

ZMATH 2000d.02279

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Forms of knowing mathematics: what preservice teachers should learn.

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What important ideas about forms of knowing mathematics should be included in mathematics methods courses for preservice teachers? Ideas are proposed that are related to categories in Shulman's (1986) framework of teacher knowledge. There is a brief discussion of the implications each idea holds for teaching mathematics, and some suggestions are given about experiences that may help preservice teachers appreciate these notions. One portion of Shulman's pedagogical content knowledge construct is knowing what makes a subject difficult and what preconceptions students are apt to bring. Three of the ideas offered for inclusion in a methods course are related to this aspect of pedagogical content knowledge: (1) Understanding students' understanding is important, (2) Students knowing in one way do not necessarily know in the other(s), and (3) intuitive understanding is both an asset and a liability. The last two ideas, are related to the other portion of pedagogical content knowledge, knowing how to make the subject comprehensible to learners. These ideas are (4) certain characteristics of instruction appear to promote retention, and (5) providing alternative representations and recognizing and analyzing alternative methods are important. Readers are asked to consider if the suggestions offered are appropriate and how they might best be taught. (Abstract)

Classification: B50

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