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Haapasalo, Lenni

Linking procedural and conceptual mathematical knowledge in technology-based learning.

Rogerson, Alan, Proceedings of the International Conference 'The decidable and the undecidable in mathematics education'. ,. 98-101 (2004).

Summary: If we agree that the main goal of mathematics education is to develop both procedural (P) and conceptual (C) knowledge and to make links between the two, a very important research question regarding technology-based mathematics education is how different technologies affect the relation between the two knowledge types. Our theoretical analysis and practical experience evidence that P-C links can be established when the learner has opportunities to simultaneously activate conceptual and procedural features of the topic at hand. Such activation is considered for interactive learning that utilizes two technological tools: the ClassPad calculator produced by Casio and Java-based hypermedia lessons developed by (future) mathematics teachers. The contribution describes this kind of learning and examines its empirical values in cognitive and affective terms.

Classification: C30 C70 U50

Keywords: learning; computer as educational medium