas and ask questions.
	11	The teacher does not scold or neglect "wrong" answers, but instead corrects them while encouraging the students.
Students' Positive Attitude	12	Students are engaged in learning during the lesson most of the time.
	13	Students feel comfortable helping each other during individual work, pair work, or group work.

To make the comparison of multiple classes easier, the ratings of "fully agree," "agree," "disagree," and "completely disagree" were converted to scores of 4, 3, 2, and 1, respectively. Therefore, each statement has a score of 1 to 4.

4.5.1 Math Class under the Old and New Curriculum in General

This section compares the observation results of 64 math classes under the old curriculum (OLD) and 36 math classes under the new curriculum (NEW).

Total Class Observation Score

The total class observation scores for the 13 statements range from 13 to 52 in each class. The mean total observation scores for NEW and OLD are 32.25 and 27.38, respectively, as shown in Figure 4.5-1. The mean total score of NEW is significantly higher than that of OLD (t=4.40, df= 98, p<.001).

We can assume from this result that classroom teaching and learning conditions under the new curriculum are better than those under the old curriculum as a whole.
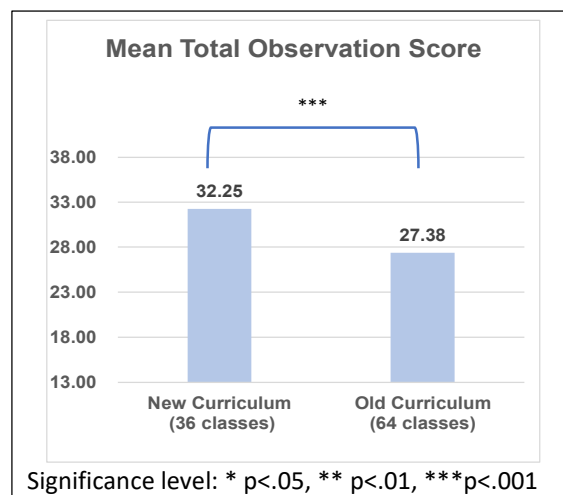

Significance level: * p<.05, ** p<.01, ***p<.001

Figure 4.5-1: Mean Total Score for NEW and OLD

Six Observation Areas

The 13 statements were grouped into 6 areas, i.e., Lesson Design Skill, Use of Teaching and Learning Materials, Teacher's Teaching Skill, Assessment Skill, Teacher's Positive Attitude, and Students' Positive Attitude.

Figure 4.5-2 and Table 4.5-3 show the mean scores of NEW and OLD for the 6 areas with t-test results. For all the 6 areas, the mean score of NEW is higher than that of OLD, and the differences are statistically significant for all areas except Teacher's Positive Attitude.
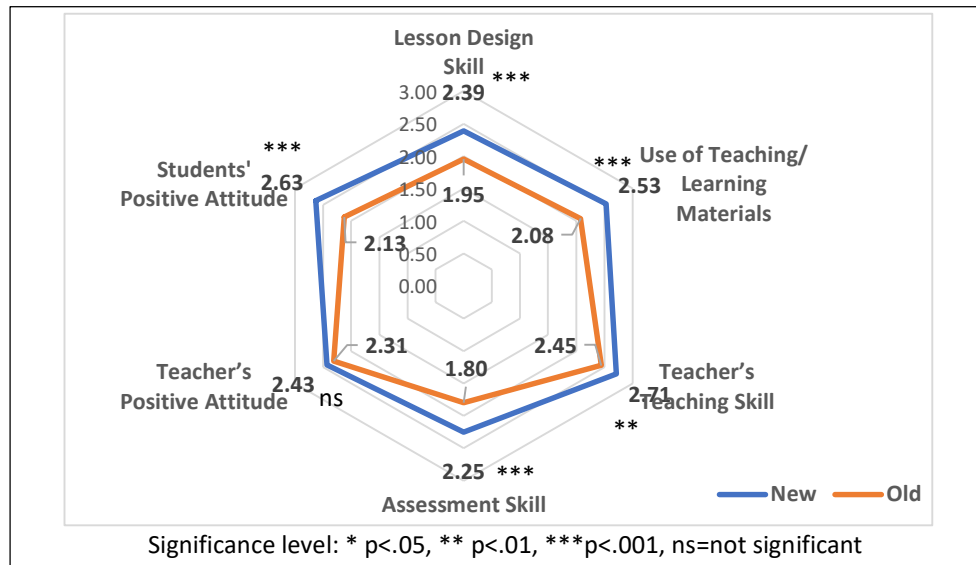

Significance level: * p<.05, ** p<.01, ***p<.001, ns=not significant

Figure 4.5-2: Mean Scores of 6 Areas by NEW and OLD

Table 4.5-3: T-test Results of Observation Score by Area

Observation Areas	New Curriculum			Old Curriculum			Results of t-test
	N	Mean	SD	N	Mean	SD	
Lesson Design Skill	36	2.39	0.61	64	1.95	0.57	NEW>OLD*** (t=3.58, df=98, p=.0005)
Use of Teaching/Learning Materials	36	2.53	0.63	64	2.08	0.51	NEW>OLD *** (t=3.90, df=98, p=.0002)
Teacher's Teaching Skill	36	2.71	0.45	64	2.45	0.43	NEW>OLD ** (t=2.89, df=98, p=.0048)
Assessment Skill	36	2.25	0.60	64	1.80	0.51	NEW>OLD *** (t=3.99, df=98, p=.0001)
Teacher's Positive Attitude	36	2.43	0.65	64	2.31	0.51	NEW>OLD ns (t=1.01, df=98, p=.3148)
Students' Positive Attitude	36	2.63	0.68	64	2.13	0.51	NEW>OLD *** (t=4.16, df=98, p=.0001)
All categories	36	2.48	0.50	64	2.11	0.35	NEW>OLD *** (t=4.41, df=98, p=.0000)

Significance level: *p<.05, **p<.01, ***<p<.001, ns=not significant

From this finding we can assume that math class has become better after the introduction of the new curriculum in all 6 areas except Teacher's Positive Attitude. However, we should be aware

that the score for Teacher's Positive Attitude was 2nd highest under the old curriculum and the score also improved somewhat under the new curriculum.

Individual Statements

Figure 4.5-3 and Table 4.5-4 show the mean score of each statement for NEW and OLD with t-test results. The mean score of NEW is higher than that of OLD for all 13 statements, and the differences are statistically significant for 8 out of 13 statements, i.e. Statements 2, 3, 4, 5, 7, 9, 12, and 13. Among them, the difference is especially significant for statements 3 (work in pairs or as a small group), 5 (effective use of teaching and learning materials), 9 (students' sharing of their learning at the end of the class), and 13 (the ease with which students help each other in class).
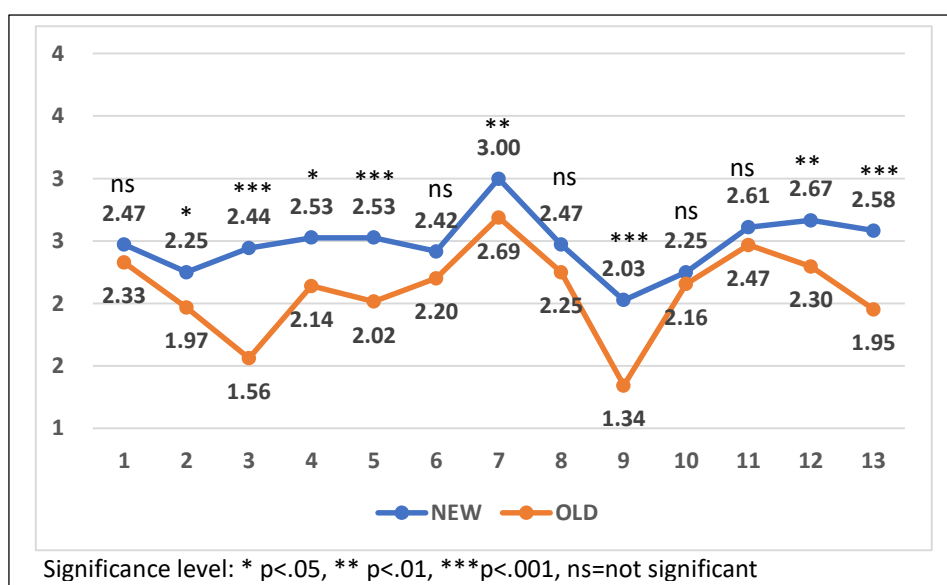

