

## Adapting Lesson Study and Teaching Mathematics through Problem Solving: Tensions, Dilemmas, Opportunities

Mineria A. Se, *Sta. Lucia High School*

Julie Reyes, *Sta. Lucia High School*

Erlina Ronda, *University of the Philippines*

This paper reports the tensions, dilemmas, and opportunities for learning in adapting lesson study (LS) and the teaching practices required to teach mathematics through problem solving (TMtPS). To structure our analysis and reflection about our lesson study experiences we use Engestrom's (1987) Cultural Historical Activity Theory (CHAT) as framework. The framework enabled us to see lesson study as an activity system where multiple interacting factors shape the learning goal of the teachers participating in the activity. Inherent to this framework is the notion of contradiction as sources of innovation or as opportunities for learning. We conceptualize these contradictions as tensions and dilemmas. Lesson study and TMtPS were introduced to us by the National Institute for Science and Mathematics Education Development, University of the Philippines (UPNISMED) from school year 2010-2012. We continued doing LS and tried to structure our lessons based on TMtPS on our own even after the project ended. In this paper, we report how 1) the research lesson, 2) the 'rules' of LS and TMtPS, 3) the school community and the policies of the Department of Education, and 4) our other roles in the school and during LS itself, created tensions and dilemmas and opportunities for learning for us. Our data sources for this study were videos of our presentations in a conference organized by UPNISMED in 2014 where we presented our research lessons and our lesson study experiences. We also developed questionnaires given to our co-teachers who participated in LS and who are still involved in the current LS activity of our mathematics department. We also interviewed selected teachers. This presentation is from our own perspective, that is from teachers. The third author of the paper was part of the project team from UPNISMED that initiated us to LS and TMtPS and has introduced us to the ideas of activity theory/ system to help us structure our reflection and our making sense of the LS activity that we are doing. In the presentation, we will present scenarios on how tensions were overcome, the dilemmas encountered and the many doors of opportunities opened for us. We hope to contribute towards understanding the complexity of adapting lesson study in contexts similar to public school in Philippines.