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Building a knowledge base: understanding prospective elementary teachers' mathematical content knowledge.

Int. J. Math. Teach. Learn. 2013, 34 p., electronic only (2013).

Summary: This survey of the literature summarizes and reflects on research findings regarding elementary preservice teachers' (PSTs') mathematics conceptions and the development thereof. Despite the current focus on teacher education, peer-reviewed journals offer a surprisingly sparse insight in these areas. The limited research that exists chiefly presents views of PSTs' reasoning at singular points during a term, thus focusing on conceptions almost to the exclusion of their development. We summarize the current findings, which are a beginning of a collective understanding of PSTs' mathematical content knowledge. We believe much more work is needed to understand how PSTs can best develop their content knowledge. This is a call to the community to produce such peer-reviewed research.

Classification: D39 D20

Keywords: pedagogical content knowledge; student teacher attitudes; mathematical concepts; misconceptions; geometry; measurement; algebra; research review; mathematical content knowledge for teaching; preservice teacher education; elementary teacher education

<http://www.cimt.plymouth.ac.uk/journal/thanheiser.pdf>