Significance level: * p<.05, ** p<.01, ***p<.001, ns=not significant

Figure 4.5-3: Mean Score of Each Statement by NEW and OLD

Table 4.5-4: T-test Results of Observation Score by Statement

Area	No	Observation points	NEW			OLD			Results of t-test
			N	Mean	SD	N	Mean	SD	
Lesson Design Skill	1	The teacher stimulates students' interest by introducing "students' experiences in their daily life," "students' prior knowledge," "concepts from the previous lesson," etc.	36	2.47	0.77	64	2.33	0.78	NEW>OLD ns (t=.89, df=98, p=.38)
	2	The teacher gives the students time to think independently/ individually by posing key questions* to the whole class.	36	2.25	0.69	64	1.97	0.56	NEW>OLD * (t=2.21, df=98, p=.0297)
	3	The teacher instructs students to work in pairs or	36	2.44	0.94	64	1.56	0.87	NEW>OLD ***

Area	No	Observation points	NEW			OLD			Results of t-test
			N	Mean	SD	N	Mean	SD	
		as a small group to promote mutual and collaborative learning.							(t=4.73, df=98, p=.0000)
Use of Teaching and Learning Materials	4	The teacher clearly guides students on how to use/refer to textbooks during the lesson.	36	2.53	0.91	64	2.14	0.89	NEW>OLD * (t=2.07 df=98 p=.0407)
	5	The teacher uses appropriate teaching/learning materials** effectively to promote students' learning.	36	2.53	0.70	64	2.02	0.70	NEW>OLD *** (t=3.51, df=98, p=.0007)
Teacher's Teaching Skill	6	The teacher facilitates the students' thinking process rather than teaching the right answers.	36	2.42	0.69	64	2.20	0.54	NEW>OLD ns (t=1.71, df=98, p=.0900)
	7	The teacher does not spend too much time talking or letting students repeat the same things during the lesson.	36	3.00	0.41	64	2.69	0.53	NEW>OLD ** (t=3.05, df=98, p<.0030)
Assessment Skill	8	The teacher observes the work of individual students during the lesson.	36	2.47	0.61	64	2.25	0.73	NEW>OLD ns (t=1.54, df=98, p=.1266)
	9	The teacher lets students share what they have learnt during the lesson at the end of the class.	36	2.03	0.88	64	1.34	0.60	NEW>OLD *** (t=4.62, df=98, p=.0000)
Teacher's Positive Attitude	10	The teacher encourages students to express their ideas and ask questions.	36	2.25	0.84	64	2.16	0.54	NEW>OLD ns (t=.68, df=98, p=.4995)
	11	The teacher does not scold or neglect "wrong" answers, but instead corrects them while encouraging the students.	36	2.61	0.61	64	2.47	0.59	NEW>OLD ns (t=1.12, df=98, p=.2655)
Students' Positive Attitude	12	Students are engaged in learning during the lesson most of the time.	36	2.67	0.59	64	2.30	0.49	NEW>OLD** (t=3.14, df=98, p=.0022)
	13	Students feel comfortable helping each other during individual work, pair work, or group work.	36	2.58	0.78	64	1.95	0.68	NEW>OLD *** (t=4.17, df=98, p=.0001)

Significance level: *p<.05, **p<.01, ***<p<.001, ns=not significant

From these findings it is assumed that it is more conducive to learn math under the new curriculum than under the old curriculum because of several factors, especially the introduction of the system of working in pairs or small groups, use of textbooks and teaching and learning materials, and implementation of a more interactive way of teaching and learning. However, many teachers are still not good at stimulating students' thinking process or encouraging students to explore their ideas or learn by themselves. This is one of the areas where teachers need further orientation.

4.5.2   Math Class under the Old and New Curriculum by Grade

This section compares the observation results of G1, G2, and G3 math classes under the old curriculum (OLD) and the new curriculum (NEW).

Total Class Observation Score

Figure 4.5-4 shows the mean total observation scores of OLD and NEW by grade. The mean score is significantly higher for NEW math classes than OLD math classes for G2 and G3 ($p<.001$), while it is higher but not significant for G1 ($p=.723$).

We can assume from this result that classroom teaching and learning conditions under the new curriculum are better than those under the old curriculum.
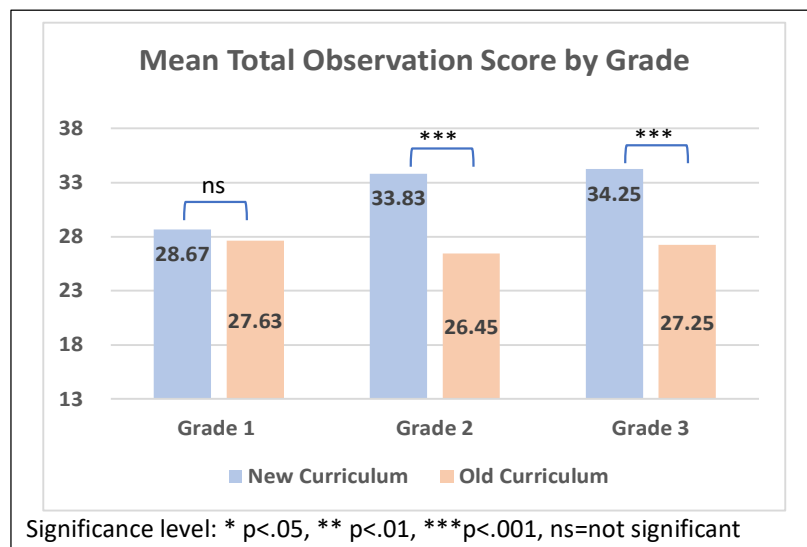

Figure 4.5-4: Mean Total Score by NEW and OLD

Six Observation Areas

Table 4.5-5 shows the mean scores under the new and old curriculum for 6 areas for G1, G2, and G3 together with t-test results.

Table 4.5-5: T-test Results of Observation Score by Area by Grade

Observation Areas	Grade	New Curriculum			Old Curriculum			T-test results
		N	Mean	SD	N	Mean	SD	
Lesson Design Skill	G1	12	2.14	0.56	8	2.29	0.79	NG1>OG1 ns (t=.51, df=18, p=.6163)
	G2	12	2.42	0.45	20	1.93	0.47	NG2>OG2** (t=2.87, df=30. P=.0075)
	G3	12	2.61	0.75	24	1.81	0.60	NG3>OG3** (t=3.50, df=34, p=.0013)
Use of Teaching/Learning Materials	G1	12	2.38	0.71	8	1.94	0.56	NG1>OG1 ns (t=1.46, df=18, p=.1621)
	G2	12	2.5	0.74	20	1.93	0.59	NG2>OG2* (t=2.43, df=30, p=.0215)
	G3	12	2.71	0.40	24	2.17	0.46	NG3>OG3** (t=3.49, df=34, p=.0014)
Teacher's Teaching Skill	G1	12	2.58	0.51	8	2.25	0.46	NG1>OG1 ns (t=1.47, df=18, p=.1577)
	G2	12	2.79	0.33	20	2.3	0.47	NG2>OG2** (t=3.17, df=30, p=.0035)
	G3	12	2.75	0.50	24	2.55	0.36	NG3>OG3 ns (t=1.44, df=34, p=.1595)
Assessment Skill	G1	12	1.79	0.54	8	1.69	0.46	NG1>OG1 ns (t=.45, df=18, p=.6604)
	G2	12	2.58	0.42	20	1.73	0.47	NG2>OG2*** (t=5.19, df=30, p=.0000)
	G3	12	2.38	0.57	24	1.85	0.58	NG3>OG3* (t=2.56, df=34, p=.0153)
Teacher's Positive Attitude	G1	12	2.13	0.57	8	2.31	0.37	NG1>OG1 ns (t=.82, df=18, p=.4236)
	G2	12	2.54	0.5	20	2.35	0.43	NG2>OG2 ns (t=1.15, df=30. P=.2603)
	G3	12	2.63	0.77	24	2.23	0.61	NG3>OG3 ns (t=1.68, df=34, p=.1016)
Students' Positive Attitude	G1	12	2.25	0.78	8	2.19	0.46	NG1>OG1 ns (t=.020, df=18, p=.8147)
	G2	12	2.88	0.31	20	2.03	0.38	NG2>OG2*** (t=6.54, df=30, p=.0000)
	G3	12	2.75	0.72	24	2.13	0.65	NG3>OG3* (t=2.63, df=34, p=.0128)
All areas	G1	12	2.21	0.51	8	2.13	0.45	NG1>OG1 ns (t=.36, df=18, p=.7229)
	G2	12	2.6	0.39	20	2.03	0.3	NG2>OG2*** (t=4.63, df=30, p=.0001)
	G3	12	2.63	0.52	24	2.10	0.35	NG3>OG3*** (t=3.68, df=34, p=.0008)

