
TAKING CHARGE: ADOLESCENTS WITH LEARNING DISABILITIES ASSUME RESPONSIBILITY FOR THEIR OWN WRITING

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Abstract. Adolescents with learning disabilities (LD) often find expository writing among the most difficult academic skills to master. These students typically experience a great deal of failure with writing and become dependent upon others — mainly the teacher — for ideas and “quality control.” Such dependence on external sources hinders the development of higher-level cognitive skills required of effective writers. This study examined how a powerful writing strategy, Cognitive Strategy Instruction in Writing (CSIW), helped enable a group of seventh-graders with LD to take over responsibility for their own writing performance and to scaffold one another’s writing development. Extensive teacher modeling and scaffolding, collaboration throughout the writing process, and a set of structuring think-sheets enabled these students to move beyond the “learned helplessness” so common among adolescents with learning disabilities; they came to see themselves as genuine writers and to employ the writing process as a tool for effective written expression.

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Expository writing represents one of the most daunting of all the academic tasks demanded of students with learning disabilities (LD) (Englert, 1990b). The complexities of written expression and the visible nature of written products make writing a tangible threat to children with language-processing problems. By junior high or middle school, many adolescents with LD have developed a special aversion to writing, which is compounded by the more complex writing tasks and greater independence demanded of students at the secondary level.

Increasingly, students with learning disabilities are receiving instruction in general education classes and are expected to perform writing tasks accordingly.

Many of these students find it very difficult to generate a personal vision of effective writing or to see themselves as genuine writers. Consequently, they often become dependent upon external sources — mainly the teacher — for topics, ideas, and “quality control.” The complexity of secondary-level writing tasks and the lifelong need of adults to compose coherent written text make this an important area of investigation for researchers in special education.

Expository writing presents both challenges and opportunities to students with learning disabilities and their teachers. Learning to write effectively — and teaching students to do so — enables students and teachers to develop learning and teaching approaches that extend

beyond writing to other academic domains. Helping students master this complex skill requires a systematic approach that draws from multiple theories of learning. The current study examined one such approach from both a theoretical and pedagogical perspective in an attempt to articulate critical connections between theory and practice. This article will explore the findings from a one-year case study and provide examples of the teacher-student and student-student interactions that occurred during a year of collaborative writing instruction.

COLLABORATIVE WRITING

By engaging four seventh-grade students in a year-long collaborative writing project, the hope was to generate a broader understanding of how adolescents with LD perceive themselves as writers and how their perceptions develop alongside their writing skills. One indication of their emerging expertise would be the extent to which they could take over responsibility for their own writing development, as well as scaffold the writing of their peers. Central to the study, therefore, was the dialogue that emerged as students worked collaboratively on expository writing tasks.

Collaboration offers novice writers a venue in which to develop deeper understandings of the writing process and how to implement it (Condon & Clyde, 1996). Although this approach takes a great deal more time and energy than writing individually (Straw, Atkinson, Baardman, & Sadowy, 1996), the results are well worth the effort. That is, when authors collaborate, their composing strategies become explicit, which leads to heightened scrutiny and development of the composing process (Condon & Clyde, 1996). Ultimately, collaborative dialogue becomes internalized and integrated into the writer's thought processes.

As a study incorporating collaborative writing, this investigation has elements in common with the work of Colette Daiute (Daiute, 1986; Daiute & Dalton, 1993) and Helen Dale (1994, 1996, 1997). In the earlier study of collaborative writing among fourth-graders, Daiute found that co-authors were able to learn about elements of the writing process from one another. Daiute also gained insights into the thinking process of inexperienced writers in a way not possible through other means of observation or analysis. Daiute recommended continued exploration of collaborative writing, suggesting that the technique could yield more knowledge about the complexities of collaboration and its potential as an effective writing intervention.

Daiute and Dalton (1993) examined the impact of collaboration on the story writing of low-achieving third-graders. They found that novice writers can serve as masters by contributing their individual strengths to the collaborations, with the role of expert

shifting throughout the collaborations, and by taking on teacher-like modeling roles. The children engaged in highly interactive and responsive composing, instruction, and evaluation.

Dale (1994) studied the discourse of three ninth-grade co-authoring triads — a model group, a typical group, and a problem group — in an effort to discern the factors that affected the relative success of their collaborations on three essays. She found that the model group took more conversational turns, engaging in active expression of their ideas, elaboration of their inner speech, and modification of their thinking.

Later Dale (1996, 1997) found that students writing collaboratively spent far more energy on critical planning and on revising than individual writers typically do. Moreover, for co-authors planning and revising became recursive processes because "ideas are evaluated as they are spoken and before they are written down ... And because students have an immediate audience for writing in process, they learn to take audience into consideration" (Dale, 1996, p. 72). Dale observed that co-authoring "engages students in the construction of meaning in a process which resembles the 'energetic' and 'constructive' composing style of more expert writers" (Dale, 1996, p. 69).

Dale (1994) noted that increasing interest in collaborative writing has not yielded many investigations of how these groups function. Like Daiute, she noted the need for further research in co-authoring interactions, particularly at the secondary level.

The current study sought to extend the collaborative writing research into the special education resource room. Among its primary aims was an examination of the extent to which the resource room can become a writing community in which students with writing disabilities accept responsibility for their own and each other's writing development.

THEORETICAL FRAMEWORKS

A complex endeavor such as expository writing demands a multidimensional approach that draws from diverse theoretical perspectives. This study centered on a writing strategy whose theoretical framework emphasizes the sociocultural theory of social constructivism, while also drawing widely from cognitive and behavioral perspectives.

The behavioral approach, with its emphasis on direct instruction, is effective for organizing, delivering, and evaluating instruction for students with learning disabilities, but emerging perspectives supplement direct instruction with cognitive approaches that emphasize processing and generalization (Lerner, 2000; Mercer, 1997). This perspective would suggest that the writing process is best taught directly as a series of recursive

steps, with support, reinforcement, and corrective feedback provided as needed. Moreover, cognitive theory suggests that the instructional methodology emphasize internalizing the thought processes employed by effective writers. Such integration of behavioral and cognitive approaches embodies the essential focus of cognitive strategy instruction.

Cognitive strategy instruction integrates elements of behavioral, cognitive, and social learning theories. Specifically, it emphasizes changing cognitive behavior through the teaching of strategy steps, cognitive modeling, guided instruction, and self-regulation (Bos & Vaughn, 2002). The current study examined the outcomes of a cognitive writing strategy that includes the sociocultural dimension embodied in social constructivist theory. Central to the study, therefore, is the interactive dialogue that occurs during collaborative writing.

Social constructivism is predicated on the assumption that people come to know and understand the world through social interaction. Learners construct meaning through the cyclical integration of prior knowledge with new socially mediated knowledge. Vygotsky (1978) posited that language and thought are interdependent. The overt language of social interaction (especially speech) "goes underground" (Vygotsky, 1986, p. 33) and turns into the inner speech that becomes thought.

Constructivist dialogue seeks to transfer responsibility for learning from the "mentor" to the "apprentice." In this view, students do not rely on the teacher as the exclusive seat of learning. Rather, they must learn to accept themselves and their peers as legitimate sources of knowledge. Teachers in turn must see themselves as mentors rather than "imparters of knowledge." Cazden (1988) noted that the teacher takes on the role of a model, serving as "an important link between interactions with the expert (teacher) and interactions among peers" (p. 148). The teacher's challenge is to use students' existing knowledge as the foundation upon which to build new understandings of higher-level tasks such as expository writing.

