

The Effects of Peer-Assisted Sentence-Combining Practice on Four Young Writers with Learning Disabilities

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Constructing well-formed sentences is an important element of writing. However, many students struggle with this skill; in particular, writers with learning disability (LD). In this study sentence-combining practice with a peer-assistance component was used to improve the ability of four young students with LD to construct sentences and compose stories. Results support the use of sentence-combining practice to increase sentence-construction ability. Furthermore, sentence-combining instruction led to gains in story quality, use of taught constructions, and number of revisions. We also targeted transfer of the sentence-combining skills to story writing by integrating generalization training via parallel writing tasks and a Peer-Editor Checklist. Student comments suggested that the checklist increased their ability to identify the use of sentence-combining skills in each other's writing and make effective revising suggestions.

Key Words: Sentence Combining, Writing, Peer Assistance, Learning Disabilities

Of the many difficulties writers may encounter, crafting effective sentences can be notably challenging (Isaacson, 1985). Sentence construction is a critical skill to master. Constructing and manipulating sentences requires that writers check the rhythm and flow of the sentences that comprise their stories by asking themselves questions such as: Are there too many short, choppy sentences? Are there fragments, run-ons, or ramblings? Do too many start with the same word? Are too many of the same length? Perhaps most important, writers must test their sentences to ensure they are accurately conveying the intended message.

Constructing and manipulating sentences can test the ability of any writer. While skilled writers in the elementary grades may not have fully mastered sentence construction, less skilled writers, including writers with learning disabilities (LD), may have considerable difficulties with sentence construction. As a result, they often produce shorter and less syntactically complex sentences that are lower in quality, more error filled, and contain less varied vocabulary than their more skilled counterparts (Graham & Harris, 1989; Myklebust, 1973).

Because of the importance of this skill in the overall writing process, direct, systematic instruction in sentence construction may be necessary for many students.

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A writing intervention called sentence combining is one way to directly teach sentence-construction skills. This approach was developed in the 1960s during a time when researchers and teachers were searching for options to formal grammar instruction. Since then, more than 80 studies have demonstrated with few exceptions that sentence combining is an effective method for helping students produce more syntactically mature sentences (e.g., Hunt, 1965; O'Hare, 1973; Saddler & Graham, 2005). Researchers have documented the positive effects of sentence-combining practice with writers from elementary through college age. Various aspects of sentence-combining instruction have been researched. These include which genre of writing (persuasive, narrative, expository) is most affected by such instruction, how oral training in sentence combining may improve written text, and if sentence combining-instruction might improve reading rate and comprehension.

Although sentence-combining instruction is not currently included as a component in popular approaches to writing instruction such as Writers' Workshop (Calkins, 1986), there is considerable evidence that it can be used to improve students' sentence-construction skills (Hillocks, 1986; O'Hare, 1973). Most of this evidence has been collected with students in middle school, high school, and college, and the impact of sentence-combining instruction on improving the overall quality of students' writing has been mixed (see Hillocks, 1986). In addition, few investigations have examined if the skills that students learn when combining sentences transfer to how they revise their text (see Horstman, 1989, for an exception). Examining transfer effects of sentence combining to writing quality and revising for young and less skilled writers is especially important, as these students often have difficulty generalizing new skills (Graham, Harris, & Mason, 2005).

Two important sentence-combining studies, Saddler and Graham (2005) and O'Hare (1973), revealed the positive effects of this technique on writing. O'Hare (1973) tested whether sentence combining or grammar would increase the normal rate of growth of syntactic maturity in an eight-month-long experiment with 83 seventh-grade writers. Students were exposed to a range of sentence combining or grammar, and their growth was analyzed at pre- and posttest on three kinds of writing samples: narration, description, and exposition. The results revealed that students learning sentence combining experienced statistically significant syntactic growth when compared to students who practiced grammar, particularly in narrative and descriptive compositions.

