**EFFECTS OF TEACHER-DIRECTED VERSUS STUDENT-DIRECTED
INSTRUCTION AND CUES VERSUS NO CUES FOR
IMPROVING SPELLING PERFORMANCE**

MARIBETH GETTINGER

UNIVERSITY OF WISCONSIN-MADISON

The purpose of this study was twofold: to examine the effects of imitating children's spelling errors alone and in combination with visual and verbal cues on spelling accuracy and retention among poor spellers and to compare the effectiveness of student-directed versus teacher-directed spelling instruction on children's spelling accuracy and retention. Nine children received four alternating experimental treatments during a 16-week spelling program. Results indicated that student-directed instruction that incorporated visual and verbal cues was most effective in increasing children's spelling accuracy.

DESCRIPTORS: spelling, instructional cues, student-directed

Poor spelling is a problem in many classrooms that is not limited to handicapped learners (Graham & Miller, 1979). Several researchers (Cronnell & Humes, 1980; Gettinger, 1984; Graham, 1983) feel that spelling difficulties may be attributed, in part, to instructional factors. Research has consistently identified some common elements of effective spelling instruction, such as using a test-study-test method (Fitzsimmons & Loomer, 1977) and presentation of an optimal number of words per session (Bryant, Drabin, & Gettinger, 1981). However, findings concerning two specific aspects of spelling instruction are less conclusive.

The first is the format of the corrected-test method. The typical format is to present a correct model of the misspelled word. This approach can be further enhanced by imitating the student's error before presenting a correct model (Kauffman, Hallahan, Haas, Brame, & Boren, 1978). Kauffman et al. theorized that pairing negative-positive instances helped focus the child's attention on ways in which the incorrect spelling differed from the

correct one, even though differences were not pointed out. An extension of this notion is that explicit focus in the form of visual and verbal cues may direct the learner's attention more specifically to misspelled word parts. Thus, one purpose of this study was to explore the effects of imitating children's errors alone *and* in combination with visual and verbal cues.

The second inconclusive aspect is the extent to which word-study procedures are teacher- versus student-directed. The Kauffman et al. (1978) procedure, for example, was teacher-directed; Foster and Torgesen (1983) also support the use of teacher-guided practice. Allred (1977), however, reviewed literature supporting student-directed practice. Thus, a second purpose of this study was to compare the effects of teacher-guided versus student-directed word-study procedures.

METHOD

Students

Nine poor spellers (6 boys, 3 girls) were referred to me by their parents. The students ranged in age from 8 to 13 years, and from 3rd to 8th grades. All were average in intelligence, but approximately 1 year below grade level in spelling. Participation was voluntary.

I thank Roberta Cattoi, Deborah Custer, and Anne Stright for their assistance in this investigation.

Requests for reprints should be addressed to Maribeth Gettinger, Department of Educational Psychology, 1025 West Johnson Street, Madison, Wisconsin 53706.

Stimulus Words

Words were selected from the *New Iowa Spelling Scale* (Greene, 1954) according to two criteria: They were spelled correctly by 35%–55% of the normative sample at the child's grade level, and there was an equal number of phonemically regular and irregular words. Four sets of 48 words (24 regular, 24 irregular) were chosen for each student. Sets were matched on word length and word configuration. Eight training lists of six words (three regular, three irregular) were then created from each set. Lists were approximately equal in word length, configuration, and difficulty (an equal percentage of the normative sample spelled the words correctly).

General Procedure

Each word set was randomly assigned to an experimental condition. Children were taught individually by either me or one of three graduate students who received training that included reading lesson scripts, familiarization with materials, demonstration, and role playing. Four experimental sessions per child were designated at random to be tape recorded and viewed by two independent raters. The raters, who were familiar with the directions for each condition, categorized the sessions into conditions with 100% accuracy, thus reflecting the reliability of the interventions.

Children were seen twice a week after school during 35-minute individual sessions. Each week, 12 words were presented in two 6-word lists. One 6-word list was taught during the first session, and one during the second session. The entire program lasted 16 weeks from February through May.

Experimental Design

An alternating treatments design (Barlow & Hayes, 1979) was used to compare four remediation procedures. During the no-instruction control phase, children were pretested, given a 5-minute study period, and posttested. Eight 6-word lists (2 lists from each set) were presented during this phase. During the treatment phase, two cueing procedures (cues vs. no cues) were alternated weekly; the student-directed and teacher-directed com-

ponents were alternated biweekly. A total of sixteen 6-word lists (4 lists from each set) were presented during this phase. During the final phase, student-directed instruction with cues was used for all four sets of words (2 lists per set).

Experimental Conditions

No instruction control. Each child was pretested on six words. The teacher put a check mark next to each correct word and circled incorrect words. The child was then instructed to "study and practice the words" on his or her own for five minutes. After this study period, the words were posttested.

