

Country Name	Project for Improving In-service Teacher Training for Science and Mathematics Education
Lao People's Democratic Republic	

I. Project Outline

Background	<p>As one of the top prioritized sectors in contributing to poverty reduction in Lao PDR, various efforts had been made in the education sector under the following three pillars: (1) improvement of equitable access; (2) improvement of quality and relevance; and (3) improvement of administration and management. Although the enrollment rate in the primary education had been improved, other indicators that are related to the quality of education, for example, repetition, dropout, and completion rates had not been improved as expected. With these backgrounds, the Education Sector Development Framework (ESDF) (2009-2015) placed an emphasis on the improvement of teachers' quality by strengthening the capacity of in-service training. JICA supported the improvement of teacher education through the Project for Improving Science and Mathematics Teacher Training (SMATT) from 2004 to 2008, which aimed at improving quality of science and mathematics lecturers at teacher education institute (TEI). Training contents and learner-centered approaches of SMATT were recognized as relevant and useful for persons and organizations concerned. Recognizing these achievements and impacts of SMATT project, the Government of Lao PDR requested the continued support to enhance and expand the outputs of SMATT project to the school level.</p>												
Objectives of the Project	<p>Through strengthening the mechanism and human resources and developing materials for improving lessons, the project aimed at improving quality of science and mathematics lessons in target schools, thereby improving quality of lessons in target provinces.</p> <ol style="list-style-type: none"> Overall Goal: Quality of lessons in target provinces is improved. Project Purpose: Quality of science and mathematics lessons in target schools is improved. 												
Activities of the Project	<ol style="list-style-type: none"> Project Site: Savannakhet, Champasack and Khammouane Provinces¹ Main Activities: (1) Ministry of Education and Sports (MOES) prepares an operational plan for supporting the mechanism for improving lessons and conducts workshops on In-service Teacher Training for Science and Mathematics Education (ITSME), District Education and Sports Bureau (DESB) conducts training of trainers (TOT), principals and academic teachers (AT) in target schools² prepare action plans and implement activities for improving lessons, DESB monitors utilization of model lesson plans in target schools and reports to Provincial Education and Sports Service (PESS), and MOES organizes seminar to share experiences with relevant organizations; (2) ITSME trainers³ participate in ITSME workshops to gain necessary subject knowledge and skills for improving lessons and principals and AT participate in TOT to learn how to improve lessons in target schools; and (3) the project develops a standard format of lesson plan, a lesson plan preparation manual, a lesson plan evaluation sheet, a lesson observation sheet, a monitoring report format, and reference materials for improving lessons for ITSME trainers, and ITSME trainers develop model lesson plans and manual for Internal Supervision (IS) for improving lessons etc. Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Japanese Side</td> <td style="width: 50%;">Lao Side</td> </tr> <tr> <td>1) Experts: 6 persons</td> <td>1) Staff Allocated: 40 persons</td> </tr> <tr> <td>2) Trainees Received: 30 persons</td> <td>2) Provision of office space and utilities</td> </tr> <tr> <td>3) Equipment: vehicle, photocopier, computer, printer, software and video camera etc.</td> <td>3) Local activity cost</td> </tr> <tr> <td>4) Local activity cost</td> <td></td> </tr> </table> 			Japanese Side	Lao Side	1) Experts: 6 persons	1) Staff Allocated: 40 persons	2) Trainees Received: 30 persons	2) Provision of office space and utilities	3) Equipment: vehicle, photocopier, computer, printer, software and video camera etc.	3) Local activity cost	4) Local activity cost	
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Project Period	February 2010 – October 2013	Project Cost	(ex-ante) 390 million yen, (actual) 303 million yen										
Implementing Agency	Department of Teacher Education (DTE), Ministry of Education and Sports (MOES)												
Cooperation Agency in Japan	Vision and Spirit for Overseas Cooperation Co., Ltd. (VSOC)												