Classroom dialogue involving students and teacher often finds the teacher engaged in scaffolding, wherein the teacher temporarily controls elements of the task that are beyond the capacity of the student. Ultimately, this initial support may enable the student to complete the task more competently than would have been possible without assistance (Gee, 1992; Palincsar & Brown, 1984; Wood, Bruner, & Ross, 1976). Scaffolding allows students "to participate in the mature task from the very beginning" (Cazden, 1988, p. 107), while the teacher gives over more and more responsibility to the learner (Freedman, 1993, 1994; Palincsar & Brown, 1984).

By engaging students collaboratively with writing partners throughout the writing process — not simply during the revising stage — this study sought to extend the research on collaborative writing in special education. Two research questions involved examining the nature of the teacher's modeling and scaffolding during writing instruction. A related question investigated the extent to which students with learning disabilities could follow the teacher's lead by taking over responsibility for their own writing achievement and scaffolding one another's writing performance.

COGNITIVE STRATEGY INSTRUCTION IN WRITING

Cognitive Strategy Instruction in Writing (CSIW) provided the instructional model within which the collaborative structure of this study was built. CSIW has helped generate dramatic improvement in written expression skills among both elementary and secondary students with learning disabilities (see, for example, Englert, Raphael, Anderson, Anthony, & Stevens, 1991; Englert, Raphael, & Anderson, 1992; Hallenbeck, 1996, 1997).

CSIW is a discursive process that, as described by Englert (1992), embodies three guiding principles for expository composition. First, effective writing is a holistic enterprise in which writers engage in the processes and strategies related to planning, organizing, writing, editing, and revising. Second, immature writers benefit from writing apprenticeships in which the teacher employs "think-alouds" (Duffy & Roehler, 1987; Englert, 1990b; Englert & Raphael, 1989; Englert et al., 1991; Hunter, 1989) to model the thinking and inner talk that underlie effective writing. The teacher scaffolds students' use of specific writing strategies through ongoing teacher-student and student-student dialogues. Third, students learn to appreciate the social nature of the writing experience by writing for authentic purposes and real audiences and by collaborating with each other throughout the writing process.

Student thinking is supported by a series of think-sheets that provide visible structure at each stage of the expository writing process. Students in this study used the think-sheets for preparing the two papers they wrote during CSIW instruction, but not for their pretest or posttest papers. The think-sheets were seen as a temporary "crutch" to help facilitate an improved understanding of the writing process. The objective was for students to internalize the writing process and ultimately to write effective essays without the use of external prompts.

METHOD

Research Setting

The setting was a rural consolidated school in the upper midwest. Situated 25 miles from a medium-sized

metropolitan city, the school district serves students from four small towns and the surrounding farms.

The resource room model includes options for direct instruction in basic academic skill areas (i.e., reading, math, and written language) and supplementary assistance in all academic areas. Secondary students may receive as much as two class periods of direct instruction and one study hall per day, or as little as one study hall per day. Another locally housed program option, the self-contained class with integration (SCI), offers special education assistance to students who require more than two to three periods per day.

Participants

Participants included four seventh-grade students (two boys and two girls). The students were 12 or 13 years of age, and all were white. All participants met state and local eligibility criteria for learning disabilities, and all experienced great difficulty with expository writing. Kris and Mike achieved relatively high Broad Written Language standard scores on the Woodcock-Johnson Psychoeducational Battery (Woodcock & Johnson, 1989) compared to their scores on the Wechsler Intelligence Scale for Children-Revised (Wechsler, 1974) (see Table 1). The Woodcock-Johnson, however, did not measure essay composition skills. Their essays, like those of Andy and Cindy, were very short and weak in structural elements.

All students participating in the study were scheduled into the resource room during the same class period, and were the only students assigned during that period. Mike, Cindy, and Andy (pseudonyms) were assigned for direct instruction in English. Kris (pseudonym) attended regular English class, but the upper-elementary resource room teacher felt that her writing skills were weak and that she would benefit from CSIW instruction. Mike,

Cindy, and Kris were enrolled in the resource program. Andy was enrolled in the SCI program; he was one of several students "shared" by the SCI and resource room teachers in order to maximize individualization in their Individual Educational Plans (IEPs).

Instruction

Instruction included mini-units on paragraph-level descriptive and narrative writing in September and October, as well as mini-units on writing introductions and conclusions that were infused while the students wrote their first extended essays. In mid-November the teacher began modeling the CSIW essay text structure by using the entire process to write a paper of his own, emphasizing through think-alouds the thought processes of an experienced writer. He chose a topic with which the students were familiar: a concession stand fundraising project that involved students in the resource and SCI programs.

After the teacher had modeled each step in the writing process (i.e., planning, organizing, writing, editing, and revising), the students completed the same steps with papers of their own on topics of their choice. The teacher emphasized that the first paper would be written very slowly and carefully and that the students would be expected to write their second paper — a research paper — with minimal assistance from the teacher. Students were asked to write pretest papers in September and posttest papers in May in order to gauge their writing progress.

In the early part of the school year, writing instruction occupied part or all of two to three class periods per week. Other instructional time was devoted primarily to reading and study skills. However, due to lengthy delays that impeded the progress of the research project, writing

Table 1
IQ and Achievement Test Scores of Student Participants

	Wechsler Intelligence Scale for Children			Woodcock-Johnson Psychoeducational Battery (Broad Written Language)	
	Verbal IQ	Performance IQ	Full Scale IQ	Grade-Level Score	Standard Score
Andy	96	111	102	2.9	70
Kris	86	91	87	6.8	96
Cindy	105	123	114	5.2	88
Mike	94	87	89	4.5	83

Table 2
Four Key Points in Time for Close Analysis

Date(s)	Event(s)
January 9	Teacher modeling of color-coding brainstormed ideas into categories
January 30-February 1	Student brainstorming of descriptive/narrative paragraphs, organizing main sections of first paper
March 28-29	Collaborative revision of first paper
May 7	Writing first draft of second paper (research paper)

instruction occupied proportionately more class time in the latter part of the school year.

Student Collaborations

As mentioned, the students collaboratively wrote two papers during the course of the year. They were asked to form two partnership pairs; each student would be the primary author of one paper and the secondary author of another. The primary author took the lead in topic selection and had final say in all matters, but the secondary author was expected to contribute extensively at all stages of the writing process. Much of the data collected during the year centered on the interactions that emerged during those collaborations. Kris and Cindy chose to work together, and Mike and Andy worked together.

The first paper was an essay on a topic with which the student was very familiar; its purpose was to inform a reader less familiar with the topic. Cindy wrote about her family's horses, Andy wrote about bull riding, Kris wrote about a recent family trip to California, and Mike wrote about steer roping.

The second paper added a research dimension to the writing process: students were to choose a topic in which they were interested and about which they wanted to learn more. Cindy wrote about the figure skater Scott Hamilton, and Kris wrote about Olympic wrestling. Andy and Mike chose to co-author a single paper on Australian animals. The students used the Internet, reference CDs, and the CSIW strategy to prepare their papers. Incorporating research added an investigatorial dimension to the students' work and served to reinforce the natural integration of reading and writing. Work on the research papers continued literally until the very end of the school year — May 29.

DATA COLLECTION AND ANALYSIS

Pretest and Posttest Papers

Pretest papers were written in September, and posttest papers in May. Both sets of papers were scored using rubrics developed by Englert and her colleagues (Englert, 1988, 1990a). Papers received ratings for the following key elements of essay structure: (a) a holistic rating of overall quality; (b) a primary-trait score representing a total of scores for introduction, definition of categories, development within categories (depth), development across categories (breadth), use of key words, and organization; (c) number of words; and (d) a reader sensitivity score representing a total of scores for drawing in the reader in the introduction, clearly expressing the purpose of the paper, targeting the audience, and establishing an author voice.

