

Progress and Challenges Continuing Teacher Professional Development Through Lesson Study in Indonesia

Sumar Hendayana, Harun Imansyah, Asep Supriatna, Nahadi

(Indonesia University of Education)

Abstract

A model of continuing teacher professional development has been developed in four districts through institutional collaboration between the Indonesia University of Education and West Java Provincial Office of Education since 2010. Best practices of the previous Lesson Study project under support of JICA at a piloting district have been adopted by making enhancements on several activities. Teachers were grouped into 16 to 32 working groups per district, depending on the number of teachers in one district so that members of one working group consists of 30 to 40 teachers per subject (Mathematics, Science, English, or Indonesian) for effective meeting. Teachers – teacher educators meetings were held regularly at schools within a working group. Teachers and teacher educators worked collaboratively to research lessons for promoting active student learning utilizing available local materials based on learning resources. Principals, supervisors, and provincial and district education officers have been involved to build ownership of the programs and promote role sharing among concerned institutions for sustainability. Progress of the model development will be reported.

1. Background

Education reform. The Government of Indonesia has paid more attention to quality of teachers. Based upon Teacher Law 2005, the Government of Indonesia stipulated teaching as a profession. Teachers should meet the qualifications of at least a 4-year Bachelor degree and have teaching certificates. The District Office of Education selects teachers to be trained at a university to get a teaching certificate. Within 10 years, 2.7 million teachers in Indonesia should have teaching certificates. If teachers pass and get teaching certificates, then their salary is doubled. According to Act No 19/2005 Standard of National Education, the teaching-learning process should be interactive, inspiring, joyful, challenging, and motivate students to be active and creative. However, the lecture type of teaching still dominates lessons at schools, so that students get bored and do not engage in learning.

Teacher training issues. In the case of West Java Province, there are 430,000 teachers to be retrained regularly to update their knowledge and skills but the West Java Provincial Office of Education did not have a systematic way of regular in-service training to retrain all teachers.

Without refreshing or updating teachers' knowledge and skills, teachers may not be able to attract students into learning engagement or provide students with appropriate hard and soft skills for competitive living in modern society. The West Java Provincial Office of Education used to conduct conventional training for representative teachers from 26 districts with a limited number of teachers of 300 teachers per a year. The top-down training was delivered in the form of lecturing theoretical aspects of teaching models. After training, trainees did not share knowledge with other teachers since principals did not facilitate opportunity for trainees to share.

JICA project of Lesson Study. SISTTEMS (Strengthening In-service Teacher Training of Mathematics and Science Education at Secondary Level), a JICA project of lesson study was conducted in Sumedang district from 2006 to 2008. Four hundred fifty mathematics and science teachers were grouped into 8 working group of mathematics teachers and 8 working groups of science teachers and participated in regular meetings twice a month at a school in rotation within a working group. The District office of Education assigned INSET-day, Wednesday for mathematics teachers and Saturday for science teachers. On these days, mathematics teachers and science teachers do not have a class to teach but they must join the regular meeting at a school. Teacher educators from Indonesia University of Education facilitated the teacher meeting to design the lesson, try out the lesson, and discuss student learning soon after the lesson. Selected teachers were assigned as facilitators to organize and lead the teacher forum at the working group. Facilitators were trained four times a year for capacity development in lesson study. In addition, principals and supervisors were trained twice a year for building ownership. It was found that SISTTEMS is effective enough to improve teachers' professionalism since all mathematics and science teachers got opportunities for INSET without leaving the school. They welcome to be observed for feedback. They are more confident in designing their own lesson and facilitating students to engage in learning. In addition, Sumedang district office of Education was able to sustain and disseminate best practices of lesson study after the project finished. Now, many school principals take these advantages to develop entire-school lesson study involving all teachers within a school. The number of schools applying entire-school lesson study has grown from 2 schools in 2007 to 35 schools in 2012.

This study will examine the following research questions: "What is the best way to disseminate the best practice of JICA project to other districts in West Java Province?", "How can it facilitate teachers' improvement?", and "How can the developed program be sustained?"

Data were collected through questionnaires from principals and teachers in four implementing districts (Bandung city, Bandung district, West Bandung district, and Subang district). Focus group discussion was also done for teachers in the four districts. Several lessons were observed and video recorded for further analysis using Ono's (2011) rubric assessment of lesson study.

