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## Empowering Students' Knowledge of English Tenses through Written Drilling and Tense Matrix

Atti Herawati, *Pakuan University*

There is no concept of time which relates to the change of verb form in Indonesian grammar. This situation makes the students find it difficult to learn English tenses and to distinguish their various forms. This study aims at empowering students' knowledge of tense forms and their perception on learning tenses through written drilling technique and with tense matrix. The drilling technique adapted the principle of structural pattern drills, while the tense matrix followed the principle of Math multiple table. This study involved 27 students from Biology Education study program. The study was conducted by applying lesson study principles in four cycles, and 16 tenses were drilled in a written form at each cycle using tense matrix. The written drill was given as a part of the whole lesson. The data were gained from students' work on tense matrix and from the questionnaires. The findings show that in cycle 1 none of the students could write the 16 tenses accurately, in cycle 2 two students could write 16 tenses accurately, in cycle 3 none of the students could write 16 tenses accurately, and in cycle 4 eight students could write 16 tenses accurately. It was found that the Subject and the verb given in each cycle affect the accuracy of the sentence. Data from the questionnaire show that 19 students knew different form of tenses easily, and eight of them found it hard to distinguish them. The students who find tenses easy reveal that it is because it was given repeatedly through written drill and using a table (tense matrix). Thus, although until the fourth cycle not all of the students could write 16 tenses accurately, it can be concluded that written drilling in the form of tense matrix could empower students' knowledge of different English tense forms.

Key words:

English tenses, written drilling, tense matrix

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## Flow of Lessons in Mathematics Textbook for School Mathematics Learning in Classroom using Lesson Study and Open Approach

Pimpaka Intaros, *Khon Kaen University*

Maitree Inprasitha, *Khon Kaen University*

Sampan Thinwiangthong, *Khon Kaen University*

Mathematics teaching and learning should be meaningfully connected to students' daily life (Nunes, Schliemann & Carraher, 1993). This research was aimed to analyze flow of lesson or sequence of teaching; (1) Representations of real world (2) Semi concrete aids and (3) Representations of mathematical world (Inprasitha, 2016, in Thai) for school mathematics learning (Mathematics Education Department, Faculty of Education, Khon Kaen University, 2004). This analysis was accomplished in problem solving mathematics textbook by a lesson study team in Thongchai Wittaya School where has been participating in the Students' Mathematical Higher Thinking Development Project in Northeastern of Thailand. Teachers in the lesson study team use Open Approach as a teaching approach and Lesson Study as a way to improve the teaching approach (Inprasitha, 2011b; 2015).

Data analysis was done by employing qualitative methodology and document analysis was selected to be a research tool in mathematics textbook as a unit of analysis. These analysis were considered in the translated-from-English-to-Thai-version textbook 'nd Grade Mathematics for Elementary: Study with your Friends' which preface, written by Associate Professor Maitree Inprasitha, Ph.D., states that 'his book represents both contents and teaching approaches at the same time' (Inprasitha, 2011a, in Thai). Length (1) was selected as a substance to conduct the analysis by using Flow of Lesson (Inprasitha, 2016, in Thai). The analyzed data was presented by using an analytic description by showing the flow of lesson or sequence of teaching in each period.

Research results were shown that there are rich of flows of lesson in the Length learning unit as follows; (1) Representations of real world are sculpting, surrounding stuffs, challenging in students' daily life such as how to call the length over centimeter(s), (2) Semi concrete aid are adapted stuffs as measure tools, and (3) Representations of mathematical world are direct and indirect comparison, 1 centimeter (cm) equals to 10 millimeters (mm), relationship between cm and mm, calculating such length. In classroom, a teacher will present the representation of real world to students and the students will develop semi-concrete aids to form mathematical world by themselves (Inprasitha, 2016, in Thai). These analysis results will be applied in lesson plans for learning of school mathematics in classrooms using Lesson Study and Open Approach.

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## A Lesson Study on the Effectiveness of Bridging the Gap between Model Method and Algebraic Method for Low Progress Learners

Ajmal Khan, *Outram Secondary School*

SayChionh Lim, *Outram Secondary School*

PuiManGrace Choy, *Outram Secondary School*

Qingyi Meng, *Outram Secondary School*

Lesson study is a wonderful way of getting teachers to rethink their classroom practices (Lee, 2011). It also allows teachers to inquire into their own practice with the aim to improve students' learning, especially topics that are challenging to teach. This is the motivation that drove the team of teachers in Outram Secondary School (OSS) to embark on the lesson study journey.

Based on the Primary School Leaving Examination (PSLE) results, OSS typically receives 2 classes of Normal Academic students, whose PSLE score belong to the lower quartile range of the Primary 6 leavers. In Singapore, these students are generally classified as Low Progress Learners (CPDD, 2010). Over the past ten years, it was observed that, these learners often had great difficulty with the domain of algebraic learning, especially in the area of formulating algebraic equations for problem sums. After identifying the challenges students faced, the team of teachers decided to conduct two cycles of lesson study with the primary goal to examine whether using the transition method (Fong, 1994) to bridge the gap between Model Method and Algebraic Method enhances learning outcome. The secondary goal is to investigate whether the use of concrete manipulative is effective in formulating the model diagram.

A class of 24 Secondary 1 Normal Academic students took part in the first round of lesson study. From the teachers' observations and post-lesson interviews, the team established that the use of transition method indeed enhances learning outcome. However, the effectiveness of using concrete manipulative in formulating the model diagram is inconclusive. The discussion and reflection led to an improved version of the lesson plan, which was carried out for another class of 28 Secondary 1 Normal Academic students during the second round of lesson study. The result reaffirmed the initial conclusion about our primary research goal.

This lesson study has shown great impact on both teachers and students' learning. It has become the main focus and direction for future professional learning community (PLC) in OSS Mathematics department. This paper also includes possible future research areas that will further strengthen and complete the findings presented here.

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