Significance level: *p<.05, **p<.01, ***<p<.001, ns=not significant

Figure 4.5-5 shows the mean scores of NG1 and OG1 for the 6 areas. The differences in mean scores of NG1 and OG1 are not statistically significant for any of the 6 areas though the graph shows a large difference in the scores for Use of Teaching/Learning Materials.
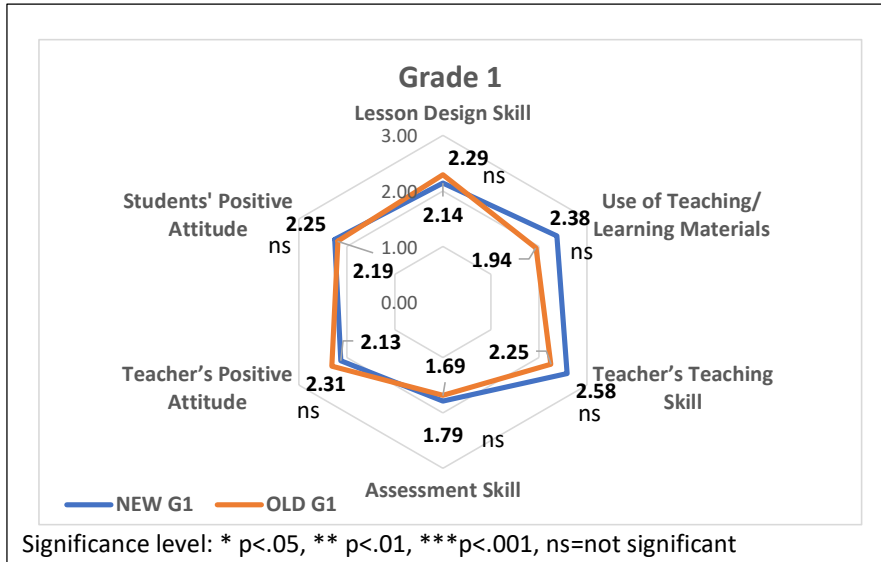

Figure 4.5-5: New G1 and Old G1 Mean Score of 6 Areas

Figure 4.5-6 shows the mean scores of NG2 and OG2 for the 6 areas. The mean score of NG2 is significantly higher than that of OG2 for all areas except Teacher's Positive Attitude. It should be noted that the OG2 score of Teacher's Positive Attitude is the highest among the 6 areas. The scores in the areas of Teacher's Assessment Skill and Students' Positive Attitude show a large difference between the two groups.
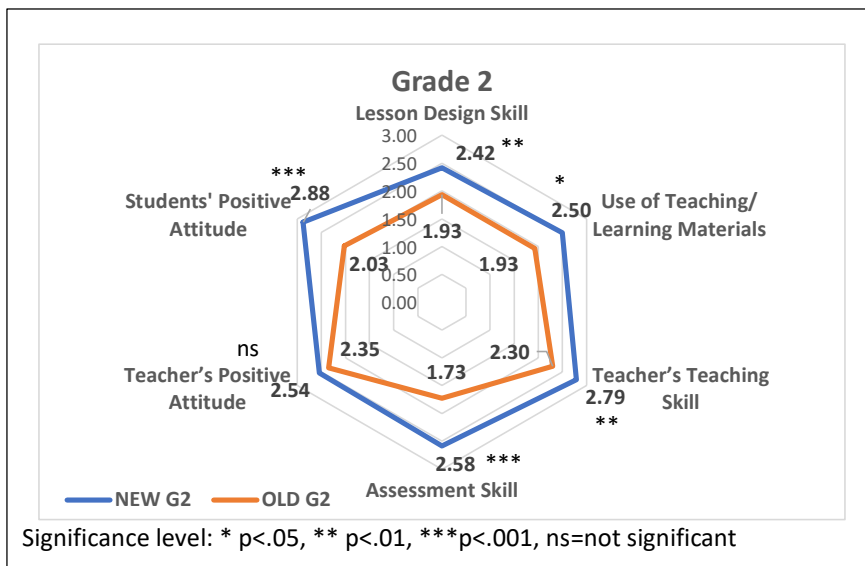

Figure 4.5-6： New G2 and Old G2 Mean Score of 6 Areas

Figure 4.5-7 shows the mean scores of NG3 and OG3 for the 6 areas. <u>The mean score of NG3 is significantly higher than that of OG3 for 4 areas, i.e., Lesson Design Skill, Use of Teaching/Learning Materials, Assessment Skill, and Students' Positive Attitude.</u>
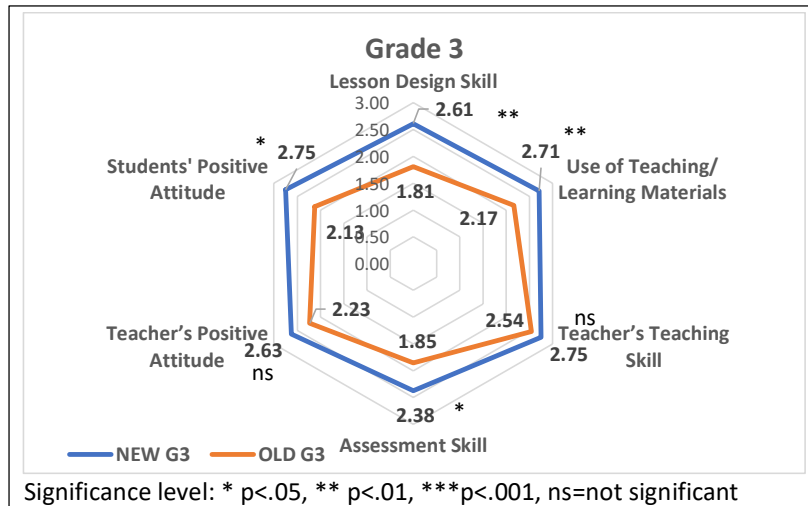

Figure 4.5-7: New G3 and Old G3 Mean Score of 6 Areas

<u>From these results we can assume that math class is significantly better under the new curriculum than under the old curriculum, especially in the areas of Lesson Design Skill, Use of Teaching/Learning Materials, Assessment Skill, and Students' Positive Attitude for Grade 2 and Grade 3.</u>

Individual Statements

Figures 4.5-8–10 show the mean scores of G1, G2, and G3 under the new and old curriculum for each statement.
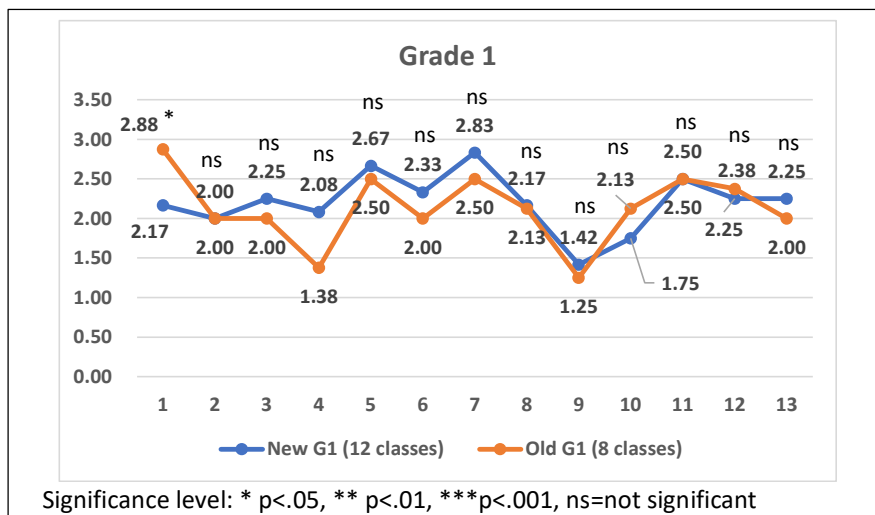

Figure 4.5-8: Mean Score of Each Statement (Grade 1)

For Grade 1, <u>the difference in the scores between OG1 and NG1 was not statistically significant for any statement except Statement 1 (stimulating students' interest)</u> wherein the score was

significantly higher for OG1 (p<.05). This was because several NG1 teachers did not give any introduction about the lesson at the beginning while some did not link the introduction to students' daily life or prior knowledge.

For NG1, the scores of Statement 5 (appropriate use of teaching/learning materials) and Statement 7 (no excessive lecturing and repeating) are the highest, and the scores of Statements 9 (sharing at the end of the lesson) and 10 (encouraging students to express their ideas and ask questions) are the lowest. From these findings it appears that NG1 teachers use appropriate teaching and learning materials more effectively and avoid traditional one-way lecturing and memorization by repeating without thinking, though they are not very good at encouraging students and letting them share what they have learned in the class.