2. Implementation of Lesson Study in West Java Province

Indonesia University of Education in cooperation with the West Java Provincial office of Education has disseminated lesson study in four districts (Bandung city, Bandung district, West Bandung district, and Subang district) to develop a model of continuing teacher professionalism since 2010. District selection was based upon willingness and distance from the campus of Indonesia University of Education. The campus of Indonesia University of Education is located in Bandung city which shares a border with West Bandung district. Subang district shares a border with West Bandung district while Bandung city shares a border with Bandung district.

Target. The main target of lesson study dissemination was 4240 teachers consisting of 2640 junior secondary school teachers (mathematics, science, English, and Indonesian) and 1600 teachers of 40 senior secondary school. Also 300 principals and 100 supervisors were involved in this lesson study program. Junior secondary school teachers were grouped into 88 working groups. Subject-based lesson study (mathematics, science, English, and Indonesian) was applied for junior secondary school teachers and entire-school lesson study was applied for senior secondary school. In subject-based lesson study, INSET-days were agreed on Monday for Indonesian, Wednesday for mathematics, Friday for English, and Saturday for science. Entire-school lesson study of senior secondary school was scheduled from Monday to Friday, so 4 senior secondary schools were scheduled to hold bi-monthly entire-school lesson study. Indonesia University of Education assigned 88 teacher educators to work collaboratively with junior secondary school teachers at a school within a working group and 80 teacher educators were assigned to work collaboratively with teachers of 40 senior secondary schools to promote student active learning.

Activities. The following eleven activities were set up.

1. Kickoff meeting. This activity was intended to provide stakeholders with general information of the whole program. The stakeholders include a representative of the legislative, head of the district office of education, head of the district office of planning, chairperson of the education board, representative of the parent association, representative of principals, and a representative of the teacher association. The kickoff meeting was held once at the beginning of the project implementation.
2. Baseline survey. This survey aimed to obtain information regarding the current situation of the teaching-learning processes and its environment. Data was collected through questionnaires, interviews, and observation. Questionnaires were distributed to students, teachers, principals, supervisors, and personnel of the district office of education. A sample of students, teachers, and principals were interviewed. Several teaching-learning processes were observed and recorded. In addition, a paper test of mathematics, science, Indonesian, and English was given to students of several classes of grade eight in junior secondary schools.

3. Principal and supervisor training. One hundred principals and 8 supervisors at a target district participated in training twice a year to improve their understanding on quality improvement in education. In the first training, the cooperation programs and lesson study principles were introduced followed by discussion on how schools could support teachers with transportation fees for regular meetings within the working group. The role of principals was emphasized to guarantee that their teachers implement training results to daily teaching practice. Following training, principals observed the lesson and had post-class discussion based upon their findings.
4. Facilitator training. Fourty two facilitators were selected from teachers based upon capacity and commitment in each target district to lead the lesson study activities of their working groups. Facilitators participated in a two-day training session 4 times a year. Principles of lesson study were introduced in the first training. Main activities for the following trainings were open lessons by facilitators and post-class discussion. Day-1: a facilitator taught a lesson while other facilitators observed the lesson and discussed their findings soon after the lesson. Day-2: similar activity (open lesson) was done with a different facilitator as a teacher. Teacher educators gave comments and suggestions to improve the learning quality.
5. Subject based lesson study. This is the main activity done twice a month. The activity of subject based lesson study was done in parallel at 44 working groups twice a month for junior secondary school teachers on the INSET day, Indonesian teachers on Monday, mathematics teachers on Wednesday, English teachers on Friday, and science teachers on Saturday. Twenty to fourty subject teachers per working group have a regular meeting at a school within the working group. A subject teacher meeting takes place at a school in rotation within working groups of a target district. Five one-day meetings were held per semester at different schools within the working group according to agreement in hosting the meeting. Facilitators are in charge of inviting their members and organizing the meeting, one of them who will chair the meeting. Meeting-1:preparation. Teachers selected topics to be studied for one semester based upon the current curriculum. They shared learning problems and discussed how to solve the problems in promoting active student learning. Lesson plans were designed collaboratively through considering several aspects, hands-on activity, mind-on activity, daily life, and local materials. Teachers agreed who would teach the lesson to be observed and which school within the working group would be the venue for the following meetings. Teacher educators engaged in discussion, instead of giving lectures. A supervisor was assigned to participate in a working group. Meeting-2: the same participants as meeting-1 reviewed the lesson plan, teaching materials, and student worksheet. Meeting-3: open lesson. A facilitator chaired a briefing before starting the open lesson, gave the teacher the opportunity to inform observers of the topic to be taught and its expectation. The chairperson reminded observers how to behave during the observation of student learning activities. Observation was focused

