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Planning, monitoring and multiple solutions while solving modelling problems.

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. 4. Kiel: IPN–Leibniz Institute for Science and Mathematics Education at the University of Kiel (ISBN 978-3-89088-290-1). 177-184 (2013).

Summary: In a quasi-experimental study that was carried out in the framework of MultiMa-project, we compared two groups of 9th graders from six middle track classes. In one group modelling tasks, where the solutions do not demand making assumptions about the missing data, were treated for five lessons. In the other group students solved similar modelling problems, where different assumptions were possible and students had to develop two and more different solutions five lessons long. Before and after the teaching unit students answered questionnaires about planning and monitoring their activities while solving problems. The analysis showed the positive influence of treating and developing multiple solutions on students’ planning and monitoring activities.

Classification: D53 M13

Keywords: modeling; multiple solutions; group work; problem solving; planning; monitoring