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- [Supplementary Information for Continuation Status of Project Effects] As stated in the Terminal Evaluation Report, achievement of Output 1, 2 and 3 led to the activation of IS and External Supervision (ES) activities⁴ in target schools, which in turn led to the achievement of Project Purpose. However, IS and ES activities are not mentioned in indicators of Project Purpose. Thus, in this ex-post evaluation, whether, how frequently and where IS and ES activities have been conducted after project completion are checked to evaluate continuation status of project effects.
- [Supplementary Information for Overall Goal] It is stated in the Terminal Evaluation Report that the achievement level of indicators of Overall Goal

¹ The target districts were Kayson District, Champhone District and Phalanxay District in Savannakhet Province, Thakhek District and Himboun District in Khammouane Province, and Sanasonboun District, Bachieng District and Paksong District in Champasak Province.

² The total number of the target schools was 116 in eight districts in three provinces.

³ ITSME trainers: lecturers of Teacher Training Colleges (TTCs) and Pedagogical Advisors (PAs) of PESS and DESB, 38 persons in total (6 in PESS, 16 in DESB and 16 in TTC) during the project period

⁴ In IS activities, teachers observe demonstration lessons conducted by principals and ATs utilizing model lesson plans, analyze model lesson plans, observe lessons conducted by peer teachers, and revise/modify their own lesson plans in accordance with model lesson plans. In ES activities, ITSME trainers (PAs) monitor lessons conducted by school teachers and provide guidance/advice to schools.

should be evaluated taking into account the two aspects below, as targets set in these indicators are not very clear:

(1) Coverage: the achievement level in terms of 'coverage' should be evaluated against coverage targets set in plans of DTE, PESS and DESB to extend ITSME approach for improving the quality of lessons in the target provinces.

(2) Qualitative achievement: the qualitative achievement level should be evaluated against 'target situation' stated for indicators of Project Purpose, which are;

Target situation for Indicator 1: Teachers can conduct lessons that are easy to understand and enjoyable for students by using ITSME lesson plans.

Target situation for Indicator 2: Teachers can develop their own lesson plans for lessons that are easy to understand and enjoyable for students by using ITSME lesson plans.

In this ex-post evaluation, the two aspects above are used to evaluate the achievement level of indicators of Overall Goal.

<Constraints on Evaluation>

- [Supplementary Information for Overall Goal] Regarding '(1) Coverage' above, coverage targets set in plans of DTE, PESS and DESB could not be obtained due to lack of data. Thus, the achievement level of indicators of Overall Goal was evaluated taking into account of '(2) Qualitative achievement' only among the above.

1 Relevance

<Consistency with the Development Policy of Laos at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Lao PDR's development policy on 'improvement of the quality of education' and 'strengthening of in-service teacher trainings' as set forth in "the Sixth National Socio-Economic Development Plan (NSEDP) (2006-2010)", "the Sixth Five-Year Education Sector Development Plan (ESDP) (2006-2010)", "Teacher Education Strategy 2006-2015 and Action Plan 2006-2010 (TESAP)", "the Seventh NSEDP (2011-2015)", "the Seventh ESDP (2011-2015)" and "TESAP (2011-2015)" etc. at the time of both ex-ante evaluation and project completion.

<Consistency with the Development Needs of Laos at the Time of Ex-Ante Evaluation and Project Completion >

The number of primary schools increased from 7,148 in 1991 to 8,740 in 2007, and the enrollment rate in primary schools was improved from 80.3% in 2001 to 86.4% in 2007. However, at the time of ex-ante evaluation (2009), improvements were not seen in repetition, dropout, and completion rates as expected, and one of the reasons for this was considered to be low quality of education. At the time of project completion, the Director of the Department of Teacher Education (DTE) announced that DTE would encourage all TTCs to introduce ITSME lesson planning as a part of compulsory study for new teachers, and ITSME lesson plan format and method of lesson planning, which were developed under the project, would be commended for a national standard. Thus there were needs for improving the quality of teachers and lessons both at the time of ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy, as stated in the "Country Assistance Program for Lao PDR (2006)", in which 'improving the quality of education' is emphasized.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

