ZMATH 2016f.01405

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Students' use of electronic support tools in mathematics.

Educ. Technol. Res. Dev. 64, No. 6, 1163-1182 (2016).

Summary: This study investigated students' use of electronic support tools within a computer-based mathematics program. Electronic support tools are tools, such as hyperlinks or calculators, available within many computer-based instructional programs. A convenience sample of 73 students in grades 4–6 was selected to participate in the study. Students completed online lessons over the course of 6 weeks. Lessons were chosen to supplement the core instruction students' received in their mathematics classes. Correlations were found between students' use of specific electronic support tools and their basic academic skill fluency. A significant difference was also found between the pre and post mathematics test ($t(72) = 6.463$, $p < .001$, Cohen's $d = 1.52$). Structural equation modeling was used to examine the direct and indirect effects of prior academic skills (a latent variable comprised of working memory, math fact fluency, and reading rate) and the overall use of electronic support tools on gains between the pre and posttest. Results indicated that having stronger prior academic skills contributed to significantly lower levels of EST use for students, and having weaker prior academic skills contributed to significantly higher levels of EST use. EST use, in turn, positively predicted gains from the program, indicating an indirect effect of prior academic skills on gain scores.

Classification: U70 U50 D70 C30
Keywords: electronic support tools; computer-based instruction; learning disabilities; learning differences
doi:10.1007/s11423-016-9452-7