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**Teaching practices and exploratory computer simulations.**

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Summary: While computing technologies are widely available in secondary schools, these technologies have had only limited impact on changing classroom practices. In part, this can be attributed to an underdeveloped understanding of the role of the teacher in engaging in classroom practices that can support student learning with technology. In this qualitative study, we analyzed the teaching practices that supported pre-college students’ learning of a conceptually rich and deep topic (the average rate of change) when using an exploratory computer simulation environment. The results illustrate the demands placed on teachers when faced with the generation of student ideas from their interactions with the simulation and three broad categories of teaching practices in response to these demands: (a) pressing students for representations, (b) harvesting student ideas, and (c) sorting out and refining student ideas. These findings contribute to evolving frameworks for understanding meaningful and productive technology use in teaching secondary mathematics.

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