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Assessing student work: the teacher knowledge demands of open-ended tasks.

Dossey, John A. et al., Proceedings of the nineteenth annual meeting: Psychology of mathematics education (PME-NA XIX). Vol. 1. ,. 131-137 (1997).

Many open-ended tasks in mathematics are designed to assess students' conceptual understanding. Using these tasks for valid assessment may require that teachers possess different levels or forms of content knowledge than more traditional forms of assessment. To investigate this conjecture about different forms of content knowledge, a study was designed in which undergraduate elementary education majors were given an open-ended task on fractions developed for fourth-grade students, and then were asked to score student work and justify the scores. Findings from the study revealed that one-fourth of the participants successfully completed all components of the activity, while another one-fourth were unable to respond adequately to the open-ended task itself. Given valid justifications for the scores appeared to be dependent on having a conceptual understanding of the mathematics in the task and on possessing certain pedagogical content knowledge related to that task. (Abstract)

Classification: D60