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Supporting Thai in-service teachers in Teaching Mathematics through Lesson Study Using Five Practices: A Pilot Study

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Lesson study is generally for enhancing professional development of teachers (Cheung and Wong, 2013) which is a collaborative instructional improvement attempt by a group of teachers. Lesson study is mainly focus on analyzing curriculum and setting goals, planning lesson together, implementing and observing the lesson, and reflecting the implemented lesson (Lewis and Hurd, 2011) While the five practices (Smith and Stein, 2011) provides an opportunity for teachers to improve their teaching as follows: 1) anticipating students' responses, 2) monitoring students' responses, 3) selecting selecting particular students to present their mathematical responses during the whole class discuss, (4) sequencing students' responses in a specific order, and (5) connecting students' responses to key mathematical concepts. It's shown that both lesson study and the five practices are focus on teachers' development. This study employs the five practices and the cycle of lesson study process to improve Thai in-service teacher's instruction.

The target group was 3 Thai in-service secondary school teachers from three public schools in Chiang Mai province, Thailand. The instruments used for the research included 1) collective lesson plans, 2) reports on group discussions about lesson planning and implementation, 3) VDO Recorder and students' worksheets and, 4) individual teachers' reflection reports. The data collecting process was started from a) each individual in-service teacher designs a lesson plan by themselves ; b) teachers and researcher meet as a group, discuss the pros and cons of each teacher's lesson plan, and develop a group lesson plan together; c) after discussion, each teacher writes a reflection report; d) each teacher implements the lesson plan, while the researcher and another teacher in the same school observe the implemented lesson; e) all teachers and researcher meet together again for discussing the pros and cons of the implemented lesson and also revises their initial lesson plan. In this study, the researcher collected data for three times of each data collection process. The findings reveal that all lesson plans changed especially the mathematical task in the lesson plan was adapted in meaningful way to specify students' thinking. Whereas some participating teachers change their teaching (2 from 3 in-service teachers) by monitoring, selecting and sequencing student responses for whole class discussion and also connecting their students' responses to key mathematical ideas.

References

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The Process of Beginning Teacher's Competence Development about Collaborative Learning: From Life History in the First Year

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In Japan, collaborative learning is the principle of learning interested in by researchers and teachers. The previous studies of collaborative learning have focused on learners and mainly examined the factors affecting the success and the processes of learning (e.g., Gillies, 2014; Webb, 2013). However, there are few studies about teachers who support children in collaborative learning (e.g., Akita, Ichiyangi, Ishibashi, Kodama, Matsuki, and Nakaya, 2016), thus more studies about teachers are needed (e.g., Gillies, Ashman, and Terwel, 2008).

The present study focused on the process of competence development about collaborative learning. In recent years, teachers' competence development is examined by narrative analysis through life history (e.g., Fujiwara, Endo, and Matsuzaki, 2006). For example, Kodama (submitted) and Kodama (in press) examined the process of expertized teachers' competence development about collaborative learning using life history approach. The results of the analysis indicated followings. (1) The process of competence development consisted of 'ensuring the collaboration' and 'ensuring the inquiry.' (2) 'initial image of collaborative learning' obtained by the experienced teacher was the important base in later competence development. However, these studies remained two issues. One is that historical background differs from current school-context, and the other is that the process of initial competence development is not examined in detail. Therefore, the purpose of this study was to examine the beginning teacher's process of competence development about collaborative learning based on current school-context.

Mr. Koreda participated in this study (male, pseudonym; he is teaching for six years). In the beginning year as a teacher, Mr. Koreda studied lessons and was mentored by Mr. Hamasaki. Mr. Hamasaki was recognized as an expertized teacher about collaborative learning (Kodama, submitted) and assigned as Mr. Koreda's mentor. I interviewed Mr. Koreda for life history especially about the first year of teaching to clarify how he developed his competence about collaborative learning from the experience of the first year. The narrative obtained from the interview was analyzed interpretationally.

The results of the analysis revealed followings. (1) Mr. Koreda changed the image of collaborative learning over time. For example, the image before becoming a teacher changed from 'forming the group and letting them talk' to 'talking according to one purpose' and 'conversation through many children, not only between teacher and a child.' This change occurred to him intermittently because he was too busy as a beginning teacher and had some troubles (e.g., beginning teacher training, paperwork, and having trouble with parents) to think and learn deeply. (2) Mr. Koreda caught the image of a teacher who ensures children's collaboration and inquiry but could not practice expertly, and understand Mr. Hamasaki's intention in some practice. Mr. Koreda became to understand it as reflecting his two years experiences. (3) The advice from other teachers was not only the chance of extending a perspective other than collaborative learning but also the cause of perplexity about how to practice lessons. These results suggest that the process of the beginning

teacher's competence development occurs teetering between values of collaborative learning and other practice, and does not change immediately by the advice. Collaborative learning has much difference from mass teaching that teachers have experienced as a learner (Kodama, 2017). In order to understand the advice, teachers need to reflect the own practice of collaborative learning intermingling it with that advice.

Improving Science Teacher Professionalism: Learning From Teachers, By Teachers and For Teachers

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Training teacher expertise with the conventional methods (camp training) has not been able to improve the performance of science teachers. The low students' science literacy compare to the science literacy of the student from other countries indicate the weakness of this program. The new continuous program development (CPD) for science secondary teachers has been designed and tried out at one of the districts of West Java Province-Indonesia. The program applied the learning principle for teachers: learning from-by-for the teachers. The developed program is a combination of lesson study principles and conventional methods of CPD, that initiated by group discussion among science teachers who are members of science teachers association (STA). The initiation step aims to harmonize the teachers' perception of science literacy concept, integrated science, and the models to teach science in integrated ways. The next step is the steps of lesson study (PDS: plan do, and see). The facilitators (University staffs) involve in the initial step, do not involved in the teacher's planning activity, and involved again in do and see steps. The result of the research shows the good response and great attention from teachers to the program. The increasing of quality and number of response in the reflection sessions (along with the three cycles of PDS) show the understanding of science teacher on how to arrange the science learning that is able to build the students' science literacy.