ZMATH 2016f.01323

Trinter, Christine

The importance of theoretical frameworks and mathematical constructs in designing digital tools.

J. Comput. Math. Sci. Teach. 35, No. 3, 269-293 (2016).

Summary: The increase in availability of educational technologies over the past few decades has not only led to new practice in teaching mathematics but also to new perspectives in research, methodologies, and theoretical frameworks within mathematics education. Hence, the amalgamation of theoretical and pragmatic considerations in digital tool design provides a space for exploring curriculum issues, student learning, and teacher practice. The purpose of this paper is to extend the literature relating theory to practice by providing practical examples of digital spreadsheet tools that are modifiable and replicable by teachers and researchers, and describe the underlying design of these tools including the guiding theory, mathematical constructs, and learning goals. Productive researcher-practitioner collaborations are essential for extending both meaningful theory and effective practice in digital design.

Classification: M50 P50
Keywords: design of digital tools; mathematical constructs