Teacher-directed (TD) without cues. Each child was pretested on six words. For correct words, the teacher said, "Good. This is how you spell _____" and put a check mark next to the word. For incorrect words, the teacher said, "This is how you spelled the word" and wrote the word in exact imitation of the child's misspelling. The teacher presented the correct word saying, "This is the right way to spell it" and wrote the word correctly next to her error imitation while pronouncing it. The child was then guided through a practice procedure for each word. For teacher-directed practice, the teacher (a) showed the word on a card and said it, (b) removed the card, (c) instructed the child to write it, and (d) checked the spelling. Practice continued until the child had spelled the word correctly two times. Finally, words were posttested.

Teacher-directed (TD) with cues. This was the same as the previously described condition with these additions: The teacher provided cues by circling in red the part of the word that was misspelled in both the error imitation and correct model saying, "This is the part of the word you need to remember. Look carefully at this part." Pointing to the circled part in the correct word, she said, "Here is how this part should be spelled," and, pointing to the circled part in the error imitation, she said, "not like this." The child was told to study the difference carefully. During practice, the teacher pointed to the difficult part in each word when she presented it and instructed the child to remember this.

Student-directed (SD) without cues. Students corrected their own pretests from individual word cards and put a check mark next to each correct word. For each incorrect word, they looked at the misspelling and copied it. They looked at the correct spelling, wrote it, and said the word. Students carried out the practice on their own by (a) looking at the word on a card and saying it, (b) turning the card over, (c) writing the word, and (d) checking it. This continued until students had written the word correctly two times. Finally, words were posttested.

Student-directed (SD) with cues. This was the same as the condition just described with these additions: Students circled in red the part of the word that was misspelled in both the error imitation and correct model saying, "This is the part of the word I need to remember." They pointed to the circled part in the imitation and studied the difference. During practice, students pointed to the difficult parts in words and circled them on every practice trial.

All students received each experimental condition. To enhance discrimination of the conditions, instructions were provided at the start of each session describing the study procedure to be used, and the steps of the procedure were written on a blackboard. Thus, during student-directed treatments, students could refer to the board when necessary to minimize teacher guidance. In addition, during the first training sessions in which a treatment was introduced (usually 40–45 minutes), the procedure was demonstrated and practiced on easy words. Students were required to carry out the student-directed procedures correctly three consecutive times prior to the actual treatment. Finally, for each condition, a retention test was administered 1 week following the treatment posttest.

Measurement and Reliability

Performance measures included: (a) number of correct words on pretests, (b) number of correct words on posttests, and (c) number of correct words on retention tests. One-third of each student's papers (pretests, posttests, and retention tests) were checked by two independent raters. In every case, interrater scoring agreement for accuracy or inac-

curacy of individual words was 100%. Raters also checked pretests to see that appropriate treatments had been used, e.g., that the student, when appropriate, had written incorrect and correct spellings, that incorrect parts of words had been circled appropriately. This check of papers confirmed the check made with tape recordings that experimental treatments were carried out accurately by teachers; raters categorized the pretest papers into teaching conditions with 100% accuracy.

RESULTS

Table 1 shows the students' mean pretest, posttest, and retention scores for each treatment condition. During the no-instruction control condition, students were able to spell, on the average, between 1.00 and 2.50 words correctly on the posttest. During the alternating treatments phase, accuracy improved under all four conditions. The data further reveal an advantage for student-directed over teacher-directed procedures during this phase. When students directed their own study, they averaged between 4.50 and 6.00 words correct on the posttest; when teachers directed the instruction, average accuracy scores were between 3.25 and 4.25. Within the context of teacher-directed instruction, adding visual and verbal cues was not differentially more effective than not using cues. However, within the context of student-directed instruction, cues were more effective than no cues. Because SD with cues resulted in the highest accuracy, it was implemented for all sessions during the final phase. This resulted in consistently high accuracy (between 5.00 and 6.00) for all word sets.

Retention results were similar to those obtained for spelling accuracy. The advantage of student-directed over teacher-directed instruction was even more pronounced for retention. When students directed their own study, the average retention was between 4.25 and 5.50 words; when teachers directed the study, retention averaged between 2.25 and 3.75. Visual and verbal cues, however, did not lead to differentially higher retention for either student- or teacher-directed instruction. Average