on student learning, or how the students learn. Why don't students learn? The teacher taught the lesson while other teachers, supervisor, university students, and teacher educators observe the lesson to collect data regarding student learning activities. Then, post-class discussion was held soon after the lesson to reflect on student learning. The chairperson first gave an opportunity to the teacher to reflect on the lesson followed by other observers to comment and share views on his/her findings regarding student learning. Teacher educators gave comments and suggestions to improve the quality of students' learning. Then teachers redesigned the lesson plan to be followed up by teachers in his/her classes and the findings were shared in the following meeting. Meetings-4 and -5 were similar activities as meeting-3: findings of the follow-up of the previous meeting were shared at a briefing session before the open lesson and post-class discussion, except at a different school venue and with different teachers who opened the lessons.

6. Entire-school lesson study. This activity was held at 10 piloting senior secondary schools in a target district. Selection of piloting schools was based upon a proposal to be evaluated by a commission composed of education district officers and lecturers. Selection criteria were based upon the commitment of school principals and teachers in reforming their school. All teachers regardless of subject participated in regular bi-monthly lesson study activity. The school principal assigned a teacher to be a coordinator for implementing entire-school lesson study. The regular, bi-monthly meeting for all teachers in a piloting school was done on one day while students had extra curricular activities, such as music, sports, or Boy Scouts. A workshop for all teachers and staff was held prior to implementing regular entire-school lesson study to discuss the principles of lesson study and have an agreement on which subjects and teachers for the open lessons in one semester. Teachers who teach the same subjects worked collaboratively in preparing a lesson plan, teaching materials, and student worksheet. Open lesson activities were done similar to subject based lesson study, except the participants are all teachers in one school. Two teacher educators of Indonesia University of Education were assigned to work collaboratively with teachers.
7. Evaluation workshop. This workshop was held twice a year at the end of the semester to share experience, discuss problems, and solve the problems for improvement of the quality of lesson study activities in promoting active student learning. Principals, supervisors, and facilitators of the working groups piloting entire-school lesson study presented the findings followed by discussion. Results were monitored by teacher educators for feedback on following activities. District education officers and teacher educators of Indonesia University of Education gave comments and suggestions for improvement on the following activities.
8. Dissemination forum. The best practice of continuing school-based teacher development by applying lesson study will be disseminated to other schools. This

activity was held at every working group twice a year by inviting primary school principals and teachers of neighboring schools. Teachers and principals from the working group shared their findings followed by discussion. Each working group disseminated the best practice to 40 teachers of dissemination targets per semester. Facilitators were encouraged to help dissemination targets to implement lesson study.

9. Conference and publication. A conference on lesson study facilitated sharing best practices and benchmarking among teachers as practitioners, policy makers, and developers. Results of the research lesson will be published through journals and websites as learning resources for others to learn. Each working group was assigned to share findings in the form of articles or videos through a website.
10. Coordination meeting. This coordination meeting was held to make sure the program implementation was on the right track. The Annual JCC (Joint Coordinating Committee) meeting among provincial decision makers gave suggestions for the program implementation. A management meeting among the management team of the involved institutions discussed planning, implementation, and evaluation programs. Task team members have meetings 4 times a year to discuss, share, and reflect on program implementation.
11. Endline survey. Similar instruments for the baseline survey will be used for the endline survey. Then the results of the endline survey will be compared with the baseline survey to obtain information on the effect of the developed programs.