The Project Purpose had been achieved by the time of project completion. In general, the quality of lessons, especially their framework, conducted by the target school teachers was improved. Through the use of ITSME materials (model lesson plans, ITSME manual and reference materials for teachers' study) developed under the project and the lesson plans made by teachers themselves, lessons became easier to understand and more enjoyable for students (Indicator 1). In general, the quality of lesson plans developed by the target school teachers was also improved. Their lesson plans were composed of i) clear objectives, ii) detailed learning process/student activities, and iii) evaluation questions based on the model lesson plans, which was a remarkable improvement from the situation at the baseline survey (Indicator 2).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially sustained since project completion. As data on the continuation status of project effects (Indicators 1 and 2 of Project Purpose) was not available in the implementing agency, an interview survey was conducted to principals of 10 schools targeted under the project⁵ during the field survey for the ex-post evaluation. Regarding Indicator 1, six principals (60%) replied "yes" to the question, "are teachers in your school able to set clear objectives, lead students' activities, summarize and evaluate the lessons using lesson plans based on ITSME models in the lesson?". Moreover, eight principals (80%) replied "yes" to the question, "are teachers able to conduct lessons that are easy to understand and enjoyable for students by using ITSME lesson plans?". They also commented that ITSME models made most of students more willing to join classes than before project implementation. Regarding Indicator 2, seven principals (70%) replied "yes" to the question, "are teachers able to develop their own lesson plans that are composed of i) clear objectives, ii) detailed learning process/student activities, and iii) evaluation questions based on the model lesson plans?". They also commented that teachers conduct peer reviews on their lesson plans to improve them, and when teachers obtain feedbacks to their teaching from other teachers, they reflect feedback comments to their lesson plans. In seven districts⁶ in three provinces targeted under the project, IS activities have been conducted once or twice a month in all schools utilizing ITSME lesson plans since project completion. However, ES activities have been conducted once a month in a limited number of schools (approximately 10% of the total number of schools), as many schools do not have a capacity to conduct both IS and ES activities and hence prioritize IS activities.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has been partially achieved by the time of ex-post evaluation. An interview survey was conducted to principals of 12 schools that were not targeted under the project in three provinces⁷ during the field survey for the ex-post evaluation. Regarding Indicator

⁵ An interview survey for project-targeted schools was conducted in one school in Paksong District, one school in Bachieng District and two schools in Sanasonboun District in Champasak Province, one school in Phalanxay District and one school in Champhone District in Savannakhet Province, and two schools in Thakhek District and two schools in Himboun District in Kammouane Province (10 schools in total).

⁶ Data was not available in Himboun District in Kammouane Province.

⁷ An interview survey for non project-targeted schools was conducted in two schools in Paksong District, one school in Bachieng District and two schools in Sanasonboun District in Champasak Province, one school in Phalanxay District, one school in Kayson District and one school in Champhone District in

1, nine principals (75%) replied that teachers in their schools are able to set clear objectives, lead students' activities, summarize and evaluate the lessons using lesson plans based on ITSME models in the lesson, and ten principals (83%) replied that teachers are able to conduct lessons that are easy to understand and enjoyable for students by using ITSME lesson plans. One of good examples is that teachers start asking questions to students from an easy level to a difficult level during a lesson, to help students understand lesson contents. Regarding Indicator 2, seven principals (58%) replied that teachers are able to develop their own lesson plans that are composed of i) clear objectives, ii) detailed learning process/student activities, and iii) evaluation questions based on the model lesson plans.

