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Recognising different aspects as a key to understanding: a case study on linear maps at university level.

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). 153-160 (2013).

Summary: Learning linear algebra is a major challenge for students in the transition from school to university level mathematics. The construction of knowledge seems to be very difficult even for basic notions like linearity. In this paper, a detailed analysis of the mathematical concepts that must be recognised by learners in order to solve standard tasks for linear maps is given and an empirical analysis based on interviews with learners solving these questions using the RBC-model is presented. The results hint at the problematic role of formal calculations and the importance of looking at the different contexts of epistemological actions.

Classification: H65 C35
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