Role sharing. This program promoted role sharing instead of reliance on a single donor. Schools were responsible for teacher transportation fees and teacher assignments. District offices of education coordinated teachers, principals, and supervisors of all target schools. Provincial office of education are responsible for the training and publication of best practices as learning resources for teachers. Indonesia University of Education supported teacher educators with transportation fees. Directorate General of Higher Education supports financial allocation for Indonesia University of Education. It is expected that role sharing systems promote ownership of the program to guarantee sustainability. The total budget for 3 years of program activities is US \$2,014,097. It was agreed that involved institutions contributed to this total budget, such as contribution of DGHE (40.50%), Indonesia University of Education (10.04%), provincial office of education (19.31%), district offices of education (5.65%), and schools (24.5%). Budget proportion between DGHE and provincial office of education shifted to 30% DGHE and 50% provincial office of education in the 3rd year.

3. Progress

Program development. Development of continuing teacher professionalism has been implemented for 3 years. The lesson study as a form of teacher professional development was introduced in the 1st year implementation (2010) to establish the system for building the

commitment of stakeholders. The head of the district office of 4 target districts agreed and supported the program implementation of lesson study since it will solve learning problems at the classroom level and give an opportunity to all teachers to improve their professionalism without leaving the schools. At the beginning of the program introduction, few supervisors, principals, and teachers resisted accepted the new paradigm in INSET. According to them, they had a bad experience in the past, the activities finished when the project ended. Their perception changed when it was explained that lesson study is not a project that depends on a donor; lesson study is a cost sharing program instead. At the beginning of the introduction session, few teachers refused to be observed when a teacher teaches a lesson. They thought observers will disturb the student learning situation and judge a teacher. After getting comprehensive information regarding lesson study and after some time their perception changed and they welcome to be observed when a teacher teaches a lesson since observers observe student learning. At the beginning of the implementation session and open lesson, observers were not focused to observe student learning. Some of them talked to each other and some of them observed a lesson outside the classroom. Also at the beginning of post-class discussion, observers commented on the teacher's way of teaching instead of student learning. Teacher educators kept reminding teachers not to talk to each other and stay inside the classroom focusing on observing student learning.

In the 2nd year of lesson study implementation (2011), observers' behavior was getting better. During open lesson, they stood up inside the classroom and were quiet while observing student learning. However, observers had difficulty in commenting on the lesson in the post-class discussion; they still commented on the teaching method and instructed a model teacher to do this, or to do that. One of the targets was to improve teachers' skills in commenting on the lesson. Observers' comment should be based upon students activity and relate to the learning target and how to revise the teaching strategy for learning improvement. In the 2nd year of lesson study implementation, Bandung City Office of Education learnt that best practice of lesson study has the potential for teacher improvement and took initiative to disseminate best practices of lesson study to train 5000 primary school teachers in 73 primary school working groups (KKG). In addition, the West Java Provincial Office of Education disseminated best practices of lesson study to 800 mathematics and science teachers in 10 districts. On the other hand, teacher participation decreased in 2011 compared to 2010 as shown in Table 1.

Table 1. Teacher participation

District/city	Number of participants					
	Entire-school lesson study			Subject-based lesson study		
	Expected	2010	2011	Expected	2010	2011
Bandung city	400	672	334	800	694	455
Bandung district	400	764	444	1280	1220	848
West Bandung district	400	386	204	800	517	293
Subang district	400	509	398	640	584	242

The number of teachers participating in the entire-school lesson study was more than that expected for 3 districts/city, except for West Bandung districts which was less than expected in 2010, then further decreased in 2011 compared to the expected participation and to participation in 2010. The exception was Bandung district which reminded above expected. This decrease in teacher participation can be explained in that other teachers from neighboring non-piloting entire-school lesson study joined piloting entire-school lesson study in 2010 but they quit joining piloting entire-school lesson study in 2011 since some of them conducted entire-school lesson study at their schools. The number of teachers participating in subject-based lesson study was less than that expected in 2010 and 2011. Teachers from 10 to 20 junior secondary schools should travel to the venue of the selected school within a working group to attend the activity of subject-based lesson study. However, school principals support only representatives of mathematics, science, English, and Indonesian due to the limited school budget in 2010. In 2011, school finances were getting worse due to bureaucratic financial distribution. In addition, changes in policy makers at the school level and district office of education were subject to less support.