<Other Impacts at the time of Ex-post Evaluation>

No negative impact on natural and social environment has occurred under the project. As other positive impacts, according to interviews with 34 ITSME trainers, approximately 80% of them replied that examination scores of mathematics and science have been improved to a certain extent in schools where ITSME approach has been adopted, compared with scores before project implementation. Moreover, according to the review of "the Education Strategic Development Plan (2011-2015)", the number of dropped-out students at the national level has decreased by 18%, compared with the number before project intervention. MOES has analyzed that the project has contributed to this improvement to a certain extent through improving the quality of teacher training.

<Evaluation Result>

In light of the above, through the project, the Project Purpose had been achieved by the time of project completion, the project effects have been partially sustained since project completion, and the Overall Goal has been partially achieved by the time of ex-post evaluation. Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) Quality of science and mathematics lessons in target schools is improved.	1. Improvement of the quality of lesson performed by target school teachers	Status of the Achievement: achieved (partially continued) (Project Completion) The quality of lessons conducted by the target school teachers was improved and lessons became easier to understand and more enjoyable for students. (Ex-post Evaluation) According to the interview survey, 60% of targeted schools replied that teachers can set clear objectives, lead students' activities, summarize and evaluate the lessons using lesson plans, and 80% of targeted schools replied that teachers can conduct lessons that are easy to understand and enjoyable for students by using ITSME lesson plans.
	2. Improvement of the quality of lesson plans made by target school teachers	Status of the Achievement: achieved (partially continued) (Project Completion) The quality of lesson plans developed by the target school teachers was improved and their lesson plans were composed of clear objectives, detailed learning process/student activities, and evaluation questions. (Ex-post Evaluation) According to the interview survey, 70% of targeted schools replied that teachers can develop their own lesson plans that are composed of i) clear objectives, ii) detailed learning process/student activities, and iii) evaluation questions based on the model lesson plans.
	(Supplementary Information) Whether, how frequently and where IS and ES activities have been conducted after project completion	Status of the Achievement: (partially continued) (Ex-post Evaluation) In seven districts in three provinces targeted under the project, IS activities have been conducted once or twice a month in all schools utilizing ITSME lesson plans, while ES activities have been conducted once a month in a limited number of schools (approximately 10% of the total number of schools).
(Overall Goal) Quality of lessons in target provinces is improved.	1. Improvement of the quality of lesson performed by teachers in the target provinces	(Ex-post Evaluation) partially achieved According to the interview survey, 75% of non-target schools replied that teachers can set clear objectives, lead students' activities, summarize and evaluate the lessons using lesson plans, and 83% of non-target schools replied that teachers can conduct lessons that are easy to understand and enjoyable for students by using ITSME lesson plans.
	2. Improvement of the quality of lesson plans made by teachers in the target provinces	(Ex-post Evaluation) partially achieved According to the interview survey, 58% of non-target schools replied that teachers can develop their own lesson plans that are composed of i) clear objectives, ii) detailed learning process/student activities, and iii) evaluation questions based on the model lesson plans.

Source : Project completion report, interviews with MOES, PESSs, DESBs, TTCs and target and non-target school teachers (principals)

3 Efficiency

Both the project cost and the project period were within the plan (ratio against the plan: 78%, 100%, respectively). Therefore, the efficiency of the project is high.

4 Sustainability

<Policy Aspect>

The importance of improving the quality of education and strengthening of in-service teacher training are stated in "the Education Vision to 2030" and "the Education Sector Development Plan (2016-2020)", which are effective at the time of ex-post evaluation.

<Institutional Aspect>

There has been no change to the organizational structures for promoting ITSME approach among DTE, PESSs, DESBs and TTCs since

project completion. The total number of quota in DTE is 36 persons in total, which is filled at the time of ex-post evaluation, and the number of staff is sufficient for DTE to promote ITSME approach utilizing the methods and materials developed by the project, according to interviews with DTE. However the number of staff at PESSs, DESBs and TTCs in Savannakhet, Champasack and Khammouane Provinces is insufficient to disseminate ITSME approach and one to two more staffs need to be assigned in each office, according to interviews with PESSs, DESBs and TTCs. There are 56 ITSME trainers in three provinces at the time of ex-post evaluation (47% increase since project completion), and the number of ITSME trainers is sufficient to develop model lesson plans, conduct TOT and monitor utilization of model lesson plans at schools, according to interviews with DTE, PESSs, DESBs and TTCs.

