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Process Mnemonics and Mathematics Learning Disabilities

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Abstract

This study investigated the effects of process mnemonic instruction on the computational skills performance of 13- to 14-year-old students with mathematics learning disabilities (LD). Two experiments were carried out. In Experiment 1, 29 students with mathematics LD were assigned to either a process mnemonic instruction group, a demonstration-imitation instruction group (which served as a comparison instruction group), a study skills group (which served as a placebo instruction group), or a no instruction group. Those in the process mnemonic and the demonstration-imitation groups were provided with instructions in computational skills. The present author acted as instructor. Assessments of performance were undertaken at pre-instruction, immediate post-instruction, 1 week later, and 6 to 8 weeks later. The results showed that those in the process mnemonic group made significant improvements following the instructions provided. During the earlier stages of post-instruction, the magnitude of improvements they made were generally equivalent to that made by students in the demonstration-imitation group. However, in the longer term, the improvements made by the students in the process mnemonic group maintained better. No significant changes in performance were observed in the study skills and no instruction groups.

In Experiment 2, 28 students with mathematics LD were assigned to groups similar to those in Experiment 1, but without the study skills group. Two research assistants acted as instructors to control for any possible unintentional bias, and to investigate the effectiveness of the process mnemonic method when used by other instructors. Assessments of performance were undertaken at pre-instruction, immediate post-instruction, 1 week later, 4 weeks later, and 8 weeks later. The results

obtained were similar to those in Experiment 1. Furthermore, the students in the process mnemonic group generally made greater performance improvements compared to those in the demonstration-imitation group. No significant changes in performance were observed in the no instruction group.

Areas focused on in the discussion include the possible reasons why the process mnemonic method of instruction proved to be effective, the method's potential applications in mathematics LD remedial instruction, and the implications of the findings about the mathematics LD condition.

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