Interrater reliability between two raters was calculated on 25% of the papers. Reliability was 100% for pretest primary-trait score, 80% for pretest reader sensitivity score, 93.75% for posttest primary-trait score, and 90% for posttest reader sensitivity score.

Classroom Conversations

The teacher tape-recorded all instructional sequences and writing-related student conversations during the school year and documented his own observations and reflections in fieldnotes. Close analysis of instructional sequences and student conversations centered on four key points in time during the school year (see Table 2); these points were chosen because of their important junctures in the writing process. To avoid sampling bias, the points were chosen prior to analysis of the corresponding transcripts. Data from the four key points in time were triangulated with data collected throughout the school year. Data reported in this article were drawn from both the four key points in time and other class sessions.

Transcripts of instructional sessions and student collaborations were coded, and numerical totals of codes were tabulated. To ensure that the analysis would be driven by the data and would be as inductive as possible, individual student and teacher comments were coded first. Conversations formed the unit of analysis, but unitizing occurred at the individual comment level. Five iterations of the coding scheme emerged from transcripts of the four key points in time and other transcripts from throughout the school year.

Categories emerging from interactions between participants took the form of analytical assertions supported by the data. Eight assertions emerged from the coded transcripts, and subsequently became the focus of the ensuing analysis. Three of the assertions are of particular interest to this article: (a) the teacher's modeling emphasized anticipating future student difficulties, thinking aloud, framing instruction, involving students, demonstrating, and reviewing; (b) the teacher's scaffolding comprised a balance of comments and questions that emphasized text structure and reader sensitivity; and (c) students accepted transfer of responsibility for their writing performance and demonstrated the ability to scaffold one another's writing development.

FINDINGS

Pretests/Posttests

Pretest and posttest analysis revealed impressive growth in three of the students' expository writing performance (see Table 3). Cindy, Mike, and Kris achieved higher holistic ratings, primary-trait totals, and reader sensitivity totals. Some of the increases, such as Cindy and Mike's primary-trait scores and Kris' reader sensi-

tivity score, were especially dramatic. These three students increased their total words by 138-193%.

Andy's posttest results stand in stark contrast to those of the other three students. The posttest papers were written at the very end of the school year, and by that time Andy, whose behavior was characterized by impulsivity and distractibility, had simply run out of gas. It is possible that the lack of evidence of improvement in his posttest papers indicates that he had not mastered the writing process as effectively as his three peers. However, the papers Andy wrote during the school year and, as we shall see shortly, his comments throughout the process indicated considerable growth in his understanding and construction of effective prose.

Classroom Conversations: The Teacher

Insights into the results of the pretest/posttest analysis can be drawn from the primary focus of this article — the capacity of the students to accept responsibility for their own writing achievement. Transcript analysis suggested that the students had internalized the thinking processes modeled by the teacher and were able to incorporate these processes not only in their own writing, but also in scaffolding the writing of their partners.

Modeling

The teacher's modeling of the writing process emphasized anticipating future student difficulties, thinking aloud, framing instruction, involving students, demonstrating, and reviewing. The students almost immediately became involved in his modeling of the writing process, and employed the thought process modeled by the teacher in their own writing and in their collaborations.

Table 3
Pretest and Posttest Results

	Holistic		Prim.-Trait Total		Read. Sens. Total		Words	
	pre-	post-	pre-	post-	pre-	post-	pre-	post-
	(possible: 3)		(possible: 18)		(possible: 12)			
Cindy	1	3	7	16	2	5	97	284
Mike	1	3	8	17	5	10	152	396
Andy	2	1*	13	9*	5	0*	144	53*
Kris	2	3	13	15	3	9	119	283

*Unrepresentative due to end-of-year motivational factors.

Table 4

Teacher Modeling Across Four Key Points in Time (Key Code Tabulations)

	MODELING COLOR-CODING	ORGANIZING FIRST PAPER		REVISING FIRST PAPER		WRITING SECOND PAPER	
		Kris/ Cindy	Mike/ Andy	Kris/ Cindy	Mike/ Andy	Kris/ Cindy	Mike/ Andy
Modeling	19	1	0	0	0	1	0
Anticipate Writing Difficulty	10	0	0	0	0	0	0
Anticipate Procedural Difficulty	9	0	0	0	0	0	0
Thinking Aloud	12	0	0	0	0	1	0
Framing Lesson or Discussion	2	0	0	0	0	0	0

Only one of the four key points in time (the January 9 session) focused specifically on teacher modeling. As such, the various techniques employed in modeling occurred almost exclusively during this session, as reflected in Table 4.

For his demonstration paper the teacher had purposefully chosen a topic with which the students were familiar: a concession stand fundraising project in which all the students were involved. Prior to January 9 the teacher had modeled the brainstorming of ideas related to that topic. Their familiarity with the topic enabled the students to contribute significantly to the teacher's brainstorm.

During the January 9 class session the teacher modeled the color-coding of his brainstormed ideas. Color-coding, the first step in organizing the paper, involved using felt-tip markers to place dots of the same color in front of all ideas on the brainstorm list that "seemed to belong together."

The teacher relied heavily on think-alouds to make his thinking visible to the students. For example, early in the lesson he located the first idea in his brainstorm, marked it with a blue dot, and employed think-alouds in his search through the rest of the list for related ideas. NOTE: In the following excerpt and those that follow, (a) ideas included within quotes represent entries read directly off written work, and (b) the ellipsis (...) indicates time passing between speakers' comments:

T: I'm lookin' for things that have to do with the kinds of students involved (in the concession stand fundraising project). O.K., "officers." I, I think I'll make that a blue dot. That has to do with the students. Uh, "monster cookies, popcorn balls, puppy

chow," no, "juice, fruit, popcorn." "How we involve students in events," no, that's something that's for the teachers. Well, that might go; I'll go blue with that. "How we involve the students in the events," yeah. "Field trips," "charitable donations," "fun," "list places that we've gone," no, "approval, benefits and skills," no, "money," "advertising, posters, signs, P.A. announcements," "purpose of the project," "nachos," nothin' about students here. "Working groups," that has to do with students ...

Table 5 reflects the key code tabulations from the January 9 session. The teacher made it a point periodically to check for understanding as he proceeded with the modeling. Since so much of his instructional focus rested on the modeling, he wanted to ensure that the students were following him. Since the students were familiar with the topic, he regularly solicited their participation. Many of the students' comments and questions resulted from the teacher's comprehension checks or anticipation of potential future difficulties, as in the following excerpt. NOTE: In the following excerpt and those that follow, the left-hand bracket ([) indicates overlapping talk:

T: ... Uh, "we decided at the beginning" — think I should put that in there? — "to make it junior high events only"? O.K. Now, one thing, I may change some of these later. I may decide later that one of these ideas should go in a different group, but right for now, ...

Kris:
what do you do?

[Then

T: just to get me started, this is the way I'm gonna

kinda work it.

[

Andy:

Then you're just workin' with the other color.

After the teacher asked the students if he was putting an idea in the proper group and mentioned that he might make adjustments later, Kris asked for clarification ("Then what do you do?"); Andy then stepped in with a response ("Then you're workin' with another color."). This is one of many transcript excerpts that suggest that Andy, despite posttest writing scores to the contrary, had successfully internalized the thought processes modeled by the teacher.

Table 5 indicates the breadth and variety of students' contributions during the teacher's modeling. For example, on six occasions students offered elaborations of someone else's comment or idea. In the following excerpt, Andy indicates that he thinks a specific detail (Ms. Jackson's early participation in the concession stand project) should be included in the group of ideas dealing with the students. After the teacher explains why he disagrees, Andy elaborates on the teacher's thinking by proposing a category in which the detail would belong:

Andy: Ms. Jackson'd be in there.

