### Study 1 - Overview

This study focused on the instruction of four writing strategies within a resource room program by the regularly assigned special education teacher. The writing strategies were taught across the course of a full school year. General education English and social studies teachers were recruited to give writing assignments in their classes to provide measures of generalization. Seven participating high school students with LD who had not been enrolled in general education courses in the past were enrolled in these English and social studies classes at the beginning of the school year. The students were first taught the Sentence Writing Strategy (Schumaker & Sheldon, 1985) by their special education teacher in the resource room. Next, the students learned the Paragraph Writing Strategy (Schumaker & Lyerla, 1991). Subsequently, they learned how to detect and correct errors in their writing by learning the Error Monitoring Strategy (Schumaker, Nolan, & Deshler, 1985). Finally, they learned the Theme Writing Strategy (Schumaker, 2003). Throughout the instruction, the students' writing performance in both the resource room and in the targeted general education classes was monitored. That is, every time they wrote a paragraph or an essay in any of the targeted settings, the product was scored for the types of sentences used, the organization of the paragraph, the number of errors, and the organization of the essay. A multiple-probe across-strategies design was employed.

### Results

The seven students wrote an average of 70% complete sentences during baseline and an average of 99% complete sentences after instruction on products written in the resource room and in general education classes. They wrote an average of 18% complicated sentences before instruction and an average of 65% complicated sentences after instruction on products written in the resource room and in general education classes. The multiple-baseline across-strategies design demonstrated that each student made gains on pertinent measures only after instruction began for each strategy.

Five of the students made the same kinds of gains on their writing assignments in general education classes as they did in the resource room, even though they had not been taught to use the writing strategies in those settings. The two students who did not generalize their use of the strategies to other classes did so quickly after they had been taught to do so.

Before the study, the students' GPA was 2.1 in special English and social studies courses designed for low-achieving students and students with disabilities; after the study, their GPA was 2.7 in regular-track general education English and social studies courses.



On a standardized test of writing instruction, the Woodcock Johnson Psychoeducational Battery, the students' mean grade equivalent score increased by two grade levels from 6.2 to 8.2. On the district's minimal competency writing exam, the students earned a mean overall score of 3.5 (out of 5.0), which compared favorably to the mean overall district average of 2.5. With regard to maintenance of strategy usage, the four students who returned to the school the following school year and who had learned all the strategies demonstrated that they could write complete and complicated sentences in their general education classes at mastery levels.

### Conclusions

Thus, this study demonstrated that high school students with LD could learn the Sentence Writing Strategy in a resource room program when instructed by their regularly assigned special education teacher. It also showed that they could generalize their use of the Sentence Writing Strategy to assignments given in their required general education courses and that they could maintain their use of the strategy across several months. It also showed that strategy instruction was associated with growth in standardized writing test scores and produced favorable writing competency test scores.

### Reference

Schmidt, J. L. (1983). The effects of four generalization conditions on learning disabled adolescents' written language performance in the regular classroom. Unpublished doctoral dissertation. University of Kansas, Lawrence.

Schmidt, J. L., Deshler, D. D., Schumaker, J. B., & Alley, G. R. (1989). Effects of generalization instruction on the written language performance of adolescents with learning disabilities in the mainstream classroom. Reading, Writing, and Learning Disabilities, 4(4), 291-309.



### Study 2 - Overview

In this study, two writing strategies were taught in a 10th-grade English class containing 31 students. A comparison class contained 25 students. Three students with disabilities, three high-achieving students, and three low-achieving students within each class served as targeted subjects for the multiple-probe across-strategies design. The students in the experimental class received instruction in the Sentence Writing Strategy and then the Error Monitoring Strategy through the use of the eight-stage strategic instructional methodology combined with cooperative-group structures. Students in the comparison class received traditional writing instruction. Measures included the percentage of complete sentences, the percentage of complicated sentences (compound, complex, and compound-complex sentences), and an error score (the total number of errors divided by the total number of words written subtracted from 100).

#### Results

The students in the two classes were somewhat comparable at the beginning of the study. For example, the targeted students with LD in the experimental class wrote an average of 45% complete sentences, and those in the comparison class wrote an average of 35% complete sentences. Low-achieving students in the experimental class wrote an average of 35% complete sentences, and those in the comparison class wrote an average of 50% complete sentences. All students in the experimental class wrote an average of 55% complete sentences and in the comparison class, wrote an average of 67% complete sentences.

With regard to student generation of complicated sentences before instruction, the targeted students with LD in the experimental class wrote an average of 12% complicated sentences, and those in the comparison class wrote an average of 32% complicated sentences. Low-achieving students in the experimental class wrote an average of 6% complicated sentences, and those in the comparison class wrote an average of 10% complicated sentences. All students in the experimental class wrote an average of 22% complicated sentences and in the comparison class, wrote an average of 28% complicated sentences

All the targeted students in the experimental class mastered the Sentence Writing Strategy after the instruction as shown by the multiple-probe design. After the instruction, the experimental students with LD wrote an average of 90% complete sentences, and the low-achieving students wrote an average of 80% complete sentences. The comparison students with LD and low-achieving students wrote an average of 40% complete sentences after traditional instruction. Also, after instruction, all the experimental students wrote an average of 95% complete sentences; all the comparison students wrote an average of 55% complete sentences. Experimental high-achieving students did not make gains in sentence completeness.



With regard to student generation of complicated sentences after instruction, the targeted students with LD in the experimental class wrote an average of 62% complicated sentences, and those in the comparison class wrote an average of 14% complicated sentences. Low-achieving students in the experimental class wrote an average of 50% complicated sentences, and those in the comparison class wrote an average of 8% complicated sentences. All students in the experimental class wrote an average of 58% complicated sentences and in the comparison class, wrote an average of 17% complicated sentences.

#### Conclusions

This study showed that writing strategies can be taught in an inclusive general education high-school class in such a way that students with LD and low-achieving students make substantial gains in their writing skills. However, a caution is in order here: these results were achieved when the eight-stage strategic instructional methodology for teaching learning strategies was used, and students had multiple opportunities to practice using the strategy. Peers within the cooperative groups provided help and feedback to those students who needed it, and the cooperative-group structure was tailored to ensure that all students mastered the strategy (i.e., points were awarded to individual students according to how well all members of the group performed).

### Reference

Beals, V. L. (1983). The effects of large group instruction on the acquisition of specific learning strategies by learning disabled adolescents. Unpublished doctoral dissertation, University of Kansas, Lawrence.

