

ZMATH 2014c.00213

Ofri, Ofra; Tabach, Michal

Knowledge construction in a computerized environment: eighth grade dyads explore a problem situation.

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. 3. Kiel: IPN–Leibniz Institute for Science and Mathematics Education at the University of Kiel (ISBN 978-3-89088-289-5). 401-408 (2013).

Summary: As computers become more dominant in learning settings, studying the impact of computers on knowledge construction and on student performance becomes increasingly important, in particular for designing improved computerized learning environments. We investigated knowledge construction among eighth grade dyads that used GeoGebra to explore a problem situation related to functions. We analyzed the knowledge construction processes through the theoretical lens of the nested epistemic actions model (RBC) for abstraction in context (AiC). The tool we used to analyze the interactions was expanded by adding a human-computer channel. The findings indicate that the three dyads constructed the targeted knowledge while interacting with a dynamic and multi-representations environment.

Classification: C33 U73 I23

Keywords: knowledge construction; impact of computers; abstraction in context; functions; computerized learning environment