T: Yeah, she was involved in it at the beginning. It says ...

Andy:

but you could put her in there.

T: Not with the students. She'll go in a different group.

Andy: Oh, like "teachers" and stuff?

T:

Yeah. Exactly ...

Andy was able to correct his own misconception and then to suggest a category title into which "Ms. Jackson" would belong.

As the class period came to a close, Kris spontaneously launched into a think-aloud of her own, as she began to apply the teacher's modeling to the brainstorm of her own paper on her family's recent trip to California. She quickly received support from Andy:

Kris: Most of mine'll be at its own. Well, no. These two will go together.

T: Yeah. Try not to leave too many things all by themselves.

Andy: Like, put (inaudible) and put them two together with the (inaudible).

Kris: Yeah. These two could go together 'cause they're on the bridge.

T: O.K.

Kris: Oh, before the bridge (inaudible).

T: Try not to leave too many things all by themselves. Try to create groups. That's the idea.

Kris: 'Cause, like, "homeless" and "bus" go together 'cause there's homeless people on the bus.

Even though the teacher had not yet demonstrated the consolidation of small groups of ideas into larger

Table 5

January 9: Modeling Color-Coding (Key Code Tabulations)

		Teacher			
Writing Support	5	Anticipate Writing		Equity	15
Check Understanding	14	Difficulty	10	Instruction	5
Directing Attention	9	Thinking Aloud	12	Respond to Student	10
Modeling	19	Review	5	Confirmation	4
		Students			
Seek Clarification	10	Equity	10	Confirmation	10
Offer Clarification	2	Elaborate other	6	Complete Thought	2
Support Writing	2	In-Context		Out-of-Context	
		Interruption	4	Interruption	2

groupings, Andy and Kris appeared already to have applied his earlier comments to Kris' brainstorm. Andy's supportive comments about Kris' "bridge" ideas ("Like, put ... and put them two together ...") seemed to help her to recognize the connection between "homeless" and "bus." At this very early stage of the investigation, the students were already demonstrating the ability to collaborate effectively and to scaffold one another's efforts.

Teacher Scaffolding

The teacher's scaffolding was designed to guide a student who was having difficulty to an entry point that would allow the writing process to move forward as seamlessly as possible. This support would be especially important if the students were to take over responsibility for the thought processes required for effective writing. Scaffolding generally dealt with issues involving expository text structure (e.g., organizing categories, adequately developing categories) or reader sensitivity (e.g., making writing interesting, providing adequate explanations).

Table 6 illustrates the various ways in which teacher scaffolding occurred during the four key points in time. In addition to codes subsumed by the analytical assertion (i.e., scaffolding comments, scaffolding questions, structural issues), the table includes codes representing other utterances that played a role in guiding the students' thinking or in responding to perceived student needs.

During the January 9 modeling session, which focused on initial instruction, teacher scaffolding primarily took the form of anticipating future difficulties. In subsequent class sessions, however, the teacher's scaffolding was divided evenly between questions and comments shared with the students. He preferred to use scaffolding *questions* whenever possible because they require the student to do most of the cognitive work, hopefully engendering a greater feeling of ownership. Sometimes, however, time constraints or the level of a student's difficulty warranted the more direct approach of a scaffolding *comment*.

During the January 30-February 1 class sessions, the students worked on organizing their first papers and incorporating description and narration to build interest. The teacher's scaffolding involved supporting the writing partners as they brainstormed and organized their papers. Twenty-seven instances of teacher scaffolding emerged from the teacher's exchanges with Kris and Cindy. Sixteen of them involved scaffolding comments and 11 involved scaffolding questions. In large part, the teacher was helping Kris to resolve difficulties that were hindering the progress of her work. Teacher scaffolding in the following excerpt, for example, relies on both questions (identified by "T(Q)") and comments (identified by "T(C)"), to help Kris recognize

possible ways of handling single-item categories about her family's trip to California:

T: You know, when you have groups, you might see if there's a way to

Cindy: Group 'em all together?

Kris: How?

T(Q): Well, what are your really small groups? What's one?

Kris: "Alcatraz," "trolley car," there's, there's, ummm, "motel."

T(Q): O.K., do they, do they all have anything in common?

Kris: I suppose. I don't know.

T(Q): Are they, like, are they, are they all in San Francisco? No?

Kris: No.

T: O.K., that won't work. We can't use that then.

Kris: 'Cause, like, those are in San-, Sacramento, that's in Eureka.

T(C): No, I mean the small groups. The, the

Kris: That. Well, see

T: This and this.

Kris: Well, there's two motels. One's in Sacramento and one's in San Francisco. That's in San Francisco, and that, San Francisco, and that's just all the weather, I guess.

T(Q): O.K. So, how many groups do you have there?

Kris: One, two, three ...

T(C): Six or seven? Well, what you might want to be ...

Kris: [Yeah.

T: thinking about is, for example, Alcatraz.

Kris: That was by Fisherman's Wharf

T: [Can you, O.K.

Kris: Maybe put that there?

T(Q): Yeah, maybe, or can you, do you have enough to say about Alcatraz that it could be a whole section of your paper, or would it be better to include it in with something else? That's what you have to ask yourself.

A key factor in assuming responsibility for their learning was the students' capacity to see themselves as legitimate sources of knowledge. As such, the teacher occasionally acknowledged that student authors had knowledge of their topic that he (the teacher) did not:

T: Try not to leave too many things all by themselves. Try to create groups. That's the idea.

Kris: 'Cause, like, "homeless" and "bus" go together 'cause there's homeless people on the bus.

T: You're the one that has to decide that. You know the background

[

Kris:

I think so.

T: and I don't ...

Acknowledging the students' expertise in their topics — and the teacher's lack of same — enabled the teacher to take on the role of a naive reader. This facilitated his scaffolding by making the effort more collaborative and less teacher-directed.

The May 7 transcript, in which the students worked on writing the first drafts of their research papers, reveals both further evidence of teacher scaffolding and the extent to which the students had learned to grapple with complex writing issues. In order to help save time at the end of the school year, the teacher spent

much of the class period typing for Mike and Andy as they dictated the first draft of their paper on Australian animals. In the following excerpt, the boys are having difficulty deciding how to divide a large number of ideas about koalas into paragraphs. NOTE: In the following excerpt and those that follow, the inverted ellipsis indicates time passing during the class period:

T: Now, you guys have a lot of material here about koalas.

[

Mike: Oh.

T: Is that too much for one paragraph?

Andy: Yeah.

Mike: Well, I was gonna say somethin' about their

[

Andy: Now, let's do about their body weight and stuff.

