

**ZMATH 06675783**

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**Designing for mathematical applications and modelling tasks in technology rich environments.**

Leung, Allen (ed.) et al., Digital technologies in designing mathematics education tasks. Potential and pitfalls. Cham: Springer (ISBN 978-3-319-43421-6/hbk; 978-3-319-43423-0/ebook). Mathematics Education in the Digital Era 8, 285-301 (2017).

Summary: Mathematical modelling and applications is a well-established field within mathematics education. Research in mathematical modelling and applications has maintained a focus on how to enhance students' capabilities in using mathematics learnt in school to solve problems identified in, or derived from, the real world. While significant progress has been made in understanding the processes that underpin the successful applications of mathematics in real world contexts, there has been limited research into how to design tasks that are authentic reflections of the role of digital technologies in solving problems situated in the work place or daily life. This chapter draws on data sourced from a research and development project that investigated the use of digital technologies in teaching and learning mathematical modelling and applications to identify principles of effective task design. The instantiation of these principles within classroom practice is illustrated through a classroom vignette. This chapter concludes with a reflection on the research needed to further develop understanding of the role of technology as an enabler of principles of design for mathematical modelling tasks.

*Classification:* U70 M10 D30

*Keywords:* modelling; technology; design; applications

doi:10.1007/978-3-319-43423-0\_14