

Research: The Word Mapping Strategy

Overview

The Word Mapping Strategy is a strategy students use to predict the meaning of new words. Thus, the Word Mapping Strategy is a generative strategy in that students can use it to unlock the meaning of many new words within word families. The effects of teaching the Word Mapping Strategy were compared to the effects of teaching the LINC'S Vocabulary Strategy, which is a word-specific strategy. That is, the LINC'S Strategy is used to memorize the meaning of a word, once that meaning of that word is known. Unlike the Word Mapping Strategy, it was not designed to be used to predict the meanings of words.

The study included a total of 230 ninth graders in nine intact general education English classes. Students with disabilities (SWDs) and without disabilities (NSWDs) were enrolled in all of the classes. Three classes participated in each of three groups: the group receiving instruction in the Word Mapping (WM) Strategy (n= 10 SWVDs, 69 NSWDs), the group receiving instruction in the LINGS (VL) Strategy (n = 6 SWDs, 73 NSWDs), and a comparison (test-only [TO]) group (n = 8 SWDS, 64 NSWDs). Classes were randomly selected into the two experimental groups. The third group of classes served as a normative comparison. Thus, a pretest-posttest control-group design was combined with a pretest-posttest comparison-group design.

Results

Figure 1 displays the mean percentage of 20 words that students in both experimental groups (i.e., the WM and VL groups) learned during the strategy instruction as determined by a written test that required students to write the meaning of the words. With regard to changes from pretest to posttest, the three-way interaction of time x subgroup x group was found to be significant, Wilks' $\Lambda = .964$. $F(2,224) = 4.138$, $p = .017$, partial $\eta^2 = .036$ (a small effect size). When the file was split on subgroup, the time x group interaction was significant for the SWDs, $F(2,21) = 12.90$, $p < .001$, partial $\eta^2 = .563$ (a large effect size), and for the NSWDs, $F(2,203) = 367.388$, $p < .001$, partial $\eta^2 = .780$ (also a large effect size). The paired-sample t-tests revealed that a significant difference existed between the pretest and posttest scores for the SWDs in the WM group, $t(9) = -6.280$, $p < .001$. $d = .957$, and for the NSWDs in the WVM group, $t(68) = -29.626$, $p < .001$, $d = .138$ (both are large effect sizes). No differences were found for the TO subgroups.

No differences were found between the posttest scores of the WM and VL groups on this measure. That is, both groups learned the vocabulary words they were taught equally well. However, large significant differences were found between the posttest scores of the WM subgroups and the TO subgroups [SWDS: $F(1,21) = 24.056$, $p < .001$, partial $\eta^2 = .546$ (a large effect size) ; NSWDs: $F(1,202) = 574.539$, $p < .001$, partial $\eta^2 = .740$ (a large effect size)].

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Figure 1: Mean percentage of words for which students wrote the meaning

