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**Secondary mathematics teachers' knowledge of slope.**

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This study, conducted in the United States, investigated secondary mathematics teachers' concept definitions, mathematical understanding, and pedagogical content knowledge of slope. Surveys were collected from 18 preservice and 21 inservice teachers; 8 teachers from each group were also interviewed. Geometric ratios dominated teachers' concept definitions of slope. Problems involving the recognition of parameters, the interpretation of graphs, and rate of change challenged teachers' thinking. Teachers' descriptions of classroom instruction included physical situations more often than functional situations. Results suggest that mathematics teacher education programs need to specifically address slope as a fundamental concept, emphasising its connection to the concept of function.

*Classification:* D69

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