Supporting Students Teacher Learning Descriptive Statistics using Lesson Study and PMRI at Sriwijaya University Indonesia

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The use of statistics is widely applied in various disciplines, both natural sciences, business, and industry. Almost every decision made in politics and economics uses a statistical reason. Therefore, statistics should be introduced to students from an early age. But while in the learning process is still using traditional learning, so students are not active, the process of teaching and learning statistics mostly done by giving the formula directly without first learning about the concepts and basic procedures meaningful for students. Which states that teaching and learning activities of statistics are teacher-centered without the effort to develop students' ideas or ideas through interaction or discussion, Thus making students unfamiliar in suggesting ideas or discussing. PMRI is an innovative mathematical approach that has been harmonized with the conditions of geography and life of Indonesian society starting from the context or situation that "real" or ever experienced by students. The role of the teacher/lecturer as a facilitator is characterized by his ability to provide a learning experience that encourages the students' reasoning process through an interactive environment. Many articles suggest that lesson study is the development of teacher professionalism through the development of a school-based approach. While in Japan, lesson study is done that is process/cycle lesson study consists of a plan (preparation), do (observation), and see (discussion and reflection) activity involving another teacher. The theme/topic of the lesson study such as the development of mathematical thinking, the development of learning, and the goals in each class according to the curriculum that asks the teacher to teach how-to and learning outcomes. The purpose of this paper is to know the role of lesson study and PMRI approach in supporting student teachers learning descriptive statistic in Teacher Education Universitas Sriwijaya Indonesia. The research subjects are student teachers at 7th-semester. Data were collected using observation and test. Research procedure followed three steps of Lesson study namely planning, implementing (teaching & observing), and reflecting. Results showed that lesson study using PMRI approach have helped student teachers learning Descriptive Statistics in Universitas Sriwijaya. This can be seen by the following results: a) model lecturer performed well in managing the classroom using PMRI approach either in starting, main or end of the lesson; b) interaction among student teachers and lecturer is good. This can be caused by some argumentations such as students have already supported by the learning materials they access from provided blog by the researcher at www.ilma69.wordpress.com. Also, they active during discussion although many observers watching them. But a group of student teacher looked nervous when he was presenting his conclusion especially about standard deviation and standard error. Finally, from test showed that student teachers understood descriptive statistics in a very good level with average score 89%.

Lesson Study Project as a Means of Developing Motivational Readiness of Teachers for Achievement of Success in Professional Activity

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The question of teachers' motives in achieving success in their practice and support of their motivation is important for Kazakhstan, taking into consideration the fact that social status of the teacher, the prestige of the profession, despite great public efforts and support of the state, is not so high, as in some countries of OECD.

It is a problem as the absence of motivational readiness of teachers for improvement pose a risk for success of reforms in Kazakhstani schools.

In this regard, we find it possible to consider Lesson Study project, the introduction of which at schools has been taking place for three years in Kazakhstan, from the position of the following research question: Can participation of teachers in the project be a driving force for development of motives for achieving success in teaching practice?

The theories of social action, the theory of systems of T. Parsons, the theory of the field and the theory of changes of K. Levin are the methodological basis of the research.

The research went through two stages: theoretical review of the concepts of support of motivation, and practical research of how teachers, influenced by participation in Lesson Study, interpret motives of their own development.

The first part of the research allowed us to advance a hypothesis: inclusion of teachers in Lesson Study project stimulates a complex of motives, which serve as a driving force in aspiration of teachers to successful practice.

The lens of the research is the dynamics of motives of teachers under the influence of their inclusion in the Lesson Study project.

During the first part of the practical stage of the research we used questioning methods for obtaining statistical information about what teachers consider about a) the reasons of their inclusion in "Lesson Study" and b) the influence of their activity within the project on their attitude to improvement of own practice. 12 regional branches of the Center of Excellence (COE), 1482 respondents ' teachers from 675 (9.3%) Kazakhstani schools took part in the survey.

During the second part of the practical stage there were interviews conducted by two COE branches in the cities of Uralsk and Aktobe ' a qualitative research of reflexive opinions of teachers about whether their participation in Lesson Study influenced their motivation to improvement of practice and how it was seen. Questions were   based on the theory of dichotomy of "standard variables" and the theory of individual choice of T. Parsons   aimed at clarification of the qualitative aspects of sources of motivation - external and

pro-social (positive as well as negative).

We would like to present the results of the research, which will allow us to draw a number of important conclusions on the role, which Lesson Study can play in stimulating teachers to achieve better progress in practice. We hope the received results of the research will be interesting to those who seek to understand more deeply the nature and philosophy of pedagogical work and to master possible mechanisms of stimulation of teachers to professional   development by means of Lesson Study project.

A Methodology to Measure Lesson Quality through Student Participation using Transcript Based Lesson Analysis

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Development of a country depends on peoples' education. Quality of education depends on the quality of lesson. In Mongolia, JICA joint project has been implemented with two stages in 2006 to 2013, and teachers started doing lesson study. As the result of the projects, teachers' view and attitude towards lesson have changed. More specifically, they aimed to plan and implement student-centered approaches at their lessons. However, the lesson study has not regularly been conducted after the project ended in 2013. The main reason of it was that A National Contest of 'A Good Lesson' among schools teachers in both urban and rural districts of Mongolia initiated by the Ministry of Education, Culture, Science and Sports, has led to the unexpected outcomes. For instance, school teachers give more significance to the lesson planning images, rather than teaching content, and also try to include more contents in one lesson, and so on. Therefore, a question raised, 'how can we measure good or bad' lesson? There are different ideas of a good quality lesson, but there is no exact criteria or definition of 'good' or 'bad' lesson. Researchers have defined many different definitions about lesson quality. The aim of elementary and secondary education is based on concepts for development of every child in Mongolia. On this regard, one basic criteria for good lesson is students' participation in the lesson. So, how can we measure student participation in the lesson? Is there a measurement tool for assessing student participation? This paper presents the results of our study on 'A Methodology to Measure Lesson Quality through students' engagement using Transcript Based Lesson Analysis: A case of Mathematics lesson in Mongolia. Therefore, we decided to use TBLA (Transcript Based Lesson Analysis) as a method to measure student participation in the lesson.

The Institute of Teacher Professional Development (ITPD) of Mongolia collects videos of best lessons from each school every year for E-content data. Teachers send the best lessons, and show their good practices to share their teaching and learning methodologies. And ITPD set out some criteria for their lessons and make selections from the lessons. So, we have collected a lot of video lessons on each subject of elementary and secondary schools. Here, we have chosen some mathematics lessons, transcribed them, and used them to collect data of our research.

In this study, we developed a model of student engagement and a methodology to measure student engagement by using TBLA. For it, we used the transcripts of mathematics lessons for the quantitative data.

From the results, we concluded that student engagement at mathematics lessons is not good in Mongolia. Practically, the study prepared the methodological tools and materials for teacher training and lesson study with regard to the encouragement of student engagement in the lesson.

TBLA is not only an important method for mathematics lesson, but also, a method to increase teachers' understanding of nature of professional subjects. Thus, it is highly recommended that there is a need to continue this study to reach to the comprehensive conclusions of how to measure 'good and active participation in the lesson' based on the number and quality of conversations at the lessons.