The study by Saddler and Graham (2005) is particularly relevant to the present investigation. The two researchers assessed the effects of a sentence-combining procedure involving peer-assisted practice with more and less skilled fourth-grade writers. Forty-two students in the fourth grade received 30 lessons, 25 minutes in duration, three times a week for 10 weeks in either sentence combining or grammar. In comparison to peers receiving grammar instruction, students in the experimental treatment condition became more adept at combining simpler sentences to create more complex sentences. In addition, for the students in the experimental condition, the sentence-combining skills they were taught transferred to a story writing task, resulting in improvements in writing quality as well as revising ability. However, there was little direct evidence of the taught constructions in the posttest stories.

Although the results of these two studies are encouraging, research has yet to establish a reliable link between sentence-combining practice and improvements in writing quality. Furthermore, we know little about exactly how to help writers effectively generalize sentence-combining skills to connected writing. Theoretically, sentence-combining practice should be advantageous for students with LD because these children need to establish intentional control over sentence production (Graham & Harris, 1989) and increase their repertoire of sentence options (Englert, 1991). In addition, sentence combining provides deliberate, stimulating language experiences designed to accelerate the development of syntactic patterns (Andolina, 1980) in a format that provides temporary supports to scaffold learning. Finally, sentence-combining practice should aid revision as the process of combining sentences is primarily a revising skill (Zimmerman & Kitsantas, 2002), thus, providing writers with another tool for recrafting already written text.

The purpose of the current study was to provide further support for these theoretical contentions via a systematic replication and extension of the encouraging results provided by Saddler and Graham (2005). Specifically, sentence-combining practice with a peer-assistance component was used to improve the ability of young students with weak writing skills to construct sentences and compose stories higher in overall quality than stories written at pretest as in the Saddler and Graham research. However, we extended the Saddler and Graham study by attempting to improve the transfer of the sentence-combining skills to story writing by integrating generalization training via parallel writing tasks and a Peer-Editor Checklist. We reasoned that if the practice exercises were returned to the context of actual writing as rapidly as possible, students would have an opportunity to employ the skills to solve sentence construction challenges within their own texts, thus increasing the relevance of the skill.

This idea is supported by Campbell, Brady, and Linehan (1991), who suggested that for generalization to occur, training for generalization must be incorporated as an integral part of the instructional program and should be implemented either during instruction or directly after the objective criterion has been reached. In addition, Strong (1986) recommended the use of parallel writing tasks using the application of target skills to create connections in the writers' mind that may increase generalization. Furthermore, we believed that by employing a checklist that emphasized the inclusion of the learned skills within connected texts, students would be more motivated to include the learned constructions and be more mindful of the requirement.

METHOD

Setting

The study took place at an inner-city elementary school in the northeastern United States. The racial demographics for the school were 35% African-American, 7% Asian, 6% Hispanic, and 52% White. A total of 47% of the students in the school received free or reduced-cost lunch.

Participants

Fourth-grade teachers in the building were asked to recommend students in their classes who were identified as having a learning disability by school district

criteria and who demonstrated writing difficulties. Based on these criteria, four students from two classrooms were selected to participate in the study. The teachers in their classes had an average of 13 years of experience and employed a writing workshop approach to writing instruction. In each class, organizational devices such as webs and story maps were routinely used.

The four students were randomly paired for instruction and assigned pseudo names. Pair 1 included Zeb and Jenna. Zeb was a 10-year, 5-month-old African-American male identified as having a learning disability in first grade. He had a performance standard intelligence quotient (IQ) scaled score of 100 on the Wechsler Intelligence Scale for Children - Revised (WISC-R; Wechsler, 1974) and the equivalent of a second-grade reading level on the Wide Range Achievement Test (WRAT-3; Jastak & Wilkinson, 1984). His individualized education program (IEP) included goals in written expression. Jenna was a 9-year, 8-month-old African-American female who had been identified as having a learning disability in second grade. Her WISC-R performance standard scaled score was 62, and her verbal score was 78. Her WRAT-3 reading level was second grade; her IEP included written expression goals.

