

Lesson Study: An Approach to Increase the Competency of Out-of-field Mathematics Teachers in Building Students Conceptual Understanding in Learning Mathematics

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This research was conducted to see the effects of the Lesson Study approach in improving the competency of out-of-field Mathematic teachers or non-option Mathematic teacher as known in Malaysia, in building the understanding of the Mathematical concept among students during teaching and learning sessions. This qualitative study was conducted using the Lesson Study approach, involving a novice and out-of field Mathematics teacher with collaboration among members of Mathematics Panel of the school in a district in Seremban, Negeri Sembilan, Malaysia. School Improvement Specialist Coaches+(SISC+) who are expert in Mathematics involved in the lesson observation. The teacher was observed in three different sessions and video recording was made. Classroom observation was discussed during the reflection session. Transcripts for three different lessons were prepared in order to see the comparison between the three lessons. Teaching analysis through video critic was conducted with excellent teachers. The study was conducted from 2015 to 2017 and was able to see the improvement of the teacher competence in Mathematics teaching through the analysis of instructional video criticism. Teachers 'competence in teaching Mathematics increased by observing students response through out the lesson and the student performance in the assessment after the lesson. A table showing competency improvement from a checklist focusing on the characteristics of the teacher being studied. The teacher developed skills through discussions in the construction of the Lesson Planning and during the reflection session conducted with the committee members. The teacher is more confident in dealing with pupils and increases class control. This study shows that Lesson Study can show the good impact to improve the teacher's competence. The collaborative among teachers and the involvement of experts in the field of Mathematics through Lesson Study approach has increased the not-in-field Mathematics teachers' competency as well as enriching her lesson with strategies, approaches, and methods in learning Mathematics.

Keywords : Non-option Mathematic teacher, Teacher's Competency, expert teacher, School Improvement Specialist Coaches+

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School Based Lesson Study Practice: Principals Leadership in Conducting Teacher Learning

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In Indonesia, principal is the teacher with additional task to manage school. One of five key principals' responsibility is managing human and other resources and process it, so it can bring needed improvements for school. This point will be optimal if principal and the teacher have same vision in improving school quality. But in facts there are such a gap between teacher and principal for instance, lack of equality and collegiality in interaction between teacher and principal. Equality is indicated by principals' characteristic that are modest, care and respectful in listening teachers' idea, while the teachers are confident to share their own ideas. Collegiality means that teachers and principal worked in a supportive, transparent, caring, and encouraging climate for success. The purpose of this paper is to describe the attempts and implication of principal for strengthening teacher learning focused on equality and collegiality by conducting SBLS. This paper use case study approach in SMPN 2 Pamulihan, Sumedang, West Java, Indonesia. To promote teacher learning, at least principal can use these three approaches. First, let teacher learn from their own practice. Second, teacher learn through their interaction to other teacher and the last, teacher learn from teacher educator in their school. These approaches were covered in SBLS. After conducting SBLS since 2015, this school obtain benefit in teacher development and principal managerial aspect. SBLS in teacher development aspect implicate to teachers' capability in organizing lesson design that concern to students' responses, teachers' sensitiveness in conducting lesson, and teachers' motivation in developing better lesson. While in principal managerial aspect, principal obtain precious suggestion about priority needs of student and teacher in learning process for school improvement. From these implications, leadership of principal with collegiality and equality close the gap between teacher and principal. With the same vision, they collaborate effectively in school improvement by focusing on students' priority needs. If principal focused on teacher learning, the teacher professionalism will be reinforced the students' achievements. The better student achievement, the better quality of education. So, by conducting SBLS it can be increasing quality of education.

Keywords: Leadership, Teacher Learning, Equality, Collegiality

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Using 5 STEPs by LS. Through PLC to Enhance Learning Achievement and Basic Scientific Process Skills of Grade 8 Students

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The purposes of this research were (1) study the learning achievements of fundamental Scientific Process Skills of grade 8 students between before and after learning with the use of Science Activity Packages focused on 5 STEPs learning processes by developing Lessons Study. Through PLC (2) study fundamental Scientific Process Skills of grade 8 students, separating into each kind of skill by using the 5STEPS learning process by developing Lessons Study. Through PLC. The research targets were grade 8 students of Khlung Ratchadapisake school whose statuses were class 2/2 of the first semester of academic year 2016. Its class were 30 students who were choosing by purposive sampling, The research instruments were: (1) activity packages focused on 5STEPS learning process by developing Lessons Study. Through PLC (2) Basic Scientific Process Skills Test (3) Scientific Process Assessment Form (4) Reflective logs. The collected data were analyzed using average, percentage and standard deviation. The hypothesis were tested by using the t-test (Dependent sample)

The research findings:

1. The learning achievement of basic scientific process skills of students' classroom 2/2 who subject to Khlung Ratchadapisake school after using activity packages focused on 5STEPS learning processes by developing Lessons Study. Through PLC. As a result, their average scores were better than their pre-test, It was statistically significant at .05

2. The basic scientific process skills after using activity packages focused on 5STEPS learning process by developing Lessons Study. Through PLC: as a result, most students overall were excellent. As a matter of fact, their abilities were separated into a variety of skill including: observing, measuring and classification skills were excellent: moreover, 5 skills were considered as good levels. Of them, 5 ones were as follows: relationship skills between space and space, and space and time, numeracy, organizing data and communication, Inference and prediction skill.

From From the teacher's reflection, it found that the teachers were more confident to work together, support and exchange their learning to one another. The culture of collaboration took place in the Science learning area among teachers where they work happily with broader experience.