



# Center for Technology in Learning Research Update

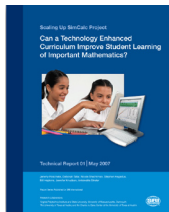


January 2008

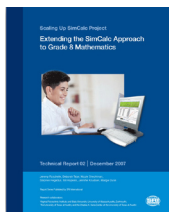
Research and Innovation in Learning

CTL News

Hello! As we begin a new year, SRI International's Center for Technology in Learning would like to share some of the exciting developments from our Scaling Up SimCalc project. We hope you find this inaugural edition of the CTL Research Update interesting.



[Tech Report 1:  
7th Grade Findings](#)



[Tech Report 2:  
8th Grade Findings](#)

[Click reports  
to download](#)

## Technology Enhanced Math Curriculum Boosts Middle School Math Learning!

In the Scaling Up SimCalc project, more than 2,400 middle school students used the dynamic, interactive SimCalc MathWorlds® software, and paper-based curriculum materials, to learn rate, proportionality, and linear function.

### Key Findings:

Students who used the SimCalc materials learned more mathematics.

- Students whose teachers used the SimCalc materials learned significantly more mathematics than students who used their traditional curriculum.
- Learning gains were concentrated in important and advanced mathematics.

SimCalc materials can help all types of students learn math.

- Gains were similar across all socioeconomic levels.
- Gains were similar for English Language Learners and English-proficient students.
- Gains were similar for boys and girls.

SimCalc materials can help teachers teach with greater cognitive complexity.

- Teachers who used SimCalc materials reported classroom activities that focused on higher-order skills such as conceptual understanding and problem-solving.
- For both treatment and control groups, increased cognitive complexity was correlated with higher student gains.

## Background on the Scaling Up SimCalc Study

During the 2005-06 and 2006-07 school years, CTL and our research partners conducted a series of randomized experiments in seventh- and eighth-grade classrooms in Texas, comparing a SimCalc replacement unit with existing curriculum units for the same math topics. More than 150 teachers (95 in seventh grade, 56 in eighth grade) and 2,400 students throughout Texas participated in the study. After 18 hours of training, treatment group teachers implemented a three-week unit that integrated the SimCalc MathWorlds® software with paper-based curriculum materials. Control group teachers received high-quality professional development but taught the content with their traditional materials. The project targeted a wide variety of teachers in a range of demographic settings throughout the state. The project is sponsored by the National Science Foundation through the Interagency Educational Research Initiative (IERI) program (REC 0437861).

[Click here for more information.](#)

[Click here to download a recent Education Week article featuring SimCalc.](#)

## Other 2007 Highlights

The Center for Technology in Learning identifies best practices for using handheld computers in education

- A series of published articles describes a range of effective uses of handheld computers. [Click here for more information.](#)

CTL provides experimental evidence of the effectiveness of teacher curriculum design

- The Transforming Instruction by Design in Earth Sciences (TIDES) study, for the U.S. Department of Education, is investigating the efficacy of different approaches to implementing an Understanding by Design approach with middle school science teachers. [Click here for more information.](#)

SRI International (<http://www.sri.com/>) is an independent, nonprofit research institute. The mission of SRI's Center for Technology in Learning (CTL) is to improve learning and teaching through innovation and inquiry. Much of our work is conducted in educational settings such as classrooms, after-school programs, and teacher education programs. For more information, visit <http://ctl.sri.com/>.

SimCalc MathWorlds is a registered trademark of the Board of Trustees of the University of Massachusetts.

SRI International  
333 Ravenswood Ave., Menlo Park, CA 94025  
<http://www.sri.com>