

ZMATH 2014c.00435

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Beyond-school mathematical problem solving: a case of students-with-media.

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). 105-112 (2013).

Summary: This paper addresses mathematical problem solving activity within the context of a web-based beyond-school competition – SUB14. Using a qualitative approach, we aim at finding evidences of the contestants’ mathematical competence and technological fluency by analysing four solutions to a particular geometry problem from participants who decided to use GeoGebra. Even though they all make use of the same tool, their approaches to the problem differ in terms of the mathematical and technological fluency they show. We interpret their different ways of dealing with the tool and with mathematical knowledge as instances of students-with-media in problem solving.

Classification: D50 B60 C30 U70

Keywords: problem solving; web-based competition; beyond-school competition; use of technology; mathematical competence; technological fluency