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Mathematical discourse as a process that mediates learning in SimCalc classrooms.

Hegedus, Stephen J. (ed.) et al., The SimCalc vision and contributions. Democratizing access to important mathematics. Dordrecht: Springer (ISBN 978-94-007-5695-3/hbk; 978-94-007-5696-0/ebook). Advances in Mathematics Education, 233-249 (2013).

Summary: While the infrastructure of the SimCalc technology provides unique opportunities for students to wrestle with complex and conceptually difficult mathematics in developmentally appropriate ways, the degree to which students engage in “doing” mathematics varies widely across classrooms. Some classrooms provide minimal opportunities for students to conjecture, justify, and exemplify, whereas in other classrooms these activities are an indispensable part of their day-to-day operations. One of the primary mechanisms by which students can be encouraged to engage in authentic mathematical activities is through the use of appropriately challenging discourse. In this chapter, the author describes discursive norms and patterns observed across multiple SimCalc classrooms in order to better understand the interaction between discourse and technology in the broader classroom environment.

Classification: U50 C70 D40

Keywords: computer aided instruction; mathematical discourse; technology in mathematics instruction; mathematically-connected discourse; affordances of technology

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