For Grade 2, the scores of NG2 are higher than those of OG2 for all 13 statements, and the difference is significant for 8 statements, i.e., Statements 3 (pair work or small group work), 4 (use/refer to textbooks during the lesson), 6 (facilitating students' thinking process), 7 (no excessive lecturing and repeating), 8 (observing the work of individual students during the lesson), 9 (sharing at the end of the lesson), 12 (students' engagement in learning), and 13 (students' cooperation). Thus, it is assumed that the NG2 class is moderately more conducive to learning than the OG2 class in many aspects.

Further, for NG2, the scores of Statements 7 (no excessive lecturing and repeating), 12 (students' engagement in learning) and 13 (students' cooperation) are the highest and the scores of Statements 1 (stimulating students' interest), 2 (giving students time to think), and 10 (encouraging students to express their ideas and ask questions) are the lowest. Thus, we assume that NG2 teachers, like NG1 teachers, avoid traditional one-way lecturing and memorization by repeating without thinking, and that NG2 students are engaged in the class and supportive of each other. On the other hand, NG2 teachers are not so adept at stimulating students' interest or motivating them to think by themselves and express their ideas.
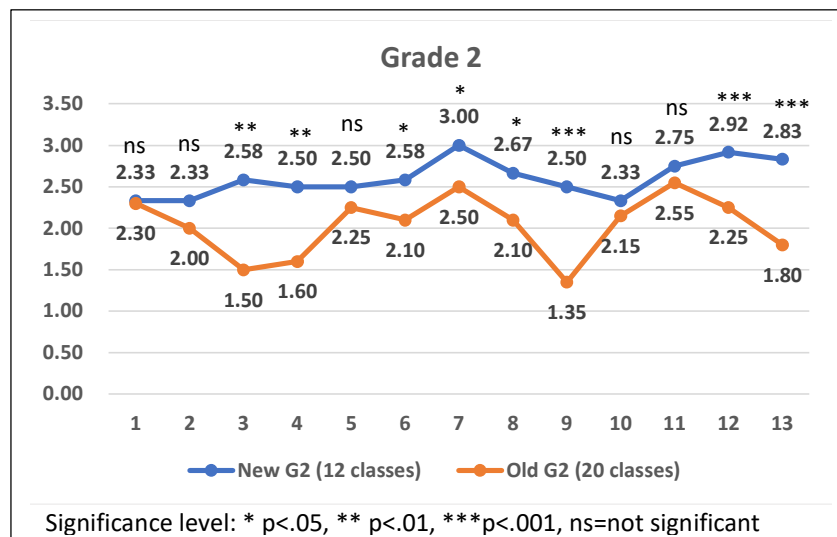

Figure 4.5-9: Mean Score of Each Statement (Grade 2)

For Grade 3, like Grade 2, the scores of NG3 are higher than those of OG3 for all 13 statements, and the difference is significant for 9 statements, i.e., Statements 1 (stimulating students' interest), 2 (giving students time to think), 3 (pair work or small group work), 5 (effective use of teaching and learning materials), 7 (no excessive lecturing and repeating), 9 (sharing at the end of the lesson), 10 (encouraging students to express their ideas and ask questions), 12 (students' engagement in learning), and 13 (students' cooperation). We can therefore assume that NG3 math class is more conducive to students' learning than OG3 math class in many aspects.

For NG3, the scores of Statements 4 (use/refer to textbooks during the lesson) and 7 (no excessive lecturing and repeating) are the highest and the score of Statement 9 (sharing at the end of the lesson) is the lowest. Thus, we assume that NG3 teachers are able to use the textbook more effectively in the class and avoid traditional one-way lecturing and memorization by repeating without thinking. On the other hand, similar to NG2 teachers, NG3 teachers are not adept at stimulating students' thinking process or encouraging students to learn, especially when hands-on activities are included.
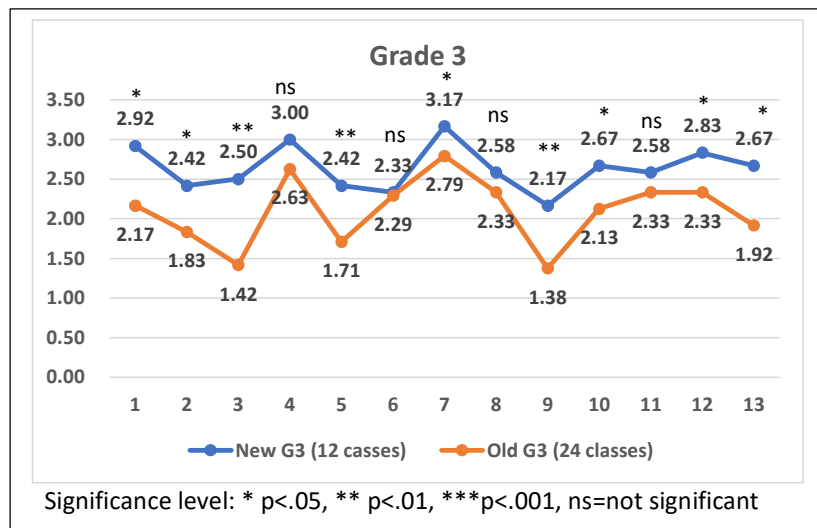

Figure 4.5-10: Mean Score of Each Statement (Grade 3)

4.5.3 Math Class from Gender Viewpoint

In addition to the above-discussed analysis using the original class observation sheet, we reassessed some of the G2 and G3 video-recorded math classes (15 classes under the old curriculum and 15 classes under the new curriculum) using a gender sensitive class observation sheet to explore factors that may have contributed to girls' increased interest in math under the new curriculum.

Table 4.5-6: Gender-sensitive Class Observation Sheet

No	Setting	Observation Point	Boys	Girls	Boys & girls equally	NA
1	Whole Class	Are more boys or girls raising hands to respond when the teacher asks questions?				
2	Whole Class	Are more boys or girls asking questions or expressing their ideas in class?				
3	Whole Class or Pair/Group Work	Are more boys or girls doing hands-on activities?				
4	Pair/Group Work	Are more boys or girls looking at or listening to other students?				
5	Pair/Group Work	Are more boys or girls asking questions or expressing their ideas?				

Whole Class

Figures 4.5-11 and 4.5-12 show the results of first two observation points in the whole class setting. The numbers on the graph are the numbers of classes for the respective options.
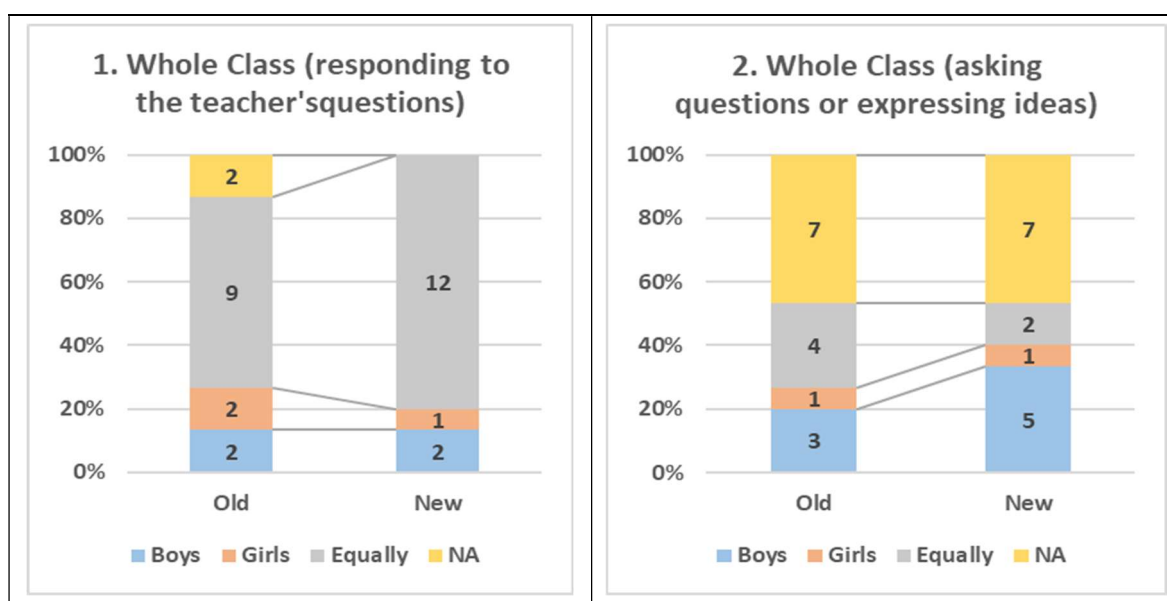

Figure 4.5-11: Observation Result (No. 1)   Figure 4.5-12: Observation Result (No. 2)

In the whole class setting, it appears that both boys and girls are more or less equally active in responding to teachers' questions while girls seem less forthcoming in asking questions or expressing their ideas.

