

Chapter 3

Research Methodology

This research was a participatory action research in which the researcher had taken part in every step of the research as follows:

3.1 Research Target Group

The target group for this research was of those who had readiness and volunteered to take part in the research. They were administrators, teachers, and students of Jae Hom Wittaya, Jae Hom District Jae Hom Wittaya School, Jae Hom District, Lampang Province. The participants in this research are as follows.

1) Two school administrators

1.1 One school principal

1.2 One deputy principal on academic affair

2) Four Mathayom Suksa 1 - 3 science teaching teachers for

2.1 One science teaching teacher for each of the level of Mathayom Suksa 1–3 totaling 3 subjects who took part in the learning organizing planning, classroom observation, reflection, and concluding the learning results.

2.2 One science teaching teacher for Mathayom Suksa 3 who took part in setting up the learning organizing plans with the one in 2.1 and had put the learning organizing plans into teaching in the classroom including in the reflecting and concluding the learning results.

3) Forty Mathayom Suksa 3/9 students

3.2 Research Procedure

Phase 1- Preparation

1) Studying the context and conditions of learning management on science strand at primary secondary education level at Jae Hom Wittaya School.

The process included the small group meeting on July 27, 2010, taking part by school administrators, head of science strand, and teachers who taught science at lower secondary education level to reflect the preset situation of learning management at the present and the problems occurred to build up the awareness on the learning management to promote scientific thinking of the students.

2) Studying the lesson study by observing and study touring at Thongchai Wittaya School, Lampang Province, one of the schools taking part in the project on teacher profession development using lesson study and open approach innovations. These innovations had been assigned by the Office of High Education Commission to the mathematics section of the Faculty of Education, Chiang Mai University, to take care of since 2009 academic year onward. The researcher had participated in all the 4 steps, namely, 1) Goal setting and planning, 2) Implementing the plans in the classroom and carrying out the classroom observation, 3) Reflecting on the results of the learning management, and, 4) Concluding the things learned. The study tours were on August 2 and August 16, 2011 before taking part in the lesson study class opening event on September 7, 2011

Phase 2 - Workshop on the guideline to organize the learning management to promote scientific thinking in which Assist. Prof. Dr. Pongsak Paenkaew had served as the resource person. The workshop was held on November 22-24, 2011, taking part by the teachers at Rom Chart Room, Jae Hom Wittaya School, aiming at enabling the teachers in organizing the instruction plans using knowledge inquiry method using 5 Es through 4 stages of scientific process—question raising/problem identifying, hypothesis setting, hypothesis testing, and concluding and presenting the results.

Phase 3 - Introducing the Lesson Study to the school through the following process:

3.1 Organizing the workshop to introduce the procedure/process of the lesson study for all of the target group including the administrator and the teachers on 6 October 6, 2011, at Room 3302, Faculty of Education, Chiang Mai University., with Dr. Anchalee Tananone and the team had served as the resource persons and facilitators to provide knowledge and guideline how to apply the lesson study process.

3.2 The researcher and research participant teachers working together to analyze the standards/indicators on science strand complying to the B.E. 2551 Basic Education Core-Curriculum at Mathayom Suksa 3 level and designing the learning unit at Thipayasarn Meeting Room at Jae Hom Wittaya School during October 20 – 21, 2011

Phase 4 – Learning management Development- This phase would concentrate on developing the learning management to promote scientific thinking skill using the lesson study along the following 3 steps:

Step 1 - Setting up learning organizing plan which was the group process in which the teachers helped one another in analyzing the standards and indicators for the learning management on B.E. 2551 Basic Education Core-Curriculum, science strand at Mathayom Suksa 3 level, designing and setting up the learning organizing plans along the standards and indicators resulted from the analysis for providing learning in the second semester 2011 academic year. The course took 5 credit units for the studying for 20 weeks totaling 60 hours. There was session on planning the course at 2.30-5.00 p.m. on every Friday.

Step 2 – Putting the learning organizing plans into classroom practice and classroom observation – The process was to implement the learning organizing plans set in step 1 to be actually used in the classroom taught by one of the teachers in the group. The teacher would teach along the prepared instructional plans why other teachers and concerned individuals would come to the class for classroom observation and collect information on the scientific thinking skill of the students focusing on the learning of the students including their participation and other behaviors. This step would be carried out on periods 3-4 (during 10.10 -11.50 a.m.) on every Tuesday, and period 6 (during 12.40. a.m.– 1.30 p.m.) every Thursday.