In the 3rd year implementation of lesson study (2012), the exit strategy and sustainability were central issues. The first semester of the 3rd year of implementation was a task case for whether or not the activities were continued when teacher educators did not show up at schools. Several working groups or schools continued to run the lesson study program, even several junior secondary schools implemented entire-school lesson study on their own initiative. However, principals and facilitators need help to strengthen the program. Therefore, a strategy to design good lessons (chapter and lesson design) was introduced to strengthen the program and to guarantee sustainability.

Teacher improvement. Teachers' competency in delivering the lesson has improved gradually.

The progress of science lessons at a school were video recorded before (baseline) and during implementation of the lesson study program in 2010, 2011, and 2012. The recorded videos were analyzed using Ono's (2011) rubric of lesson study assessment. At the baseline, a teacher dominated the lesson by giving more lectures. Few students understood the lesson. Moreover, several observers were outside the classroom. Without post class conference, it was not done soon after the lesson. According to Ono's (2011) rubric, the level of reflection is 0.

In 2010, a teacher let students do an experiment but few students did. Students neither have enough information on what they should do nor time to discuss the experiment results since the teacher gave more explanation. Observers comment on the teacher's way of teaching which is level one of reflection.

In 2011, several students engaged in learning but the group members was too large (9 students/ group). Some observers still comment on the teacher's way of teaching, some of them give constructive suggestions. The average level of reflection is 1.6 according to Ono's rubric.

In 2012, students engaged in the experiment and thinking process. Observers observed student learning closely. Some observers commented on student learning, related to student

learning objectives, and gave constructive suggestions. Few observers did not relate student learning to learning objectives. According to Ono's (2011) rubric, the average level of reflection is 2.7.

Teachers' response. A questionnaire was distributed to 160 respondents among the facilitators to obtain information on teachers' response. One hundred thirty one respondents returned the questionnaire. Table 2 shows teachers' response on how teachers benefit from lesson study program implementation. There are 4 groups of questions on the questionnaire: statement number 1 and 2 refer to knowledge improvement, 3 to 6 refer to teaching skills, 7 and 8 refer to teaching accountability, and 9 and 10 refer to principals' support. With regards to Table 2, all respondents agree and strongly agree that teachers' knowledge has improved. Teaching skills have improved as indicated by the 98% response rate of average respondents to agree or strongly agree on statements 3 to 6. Ninety six percent of respondents agree and strongly agree to be more accountable in teaching. School principals support teachers to participate in the lesson study program and facilitate teachers to share with others as indicated by 96% of the respondents to agree or strongly agree to statement 9 and 10.

Table 2. Teachers' response

Note: SD = Strongly Disagree; D = Disagree; A= Agree; SA = Strongly Agree

No	Statement	%			
		SD	D	A	SA
1	Improving knowledge of subject matter and pedagogy			31	69
2	Inspiring for improvement of my class			25	75
3	Develop own lesson plan		4	52	44
4	Improving teaching skills		2	53	45
5	More sensitive to observe student activities		1	58	41
6	Improving awareness of students' difficulties		2	48	50
7	Welcome to be observed		6	59	35
8	Inviting colleagues to observe lesson		3	68	28
9	Principal support for participating in LS		2	49	49
10	Principal facilitates to share with others		7	61	32

Strategy of sustainability. Four strategies have been set up to sustain the lesson study program as a form of continuing teacher professional development. First, at least one junior secondary school per district will be maintained as a center of excellence in lesson study through implementing entire-school lesson study. Second, well-performing facilitators will be assigned to facilitate teachers in other districts to implement lesson study since the West Java Provincial Office of Education will disseminate lesson study to another 20 districts. Third, West Java Provincial Office of Education will support an annual lesson study conference to facilitate a teachers' exchange of their experiences. Fourth, the website of the Indonesia Center for Lesson Study has been established under the address of <http://icls.upi.edu> to share experiences.

4. Conclusion

Lesson study implementation as a form of teacher professional development is promising as a model of continuing teacher professional development in Indonesia through teacher-teacher educator collaboration in designing, delivering, and reflecting on the lessons. Both subject-based and entire-school lesson studies are effective enough and inexpensive to improve teachers' knowledge and skills without leaving the schools. Strong support of policy makers of teacher institutions are necessary to sustain lesson study practice at schools.

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