Hands-on Activities

Figure 4.5-13 shows the result of the 3rd observation point on hands-on activities. Under the new curriculum, 4 out of 15 classes incorporated hands-on activities, requiring students to make

triangles or cubes from paper. Both boys and girls were actively engaged in the activities in all 4 classes. It appears that both boys and girls are equally active in hands-on activities.
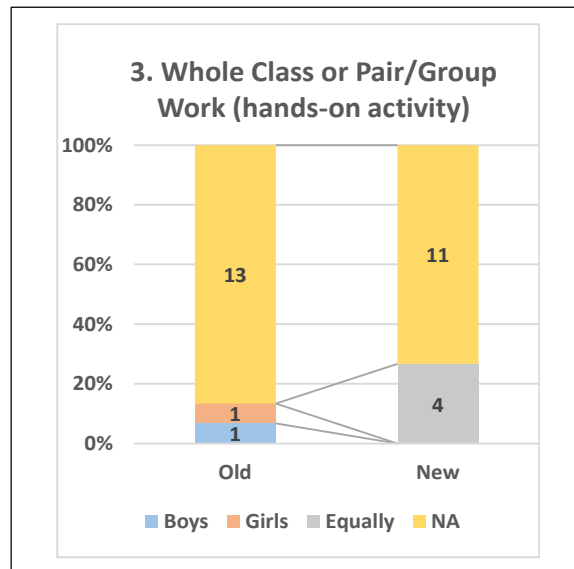

Figure 4.5-13: Observation Result (No. 3)

Pair/Group Work

Figures 4.5-14 and 4.5-15 show the result of the last two observation points on pair/group work. Based on the original observation sheet, it was found that only 2 out of 15 classes under the old curriculum while 9 out of 15 classes under the new curriculum introduced some pair/group work. However, for some cases it was not possible to make a clear observation on whether boys or girls were more actively engaged in listening or asking/expressing.
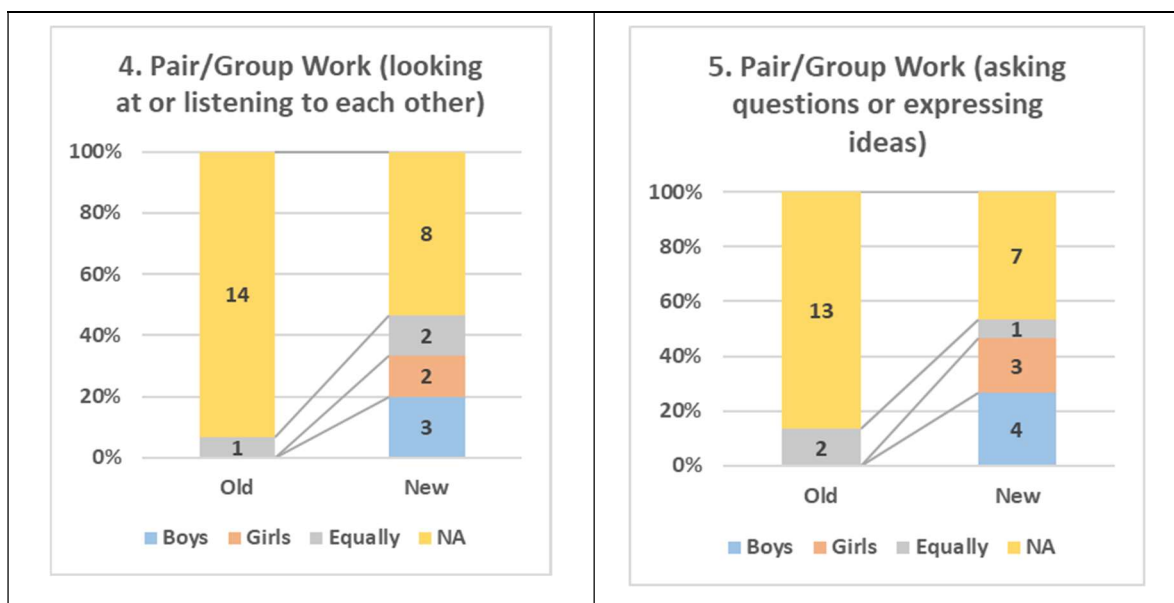

Figure 4.5-14: Observation Result (No. 4)   Figure 4.5-15: Observation Result (No. 5)

It appears that both boys and girls are actively engaged in group work under the new curriculum as well as under the old curriculum though there is little employment of pair/group work under the old curriculum.

The analysis revealed the following:

1) Girls speak up less in the whole class situation under both the old and the new curriculum;

2) Girls participate in hands-on activities and pair/group work in class as much as boys do under both the old curriculum and the new curriculum; and

3) Teachers employ more collaborative learning under the new curriculum.

Thus, the new curriculum, which employs more collaborative learning, provides girls with opportunities to be more active in class, and our hypothesis that the new curriculum is more appealing to girls seems to be valid. Math classes have become more enjoyable to girls, which may be responsible for the sharp increase in girls' interest in math in the new curriculum that was identified in the previous survey.

Appendix 14

List of Public Relations for the Project (Provision of articles and information for JICA's website, Facebook articles, and exhibits)

No.	PR Tools	Overview	Publication Date	Language	Target	Media	URL
1	JICA Project Website	Introducing the project's activities in newsletters posted on the website		J	General Public	Internet	https://www.jica.go.jp/project/myanmar/014/index.html
2	JICA Myanmar Office Facebook	Reporting the visit of students of Ritsumeikan Junior and Senior High School.	03/08/2016	E	General Public	Internet	https://www.facebook.com/JicaMyanmarOffice/posts/1399326183415424
3	JICA Myanmar Office Facebook	Publicizing the introduction of the new G1 textbook from 1 June 2017.	25/05/2017	E,M	General Public	Internet	https://www.facebook.com/JicaMyanmarOffice/posts/1735192169828822
4	Press Release	Introducing the characteristics of the new curriculum and the project's activities.	26/05/2017	E	General Public	Internet	https://www.jica.go.jp/myanmar/english/office/topics/press170526.html
5	JICA Myanmar Office Facebook	Introducing the JICA's press release dated 26 May 2017.	31/05/2017	E	General Public	Internet	https://www.facebook.com/JicaMyanmarOffice/posts/1741831412498231
6	News Release	Introducing the characteristics of the new curriculum and the project's activities.	01/06/2017	J	General Public	Internet	(PC) https://www.jica.go.jp/press/2017/20170601_01.html (mobile) https://www.jica.go.jp/mobile/press/2017/20170601_01.html
7	JICA Myanmar Office Facebook	Introducing how the tryout of G2 Life skills was conducted.	20/06/2017	E	General Public	Internet	https://www.facebook.com/JicaMyanmarOffice/posts/1766439753370730
8	News Topics	Introducing the characteristics of the new textbooks, and comments of teachers and the Minister of Education.	10/07/2017	J	General Public	Internet	(PC) https://www.jica.go.jp/topics/2017/20170710_01.html (mobile) https://www.jica.go.jp/mobile/topics/2017/20170710_01.html
9	JICA Media and PR Department Facebook	Introducing the JICA's News Topics dated 10 July 2017.	11/07/2017	J	General Public	Internet	https://www.facebook.com/jicapr/posts/1374719719230838
10	News	Introducing the characteristics of the new textbooks, and comments of teachers and the Minister of Education.	27/07/2017	E	General Public	Internet	(PC) https://www.jica.go.jp/english/news/field/2017/170727_01.html (mobile) https://www.jica.go.jp/english/mobile/news/field/2017/170727_01.html (narrow) https://www.jica.go.jp/english/low/news/field/2017/170727_01.html
11	JICA Myanmar Office Facebook	Introducing the article of The Myanmar Times, in which the project was featured.	06/10/2017	E	General Public	Internet	https://www.facebook.com/JicaMyanmarOffice/posts/1886204048060966
12	JICA Media and PR Department Facebook	Introducing the visit by Vice Minister of Education, Culture, Sports, Science and Technology of Japan	12/10/2017	J	General Public	Internet	https://www.facebook.com/jicapr/posts/1454834407886035
13	News topics	Introducing the new PE textbooks.	24/01/2018	J	General Public	Internet	https://www.jica.go.jp/topics/2017/20180124_01.html
14	JICA Myanmar Office Facebook	Introducing the project's website.	06/07/2018	E,M	General Public	Internet	https://www.facebook.com/JicaMyanmarOffice/posts/2206811342666900
15	JICA Media and PR Department Facebook	Reporting G1 impact survey results, the implementation of G2 INSET, and the distribution of G1 textbooks.	06/07/2018	J	General Public	Internet	https://www.facebook.com/484006651635487/posts/1722827964420010/
16	JICA Myanmar Office Facebook	Reporting the media tour organized by JICA Myanmar Office.	29/01/2019	E,M	General Public	Internet	https://www.facebook.com/JicaMyanmarOffice/posts/2523047454376619
17	JICA Media and PR Department Facebook	Introducing the drama "Our Hope, Our Future" produced by the project.	02/03/2019	J	General Public	Internet	https://www.facebook.com/jicapr/posts/2047826061920197
18	JICA Myanmar Office Facebook	Introducing the project's You Tube channel.	29/05/2019	E,M	General Public	Internet	https://www.facebook.com/JicaMyanmarOffice/posts/2723215477693148
19	Exhibition at G20 Summit	As "ODA good practice", textbooks and photos and TV commercial were displayed at G20 Summit.	07/2019	E	Visitors of G20 Summit	Exhibits	-
20	JICA Media and PR Department Facebook	Introducing the new Physical Education, which was featured on Mundi (April 2020)	03/05/2020	J	General Public	Internet	https://www.facebook.com/jicapr/posts/2860938900608905
21	News topics	Introducing how experts conducted the activities even though they cannot visit Myanmar due to Covid-19.	14/08/2020	J	General Public	Internet	https://www.jica.go.jp/topics/2020/20200814_01.html
22	JICA Media and PR Department Facebook	Introducing the news topics dated 14 August 2020.	18/08/2020	J	General Public	Internet	https://www.facebook.com/jicapr/posts/3140284289341030
23	News	Introducing how experts conducted the activities even though they cannot visit Myanmar due to Covid-19.	25/09/2020	E	General Public	Internet	https://www.jica.go.jp/english/news/field/2020/20200925_02.html
24	JICA Media and PR Department Facebook	Introducing the overview of the project as a part of the post about International Day of Education.	23/01/2021	J	General Public	Internet	https://www.facebook.com/jicapr/posts/3584459771590144