Table 6
Teacher Scaffolding (Key Code Tabulations)

	MODELING COLOR-CODING	ORGANIZING FIRST PAPER		REVISING FIRST PAPER		WRITING SECOND PAPER	
		Kris/ Cindy	Mike/ Andy	Kris/ Cindy	Mike/ Andy	Kris/ Cindy	Mike/ Andy
Scaffolding Question	0	11	17	0	0	1	11
Scaffolding Comment	0	16	19	0	0	1	14
Direct Thinking to Structural Issue	0	0	1	0	0	0	12
Direct Thinking to an Idea	0	0	0	0	0	0	3
Direct Thinking to a Resource	0	2	8	3	6	2	1
Direct Attention	9	2	5	0	0	3	6
Anticipate Writing Difficulty	10	0	0	0	0	0	0
Anticipate Procedural Difficulty	9	0	0	0	0	0	0
Instruction	5	0	0	2	1	0	5
Check on Things	2	5	5	0	0	1	3
Seek Clarification	1	2	2	0	1	0	15
Offer Clarification	2	0	0	0	0	0	1
Offer Help with an Idea	0	0	0	0	0	0	2
Offer Procedural Help	0	1	0	0	1	1	2
Elaborate	0	0	1	0	2	1	0
Question an Idea	0	0	0	0	0	1	0
Review	5	2	11	0	0	0	1
Repeat an Idea	0	2	1	0	0	0	0
Suggesting	0	0	2	0	0	1	0
Respond to Expressed Student Need/Question	10	3	8	3	9	3	10
Frame Lesson/Discussion	2	0	0	0	0	0	0

T: ... is that some stuff about behavior?
Mike: No, it's about how to get the food.
T: Oh, O.K. Well,
Mike: and their, like,
Andy: Yeah, behavior. They climb trees.
[
Mike: (inaudible) to get the food.
T: Do you have enough about behavior for one paragraph?
Mike: No.
Andy: No. Then, we could put
Mike: Well, would behavior, ...
[
Andy: ... their behavior, ...
Mike: be about their young and stuff?
Andy: their behavior
T: Could be.
Andy: and their young?
T: Yeah, yeah, the, the way they rear their young. That would be behavior. I'm just thinking, you've got too much there for one paragraph.
Mike: Well, could we put,
T: You've got a lot of stuff.
Mike: "They, they are vegetarians" (brief pause) in that same thing?
T: No, yeah, where would you want that?
[
Mike: 'Cause then, 'cause then we wouldn't have to put any more in that. We could start a new paragraph.

This excerpt reveals a good deal of high-level collaborative thinking. The teacher's scaffolding questions ("Is that too much for one paragraph?"; "... is that some stuff about behavior?"; "Do you have enough about behavior for one paragraph?"; "... where would you want that?") and scaffolding comments ("Now, you guys have a lot of material here about koalas"; "I'm just thinking, you've got too much there for one paragraph"; "You've got a lot of stuff") appeared to help Andy and Mike to identify which material belonged together. However, the teacher did not make this organizational decision; Mike did it himself, and Andy concurred.

Summary

Both modeling and scaffolding afforded the teacher important opportunities to influence the students' thinking while enabling them to retain primary responsibility for their own learning. Modeling emphasized articulating the thinking that undergirds effective

writing and drawing students into that thought process. During modeling the teacher's scaffolding emphasized anticipating future difficulties that the students might encounter. When the focus shifted to student writing, the teacher's scaffolding included both questions and comments designed to help keep the students' writing efforts moving along smoothly.

Classroom Conversations: The Students

To become independent writers and to generalize their learning to new settings, students must ultimately take responsibility for their own learning. This study sought to examine the extent to which the students internalized the thinking and the writing techniques the teacher had modeled, as well as their ability to scaffold one another's writing development.

Table 7 summarizes the key codes that inform the issue of transfer of responsibility. As noted earlier, the teacher relied heavily on thinking aloud during his modeling. The code tabulations indicate that thinking aloud played a prominent role in the students' writing work through the revision stage of their first papers. By the time they started writing their second paper, however, thinking aloud had become less evident. Constructivist learning theory would suggest that previously overt thinking had become internalized as part of the students' covert thought processes.

Seeking and offering clarification, seeking ideas and evaluations from others, and admitting difficulty serve as additional indicators of the students' efforts to take command of their own learning. These codes appeared less frequently and less consistently, but they did play an important role in specific situations and for specific pairs of students. It is noteworthy that students occasionally sought evaluation of their work from a peer, but never from the teacher. This can be attributed, at least in part, to the teacher's frequent reminders that the students were expected to rely as much as possible on each other for assistance and support.

The potentially disconfirming codes further illuminate the interactions that evolved during the school year. For example, Kris and Cindy worked very independently throughout the year and required few reminders to stay on task; their interruptions were generally brief and seldom interfered substantially with their work. Andy and Mike, on the other hand, had a more difficult time staying on task. While the teacher found it necessary to spend more time with them than with Cindy and Kris, they generally were able to get back to work and to accomplish the tasks at hand once they had been redirected. The relative scarcity of teacher comments about time and behavior management indicates that distractions and interruptions rarely reached crisis levels.

Prewriting and Composing

Kris and Cindy. The students appeared to quickly internalize the process of both seeking and offering assistance. In the following excerpt during the organizing stage of the first paper, Cindy is instrumental in developing a name for one of Kris' categories:

Kris: Which is my t-, my, my topic? Oh, I know what I'll call it. Never mind.

Cindy: (sighs.) Oh, boy.

Kris: What is "oh, boy?" Can you help me come up with a name for, um, Fisherman's Wharf, the wax museum, a boat museum,

Cindy: "Museums?"

Kris: um, sourdough bread, sea lions,

Cindy: Mmm, "sights?"

Kris: O.K., hey! Good idea, jeez! ...

Vivid examples of both Cindy's contributions to Kris' writing and Kris' exuberant reaction occurred while the girls worked on descriptive paragraphs for their first papers. In the following excerpt, they co-

construct additional description of a wax museum for Kris' paper:

Kris: Um, "strange"? "Looks like real human flesh."

Cindy: "The people look real." "The statues look real." How does that sound?

Kris: (inaudible.)

Cindy: "The statues in the museum look like real people."

Kris: Your flesh is just sk-, skin, isn't it? "Flesh."

Cindy: (inaudible.)

Kris: Oh! "The s-"

Cindy: "The statues of the (inaudible) look like real people." It doesn't ... (inaudible).

Kris: Well, "The wax museum comes to life." That's what I was k-, it kind of ...

[

Cindy: (inaudible.)

Kris: They're kind of the same, I think. But, uh,

Cindy: "The wax museum"

[

Kris: "The wax, the wax on the"

Cindy: "Statues"

Table 7

Transfer of Responsibility (Key Code Tabulations)

	ORGANIZING FIRST PAPER		REVISING FIRST PAPER		WRITING SECOND PAPER	
	Kris/ Cindy	Mike/ Andy	Kris/ Cindy	Mike/ Andy	Kris/ Cindy	Mike/ Andy
Thinking Aloud	20	15	11	3	0	0
Admit Difficulty with Structure	7	0	0	0	0	0
Taking/Giving Ownership of Idea	0	1	0	0	0	7
Seek Clarification	2	4	1	5	0	20
Offer Clarification	0	5	2	4	1	13
Seek Evaluation from Peer	4	0	3	1	3	0
Seek Evaluation from Teacher	0	0	0	0	0	0
Seek Idea from Peer	1	10	6	4	0	0
Offer Help with Idea	0	0	9	2	0	0
Question Own Idea	0	4	0	0	1	2
Question Other's Idea	2	5	0	1	0	0
Admit Difficulty with Own Idea	7	4	1	0	0	3
Admit Difficulty with Other's Idea	0	0	1	0	0	3
Admit Memory Difficulty	0	0	1	0	6	0
*In-Context Interruption	0	10	1	7	3	1
*Out-of-Context Interruption	6	18	1	3	4	3
*Teacher Comment - Time Management	2	5	1	2	0	1
*Teacher Comment - Behavior Management	0	3	0	3	0	1

*Potentially disconfirming.

Kris: "statues"

Cindy: "Looks like flesh"?

Kris: Yes. Yes! I ...

?: (inaudible.)

Cindy: You like that one?

Kris: I like that one.

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. .
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Kris: Woa! Am I, oh, jeez, I'm glad I asked you to help me!

Cindy's original suggestions ("The people look real"; "The statues in the museum look like real people") led to Kris' mention of flesh and her more abstract contribution: "The museum comes to life." Finally, together the girls constructed the final image, "The wax on the statues looks like flesh."

