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## Cognitive Tools: Exploring Linear and Exponential Growth

PROCEEDINGS

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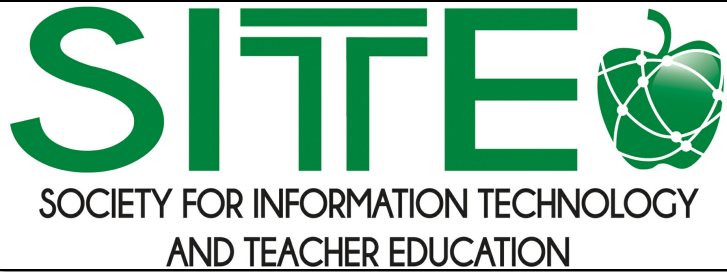
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## Abstract

This paper addresses some of the issues relevant to the cognitive goals of technology integration in the mathematics classroom. It focuses on the development of conceptual understanding through multiple representations. Specifically, it informs about a group of middle school mathematics teachers' learning and teaching about linear and exponential growth in a technology-oriented environment. A particular focus of the professional development was two-dimensional: (a) deepening teachers' understanding of linear and exponential growth via technology-based representations, and (b) providing effective context for students' learning from the same technology-based representations, considering the fact that they do not have teachers' standard representations in their toolbox. We describe exploration of exponential and linear growth via spreadsheets and graphing calculators, grounded on a rich, open-ended, real-life problem. Also, we report on lessons learned during these activities.

## Citation

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## Keywords

[Mathematics](#) ; [middle school](#) ; [Middle School Education](#) ; [Professional Development](#) ; [Teachers](#)

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