Pair 2 consisted of Sam and Nancy. Sam was a 9-year, 7-month-old African-American male. He had been identified two years earlier as having a learning disability. His WISC-R performance standard score was 73 (standard scaled score), and he had a second-grade reading level on the WRAT-3. He had goals on his IEP in written expression. Nancy was a 9-year, 3-month-old African-American female. Her WISC-R performance standard scaled score was 73; she also had a second-grade reading level according to the WRAT-3.

To gain additional evidence of initial story-writing skill level, each student was administered the story-writing probe from the Test of Written Language -3 (TOWL-3; Hammill & Larsen, 1996). The writing sample was analyzed using the TOWL-3 Story Construction subtest criteria. This subtest measures story writing quality as revealed by plot, prose, development of characters, interest to the reader, and several other compositional aspects (coefficient alphas ranged from .88 to .90 for 9- to 11-year-olds).

The stories were scored by two graduate students in educational psychology who were unaware of the research questions. To determine interrater reliability between the scores assigned by the two raters, a Pearson Product-Moment correlation coefficient was calculated. Interrater reliability between the two scorers was .95. The overall scores for each examiner were then averaged. For the purpose of data analysis, raw scores were converted to standard scores ($M = 10$; $SD = 3$) using the normative tables in the test manual. Three students, Zeb, Jenna, and Sam, achieved a standard score of 7 points. The fourth student, Nancy, achieved a standard score of 8 points.

General Procedures

Sessions lasting for 35 minutes occurred three times per week, with each pair of writers receiving 18 lessons. Each lesson was scheduled so that students could participate in their general classroom writing instruction. Instruction began with Zeb and Jenna. A trained graduate student served as the instructor for each of the writing pairs. She was introduced as a writing teacher and met with students in a room outside of the classroom. Before the start of the study, the first author trained

the instructor in the intervention and gave her a notebook that contained detailed directions for implementing each activity and lesson (this included a space to check off each step as it was completed).

The sentence-combining intervention was adapted from the curriculum used in the Saddler and Graham (2005) study. It involved rewriting short, kernel sentences using three units of instruction consisting of six lessons each. Each unit taught a particular type of sentence construction. In the first unit students combined kernel sentence clusters of three or more sentences using adjectives. In Unit 2 students combined sentences by inserting phrases, and in the third unit they used the connectors “but” and “because” to combine sentence kernels (see Figure 1 for examples from each unit of instruction and Figure 2 for an example from an individual lesson). Each unit also included a parallel writing piece that was peer-revised using a checklist.

Figure 1. Kernel sentence cluster examples by unit of instruction.

Unit 1 – Adjective Insertion

The room was dark.

The room was small.

The room was cold.

Unit 2 – Phrase Embedding

The ground shook.

The ground trembled.

The ground was around the mountain.

The mountain was tall.

Unit 3 – Connectors “But” and “Because”

They landed in the water. The water was swirling. (but)

They did not sink.

Figure 2. Example of sentence-combining practice activities.

The Boat

1. The boat was in the water.
The water was cold.
The water was salty.
2. It began to sink.
It sank slowly.
3. The men jumped.
They were frightened.
4. They landed in the water.
The water was swirling.

A peer-assisted component was included in all lessons except Lesson Four. We believed that peer-assisted learning formats may be a particularly powerful way to enhance the writing skills of students with LD because these children need extensive, systematic, structured teaching to acquire skills that others master with less effort (Mathes & Fuchs, 1993; Newcomer & Barenbaum, 1991). Furthermore, peer-assisted learning provides the weaker writer with a model and assistance, while simultaneously allowing both students to act as tutor and tutee (Fuchs, Fuchs, Mathes, & Simmons, 1997). Peer-assisted instruction usually employs a “coach-player” pairing, wherein each student takes a turn at directing or receiving instruction (Fuchs, Fuchs, & Thompson, 2001). This peer-assisted framework supports learning through frequent verbal interaction and feedback between tutors and tutees and with reciprocity of tutoring roles (Fuchs et al., 2001). In addition, it provides opportunity for the writing pairs to compose using one another as resources instead of the instructor. By serving as a resource for each other, students’ engagement with the writing activity is increased, and a structure for providing feedback on the quality of their writing is created. The peer-assistance component was patterned after the arrangement used in Saddler and Graham (2005).