Appendix 15

Points for Further Revisions of New Textbooks and Teacher's Guides

Points for Future Revisions of New Textbooks & Teacher's Guides

■ Myanmar

Revision Time	Issues to be Revised	Explanations
Short Term	Correcting illustrations	• In the new textbooks, all illustrations were drawn with the same touch, which makes textbooks less attractive to pupils. • It is necessary to increase the number of illustrations that correspond better to the learning material and the world of the work.
	Creating worksheets	• Initially, it was planned to include worksheets for each unit, but the new textbook and teacher's guide had only a limited number of worksheets. It will be necessary to see how well the worksheets are used in schools and to consider how to increase and improve them if necessary.
	Developing audio teaching materials	• It is significantly important for teachers and pupils to hear correct and clean Myanmar pronunciation at all times. • For this purpose, it is necessary to develop effective audio teaching materials based on textbook contents.
	Developing dictionaries for pupils	• The new textbooks of the upper grades (G4 and G5) have a simple dictionary function, and when pupils look up the alphabetical word list in the appendix, the corresponding page of the text is shown and the meaning is written there. • It is necessary to add vocabulary for lower grades to this simple dictionary function in order to enhance it.
Medium To Long Term	Reexamining systematic goals by grade	• The language skills to be acquired vary depending on the learning materials used in the textbooks. • In the development of new textbooks, learning objectives for each grade were set earlier than creating specific learning contents. • Therefore, it was started from searching for new learning materials according to the determined grade-specific goals, so some of the language skills originally required for the learning materials do not completely match the grade-specific goals. • It is necessary to revise the grade-specific goals by systematically and carefully comparing the grade-specific goals with the learning materials.
	Discovering new learning materials	• Some learning materials in the new textbooks were the same as ones in the old textbooks. Some of them are not always the best to achieve subject-wise objectives. • Especially, the learning materials of the lower grades (G1 and G2) dealing with character instructions (vowel and consonant learnings) include ideas about morality and patriotism that may be difficult for pupils in these grades. • It is necessary to consider replacing these learning materials with those that are more suitable for pupil's learning. For this purpose, discovering new learning materials becomes significantly important.
	Examining needs of ethnic minorities whose mother tongue is other than Myanmar Language	• The new textbook only provides limited contents about ethnic minorities in the lower grades. • In the future, it is necessary to consider how to deal with this issue in the subject of Myanmar language.

■ English

Revision Time	Issues to be Revised	Explanations
Short Term	Increasing the number of pages in the new textbooks	• In the new textbooks for G1 and G2, the standard structure was to study the contents of 1 page in 1 lesson period (G1 textbook's volume is 98 pages and G2-textbook's volume is 96 pages). • However, the number of pages for G3 was only 84 due to the limitation of the volume. As a result, many communicative activities could not be described in the textbooks, but only in the teacher's guides. This may cause that teachers do not conduct these important learning activities in class. • In addition, the number of pages was limited to 111 pages in G4 and G5 textbooks, even though the annual class hours increased to 145. For this reason, the content of one lesson time was described only in half of the page, and the illustrations and charts necessary for learning have been largely deleted. • In future revisions, it should be possible to describe the content for one lesson time on one page.
	Optimising time allocation in lesson planning	• Communicative activities in class take longer than expected. New textbooks and teacher's guides for G3 to G5 secure one lesson time each for reading and writing, but in reality, one lesson time is not enough. • This shortage of time can be managed by using the spare time, but there is no such description in the teacher's guides. • In future revisions, it is necessary to describe that spare time must be used to conduct reading and writing activities, or to amend the time allocation for each lesson making a little more flexible and possibly with less contents.
	Examining the development of teacher's guides written in English	• All new textbooks and teacher's guides are basically written in English. This is based on the agreement between Myanmar counterparts and JICA Project Team. • However, reading teacher's guides written in English is not easy for Myanmar's primary school teachers. Under such a situation, it happened that an unofficial Myanmar translation version of the teacher's guides have been on sale in the market since 2018. • In the future, it is necessary to reconsider whether teacher's guides written in English must be maintained or these must be written in Myanmar.
	Reconsidering the ideal way of audio materials	• Audio materials are very important for effective learning in English learning. Currently, audio materials for the new textbooks are available on the CREATE website, but it is hoped that these must be accessible to all teachers and pupils easily. • In order to make the audio materials easier to use, there is a description of the audio materials corresponding to each page in G1. It is desirable that the new textbooks for G2-G5 has the similar description.
	Consistent description of supplementary materials	• There is inconsistency in the description of the use of supplementary materials such as picture cards in textbooks and teacher's guides. • It will be necessary to clearly describe required supplementary materials in each chapter consistently.

| Consistency of subject goals | • The description of chapter objectives differs depending on the chapter and some of the chapter objectives include ones which do not match the overall objectives of primary English education.
• It will be necessary to rewrite the chapter objectives in line with the overall objectives described in the curriculum outline. |
| Enriching description of 5th grade English grammar learning | • In the new G5 textbook, English grammar is learned, but the grammar knowledge that is necessary for effective learning is not sufficiently described, due to the limitation of the number of pages.
• It is required to clearly describe the grammatical knowledge necessary for grammar acquisition in the textbook. |

■ Mathematics

Revision Time	Issues to be Revised	Explanations
Short Term	Reconsidering Myanmar numbers and weights and measures unit symbols	• The new textbooks use Myanmar numerals following the old textbook (Arabic numerals are used from middle school textbooks). • There are some inconveniences in the area of measurement learning when using Myanmar numbers. What is generally expressed as "Arabic numerals + unit symbols" is "Myanmar numerals + units expressed in words". Naturally, the notation becomes very long. • In the future, it is necessary to make a clear notation policy and to revise the current descriptions. The possible directions are: (1) To use Arabic numerals and unit symbols, (2) To use Myanmar numerals and unit symbols, or (3) To use Arabic numerals and unit symbols from the upper grades.
	Adding exercises in the 1st grade textbook	• In the new G1 textbook, it was not possible to include sufficient exercises due to the limitation of page numbers. • It is very important for pupils to do many exercises for effective learning and thus it is necessary to add more exercises.
	Order of introducing the three-number addition and subtraction	• In the new G1 textbook, the addition and subtraction with three numbers are included in two units. • It is desirable, however to introduce this learning content in one unit just before the unit of "the addition and subtraction of numbers up to 19" in terms of the order of learning. The order should be revised accordingly.
	Preparing measuring instruments	• In the learning area of measurement in the new textbooks, learning activities that actually measure length and weight using measuring instruments are emphasized. • In order to carry out such learning activities effectively, it is necessary to prepare measuring instruments such as 30-meter and 50-meter tape measures and scales.
	Reexamining the definition of average (5th grade)	• In the new textbooks and teacher's guides, the definition of average is described that "when there are a certain number of groups, the total of those numbers divided by the number of groups is the average." • However, there is no description of why this concept is needed.

