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Mathematical modeling through creativity lenses: creative process and outcomes.

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). 9-16 (2013).

Summary: The aim of this paper is to demonstrate the process of mathematical modeling development and its significant outcomes through creativity lenses, as part of a more inclusive intervention study. The intervention included engaging students in three modeling workshops involving authentic, hands-on mathematical situations. An analysis of students’ modeling process and outcomes revealed their creative thinking skills. The participants were mathematically talented primary school students who were members of “Kidumatica” math club. This “visual” analysis gave us a better and clearer view of students’ creative skills as manifested in the diversity of their significant mathematical ideas and the variety of approaches leading them to create, invent and discover significant conceptual tools.

Classification: M10 C30

Keywords: modeling; creativity; intervention; hands-on situations