

SYMP - (18632) - CONSTRUCTING MATHEMATICS PROBLEM-SOLVING KNOWLEDGE FOR TEACHING: A LESSON STUDY DIALOGIC ANALYSIS

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Short Abstract

This research aims to analyse the type of Mathematics Problem-Solving Knowledge for Teaching teachers use when working collaboratively in a lesson study process and how their dialogic interactions contribute to this knowledge construction. The meetings during one lesson study cycle of a group of ten Swiss primary teachers were video recorded and transcribed. The analysis is conducted by crossing analytical tools from two different fields in education, namely mathematics education and dialogic analysis. The current research focuses on problem-solving teaching using the Mathematics Problem-Solving Knowledge for Teaching (MPSKT, Chapman, 2015) framework.

Furthermore, besides what knowledge is used, we want to know how it is constructed by the participants during a lesson study process. In order to answer this question, the second educational research field used is dialogic analysis (e.g., Bakhtin, 2010; Kershner et al., 2020). To accurately describe how teachers' knowledge is constructed or evolves, we adapted the Scheme for Educational Dialogue Analysis (SEDA, Hennessy et al., 2016) from students' mathematics problem-solving classroom situation to teachers' professional problem-solving discussion. The ongoing analysis combines statistic network analysis (Goh et al., 2014) of the whole cycle and qualitative analysis of moments that appear representative during the network analysis.

Preliminary results show how the roles of the participants (facilitators, teachers) shape their contributions in the dialogue and their use of MPSKT. This research brings significant contributions both from theoretical and practical points of view, networking two families of theories, characterizing links between LS dialogues and knowledge development, and identifying productive facilitators' moves.

References

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