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**Shaping prospective teachers' justifications for computation: Challenges and opportunities.**

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From the text: This article discusses the challenges and opportunities that arose in attempting to support prospective elementary teachers in developing mathematical justifications in the context of whole-number computation. Justification for whole-number computation is important for three reasons. First, this is the introductory topic in the first of three mathematics courses for prospective elementary teachers. Second, the number and operations strand is a major focus in elementary school. Third, in our experience as teacher educators, prospective elementary teachers have a difficult time considering how and why to teach whole-number computation in a conceptual manner. If prospective teachers' reasoning and justifications can be shaped in this area of mathematics, sense making and mathematical justification in other areas of mathematics can be shaped as well. We created opportunities to shape prospective teachers' view of what constitutes a valid justification. In this article, we describe two general techniques: (1) developing sociomathematical norms for justification, similar to the norms developed by Yackel and Cobb; and (2) selecting tasks that create uncertainty. We provide examples illustrating specific uses of these techniques and identify ways of deepening prospective teachers' mathematical knowledge as they engage in the process of justification.

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