Revision Time	Issues to be Revised	Explanations
		• In primary mathematics, it may be better to use the definition of "a quantity after smoothing out several quantities" which is easier for pupils to understand. This point needs further consideration.
	Revising the content of division with fractions (5th grade)	• In the new textbooks and teacher's guides, a learning approach used in the introductory part of division with fractions has little relevance to the ones that have already been learned. • It is necessary to reconsider the learning approach for division with fractions and make it relevant to what pupils have already learned.

■ **Science**

Revision Time	Issues to be Revised	Explanations
Medium To Long Term	Deepening child-centered education	• New textbooks and teacher's guides are basically developed according to the idea of child-centered education, but it is necessary to further advance this idea, for it will be possible to develop 21st century skills such as pupil's thinking ability and problem-solving ability by conducting exploratory learning activities entirely in class, • It is necessary to deepen the idea of child-centered education not only in science but also in cooperation with other subjects such as Life Skills, Mathematics and Social Studies.
	Integrating curriculum, instruction, and assessment	• It is necessary to comprehensively grasp the three aspects of curriculum, instructions, and assessment, and to provide more effective school education.
	Revising learning contents according to social conditions	• The society of Myanmar is currently changing rapidly. It is necessary to change the learning contents of Science in accordance with the social changes. In the future, it is necessary to regularly examine the social situation, consider whether the content of Science education is suitable for it, and revise it as appropriate.

■ **Social Studies**

Revision Time	Issues to be Revised	Explanations
Short Term	Correcting illustrations and charts	• Illustrations and charts not only help pupils understand what they are learning, but also discover important contents from them and cultivate deep understanding, thinking and creativity. • However, some illustrations and charts in the new textbooks may be difficult (or impossible) for pupils to discover what these really means. Therefore, it is necessary to revise such illustrations and charts to appropriate ones.
	Deepening learning approach in the history area	• In the new textbook, systematic history learning, which is significantly different from the old textbook, was introduced in the history area of G4 and G5. This is a learning approach that has traditionally been adopted from middle schools.

		• As regard to this point, the old learning approach of memorising detailed historical facts cannot be dispensed with, and the content allows for this to a large extent. • Originally, the aim was to encourage pupils to think about historical facts, how they were effective in society at the time and how they are used today, but unfortunately this has not been the case. In the future, it will be necessary to improve the approach to learning in the field of history so that pupils can use their thinking and creativity more.

■ **Moral & Civics**

Revision Time	Issues to be Revised	Explanations
Short Term	Additional information of concept in teacher's guides	• Teacher's guides describes how a teacher can facilitate pupils' learning. However, they lack sufficient description of the concept introduced in Morals and Civics. For example, obligation, responsibilities, and rights appear in several grades, but the depth of the concept to be discussed in each grade is not clearly explained in the teacher's guides which makes it difficult for teachers to understand the objectives of learning.
Medium To Long Term	Deepening learning content in the civics area	• In the new textbook, two major revisions have been made from the old textbook. The first point is to change the old contents, which focused on Buddhism and traditional values, to the new contents, which allow pupils to acquire the values and qualities necessary to live better in society. The second point is a change from imprinting the traditional values to a new learning approach in which pupils understand their values and ideas while thinking deeply through reading simple stories and sentences. This is considered to be a big change for Myanmar education. • However, this subject should aim not only "cultivating the necessary foundations as human beings" (moral purpose) but also "cultivating abilities as citizens" (civil purpose). • For the second aim of "cultivating abilities as citizens", it is necessary to incorporate more learning contents of civics and citizenship education. In particular, if it is aimed to revive and perpetuate Myanmar's democracy in the future, such a content is indispensable. It is necessary to consider the introduction of three areas: "community involvement," "social and ethical responsibility," and "political literacy."

■ **Life Skills**

Revision Time	Issues to be Revised	Explanations
Short Term	Clarifying the overall objectives and the nine skills	• In the new textbooks and teacher's guides, overall objectives was set as "to cultivate the basics in cooperation with others for healthy and comfortable life both physically and mentally." • In addition, based on the concept of Life Skills in WHO, the nine skills, which includes (1) self-recognition, (2) sympathetic understanding, (3) communication skills, (4) interpersonal skills, (5) decision making skills, (6) problem

		solving skills, (7) creative thinking, (8) critical thinking, and (9) emotion and stress coping skills, are very important to achieve the overall objectives. • However, it is not the main purpose to acquire these nine skills in Life Skills education, but it is desirable to effectively develop these skills toward the realization of the overall objectives. Therefore, it is necessary to revise descriptions in the teacher's guides in order to make this point to be easily understood by teachers, such as by adding icons to each chapter page.
	Effective usage of the "Future Card"	• In the new textbooks and teacher's guides, the "Decision Card" was introduced for the following four purposes: (1) to clarify and organise pupil's thoughts, (2) to use this card for pupil's reflection, (3) to capture pupil's growth, and (4) to use this card for assessment by teachers. • However, it is not sure that pupils can recall their ideas in past and grasp their change and growth in a metacognitive manner. In order to make this possible, it is necessary for teachers and pupils to look back on the previous lessons. • A portfolio can be considered as an effective tool for teachers and pupils to assess individual growth. However, the new teacher's guides do not describe this portfolio in order to avoid confusion among teachers who are not accustomed with portfolio assessment. Therefore, it is necessary to add a description about a portfolio in the teacher's guides in the future. In this case, the following explanations can be possible to describe: (1) how to divide Life Skills into three areas and organize the 1^{st} to 5^{th} grades in a portfolio, (2) how to organize by grade, and (3) how to arrange a portfolio in the case of including "exercises after class", and (4) how to utilize e-portfolio.
	Describing "past" and "future" learning	• It is very useful for teachers to include information of the chapter that pupils have already learned and of the chapter related to what pupils will studying in the future. Such information can be used when teachers prepare their lesson plans and teaching and learning materials. Originally such information was supposed to be included in the teacher's guides as "past" and "future." • However, due to the process of textbook development in which one grade at time is developed, it was not possible to include "future" and thus only "past" is included in teacher's guides. • It will be better that in the future both "past" and "future" will be clearly stated in the teacher's guides.

Medium To Long Term	Deepening discussion activities	• The idea learning approach is 1) teacher's question and 2) class-wide discussion." However, the new textbooks and teacher's guides introduced learning approach of 1) teacher's question, 2) Individual thinking, 3) discussion in pairs, and 4) class-wide discussion" in consideration with the unfamiliarity of class discussion both teachers and pupils.
		• In the future when teachers are more accustomed with the new learning approach, the following procedures can be introduced:
		  ➢ 1) Teacher's question 2) Group discussion 3) Group presentation
		  ➢ 1) Teacher's question 2) class-wide discussion

		In both cases, it is important for teachers to facilitate communication between pupils and link one's opinions with others.
	Collecting information on domestic laws and regulations and revising the learning content accordingly	• Life Skills is a subject that requires specialized knowledge. However, the Myanmar's domestic laws are not fully developed at this moment, so there are some chapters that lack sufficient description. • In the future, it is necessary to reexamine the contents according to the development of Myanmar's domestic laws. Chapters that need to be revised at this moment are as follows: (1) G3: "Cigarette Smoke" The current law states that "Cigarette must not be sold to young people under the age of 18", but it does not state that "young people under what age must not smoke." The current description in the textbook is based on the current law and it needs to be revised according to the revision of the law. (2) G3 and G4: "Traffic Safety" The new textbooks describe the content of "Traffic Safety" based on the latest traffic rules as much as possible, and it is necessary to revise the content in line with the revision of the law. In addition, how to deal with the current situation need to be examined where there is a pedestrian crossing, but cars do not stop and it is as if cars have priority over people. (3) G4: "First Aid" There may be a discrepancy between traditional and customary treatment methods and those recommended in medical practice. The same applies to Myanmar's traditional treatment methods. In the new textbooks and teacher's guides, the traditional treatment methods are included in respect of Myanmar traditions, but it is possible that they may change in the future to the medically recommended methods. In this case, revisions will be necessary.