Lessons one and two. The first two lessons of each unit began with the instructor explaining the sentence-combining technique to be practiced in the given unit. The instructor then modeled combining sentences during a brief oral warm-up. Students took turns completing the remaining sentence pairs. The instructor provided an answer if neither student suggested a solution and then moved to the next set of sentences. After completing the warm-up sentences, the instructor asked the students to explain how they knew to put the sentences together. The instructor then explained how the student could possibly combine the sentences; namely, using a connecting word (if appropriate), getting rid of words they did not need, moving words around, changing words if needed, or adding words.

A written guided practice portion followed the warm-ups (see Figure 3). This practice consisted of the students combining sets of kernel sentences into single sentences. The students were asked to combine the first set of sentences individually and then write out their answer on a worksheet. They were instructed to stop after finishing each sentence set and read their answers to each other out loud. While one student was reading his or her response, the other student used hand signals to rate the sentence. Ratings for each sentence were established through discussion about the “sound” of the sentence. If the sentence sounded great and made sense, the student would give a thumbs-up. If it sounded O.K., the student placed a thumb parallel to the ground, and if the sentence did not sound right and did not make sense, the student gave it a thumbs-down. If a sentence received a thumbs-down, the partner and instructor discussed how it could be improved.

Lesson three. In this lesson, the sentence-combining skills the students were practicing were generalized to a revision task. The lesson began with an oral warm-up time identical to those in Lessons One and Two, and then the students assisted each other in producing a revised paragraph from a series of kernel sentences.

Figure 3. Example of guided practice lesson plan.

Guided practice:

- 1. Say **“let’s start to practice writing out some different combinations.”**
- 2. Give students notebook paper and pencil. Have them place name and date on it.
- 3. Say **“I want you to combine the sentences on this sheet. Remember, read the pairs of sentences and then write out your new sentence on this line. Stop after finishing each pair of sentences. You will read your answers out loud to each other before starting the next pair of sentences.”**
- 4. Say **“remember, when you read your sentence out loud, your partner will use hand signals to tell how they think the sentence sounds. If the sentence sounds really great, give it a thumbs-up, if it sounds OK, put your thumb parallel with the ground. If the sentence does not sound good, give it a thumbs-down. If the sentence is a thumbs-down, we will try to fix it together. Go ahead and finish the first sentence pair.**

Note: If the student says his partner made an OK sentence, ask him how the sentence could be made better. The trick is to get students to defend their opinions. If students provide an ungrammatical sentence, ask if the sentence sounds right. Don’t try to explain the technicalities, try to get them to rely on their own knowledge of language. Say that it is O.K. to make mistakes because we learn from our mistakes.

- 5. Discuss each sentence pair after they finish, but leave enough time for them to finish all of the sentence pairs.
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Lesson four. This lesson provided additional practice with the sentence-combination skills within the context of connected writing. The lesson began with the same oral warm-up activity as in the previous lessons with one minor change. This time students attempted each of the warm-up problems individually to ascertain if each could create a different solution for the problem. Then, each student was given two picture-prompt story starters similar to the ones used to collect the pre-and posttest story probes. The students were instructed to select one of the pictures to write about and then were given 15 minutes to draft a story.