As we have seen, Cindy's scaffolding often took the form of leading Kris to improved wording. In the following excerpt, Cindy suggests an idea that leads Kris to a very descriptive image:

Kris: Wait, O.K., I have one. "The tomato trucks are really cool." Should I put a period and then put, "When they," yeah, yeah, yeah! Never mind.

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. .
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Kris: Wait, O.K. I'm gonna put, "When they go by,"

Cindy: "They drop tomatoes all over the road"?

Kris: "tomatoes will fly across the road." Yup, O.K.

Mike and Andy. Of the four students, Mike exhibited the most overt hostility for writing. Over time, however, he was able to overcome his resistance to writing; eventually he came to accept his own potential as a writer. In the following excerpt, Andy helps with the conclusion to Mike's paper on steer roping:

Andy: "You are ready to go roping now with your partner."

Mike: Could I put that?

Andy: (inaudible.)

Mike: What?

Andy: "I think you're ready to"

Mike: "Start roping"?

Andy: Yeah. "I think you are ready to start roping with your partner and buy my next book."

(Mike laughs.)

Andy: "You"

Mike: O.K., what?

Andy: "You are ready" (Typing begins in the background.)

Mike: I'm ready.

Andy: "You (typing sounds) are (typing sounds) ready (typing sounds) to (typing sounds) start (typing sounds) roping." (inaudible) space.

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Mike: (chuckles.) "(inaudible) buy my next book." No, I won't put that.

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Mike: I'm gonna put something else. I got something better. (Typing sounds follow.)

Mike's last comment above indicates that, despite Andy's obvious assistance in getting him started, he was not relying entirely on Andy's ideas. Moreover, Andy's help seems to have unleashed what Mike considered to be even better ideas. Mike's conclusion eventually read as follows:

Now if you want to start roping you should find a partner and you should go to roping class for practice and advice. If you're a city person or country person and you have no experience with roping or horses or nobody in your family has experience I would would (sic) not recommend this to you. I would not recommend this to you because you won't know much about horses and how to work with the horse to get the steer.

The CSIW framework, combined with teacher modeling and peer scaffolding, seemed to allow the students to redirect their energies from previously problematic structural issues to more creative thought processes. We have noted that Andy's posttest paper did not indicate the same level of improvement as that of the other three students. His first paper and his contributions to the second paper, however, indicate significant development as a writer. The introduction to Andy's paper on bull riding reveals the quality of which he was capable when his energies were not consumed with procedural concerns. In the following excerpt, Andy's introduction unfolds during think-alouds and conversation with Mike:

Andy: "Are you crazy enough to strap your hand to a 2,000-pound package of hamburger?"

Mike: What?

Andy: "Are you crazy enough to strap your hand to a 2,000-pound package of hamburger?"

Mike: Yeah, and let it drop off a building. Yeahhhh! I wouldn't mind that, though, if it was soft.

Andy: No, bull — hamburger?

Mike (chuckles): Oh.

[
Andy: Two thousand-pound package of hamburger?

(Discussion of what it would be like to jump into a huge, uncooked hamburger.)

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Andy: How d'ya spell "shish-kabob"? Oops, just a minute.

Mike: Shish-kabob.

T: I think it's

Andy: Just a minute.

T: I'll write it on the, I'll write it on the board (inaudible).

Andy: Write it nice and dark.

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. .
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Andy: "Cowboy shish-kabob." Is that one or two words?

T: "Cowboy shish-kabob!" Sounds like a good, uh, image.

(Andy asks Mike for help reading "shish-kabob" off the board. Mike razzes him about needing glasses.)

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. .
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Andy: How's this sound: "Is this what you call fun? Getting a tour of hell on a 2,000-pound package of hamburger, and you better get out of the way before you're turned into a cowboy shish-kabob."

Mike: (inaudible.)

Andy: I think that sounds kinda good!

Andy expressed justifiable pride in a truly remarkable introduction that reveals the kind of writing that is possible for a student with a severe writing disability whose energies can be applied creatively. The boys' occasional digressions are typical of those that occur during any "professional" conversation; it is noteworthy that the boys did not allow these digressions to derail the work at hand.

Revising

The revision stage of the writing process provides the most structured opportunities for authors to scaffold one another's efforts. Suggestions from peer editors served as the focus of the March 28-29 class sessions and provided numerous scaffolds for writing improvement.

Mike and Andy. In the following excerpt Andy helps Mike respond to one of his (Andy's) editing suggestions

for Mike's paper on steer roping, which Andy connects conceptually to questions raised by one of the girls:

Mike: ... Then, you put, like, "Explain why you need, need a partner," or something, "where, where you don't have to have a partner," or something.

Andy: Yeah, except ...

Mike: Yeah, but you can't compete then if you don't.

Andy: Well, you should explain that then.

Mike: Yeah, O.K.

Andy: Like, "If you wanta compete professionally, you should have a full-time he-, heeler or header. And you, and the header ropes the head of the steer," 'cause didn't Cindy or Kris ask what that was?

Mike: Huh?

Andy: Didn't Kris or Cindy ask what a header or a heeler was? I thought so.

Mike: Yeah.

The fact that Mike and Andy had a collection of revision suggestions from which to work and were not forced to generate all their own ideas probably contributed to their higher level of independence. Moreover, it would appear that the boys were also gaining confidence in their abilities as writers. We have noted Andy's emerging success with creative expression and idea development. For his part, on several occasions Mike appeared to be quite interested in not only incorporating editors' suggestions into his paper, but also in selecting which revisions he would include.

Kris and Cindy. Kris and Cindy worked efficiently and independently throughout the revising sessions of March 28-29. Much of the girls' conversation during revision centered on structural issues such as moving ideas within the paper, adding supporting details, adding categories, and incorporating reader sensitivity. Evidence of the girls' thinking on structural issues once again emerged through their think-alouds, of which there were 11 during these sessions (see Table 7). The following brief excerpt, for example, includes think-alouds revealing both Kris' concern for addressing issues raised by her editors and Cindy's awareness of organizational structure:

Cindy: Gee, I'm gonna change this before I go moving it.

Kris: Hmm. O.K., let's see. And I talked about (inaudible). The sights? Hmm. Do I need (inaudible)? (Typing sounds.) Somebody said I needed to look over the ...

Cindy: Oops, made a boo-boo.

In the following excerpt, Cindy scaffolds Kris' effort to address one of her editor's suggestions:

Kris: O.K., Cindy?
Cindy: What?
Kris: I need help.
Cindy: Tell me what's wrong.
Kris: What?
Cindy: Tell me what you need. I'm double-spacing.
Kris: O.K. It says,
Cindy: (inaudible.)
Kris: "How long was I there, how was the climate, and how long did it take me to get there?" So, I'm at the airport part. So, I don't know. I think it took us three hours to get there.
Cindy: Well, what time did you leave?
Kris: Early in the morning, I don't know.
Cindy: From the airport? Do you remember?
Kris: Seven, and we got there at 10.
Cindy: (inaudible.)
Kris: Yeah. Three hours.

The final version of Kris' paper reflects her inclusion of details that grew out of this conversation: "... When we went to San Francisco we flew. We arrived at the airport at 10:00."

In order to reinforce ownership of ideas, the teacher frequently reminded the students of their responsibilities as writers and their legitimacy as sources of knowledge. Early in the March 28 class session, for example, Kris asked if she had added an idea in the right place. After discussing the matter briefly, the teacher added, "You're the writer. Sometimes it helps to just write it down and then look it over later on and see if you like the way it sounds or not."

