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Project teaching and mathematical modelling in STEM subjects: a design based research study.

Ubuz, Behiye (ed.) et al., CERME 8. Proceedings of the eighth congress of the European Society of Research in Mathematics Education, Antalya, Turkey, February 6–10, 2013. Ankara: Middle East Technical University (ISBN 978-975-429-315-9). 1010-1020 (2013).

Summary: We introduce our concept of a design based research study on the implementation of a new course STEM. The idea is to create a 3-years course for students of lower secondary level that integrates several STEM subjects, e.g. mathematics, computer science and biology. The subjects are not taught separately but are working on the same overall topic, seeing through the eyes and using the techniques of the respective discipline. After motivation and introduction of our concept we explain the real-world problem for the current round of the study and outline some first results and experiences.

Classification: M50 M60 D30 D40

Keywords: mathematical modelling; design-based research; STEM subjects; project teaching; active learning