Table 1
Average Pretest, Posttest, and Retention Scores Across
Treatments

Student	Experimental phase					
	No in- struc- tion	Alternating treatments				Final SD cues
		TD no cues	TD cues	SD no cues	SD cues	
1						
Pretest	0.25	0.25	0.50	0.25	0.25	0.50
Posttest	2.50	4.00	4.25	5.50	6.00	6.00
Retention	1.25	3.50	3.75	4.75	5.50	5.00
2						
Pretest	0.38	0.25	0.00	0.25	0.50	0.25
Posttest	2.38	3.75	4.25	4.75	6.00	6.00
Retention	1.00	2.75	3.50	4.50	5.00	5.25
3						
Pretest	0.13	0.00	0.25	0.00	0.25	0.00
Posttest	1.63	4.00	4.00	4.50	5.50	5.75
Retention	0.50	3.00	3.25	4.25	4.75	4.63
4						
Pretest	0.13	0.25	0.00	0.00	0.25	0.13
Posttest	1.50	3.50	4.00	4.75	5.75	5.88
Retention	0.63	2.75	3.00	4.50	4.25	4.50
5						
Pretest	0.38	0.25	0.25	0.25	0.00	0.38
Posttest	2.13	3.75	3.75	4.75	6.00	5.63
Retention	0.50	3.00	2.25	4.25	5.00	5.13
6						
Pretest	0.25	0.25	0.25	0.00	0.25	0.25
Posttest	1.75	4.00	4.25	4.50	5.25	5.63
Retention	0.38	3.25	3.50	4.25	4.50	4.88
7						
Pretest	0.13	0.00	0.25	0.25	0.00	0.13
Posttest	2.13	3.75	4.00	5.25	6.00	5.75
Retention	1.00	2.50	2.75	4.75	5.00	4.38
8						
Pretest	0.00	0.00	0.00	0.00	0.00	0.00
Posttest	1.50	4.25	3.75	5.00	5.75	5.38
Retention	0.00	2.75	3.00	4.50	4.75	4.74
9						
Pretest	0.00	0.00	0.00	0.00	0.00	0.00
Posttest	1.00	3.25	3.25	4.50	5.25	5.00
Retention	0.00	2.25	2.25	4.25	4.50	4.25
Total						
Pretest	0.18	0.14	0.17	0.11	0.17	0.18
Posttest	1.83	3.81	3.94	4.83	5.72	5.67
Retention	0.58	2.86	3.03	4.45	4.81	4.75

retention during the final phase (SD with cues) was between 4.25 and 5.25 words.

DISCUSSION

The results demonstrated that a student-directed instructional procedure incorporating visual and verbal cues produced the highest posttest accuracy scores. This condition was superior to teacher-directed instruction (with and without cues) as well as student-directed instruction without cues. All four treatments were more effective than a no-instruction control that provided equivalent exposure time to words but offered no systematic study or practice procedure.

A distinction should be made between the student-determined aspect of the no-instruction control and the student-directed aspect of two treatments. In the latter, students were trained to implement a specific, fairly structured procedure on their own; in other words, instruction was teacher-determined, but at the same time, student-directed. In fact, a review of taped student-directed sessions revealed that teachers offered minimum or no guidance during these treatments.

The findings consistently demonstrated superiority of a student- versus teacher-directed approach in the training format. Although there was no systematic observation during instruction (one recommendation for future work), teachers reported that students were clearly more "active," "involved," and "on task" during student-directed conditions. Thus, one explanation for the effectiveness of student-directed instruction is that it secures learners' attention and encourages active participation, both of which facilitate the acquisition of spelling words.

Results concerning the effectiveness of cues during instruction suggest an interaction with student- or teacher-directed instruction. Cues were differentially more advantageous for spelling accuracy within the context of student-directed, but not teacher-directed instruction. Efforts to focus students' attention on misspelled parts of words during teacher-directed instruction may not have been

as successful due to lower involvement on the part of students when teachers guided their study and practice. The advantage attributed to using cues did not recur for 1-week retention. Although the differences between teacher- and student-directed instruction were maximized on retention measures, the advantage of cues over no cues within student-directed instruction was reduced. In general, cues seem to be an effective instructional aid to enhance acquisition (because they serve to focus students' attention and, with student-directed practice, to involve them more actively in learning), but cues are not as effective a memory aid to enhance retention of words over time.

One limitation of this study that should be circumvented in subsequent research concerns the social validity of the treatment procedures. Time constraints precluded the actual application of procedures in classrooms and the inclusion of information on students' performance during regular spelling assignments. Thus, the utility of the treatments as part of students' normal classroom instruction is inconclusive, given that treatments were implemented in a fairly restricted and individualized format. Nonetheless, the results of this study offer suggestions for developing potentially effective remedial spelling programs for poor spellers. First, students with spelling problems can benefit from a standard, systematic approach for studying spelling words on their own. Second, study strategies and practice procedures that are taught to students and subsequently carried out by them are more beneficial than procedures that are directed primarily by teachers. These instructional benefits for students are coupled with the obvious time-saving benefits for classroom teachers. Third, the

addition of instructional cues to a student-directed approach appears to facilitate even further the acquisition of spelling words.

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Received June 28, 1984

Final acceptance February 7, 1985