The Research Paper: Student Scaffolding Continues

Kris and Cindy. As the students more efficiently employed the thinking of writers, they also began using writing terminology. A later conversation, recorded on May 3 as Cindy and Kris worked on organizing their research for their second paper, reveals the development of a lexicon of terms relating to subtopics. The excerpt begins as Kris muses over where to include specific details in her brainstorm on the Olympics, receiving support from Cindy along the way:

Kris: O.K., all of this here, there, there, and there.
Cindy: Maybe you could figure out which ones sound better together like I did.
Kris: Like, this all goes together. These go, I bet all these go together for sure.
Cindy: Then the other ones.

Kris: This is about the track. That is, too, though. I, I don't, do you think I need to say that?

Cindy: What?

Kris: (inaudible.)

Cindy: No.

Kris: Then, this is about, um, there too, this is all, this is a category, O.K.?

Cindy: Yeah.

Kris: I know that 'cause it talks about all the points and all that.

Cindy: Yeah, it could be a separate category.

Kris: O.K.

Cindy: These all go together. You can make 'em a group (inaudible) if you have any other ones that color.

Kris: Oh, I changed, (brief pause) yeah, I should change this and that to a different color. Yeah. They'll be brown. (brief pause) O.K. See, these go together. This is a separate group. That's a separate group. I'm still tryin' to figure out that one and that one. That's about

Cindy: This should be a different color, too, 'cause it's about (brief pause) yeah.

Cindy continues to support Kris' efforts as the conversation turns to identifying category titles:

Kris: Now help me come up with a topic.

Cindy: (inaudible.)

Kris: I need a topic for this.

Cindy: (inaudible.)

Kris: I need to come up with a name for, like ...

Cindy: The other groups?

Kris: Yeah.

Cindy: O.K., what group were the turquoise? (brief pause) O.K., I got an idea for this category.

Kris: Oh, goodie! That's what I need help on.

Cindy: Um, "things at night"? "Things to do with night"? Let's see, (inaudible)

Kris: Um, like, "things,"

Cindy: "that go on at the night."

Kris: "that go on." Or just, "things that are going on."

Cindy: "During the nighttime," 'cause you have 6:30 P.M., 7 P.M., (inaudible).

Kris: O.K.

Talking the possibilities over with Cindy enabled Kris to organize her ideas in a way she had been unable to do by herself. The girls employed the terms "category" and "group" to help solidify their thinking. Once the groupings had been identified, Kris introduced the term "topic" to represent a label that would complete the grouping task.

While the girls' early conversations were characterized by more scaffolding from Cindy than from Kris, later in the school year Kris became better at sensing opportunities to suggest improvements to Cindy. In the following excerpt from the May 6 writing session, Kris shares a suggestion that helps Cindy to clarify her thinking about the introduction to her paper on figure skater Scott Hamilton:

Cindy: "... facts about his life. Would you like to hear about him?"

Kris: That's good. How about, when you put, "This paper is on Scott Hamilton," oh, yeah, that's fine. And then, you wanta know how to start it out, you probably already know, but start out, "Scott Hamilton was an ice skater, figure skater."

Cindy: "Figure skater."

Kris: "He was a figure skater in the blank, blank Olympics."

Cindy: I was thinkin' of starting with

Kris: Right? Does that sound, that'd sound good, that'd make it inter-

[
Cindy: I was gonna start with what he did when he was little. (inaudible.)

Kris: Oh, yeah, when he was in ...

Cindy: (inaudible.)

Kris: Oh, yeah, that's ...

Cindy: Now he's a broadcaster.

Interesting, the introduction that Cindy settled on included very few of these ideas: "This is a biography on Scott Hamilton's life. Here are some facts about his life. Read on if you want to know more about him." Although little of this conversation found its way into the final introduction, the dialogue appeared to have stimulated Cindy's thinking about various ways to introduce her paper.

Mike and Andy. The May 7 transcript reveals Andy and Mike organizing their co-authored research paper about Australian animals. In order to save time, the teacher was typing as the boys dictated their first draft. In the excerpt that follows, the boys set about explaining the importance of eucalyptus leaves to the koala. Their discussion demonstrates a keen interest in crafting the best possible sentence. Mike gets the sentence started, but Andy quickly takes the lead in refining the wording. Mike does not seem to feel like Andy has stolen his thunder (as probably would have been the case earlier in the year), but rather contributes his support:

Mike: ... "They get their"

[
T: Now, you've got

Mike: "water from the leaves."

Andy: "They also get their water from the ee-calyp-tus leaves, or u-calyptus." (Typing sounds.)

T: O.K.

Andy: "The eucalyptus leaves have a high ..."

[
Mike: You get a good diet from 'em?

Andy: "high water content."

T: Do you wanna put that in here?

Mike: Just said that, though.

Andy: Yeah, but it doesn't say they have a high ...

[
Mike: They get their water from 'em.

T: It's a good ide-, yeah, that makes sense. So, you wanta add that?

Andy: Yeah.

T: Um, let's see. "The eucalyptus leave, leaves have high water content" (pause)

Andy: "so koalas normally don't need to drink water, as they absorb enough water from"

T: Yikes! Wait a minute. (chuckles)

Andy: "the leaves."

.

.

.

T: Good sentence! That's a world-class sentence, Andy.

Mike: (swoons): Ohhhhhh!

T: Alright!

Mike: Professional (inaudible) are you now.

[
T: O.K.

Andy: I know.

Andy had crafted an exceptional sentence, providing further evidence of his development as a writer. The teacher's praise for his effort was eclipsed by Mike's, which anointed it with professional status. The conversation soon turned to the issue of establishing parameters for the next paragraph:

T: So, ...

Andy: Yeah, (inaudible).

T: is that some stuff about behavior?

Mike: No, it's about how to get the food.

T: Oh, O.K. Well, ...

Mike: and their, like,

Andy: Yeah, behavior. They climb trees.

[
Mike: (inaudible) to get the food.

T: Do you have enough about behavior for one paragraph?

Mike: No.

Andy: No. Then, we could put

Mike: Well, would behavior ...

[
Andy: ... their behavior

Mike: be about their young and stuff?

Andy: their behavior

T: Could be.

Andy: and their young?

T: Yeah, yeah, the, the way they rear their young.
That would be behavior. I'm just thinking, you've
got too much there for one paragraph.

At first, both boys thought they had too little information for a paragraph about koala behavior — until Mike recognized that "behavior" would include raising the young. As the conversation continued, Mike devised a scheme for separating the next two paragraphs:

Mike: Well, could we put,

T: You've got a lot of stuff.

Mike: "They, they are vegetarians" (brief pause) in
that same thing?

T: No, yeah, where would you want that?

[
Mike: 'Cause then, cause then we
wouldn't have to put any more in that. We could
start a new paragraph.

T: O.K., that would be the end of this para- ...

[
Andy: I'm an omnivore.

Mike: Yeah.

T: Oh, where, O.K., tell me where you wanta put
that they're vegetarians. Tell me where that's
gonna go in the paragraph.

Andy: Right before the ee-calyptus thing, where
they're gettin' hooked on it and drugged and stuff?

Mike: That, that would ...

[
T: Right here? O.K., right here? Where the
cursor is? (pause.)

Andy: Mmm, (inaudible), yup.

Mike stepped in this time and took leadership. By putting information about the koala's vegetarianism in the previous paragraph, he insightfully placed eating habits in the same paragraph as water gathering. This allowed the next paragraph to deal more specifically with behavior. Andy seemed to recognize the wisdom of this decision before the teacher did. Moreover, the teacher's scaffolding did not appear to contribute to this organizational decision; Mike did it by himself, and Andy concurred. In this instance, Mike took charge of an organizational task, which previously more likely

would have fallen to Andy. It seemed that Andy's organizational insights had rubbed off on Mike.

