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Developing extended real and virtual robotics enhancement classes with years 10–13.

Eronen, Lasse (ed.) et al., Mathematics and education. Learning, technology, assessment. Festschrift in honour of Lenni Haapasalo. Münster: WTM-Verlag (ISBN 978-3-95987-005-4/pbk). Festschriften der Mathematikdidaktik 3, 101-115 (2016).

Summary: There is growing evidence of the potential of robotics to enhance learning provided that they are deployed carefully. This paper describes an action research project to develop extended robotics enhancement classes using real and virtual robots. Two styles of class were deployed: student-led project creations and facilitator-led challenges. The pedagogical principles underpinning these classes and their design are discussed. Feedback indicated that the classes were successful and appreciated by the students but they experienced difficulties in incorporating the virtual robotic element. Lessons learnt, including the development of employabilily skills, the potential impact on students with autism, and the effective use of peer students, are discussed. The possibility of combining the two styles of class together is proposed.

Classification: D40 M50 U60 U70 C40
Keywords: robotics; learning; student-led projects; mathematical simulations; autism