What Works Clearinghouse

INSTITUTE OF EDUCATION SCIENCES

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WWC Quick Review of the Report: "Scaling Up SimCalc Project: Can a Technology Enhanced Curriculum Improve Student Learning of Important Mathematics?"†

What is this study about?

This study examines whether *SimCalc Mathworlds*™ improves students' knowledge of the algebra concepts of rate and proportionality.

Ninety-five teachers and more than 1,600 of their seventh grade students in eight regions of Texas participated in the study.

Teachers were randomly assigned to use either the *SimCalc Mathworlds*™ curriculum or the conventional unit on rate and proportionality.

Study authors, in consultation with an expert panel, created a 30-item test to assess student knowledge of simple and complex concepts of rate and proportionality.

A team from SRI International, University of Massachusetts Dartmouth, and other universities conducted the study. This team also developed the *SimCalc Mathworlds*™ curriculum.

What is *SimCalc Mathworlds*™?

Curriculum and interactive computer software

Teaches concepts of proportions, rates, and linear functions

Students use graphing calculators or computers to generate math functions

Work is sent wirelessly to the teacher's computer

Unit takes three to six weeks to complete

WWC Rating

The research described in this report is consistent with WWC evidence standards

Strengths: The study is a well implemented randomized controlled trial (RCT) with acceptable sample attrition rates and no indications of other problems.

Cautions: The study authors describe a rigorous test validation process, but not the results. If the test was based on specific *SimCalc Mathworlds*™ concepts, the results of the study could be misleading.

What did the study authors report?

Students who used *SimCalc Mathworlds*™ had a better understanding of rate and proportionality than similar students who used the standard curriculum.

SimCalc Mathworlds™ had a statistically significant effect on students' scores, particularly on knowledge of complex concepts.

The estimated effect size was 0.84, equivalent to moving a student from the 50th to the 80th percentile.

†Roschelle, J., Tatar, D., Schectman, N., Hegedus, S., Hopkins, B., Knudsen, J., & Stroter, A. (2007). *Scaling up SimCalc project: Can a technology enhanced curriculum improve student learning of important mathematics?* (Technical Report 01). Menlo Park, CA: SRI International.