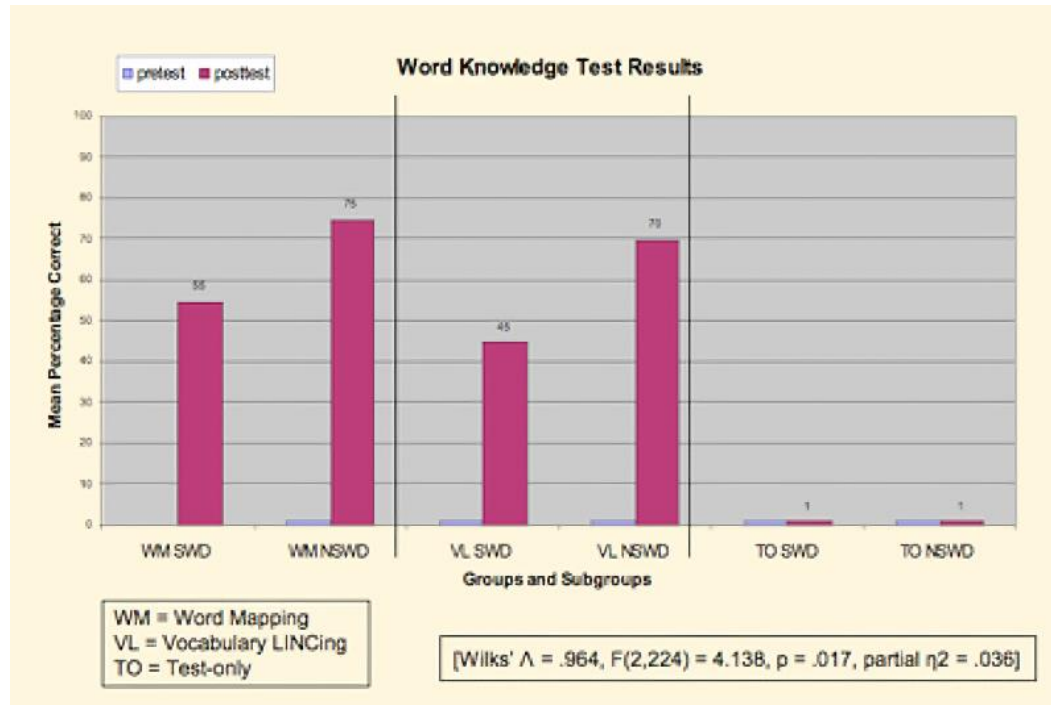


Figure 2 displays the mean percentage of points students earned on a test of strategy use. Students in the W/M group took a test requiring use of the Word Mapping Strategy: students in the VL group took a test requiring use of the LINC Vocabulary Strategy. With regard to the WM group, a statistically significant difference was found between students' pretest and posttest scores. Wilks' $\Lambda = .075$, $F(1,77) = 947.03$, $p < .001$, partial $\eta^2 = .925$ (a large effect size). There were no differences between the SWDs and the NSWDs in learning the Word Mapping Strategy.

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Figure 2: Percentage of points earned on a test requiring use of the strategy