Andy took the lead in the next portion of the conversation, which focused on the wording of the sentence about the koala's vegetarianism:

T: O.K. What do you want, what do you want to
say there?

Andy: "They are only vegetarians."

T: "They are only vegetarians"?

Mike: (inaudible.)

Andy: What's that word, "fetus" or somethin' like
that? "Fauna."

T: "Fauna."

Mike: What?

T: "Fauna" just means animals.

Andy: Yeah, see, "They're only vegetarian fauna."

T: Oh, "vegetarian fauna." My word! Andy,

Andy (chuckles): *What?*

T: I'm impressed with the language. That's good.
Good.

These excerpts, only sections of a much longer collaboration, illustrate the extent to which Mike and Andy had taken control of their own writing development. Their command of writing structure, modeled earlier by the teacher and supported by the CSIW think-sheets, had freed up their energies for more subtle refinements in writing quality.

Summary

It is clear that these seventh-graders were able to provide very helpful guidance to one another when difficulties in organization and expression arose. The result was enhanced interest in writing and remarkable improvement in their written products. Interesting, for different reasons (distractibility and a quiet nature) Andy and Cindy would appear at first to be uncertain candidates for consistently providing meaningful scaffolding to their peers; in reality, however, they each took the lead in their respective pairs in providing assistance and advice.

DISCUSSION

Theory Development

This investigation sought to further develop the theory and practice of effective writing instruction for students with learning disabilities by examining an approach that draws from several perspectives on learning. Cognitive Strategy Instruction in Writing (CSIW) blends elements of direct instruction and cognitive strategy instruction with a core emphasis on collaborative teacher-student and student-student dialogue. This "apprenticeship" approach provides struggling writers

with access to the thought processes employed by effective writers and enables them to apply those processes to their own writing.

Perhaps most important, this study revealed the potential of a powerful metacognitive writing strategy and a mentoring teacher to help students with writing disabilities take over responsibility for their own writing development. Teacher modeling and scaffolding during the writing apprenticeship provided students with the cognitive tools necessary to move beyond the "learned helplessness" that is so common among adolescents with LD. Collaborative dialogue was internalized by the students (Vygotsky, 1978, 1986) and helped transform their thinking about writing and their perceptions of themselves as writers.

Like students in previous studies within general education (Daiute, 1986; Daiute & Dalton, 1993; Dale, 1994, 1996, 1997), these students with LD pushed one another's understanding of the writing process through collaborative problem-solving. The study revealed that learning communities can develop within the resource room that enable students to develop higher-level thinking processes within such complex domains as expository writing.

The teacher's role in supporting collaboration among students with learning disabilities is a complex one. The teacher must juggle the inclination to help with the need to turn over responsibility to students. Facing seemingly endless demands for remediation of student difficulties, the special education teacher might be tempted to consider collaboration too risky and too time-consuming for special education settings. The value of collaborative structures, however, lies in their potential to both capitalize on students' natural urges to communicate and broaden their base of support.

Collaboration: Internalizing the Thought Process

As the findings of this study suggest, collaborative writing provides opportunities for students to "try out" their ideas on others, as well as to experience the support of peers as they develop their writing skills. Furthermore, collaborations intended to assist a partner force the mentoring student to reexamine his/her own thinking in a way that leads to refinements in his/her own writing processes. Certainly, the extra time spent employing collaborative structures pays off in enhanced student understanding and independence.

Collaborative dialogue among students with LD is an under-researched area. Much remains to be learned about the ways in which students collaboratively generate knowledge. With collaboration becoming increasingly important in the employment world, students with LD must learn to both share and receive ideas with a sense of purpose and grace. Equally important, through collabora-

tion students gain enhanced understanding of their own thinking and a greater appreciation of their potential to generate meaningful knowledge.

Limitations, Implications, and Recommendations

The findings of this study cannot be generalized beyond the single case in which the investigation occurred. Nevertheless, the interactions of the four seventh-graders and their teacher reveal numerous conditions that appear to facilitate improvement in expository writing skills. The CSIW strategy was developed to emulate the thought process of accomplished writers, and writing improvement among participants in this study was consistent with that of students in other studies involving CSIW. Therefore, it is reasonable to assume that similar results might be realized in other settings if the strategy is implemented in a similar manner.

The results suggest several implications for writing teachers and their students.

Implications for Teachers

1. Recognize that teaching expository writing collaboratively requires a great deal of time, but the thought processes and skills that are developed make it time well spent.
2. Help students understand that the explicit intent of the instructional approach is for students to become more effective, more independent writers, and help them realize why this is so important for their future.
3. Make sure that the writing process is taught directly in recursive steps but that students do not lose sight of the purpose of expository writing: to provide information to a reader in a way that is both informative and interesting. Specific writing skills can be taught or reviewed effectively as mini-units within the context of an extended essay, thus providing students with opportunities for immediate and meaningful application of those skills.
4. Help students recognize ways in which the thought processes developed through collaborative writing instruction can generalize to multiple settings (e.g., writing letters and e-mail messages, answering essay questions on tests, taking notes in class).
5. Be willing to relinquish some control over the instructional environment during periods of student collaboration. Students, however, must understand the expectations for their writing outcomes and their behavior during these sessions. Recognize that, like any conversation, collaborations will occasionally detour onto unforeseen sidestreets. It is important, nevertheless, that the conversation

gets back on track as quickly as possible and that the work at hand continues.

6. Develop rubrics to facilitate systematic assessment at critical stages of writing instruction (e.g., creating a detailed brainstorm, writing well-organized expository paragraphs, writing interesting introductions). Students can use rubrics to facilitate self-evaluation and to accept transfer of responsibility for their learning. Sample rubrics used during CSIW instruction are available from the author.

Implications for Students

1. Students must be willing to make a commitment of time and energy to improve their writing. It is helpful for them to see other students' pretest and posttest papers in order to realize the kind of progress that is possible.
2. Students must recognize the importance of gaining greater control over their own learning and must be willing to make this a personal priority. It is important in this regard for the teacher to spend considerable time modeling and scaffolding during the first paper, while explaining that students would be expected to be much more independent with subsequent papers.
3. Students must develop the ability to "walk in somebody else's shoes." This is especially important when anticipating the needs of their readers and when serving as a peer collaborator on a partner's paper. They often require role-playing simulations and teacher guidance in order to engage in productive behaviors during collaborations.
4. Students must learn to recognize opportunities to employ what they are learning about the writing process in other settings. They also should practice applying this process to additional expository text structures (e.g., explanation paper, comparison/contrast paper, persuasive essay).

Recommendations for Future Research

The current study might be extended in a number of ways. Future investigations could focus on specific skills and capacities that are enhanced during collaborative work. Findings from such research would have important implications for classroom management and instructional design. Also, the role of the teacher in fostering meaningful collaboration might be explored further. Teachers would benefit from additional insights into effective ways of introducing and modeling collaborative problem-solving within special education and, for that matter, regular education settings. "Guideposts" for identifying successful and unsuccessful interactions at various stages of the collaborative enterprise would be especially helpful.

This study featured a single teacher-researcher working with four students with learning disabilities in a pull-out resource room setting. Future research could involve teachers in multiple sites working with larger, more heterogeneous groups of students. In light of the current emphasis on serving students with learning disabilities in the general education classroom, a particularly useful investigation would involve whole-class implementation of collaborative writing that involves students both with and without LD. Moreover, there is no reason to believe that findings similar to those outlined here would not accrue among general education students in regular classrooms.

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