■ Physical Education

Revision Time	Issues to be Revised	Explanations
Short Term	Consistency of description regarding assessment	• In the new textbooks and teacher's guides, the descriptions about assessment are slightly different depending on grades, and it is not consistent. In addition, the formats of a self-assessment table, teacher assessment table, peer assessment table attached to the end of the teacher's guides as references are not consistent. • In the future, it is necessary to revise such descriptions and assessment table formats consistently.
Medium To Long Term	Adjusting the number of chapters	• There are quite a few units in the new textbooks and teaching materials that are as short as two hours per unit, but ideally, it is necessary to spend more time on a single exercise and to guarantee the opportunity to try it for a long time by setting aside several lesson hours. • In the future, it is necessary to reduce the total number of chapters and to increase the number of lesson periods per chapters to make the curriculum more flexible.

	Associating the four learning areas	• In physical education, the study of movement requires an understanding of technical issues and how to identify them. Feedback by teachers on results and how to correct movement is also important. At the same time, feedback can be perceived differently depending on how it is delivered. Therefore, deliberate learning of social and emotional skills should be emphasized as well. From this point of view, lessons should be conducted in way that the four learning areas are interrelated with each other in the classroom. • However, since it was difficult to accurately describe these issues in the new textbooks and teacher's guides, such a description was not made. In the future, it is necessary to consider how to include such descriptions in the textbooks and teacher's guides.
	Position of the group game with	• Usually, the tasks set in Physical Education are divided into the following three categories: (1) personal tasks that do not lead to interests with others, (2) tasks that lead to conflicts of interest such as the zero-sum game, and (3) mutually beneficial tasks. • However, even the task like (2) may change to the task like (3), depending on how the rules are set. The descriptions in the teacher's guides are the key to this. • However, in order to make a task like (2) into a task like (3), even if detailed rules are described in the teacher's guides, some teachers may change the rules, and the lesson which was originally intended may not be practiced. • In the future, it is necessary to research how the new textbooks and teacher's guides are used at school and to revise the descriptions in teacher's guides based on the research result.
	Transferring the contents of the expression area to the upper grades	• The new textbooks and teacher's guides introduce the learning content of "Singing and Dancing Games" from G1, which is the same as the old textbooks. However, it would be better to transfer this content to the upper grades. • The reason is that the level of dance content is relatively high from the viewpoint of fostering free ideas and expressing emotions.
	Improving class environment	• The contents of the new textbook and teacher's guides can be implemented within the scope of the current school facilities. Alternative methods are also described in the teacher's guides in order for teachers to conduct the lessons. • However, it is quite possible that teachers do not conduct some lessons because of their excuses of "there are no facilities at school". Therefore, it is necessary to create an environment in the school where such lessons can be conducted from a long-term perspective.

■ **Arts (Performing Arts)**

Revision Time	Issues to be Revised	Explanations
Short Term	Distributing audio data to be learned	• In the new textbook, all music is accompanied by a score but many primary school teachers in Myanmar cannot read the music scores. Therefore, from G4 textbooks, all audio data

		was provided during the new curriculum training for in-service teachers and uploaded in the project website. • Not all songs of the primary music, however, are not available on data and it is necessary to prepare these music data.
	Explaining how to use supplementary teaching materials	• In the new textbooks and teacher's guides, there are descriptions about sample reference songs as supplementary and advanced learning, but there is no description about how to actually use those reference songs. • In the future, it is necessary to describe teaching plans with using these songs as references.
	Describing the way of assessment	• In the new textbooks and teacher's guides, the viewpoints of assessment are diversified and the descriptions about assessment are not consistent throughout the grades. • From now on, it is necessary to make the descriptions consistent throughout all grades. In particular, it is important to maintain the following three points properly: (1) Assessment as a part of teaching (2) Maintaining the consistency between the subject-wise viewpoints of assessment and chapter-wise viewpoint of assessment. (3) Clarifying the process of assessment such as quantifying the assessment criteria and grading.
Medium To Long Term	Clarifying the significance of music education as school education	• It is necessary to clarify the idea of why music is an indispensable subject in school education. • Leaning Music is a process that brings the pupil's intellect and mind (sensibility) together in a single point, a fusion of intellect and sensibility. • Immersing oneself in music can also help to sublimate and purify emotions such as anger and sadness. Human emotions can be purified from everyday experiences to aesthetic experiences and have the potential to enhance themselves. It is important to reiterate this and to explain the need for it.
	More systematic instructions	• 50% of songs included in the new textbook are of Myanmar and another 50% are taken from foreign songs. However, when learning about Myanmar songs, there is no systematic or systematic instructions. • In the future, it is desirable to re-organise the learning contents in a systematic and systematic way with personnel who understand the elements of Myanmar music systematically and systematically. In particular, there is a need to re-select Myanmar music suitable for the purpose of study.
	Establishing the "appreciation" area	• The appreciation in Music education is a very important learning area. However, the learning of this area is not dealt in the new textbooks and teacher's guides because school facilities are not ready for this. • In the future, it is necessary to introduce such contents of the appreciation area with the improved school facilities.
	Improving class environment	• It is important to improve the school facilities so that the learning contents dealt in the new textbook can be regularly taught in class. • Specific examples include the distribution of textbooks to the lower grades (for all pupils), the provision of Myanmar flutes to each pupil and banners of music scores.

■ Arts (Visual Arts)

Revision Time	Issues to be Revised	Explanations
Short Term	Setting clear learning objectives and assessment criteria	• In the new textbooks and teacher's guides, the assessment of pupils' performance is judged with the use of abstract words (such as clean, careful, and accurate), and if both the shape and colour of the work are good, the assessment will be "A," if either the shape or colour is good, the assessment will be "B," if neither the shape nor colour is good, the assessment will be "C." It is in fact difficult to assess art and crafts. • It is clear that learning objectives need to be clearly stated in order to assess adequately. • The project spent a lot of time to discuss the assessment methods during the development of textbooks and teacher's guides. In the future as well, it is necessary to set clear learning objectives with an awareness of "why pupils study/practice the learning materials."
	How to assess group activities	• Group activities and collaborative production have the effect of enhancing the joy of collaboration and communication, but when assessing it, it is an assessment for individuals. For that purpose, supplementary writings by pupils to record their learning and self-assessment are required. • The new textbooks and teacher's guides did not include the examples of such format of pupils' writing, but in the future, it should be considered to include them.
	Preparing materials and tools used in the Visual Arts	• In the development of new textbooks and teacher's guides, there is a description of basic materials and tools (drawing paper, crayons, scissors, plastic bags, PET bottles, etc.) necessary for learning Visual Arts. However, even these basic materials and tools may be difficult to be obtained in some schools. • It is necessary to make sure that these basic materials and tools are distributed. • In addition, some argue that it is better not to recommend the use of plastic bags and PET bottles due to environmental considerations. In the future, there is a possibility to some materials cannot be used. Depending on the social situation, it is necessary to replace the learning contents using these materials with the contents using waste materials such as paper containers and newspapers.
Medium To Long Term	Handling digital teaching materials	• Digital images are not dealt with in new textbooks and teacher's guides. However, digital devices are rapidly becoming widespread in the current Myanmar society, and it is highly possible that drawing pictures using tablets will become common in the future. • In the future, it is necessary to consider handling digital teaching materials in response to such changes in social conditions.
	Issues concerning religion and ethnicity	• In the development of new textbooks and teacher's guides, the selection of paintings in the field of appreciation was initially considered inappropriate because Buddhist paintings are a specific religion, and oil paintings and monument sculptures by Myanmar writers could not be published. • However, in the upper grades, it is published based on the decision made by Myanmar counterparts that there is no

		problem in posting paintings and Buddhist statues of Buddha tales (Jataka).
		• As described above, at present, the criteria for publishing works of a specific religion or ethnic group in textbooks are unclear. Therefore, it is necessary to set clear guidelines for this, and after that, it is necessary to reconsider the works to be included in the textbooks according to the criteria.

■ **Assessment**

Revision Time	Issues to be Revised	Explanations
Medium To Long Term	Improving understanding of educators' assessments	• In the development of new textbooks and teacher's guides, it was aimed that Myanmar educators, including curriculum development staff, in-service teachers, EDC teacher educators, educational administrators, must improve their understanding of the assessment. • In the future, it is necessary to further strengthen the following four areas: (1) Ability of developing problems to ask higher thinking skills (2) Ability to develop activities that utilise higher thinking skills (3) Ability to create indicators and practice for performance assessment (4) Understanding and practicing various other assessments
	Revising the sample questions for G1-G5	• It is necessary to develop items according to the chapter objectives and contents of the textbook, and to develop rubrics in the practical subjects.
	Revising the reference book	• It is necessary to review and revise the reference book according to the revision of the textbook, including the concept of new assessment, items, rubric development process, various item types, introduction of item examples of each grade, features of various assessments and practical methods.
	Revising the guidebook	• Guidebook presents specific practices of assessment in class and school for both formative assessment and summative assessment (regular tests for G4 and G5). It requires review and revision based on the real practices and revision of assessment format.