Step 3 - Reflect on and concluding the learning results – In this step, the administrators, the teachers, and other concerned individuals would exchange ideas and worked together to analyze the information on learning of the students. They examined the evidences to prove if the students could achieve the goals and development as well as working together to conclude the results of the learning management and came up with the guideline for developing the learning management

for the weeks to come. After engaging in the activities in Step 2, this step would be carried out during 1.00 – 2.30 p.m. on every Friday.

Phase 5 – Lesson Learning Activity – The activity would be organized after the operation had been completed along lesson study cycle for the whole lesson study for the whole semester to exchange knowledge and expand the result of using the lesson study innovation for school administrators in the Phayawang Network, Heads of 8 learning strands, and the teachers from other strands who were interested in the lesson study. The activity was carried out at Rom Chart Room at Jae Hom Wittaya School on March 2, 2012.

Phase 6 – Evaluation on the learning management to promote student’s scientific thinking using lesson study – During March 8-9, 2012 after the activities on lesson study were completed, small group discussion was organized for everyone who had participated in the research to help conclude the operation. In the session, there were questionnaires to ask the project participants on the learning management to promote scientific thinking using lesson study.

3.3 Research Tools

1. **Tools used for teaching profession development** included:

1.1 **Training Manuals** – These were the manuals developed by the researcher to assure understanding on part of the target group individuals and used as the guideline for organizing the activities along the research process. They were the manual for training on lesson study and the manual for the workshop on the guideline for organizing the instruction that promoted scientific thinking and the knowledge inquiry learning management.

2. **Tools for collecting information** included:

2.1 Behavior recording notebooks – include:

1) Lesson study notebook

It was an open-ended recording form for the researcher to use in recording the behavior of the target group individuals such as administrators, teachers, and students and recording various events occurred during the lesson study operation in which the the researcher had taken part at all of the 3 steps, namely, Step 1 - Setting up the plans on learning management, Step 2 - Using learning organizing plan in the

classroom and classroom observing, and Step 3 – Reflecting and concluding the learning management.

2) Classroom observation notebook

This was an open-ended recording form for the researcher, administrators, and teachers taking part in the classroom observation to use to record the learning and teaching behaviors and various events occurring while the teachers was teaching through learning organizing plan along the step 2 of the lesson study process. The main goal was to observe the learning behavior of the students.

2.2 Issues for the focus group

These were the topics of conversation within the focus group organized to survey the opinions of the administrator and the research participant teachers concerning the teaching profession development on learning management using lesson study.

2.3 Video recorder

This was the equipment for recording various events occurring during carrying out the classroom activities along the procedural steps of putting the learning organizing plans into practice and the classroom observation.

2.4 Camera

This was an equipment to record picture or crucial events occurring during the operation of the lesson study at all 3 steps to be used as the evidences to support various operations.

2.5 Documents recording after implementing learning organizing plans and on the works done by the students. The documents were summarized the points from the observation or results of the learning management after the class. They compiled all works of the students done for the assignments in every learning session.

Information Collection

As this research utilized information mostly in qualitative form, the researcher had compiled the information along the procedure determined by nature of information as follows.

Qualitative information covered the change of roles of the teachers, role of students in form of learning behavior of the students as well as role of the administrator and the superintendents shown during the research information collection. These were done along the following modes.

1. Observation

1.1 Participant observation - the researcher observed the behavior and roles of the teachers and the administrator and observed the phenomena occurred during the activity engagement and the 3 steps of the lesson study.

1.2 Classroom observation was the observation of phenomena occurred during the classroom activities such as the teaching of the teachers and studying behavior of the students along the research goals to compile all the phenomena and later on link to find the relationship of the observed phenomena.

2 . Focus Group was set up to include the personnel who had part in the teaching profession development on learning management to promote scientific thinking of the students using lesson study.

3 . Video Recording – This was to record the moving pictures using video recorder to collect information occurring during the learning organizing activities in the classroom.

4 . Photo Taking - The researcher had used camera to record the picture of event occurring during the operation along the 3 steps of the lesson study.

5 . Document compiling – This included the notes after implementing the learning organizing plan and works of the students to be used to support the information analysis.

Information Analysis

As the information in this research was mostly qualitative one, the researcher had brought information obtained through observation, focus group, video, and information extracted from the documents to analyze the content and encoded it to be classified and derive the conclusions that were reliable.