

ZMATH 2014c.00241

Dreher, Anika; Nowinska, Edyta; Kuntze, Sebastian

Awareness of dealing with multiple representations in the mathematics classroom – a study with teachers in Poland and Germany.

Lindmeier, Anke M. (ed.) et al., Proceedings of the 37th conference of the International Group for the Psychology of Mathematics Education “Mathematics learning across the life span”, PME 37, Kiel, Germany, July 28–August 2, 2013. Vol. 2. Kiel: IPN–Leibniz Institute for Science and Mathematics Education at the University of Kiel (ISBN 978-3-89088-288-8). 249-256 (2013).

Summary: Pedagogical content knowledge (PCK) about dealing with multiple representations should encompass the awareness of their key role for mathematical thinking and for designing rich learning opportunities. However, it should also include a certain sensitivity for the complexity of changing between representations and thus the problems that learners may have with such conversions in specific classroom situations. Consequently, this study focuses on PCK regarding the role of representations and their conversions for the learning potential of tasks as well as for students’ understanding in classroom situations. Such PCK of Polish and German pre-service teachers is compared, with German in-service teachers as a further reference. The results indicate significant differences between the samples.

Classification: C39 C70 D40

Keywords: multiple representations; pedagogical content knowledge; awareness; role of representations; students understanding; classroom situation