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Graduate teaching assistants' enactment of reasoning-and-proving tasks in a content course for elementary teachers.

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Summary: Graduate teaching assistants serve as instructors of record for numerous undergraduate courses every semester, including serving as teachers for mathematics content courses for elementary preservice teachers. In this study, we examine 6 teaching assistants' teaching practices in the context of a geometry content course for preservice teachers by focusing on their enactment of reasoning-and-proving tasks. Results indicate that teaching assistants engaged preservice teachers in a variety of reasoning-and-proving activities. For 42 of 82 tasks observed, preservice teachers' engagement in reasoning-and-proving processes decreased relative to the potential for reasoning and proving in mathematical tasks. This investigation into teaching assistants' teaching practices identifies factors associated with their enactment of reasoning-and-proving tasks (e.g., generating student participation). This research has implications for professional development to support college mathematics instructors' teaching.

Classification: E59 D49

Keywords: graduate teaching assistants; preservice elementary teachers; proof; reasoning; teaching practice; undergraduate teacher preparation

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