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*Math for teaching: Who needs it?*

Far too many elementary teachers enter teacher preparation programs with a fear and even loathing of mathematics. Many describe surviving school mathematics by memorization of rote methods, yet express a desire to have their own students learn math with conceptual understanding. This presentation will focus on the first four years of a study of preservice teachers' conceptual understanding of elementary mathematics as needed for teaching. Preservice teachers' knowledge of mathematics, and beliefs about mathematics, were examined in a pre-test/post-test format using the Perceptions of Mathematics survey, as well as during semi-structured interviews. Preservice teachers developed significantly during one-year mathematics methods courses, but conceptual understanding, while much improved, generally was not yet strong. Preservice teachers who opted to take an optional course in specialised mathematics for elementary teachers tended to be weaker initially mathematically, yet stronger than their classmates by the end of the teacher education program. Improvements were found in both general conceptual understanding of elementary mathematics as well as more specialised mathematical aspects such as an understanding of the appropriate use of particular classroom mathematics models.

Examples of particular topics and how they might be understood by teachers will be offered as examples of the emergent field of mathematics for teaching, which is argued to be both challenging and to include much more than "remedial" mathematics. While our program changes have shown promise, it is argued that the increase in time spent on learning specialised mathematics is still not enough for most preservice teachers.