Lesson five. During this lesson the students used a Peer-Editor Checklist to revise their story drafts produced in Lesson Four (see Figure 4). The checklist was included to further support the peer-assisted learning arrangement by providing a detailed structure to guide revision. Initially, the instructor modeled the checklist by examining a sample story while verbalizing answers for each of the questions on the checklist. Then the students were given the rest of the lesson to examine the other’s story using the checklist as a guide while the instructor answered questions and provided encouragement.

Figure 4. Peer-Editor Checklist.

Author's Name: _____

Title of Work: _____

Directions: Answer the following questions while you read your partners story.
Give your partner as many good ideas as you can. The more ideas, the better the revised story will be.

What did you like about the characters?

What made the setting fun?

What made the ending fun?

What did you like best about the story?

What part of the story do you want to know more about?

Where did the author use the sentence-combining tricks? Circle the sentences in the story.

What sentences can the author change to make the story more interesting? Put an "X" above the sentence in the story.

Peer Editor: _____

Lesson six. During this lesson the students discussed each other's story using the completed Peer-Editor Checklist and made revisions. They then read the revised stories out loud.

Fidelity of Treatment

To ensure that the treatment was delivered with documented fidelity (Horner et al., 2005), the following safeguards were employed. First, the instructor received intensive practice from the first author in applying the instructional procedures. Second, the instructor met with the first author weekly to discuss any problems that occurred in implementing procedures. Third, the instructor received a checklist that contained step-by-step directions for each lesson. Each step was checked off when completed. Examination of the checklists by the author showed that the instructor completed 100% of the steps in the sentence-combining treatment. Fourth, to reduce the possibility of instructional contamination, each classroom teacher was asked not to discuss the intervention with students who were participating in the study until the study ended. Furthermore, the particular objectives of the study or the details of the intervention were not explained to the teachers until the study concluded.

Dependent Measures

Five measures were used to document instructional effects: sentence-combining ability, story quality, number and quality of revising, and instances of taught sentence-combining constructions in connected text. Students were tested in pairs. All measures were rated by two graduate students in educational psychology who did not know the purpose of the study. To determine interrater reliability between the scores assigned by the two raters, a Pearson-Product Moment correlation coefficient

cient was calculated for each measure. The overall scores for each examiner were then averaged.

Sentence-combining ability. To assess changes in students' sentence-combining skills, each student completed Form A of the Sentence Combining subtest from the TOWL-3 (Hammill & Larsen, 1996) before the start of the study. After instruction was completed, students were administered the alternate form (B) of this subtest. Interrater reliability between the two scorers was .98. For the purpose of data analysis, raw scores were converted to standard scores ($M = 10$; $SD = 3$).

Story quality. Before instruction, and immediately following instruction, students were asked to write a story and they were provided with two pictures depicting activities of interest to young children, and were instructed to select one of two pictures to write about. The order in which the pictures were presented was randomly selected but consistent across groups. Students were told that the examiner could tell them how to spell specific words upon request but could provide no other help. The students were given 20 minutes to write each story. Once the students finished writing, they read their story to the instructor, who recorded any unreadable word; however, no new words were recorded.

To assess treatment effects on the quality of students' writing, each story was scored using a holistic quality rating scale originally developed by Graham and Harris (1989). Examiners were asked to read the paper attentively to obtain a general impression of the overall writing quality. Stories were then scored on an 8-point scale, with 1 representing the lowest quality of writing and 8 representing the highest quality. Examiners were told that ideation, organization, grammar, sentence structure, aptness of word choice, and mechanics should all be taken into account in forming a judgment about overall quality, and that no one factor should receive undue weight. Examiners were provided with a representative paper (or anchor point) for a low-, middle-, and high-quality score. These papers were the same as those used in the Saddler and Graham (2005) study.

The author trained the examiners to use the quality rating scale by discussing the distinguishing features of each of the anchor points. Next, the examiners practiced applying the scale to a series of compositions that varied widely in quality. After independently scoring each practice story, examiners compared their scores and resolved any differences through discussion. Training continued until the examiners' scores differed by no more than 1 point on 10 consecutive compositions. Interrater reliability was .86 between the two examiners.

