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REMEDIATION OF MATHEMATICAL DEFICITS USING SELF-INSTRUCTIONAL TRAINING WITH CHECKING PROCEDURES

by

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To the memory of my late father, Anthony Philip Pereira

ABSTRACT

The present study examined the relative effectiveness of three procedures for teaching long multiplication/division to seven learning-disabled adolescents: no-checking, end-checking, and multi-checking. During training, each student was taught by modelling and imitation, to verbalise self-instructions in the form of a strategy while solving the problems. The relative effects of the various checking procedures on accuracy, error rate and rate of problems completed were examined in an alternating treatments design. The best treatment was then given alone and a follow-up (a reversal) was implemented six weeks later, followed by a return to the best treatment during a final phase. Irrespective of the procedure used, the students' accuracy improved and their error rate decreased accompanied by a decline in the rate of problems completed. These effects were greatest with the multi-checking procedure for six of the seven students. Variability in performance across students indicated that the effectiveness of procedures, especially multi-checking, might be influenced by pre-skill knowledge and distractibility. Generalisation to untaught problems occurred under all procedures. Though maintenance effects were seen during the follow-up, accuracy was generally higher and more reliable with the re-implementation of the student's best checking procedure. Several hypotheses were advanced for the differential effectiveness of the procedures based on error detection and correction. Limitations of the study and some directions for further research were discussed. The findings of the study were interpreted within a radical behaviorist framework.

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