<Technical Aspect>

Most project counterparts (C/Ps) still work at DTE, PESSs, DESBs and TTCs at the time of ex-post evaluation. The skill level of staff of DTE is sufficient to promote ITSME approach utilizing the methods and materials developed by the project, and the skill level of staff of PESSs, DESBs and TTCs in Savannakhet, Champasack and Khammouane Provinces is also sufficient to disseminate ITSME approach, as the monitoring and supporting network for promoting ITSME approach has been established among these organizations and required tasks of each organization has been conducted properly. The skill level of ITSME trainers in three provinces is generally sufficient to develop model lesson plans, conduct TOT and monitor utilization of model lesson plans at schools, according to interviews with ITSME trainers. On the other hand, some ITSME trainers pointed out that teachers in schools would need to develop skills to teach students in multi-grades at once, as approximately 30% of classes in Laos has multi-grades students in a class. Preparation workshops to prepare model lesson plans have been conducted twice (once in 2014 and another in 2016) among ITSME trainers since project completion. The workshop was not conducted in 2015, due to lack of budget. TOTs have been conducted for some schools (among 22 schools visited during the field survey for ex-post evaluation, TOTs have been conducted in four schools) once or twice a year to deliver model lesson plans to schools (principals and ATs) since project completion, however, TOTs have not been conducted in other schools due to lack of budget etc. According to interviews with staffs of DTE, PESSs, DESBs and TTCs and school teachers in three provinces, ITSME Material Book produced under the project is still utilized at these organizations and schools.

<Financial Aspect>

DTE does not have sufficient amount of budget to cover all the activities for promoting ITSME approach utilizing the methods and materials developed by the project, due to lack of budget allocation from the Ministry of Finance, according to interviews with DTE (detailed financial data was unavailable). PESSs, DESBs and TTCs in Savannakhet, Champasack and Khammouane Provinces also do not have sufficient amount of budget to disseminate ITSME approach including conducting preparation workshops, TOTs and monitoring of schools sufficiently, due to lack of budget allocation from MOES, according to interviews with PESSs, DESBs and TTCs. According to interviews with schools in three provinces, generally, they are not allocated sufficient amount of budget to conduct IS activities, however, they make efforts to secure budget for conducting IS activities by allocating the school independent budget which is managed under school principals supported by other donors and/or utilizing the budget from the Village Education Development Committees (VEDSs)⁸.

<Evaluation Result>

In light of the above, slight problems have been observed in terms of the institutional, technical and financial aspects of the implementing agency. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

Through the project, the Project Purpose had been achieved by the time of project completion, the project effects have been partially sustained since project completion, and the Overall Goal has been partially achieved by the time of ex-post evaluation. As for sustainability, some problems have been observed in terms of the institutional, technical and financial aspects of the implementing agency, while there is no problem in terms of the policy aspect.

Considering all of the above points, this project is evaluated to be satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- As stated above, some ITSME trainers pointed out that ITSME approach should also focus on multi-grade class teaching. Thus, DTE and relevant organizations should consider to develop skills to teach multi-grade class students with lessons learned of ITSME experience.

Lessons Learned for JICA:

- As stated above, ES activities have been conducted once a month in a limited number of schools, as many schools do not have a capacity to conduct both IS and ES activities. One of the reasons for this is that the volume of teaching materials which the project supported to develop is excessive of teachers' capacities to handle. Thus, when implementing a similar project in future, appropriate volume of teaching materials which teachers can actually handle should be developed, taking into account their capacity.

⁸ Village Education Development Committees (VEDSs) are village committees in charge of education development within a community, and are composed of a village leader, school staff and residents in a village.



Target School under the Project



Science Class in the Target School