Revisions. During the following testing session after writing the first draft, the students were asked to revise their stories. The instructor read the following directions: "Today I want you to revise the story you wrote for me. When you revise, you look for ways to make your story better and different from your first version. When you revise, you can add, delete, or move words around." They were then allowed 20 minutes to revise.

The number and quality of revisions in the first and second drafts were analyzed. The number of revisions included any change the writers made to their story regardless of the type of change (i.e., spelling, punctuation, capitalization, addition, deletion, substitution). Each word added counted as a single revision. Interrater reliability for this measure was 1.0.

To assess the quality of revisions made to the second draft, the changes in quality between drafts were analyzed following procedures from MacArthur and Graham (1987). Raters used the first draft as the standard and rated the second draft in comparison. Points ranged from -2 (the second draft was much worse than the first) to +2 (the second draft was much better than the first). Two graduate-level students who were unfamiliar with the overall hypothesis of the study scored the compositions. The percent of agreement between the scorers (exact agreements/agreements plus disagreements) was 100%. Quality change was used as an indicator of the effectiveness of the revisions made by the students.

Instances of taught sentence-combining constructions. To evaluate if the writers used the learned sentence-combining skills in their compositions, the examiners counted the number of sentence-combining constructions occurring in each story. The first author trained the examiners by practicing scoring papers that included examples of each type of sentence-combining skill found in the treatment. Training continued until the examiners' scores differed by no more than 1 point on five consecutive compositions and the examiners agreed completely on the type of sentence-combining skill demonstrated (i.e., adjective, phrase insertion, connection). Interrater reliability was .77 between the two examiners when they independently scored drafts from pretest and posttest.

Experimental Design

To demonstrate experimental control, we used a multiple-baseline-across-subjects design with multiple probes during baseline (Horner & Baer, 1978). Prior to the introduction of treatment, each student's writing performance was measured over time to establish a baseline of typical ability. The following conditions existed during the study: *Baseline (pretest)* when each student wrote stories to establish pre-treatment skill level. *Treatment* when instruction began for each pair of students after each child established a stable baseline for story quality. *Posttreatment (posttest)* when students wrote three stories immediately following instruction under the same conditions as during baseline.

RESULTS

In addition to the visual analysis of level and trend, the data were also analyzed using the percentage of non-overlapping data (PND) procedure as outlined in Scruggs, Mastropieri, and Casto (1987). The following guidelines recommended by Scruggs et al. were used: 90% of the posttreatment and maintenance points exceeding the extreme baseline value indicated a very effective treatment, 70-90%, an effective treatment, 50-70%, a questionable treatment, and less than 50%, an ineffective treatment.

Sentence Combining

All students improved their sentence-combining ability. At baseline, none of them completed a sentence combination correctly. However, at posttest each child improved by at least 5 points. Zeb and Jenna improved to 6 and 10 points, respectively, whereas Sam and Nancy improved to 5 and 6 points, respectively. The PND for this variable was 100%; therefore, the intervention was very effective in increasing sentence-combining ability, as was expected.

Although Sam gained the least, his attempts revealed that he understood the concept of combining but remained overly reliant on “and” to coordinate sentence elements rather than embedding the elements. For example, when attempting the combination “The bush is green. The bush has berries.” Sam responded, “The bush is green and has berries.” Although this is a grammatically correct response, it is an incorrect response according to the TOWL-3 scoring instructions.

