

Research: The Capitalization Strategy

Overview

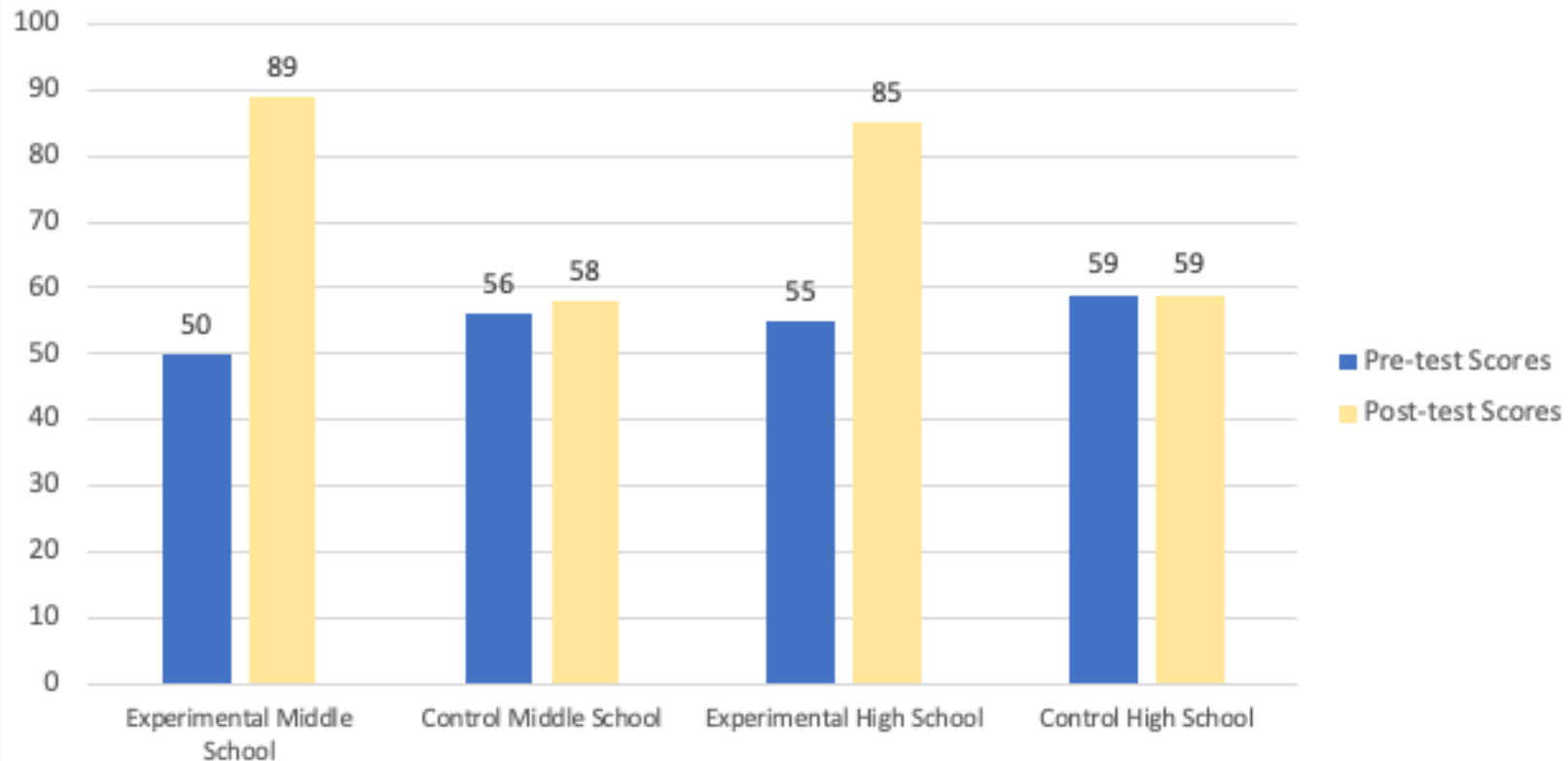
The Capitalization Strategies CD is a computerized program for teaching students to apply the capitalization rules. This study was conducted with students with learning disabilities, including 34 middle-school students and 33 high-school students. A pretest-posttest control-group design was employed, with students randomly assigned to the experimental or control group. Students in the experimental group worked through the interactive computerized program independently. They took quizzes at various points during the program, which were scored by the teacher. They had to reach the mastery criterion in order to be allowed to progress to the lesson or next portion of a lesson.

