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## How Does Lesson Study Contribute to Teachers Learning and School-based Development in Norwegian Schools?

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School-based competence development, learning organizations and professional learning communities are highly valued by Norwegian school authorities. Despite that Norwegian teachers perceive colleagues as their most important source of knowledge, research shows that their cooperation is action-oriented and characterized by practical clarifications and lack of professional discussions (Junge, 2012; Helstad, 2013). In order to strengthen teachers' professional development, an increasing number of Norwegian schools choose Lesson Study as structure for systematic school development, and we ask; how do Lesson Study contribute to professional learning and development in Norwegian schools? And how do Lesson Study influence teacher's cooperation?

The purpose of Lesson Study is to improve the quality of teaching through a 'reflexive, recursive and collaborative process' (Dudley, 2001, p.5). The word reflection comes from Latin (*re-flectio*) and means to 'turn' (re) 'back' (flection). Reflection means asking questions about our practice and foreseeing possibilities for change and development (Revans 1984). Dudley describes learning points in Lesson Study as moments that revealed a teacher expressing a change in attitude, belief or knowledge about teaching (Dudley 2013). Sondenå (2004) talks about forceful reflection as something that has to exceed what is already thought about ideas and actions and to think new about actions to create development. And Metzriow (1991) uses the concept transformative learning; when the reflection is about reconsidering the assumptions one's beliefs are based on, exploring alternative perspectives, changing old ways of understanding and acting out of new perspectives.

Based on a theoretical assumption that the quality of reflection is central to the teachers' learning outcome, and seeing learning points, forceful reflection and transformative learning as steps in professional development, our research questions are; What do we find of learning points, strong reflection and transformative learning in the teachers' Lesson Study-cooperation? What is the content of the conversation when it occurs? And where in the Lesson Study-cycle does it happen?

This research is part of an 3-year ongoing action research cooperation where we as participating researchers follow teachers in a primary school through nine Lesson Study-cycles. Six cycles have been completed, and data are collected through audio recordings, written logs, interviews and observation.

We will present findings from content analysis of audio-recordings from teachers meetings and show how we through coding and categorizing inspired by Grounded theory (Strauss and Corbin, 1998) became aware of key topics and decisive phases for teachers' learning. What we have chosen to call pre- and post analysis appear as both powerful and crucial phases in the teachers' Lesson Study process. In these phases we find professional learning beyond what have been found in previous research on teacher cooperation in Norway (Junge, 2012; Helstad, 2013).

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## A Study of Preschool Teachers Classroom Action Research Enhancement in a Professional Learning Community

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The purpose of this research was to investigate how professional learning community (PLC) assist preschool teachers in doing classroom action research (CAR). The research data were obtained over the period of one month from 3 settings consisted of 2 schools and 1 child care in Thailand. Data were collected via in-depth interviews with preschool teachers, head of academic department, head of preschool department, school administrators and supervisors. Field notes from participatory observation, group discussion data, teachers' lesson plans, and teachers' classroom action research papers were also used in this data collection. Member check was used in term of validation and content analysis was also used to analyze data.

The finding of this study were as follows:

- 1) Problems of preschool teachers related to CAR can be described in 3 categories: the lack of effective lesson planning, inappropriate children's learning assessment and the lack of ability to implement CAR concepts into practice
- 2) In an effective PLC, members played in different significant roles categorized as follows: preschool teachers acted as planners and buddies, heads of academic and preschool departments acted as mentors, school administrators acted as internal supervisors, and supervisor acted as external supervisors. PLC integrated with the concepts of coaching and mentoring, lesson study, and 5 steps teaching method was an effective way in assisting preschool teachers' abilities of doing research to improve young children's development and learning to meet the individual needs of each child.
- 3) The process of doing CAR in PLC consisted of 4 main phases with described as follows: Phase 1: Identifying the specific problems. Phase 2: Developing an effective CAR plan. Phase 3: Collecting and analyzing data. Phase 4: Sharing the results.

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## Fostering Teaching and Learning Effectiveness through a Cross-school Learning Study of an eLearning Lesson in General Studies

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Teaching biological concepts, such as functions of human organs, to primary school students poses great challenge to teachers of the subject of General Studies in Hong Kong. The common difficulties as perceived by teachers are the abstraction of the related concepts and the way to tailor-make the teaching materials to meet the intellectual ability of the students. As a result, teachers have the tendency of adopting the teaching resources provided by textbook publishers and hesitate to create new teaching resources or implement innovative teaching approaches, such as eLearning to teach those concepts. On the part of the students, they are only required to memorize the concepts, thus may demotivate them in learning the subject.

This paper illustrates how a group of teachers from three different primary schools from Hong Kong, making use of a cross-school Learning Study not only to maximize students' learning, but also to enhance teachers' capability of implementing eLearning approach to teach the functions of small and large intestines. The IT hardware setting and teachers' competency on implementing eLearning in classroom of the three schools are diverse. Throughout the Learning Study process, from identifying students' learning difficulties to refining the lesson design, team members worked collaboratively, sharing their experience and ideas on teaching the target concepts among each other, as well as on their experience of implementing eLearning in classroom. The team finally abandoned the 'standardized' teaching materials provided by textbook publishers and decided to use online resources, creating new teaching materials, and using an e-learning app to facilitate students' learning. Furthermore, the team also made use of the pre- and post-test data, feedbacks from students during the post lesson interviews to inform teaching and learning so as to refine teaching strategies after each cycle of teaching.

The findings show obvious improvement on students' learning outcome when comparing the pre- and post-test results. More importantly, it is found that teachers also gained confidence in adopting eLearning in teaching after having learned from each other via the learning community that has been established during the learning study process.

Key words:

Learning Study, Teaching Effectiveness, Learning Effectiveness, Learning Community, General Studies, eLearning Hong Kong.