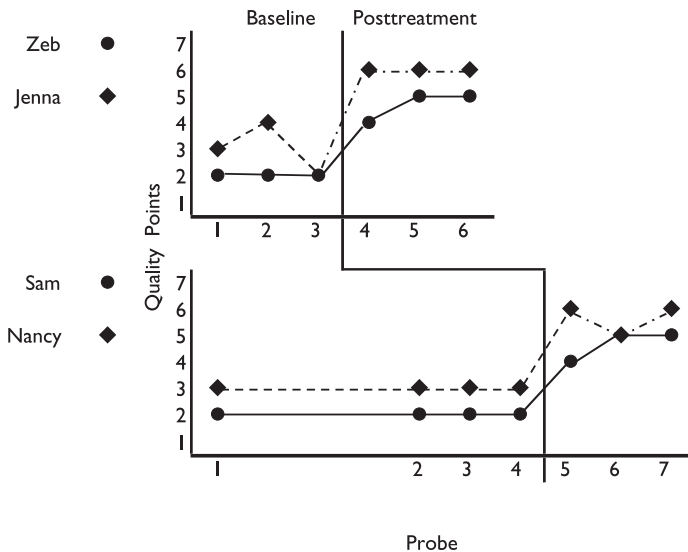
Story Quality

As illustrated in Figure 5, all the students also improved the quality of their stories. Jenna improved from a baseline average of 3.3 to 6, Zeb from an average of 2 to 4.7, Sam from 2 to 5, and Nancy from 3 to 5.7. The PND for this variable was 100%; therefore, the intervention was very effective in increasing story quality.

Revisions

At baseline none of the children attempted any revisions to their second drafts. By comparison, at posttest Zeb attempted two revisions, Jenna and Sam, three, and Nancy, four. All but two of these revisions were either word changes or additions. Jenna and Sam each made a change to their second draft that involved taught sentence-combining constructions. The PND for this variable was 100%; however, although the number of revisions increased at posttest, the quality of the second drafts did not improve, meaning that the revisions attempted were not robust enough to improve the stories.

Figure 5. Story quality.



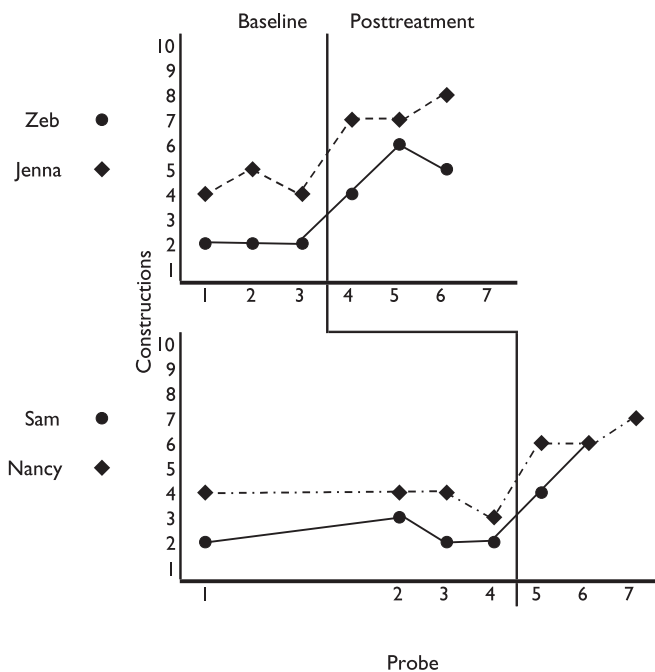
Taught Constructions

As reported in Figure 6, all students increased their use of the constructions included in the sentence-combining curriculum. Specifically, Jenna improved from a baseline average of 4.7 to 7.3, Zeb from an average of 2 to 5, Sam from 2.3 to 5.7, and Nancy from 3.8 to 6.3. Of the three constructions, the use of adjectives was the most prevalent during pretest and posttest. The PND for this variable was 100%, indicating that the intervention was very effective in increasing the use of the taught constructions.

DISCUSSION

In this study, we attempted a systematic replication and extension of the Saddler and Graham (2005) investigation. As in Saddler and Graham, sentence-combining practice with a peer-assistance component was used to improve the ability of young students with LD and weak writing skills to construct sentences and compose stories higher in overall quality than stories written at pretest. In addition, we extended the Saddler and Graham study by targeting transfer of the sentence-combining skills to story writing by integrating generalization training via parallel writing tasks and a Peer-Editor Checklist.