Results

Two tests were used. In one, students were required to insert capital letters into sentences where capital letters had been omitted. In the other test, students were required to demonstrate the use of the capitalization rules in their own writing. On the pretest where students had to insert capital letters, the whole group of experimental students correctly inserted 53% of the capital letters, and the whole group of control students correctly inserted 57% of the capital letters. On the post-test, the whole group of experimental students correctly inserted 87% of the capital letters, and the control students correctly inserted 58% of the capital letters. The experimental students' results ($M = 87\%$) compared favorably to the results of same-age comparison students without disabilities who inserted a mean of 70% of the capital letters correctly without instruction. The results of an ANCOVA indicated that there was a significant difference between the post-test scores of the two groups [$F(1, 64) = 126.41, p < .0005$], in favor of the experimental group. The effect size between the groups (partial eta squared) was .571, representing a very large effect. There were no differences in the way the middle-school students and high-school students responded to the program. (See Figure 1 for results for the middle school and high-school students.)

Research: The Capitalization Strategy

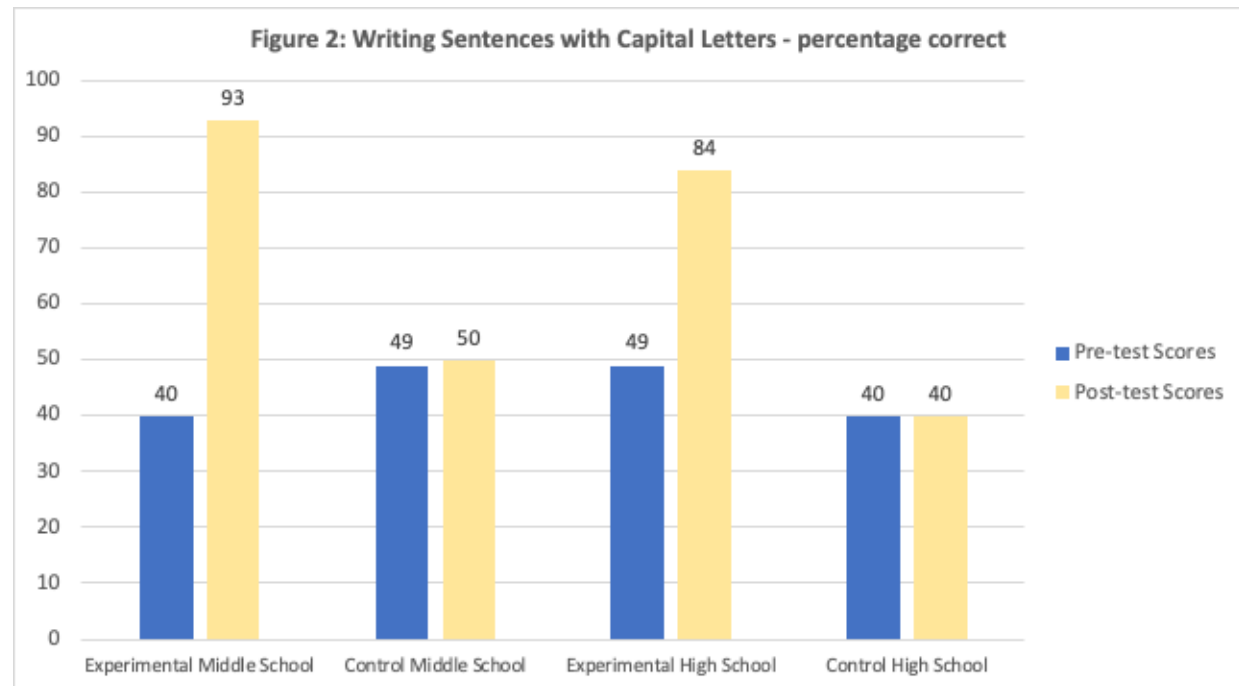
Figure 1: Correcting Capitalization Errors - percentage correct



Research: The Capitalization Strategy

Results

On a test of student use of the strategies where students demonstrated their use of capital letters in their own writing, the whole group of experimental students earned an average of 44% of the points available on the pre-test and 89% of the points on the post-test. The whole group of control students earned an average of 44% and 45% of the points on the pre-test and post-test, respectively. An ANCOVA revealed a significant difference between the groups' post-test scores [$F[1, 63] = 19.15, p < .0005$], in favor of the experimental group. The effect size (partial eta squared) was .693, representing a large effect size. There were no differences in the way the middle school students and high school students responded to the program. (See Figure 2 for results for the middle school and high school students.)



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Conclusions

The Capitalization Strategies CD program is an effective means of teaching the capitalization strategies to students with LD. All students reached mastery on all the lessons in the program. Experimental students' use of the strategies increased from pre-test to post-test, and their post-test scores exceeded the scores of a same-age comparison group without LD. Experimental students' post-test scores were significantly different from the post-test scores of the control students after the pretest scores were used as a covariate. Since no differences were found between middle school and high school students' scores, the program appears to be equally effective for students at both school levels.

Reference

Schumaker, J. B., & Walsh, L. (2009). *Effects of a hypermedia program on the punctuation and capitalization skills of students with learning disabilities*. Phase II Final report for SBIR Grant #5 R44 HD043618-03.