Thank you for your request to our REL Reference Desk regarding research about the Rocket Math program. Ask A REL is a collaborative reference desk service provided by the ten regional educational laboratories (REL) that, by design, functions much in the same way as a technical reference library. It provides references, referrals, and brief responses in the form of citations on research based education questions.

The information below represents the most rigorous research available. Researchers consider the type of methodology and give priority to research reports that employ well described and thorough methods. The resources were also selected based on the date of the publication with a preference for research from the last ten years. Additional criteria for inclusion include the source and funder of the resource.

Question*: I am looking for research about the math program called Rocket Math.*

Search Process

Key words and search strings used in the search: *Rocket Math; Rocket Math* AND *research; Rocket Math* AND *elementary grades; automaticity* AND *elementary math instruction*

Search databases and websites:

1. ERIC: http://www.eric.ed.gov/
2. JSTOR: http://www.jstor.org/action/showAdvancedSearch
3. Google Scholar: www.google.com/scholar
4. Institute of Education Sciences (IES) Resources: http://ies.ed.gov
5. What Works Clearinghouse: http://ies.ed.gov/ncee/wwc/

Sample Citations Retrieved: (NOTE: Abstracts and executive summaries are copied directly from the reports when possible to ensure accuracy):

Rave, K. & Golightly, A.F. (2014). The Effectiveness of the Rocket Math Program for Improving Basic Multiplication Fact Fluency in Fifth Grade Students: A Case Study. *Education*, 134(4), 537-547.

Abstract/Summary: This study examined the impact of a commercially available math fluency intervention program on the basic multiplication fluency of three classrooms of fifth grade students. Baseline assessment and progress monitoring of thirty-three regular- and eleven special education students occurred over nine weeks. Within-group analyses revealed significant positive increases in the number of problems completed correctly, and levels progressed. Between-group analyses revealed that no significant differences between regular- and special education students in number of levels progressed or percentage change in number of problems completed correctly, though, as would be expected, the regular education students started and ended at higher levels overall. Results provided some preliminary support to the hypothesis that

the program could improve multiplication fact fluency on a classroom level, and that the program could be an effective fluency intervention for both regular and special education students. Implications, future directions and limitations of this study are discussed.

Smith, C.R., Marchand-Martella, N.E., & Martella, R.C. (2011). Assessing the Effects of the "Rocket Math" Program with a Primary Elementary School Student at Risk for School Failure: A Case Study. *Education and Treatment of Children*, 34(2), 247-258. doi: 10.1353/etc.2011.0011

Abstract/Summary: This study assessed the effects of the "Rocket Math" program on the math fluency skills of a first grade student at risk for school failure. The student received instruction in the "Rocket Math" program over 6 months. He was assessed using a pre- and posttest curriculum-based measurement (CBM) and individualized fluency checkouts within the program. On the CBM pretest, he completed 10 problems correct in 1 minute. On the CBM posttest, he finished 21 problems correct in 1 minute. On the "Rocket Math" fluency checks, the student's problems correct per minute increased from 19 (Level A on first assessment) to 26 (Level M on third assessment session). He had few errors and averaged 23.1 problems correct per minute on the fluency checks. Implications for further research are discussed. (Contains 1 table and 1 figure.)

Woodward, J. (2006). Developing automaticity in multiplication facts: integrating strategy instruction with timed practice drills. *Learning Disability Quarterly*, *9*(4), 269-289. doi 10.2307/30035554

Abstract/Summary: Automaticity in math facts has been of considerable interest to special educators for decades. A review of the intervention literature suggests at least two common approaches to developing automaticity in facts. One is grounded in the use of strategies for teaching facts, the other emphasizes the use of timed practice drills. Recent research indicates that students might benefit from an integration of these two approaches. This experimental study contrasted an integrated approach (i.e., strategies and timed practice drills) with timed practice drills only for teaching multiplication facts. Participants were 58 fourth-grade students with a range of academic abilities. Fifteen of the students in the study had IEPs in math. Results indicated that both approaches were effective in helping students achieve automaticity in multiplication facts. However, students in the integrated approach generally performed better on posttest and maintenance test measures that assessed the application of facts to extended facts and approximation tasks. These results have implications for teaching a range of skills and concepts that are considered important to overall mathematical competence in the elementary grades.

Referrals

Organizations:

- R & D Instructional Solutions: http://www.rocketmath.com/

Federally Funded Resources:

- Institute of Education Sciences (IES), public search engine available at: http://ies.ed.gov/pubsearch/
- What Works Clearinghouse: http://ies.ed.gov/ncee/wwc/