Figure 6. Constructions.



As in Saddler and Graham (2005) and O'Hare (1973), direct practice in constructing sentences improved sentence-combining ability. However, unlike in those studies, the taught constructions appeared to a greater extent in the posttest stories than at pretest. This was an encouraging finding, as it may indicate that the additional practice activities were effective in generalizing the isolated skill instruction. Furthermore, the quality of the stories produced at posttest improved for all of the writers. This was an additional positive result not found in prior research. In addition, revising behavior increased; however, the attempted revisions did not improve the quality of second drafts.

Anecdotal evidence collected by the instructor during the lessons indicated that the students believed the sentence-combining activities were valuable in making their sentences better in their stories. Unfortunately, similar information was not collected in the Saddler and Graham (2005) or O'Hare (1973) studies.

The students stated that they thought sentence combining helped them make better sentences and stories. Interestingly, the aspect of the instruction that was the most memorable to the students was the guideline for correctness used during instruction. When discussing the efficacy of a newly created combination, the students would determine if the sentence "made sense." Using this term to analyze their new sentences was identified by several students as a positive outcome of the instruction. For example, Nancy would often stop to think about the new combination during the warm-up portion of the lesson and state, "It doesn't make sense." Sam related that he used the sentence-combining skills in writing to "take out sentences that didn't make sense." Similarly, reading through the newly constructed sentences was important to Jenna because it helped her tell if "the new sentence was right because when you read it over again it makes sense."

The idea of "sense-making" carried over to connected writing for Zeb, who felt that sentence combining helped his stories to be "better and stronger" and to "make more sense." This is an important outcome of this instruction, as nurturing a feel for "sense-making" in young writers may be an important step in developing the reflective behaviors needed to trigger and facilitate effective revisions.

Furthermore, student comments suggested that the Peer-Editor Checklist increased their ability to identify the use of sentence-combining skills in each other's writing and make effective revising suggestions as they progressed through the intervention. This was an important finding as checklists have not been used in prior sentence-combining research.

During the first unit, students wrote only brief notes on the Peer-Editor Checklist and had a difficult time locating where the author used the sentence-combining skill being taught. In addition, identifying sentences that could be changed to improve the interest of the story was problematic. However, by the third unit, all the students were not only able to identify areas in the story where the author used the sentence-combining trick, they could also make effective suggestions that helped the author improve their sentences.

Moreover, the editing checklist seemed to help the students appreciate the importance of revising and the efficacy of external feedback. For instance, Sam said he liked talking with another student about revising because, "I liked when someone else looked at my story. The stuff you need to fix, they tell you or when you don't

know where to put a period they tell you.” Nancy believed that talking about revising was good because “if you make a mistake ... you can fix it.” Having someone else read his story and provide suggestions was also important to Zeb, who stated that he did not revise on his own because, “it’s too complicated. I like it when the teacher tells you what is wrong and how to correct it.” Zeb also optimistically declared that he appreciated receiving revision advice because “you don’t know what you will get, and; you might get something good.” Finally, Jenna believed that the checklist was fun, “it is like a little game; it makes me feel like a teacher.”

Limitations and Future Research

There are several limitations to this study. First, the sample size was small and only represented one grade level. Second, only one writing genre was used. Third, maintenance data were not collected. Fourth, fidelity of treatment was not verified by an independent person.

Although the results are encouraging and provide evidence of the effectiveness of the sentence-combining activities used, future research needs to replicate the findings with a larger and more diverse sample. In addition, generalization needs to remain an important outcome of future research, and other methods to increase the use of sentence combining skills in connected text need to be explored. Furthermore, researchers should investigate how a student approaches a sentence-combining task cognitively, or how instruction may help reorganize existing schemas about sentence construction. This information would help in designing activities to foster generalization.

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