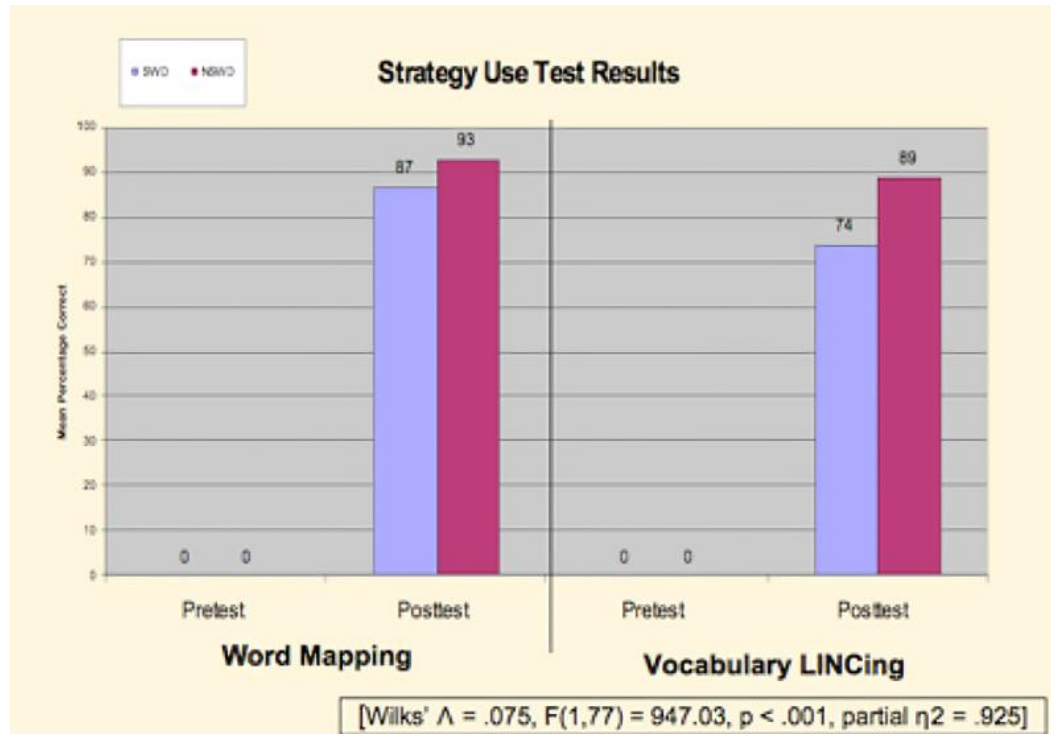


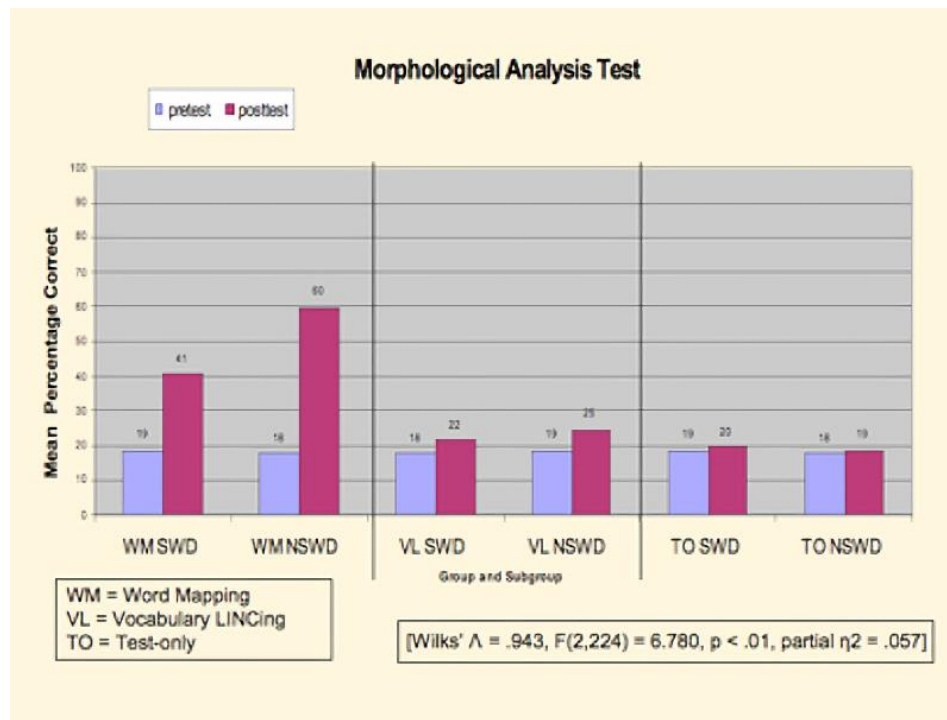
Figure 3 displays the percentage of points earned by the students in all three groups on a written test that required them to predict the meaning of new words. With regard to changes between pretest and posttest scores, the three-way interaction of time (pretest to posttest) x subgroup (SWD and NSWVD) x group (WM, VL, and TO) was significant, Wilks' $\Lambda = .943$, $F(2,224) = 6.780$, $p < .01$, partial $\eta^2 = .057$ (a medium effect size). When the file was split by subgroup, the time x group interaction was significant for the SWD subgroup, Wilks' $\Lambda = .613$, $F(2,21) = 6.630$, $p < .01$, partial $\eta^2 = .387$ (a large effect size), and for the NSWVD subgroup, Wilks' $\Lambda = .287$, $F(2,203) = 251.790$, $p < .001$, partial $\eta^2 = .713$ (a large effect size). Paired-sample t-tests revealed a significant difference between the pretest and posttest scores for the SWDs in the WM group, $t(9) = -3.45$, $p < .01$, $d = .896$ (a large effect size), and for the NSWVDs in the WM group, $t(68) = -21.256$, $p < .001$, $d = .129$. The posttest

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scores were significantly higher than pretest scores in each case. No significant differences were revealed for the subgroups within the VL and TO groups.

With regard to the differences between the posttest scores of the three groups on this prediction test when the pretest scores served as the covariate, the two-way interaction of strategy group and disability subgroup was significant, $F(2,223) = 6.61$, $p = .002$, partial $\eta^2 = .06$ (a medium effect size). When the file was split on subgroup, the main effect of strategy group for the SWVDs was significant, $F(2,203) = 250.51$, $p < .001$, partial $\eta^2 = .713$ (a large effect size).

Figure 3: Percentage of points earned on a test requiring the prediction of word meanings



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Pairwise comparisons revealed that there was a significant difference between the posttest scores of the SWDs in the W group versus SWDs in the VL group, $F(1,20) = 8.599$, $p < .01$, partial $\eta^2 = .301$ (a large effect size), and versus SWDs in the TO group, $F(1,20) = 11.801$, $p < .01$, partial $\eta^2 = .371$ (a large effect size). Mean posttest scores for the WM SWD group were significantly higher than the mean posttest scores for the VL and TO SWD subgroups. A significant difference was found between the NSWDS in the WM group versus NSWDS in the VL group, $F(1,202)=344.281$, $p < .001$, partial $\eta^2 = .630$, and versus NSWDS in the TO group, $F(1,202)=404,275$, $p < .001$, partial $\eta^2 = .667$. Again, the WM NSWDS' mean scores were significantly higher than the mean scores for the VL and the TO NSWDS groups, and the effect sizes were large.

Conclusions

Students in general education classes were able to learn the Word Mapping Strategy and the meaning of words taught during Word Mapping instruction. The effect sizes in each case were large. In addition, their learning of the strategy enabled them to predict the meaning of significantly more words after instruction than before instruction. Additionally, their scores on predicting the meaning of words were significantly higher than the scores of the other groups at the end of the study. There were no differences between the performance of students with and without disabilities,

Reference for this study*

Harris, M. L., Schumaker, J. B., & Deshler, D. D. (in preparation). The effects of strategic morphological analysis instruction on the vocabulary performance of secondary students with and without disabilities. (Available through Edge Enterprises, Inc, or call Edge for updated publication information.)

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