SPECIAL SERIES

EDITOR'S COMMENT: *In this issue we present the final arti-
cles of a two part, point–counterpoint series on cognitive process-
based instruction. See Dr. Bernice Wong's introduction to this series
in the March 1992 issue. Readers' comments are welcome and will
be published as space permits.*—JLW

Fostering Literacy Learning in Supportive Contexts

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*Young children with learning disabilities typically encounter difficulty with academic tasks
requiring intentional effort and effective use of metacognitive skills—qualities that competent
readers and writers possess. In response to these difficulties, special educators often modify literacy
instruction, isolating the "basic skills" of literacy (such as decoding and penmanship) from
meaningful reading and writing activities. Such instruction contributes to impoverished notions
of literacy and exacerbates problems of metacognition. The two research programs reported here
challenge the conventional literacy instruction provided to many young students with LD.
The programs are rooted in developmental and cognitive theory and research, as well as emergent
literacy theory. The social nature of learning is emphasized, with a focus on the role of the
teacher, the form of discourse, and the role of text in literacy instruction. Results show that
children with learning disabilities benefit from strategy instruction occurring within classroom
cultures that support collaborative discourse, the flexible application of comprehension strategies,
and appropriate, meaningful opportunities for reading and writing.*

M etaphors are powerful means of describing what is, as well as envisioning what is possible. Three metaphors provide the foundation for this article: instruction as scaffolding, learning as cognitive bootstrapping, and classrooms as communities of inquiry. Specifically, we are interested in the use of these metaphors to inform the literacy instruction of young children who are experiencing school-related difficulty. In keeping with the theme of this special series, the instruction that we will

describe has been informed by principles derived from cognitive, as well as developmental, studies of learning. We will describe two programs of research. While the first program was specifically designed to enhance children's listening comprehension and the second to enhance the acquisition of written literacy, central to both programs is teaching children who are having school-related difficulty to engage in intentional learning. We begin with a discussion of the centrality of intentional learning to success in school.

Intentional Learning

Anyone who has spent time with preschool children has no doubt witnessed the wonders of *incidental* learning, or learning that is the naturally occurring product of the child's interaction with his or her environment. On an excursion one gorgeous summer day, 4-year-old Danielle observed a row of sunflowers. Each sunflower in the row was shorter than the one before it. "Why," she wondered aloud, "are they different sizes?" Prompted to think of flowers' various requirements for growth, Danielle named water, dirt, and sunshine. "I think they all have the same dirt, and I don't think the water is making the difference. That's it!" she exclaimed, "the first one got the most sun, it grew tallest, and then it made shade on the next one that made shade on the next one that made shade on the next one . . . " In many respects, the language, conceptual understandings, social skills, and motor skills (to cite a few examples) of young children are all acquired in the context of these everyday occurrences and interactions. It is not

generally our expectation that young children learn for the purpose of recalling or using information in systematic ways. However, with the transition into primary and then middle school, there are new demands for children to organize and structure their learning for the purpose of recalling what has been learned and applying that information in the context of problem-solving activity. This transition has been characterized as the shift from incidental to *intentional* learning (Bereiter & Scardamalia, 1989; Torgesen, 1977).

Intentional learning, in contrast to incidental learning, is an achievement resulting from the learner's purposeful, effortful, self-regulated, and active engagement. Intentional learning requires metacognitive knowledge, or the awareness and ability to monitor and control one's activity as a learner (Brown, Bransford, Ferrara, & Campione, 1983). It requires a repertoire of strategies, or "constructions between the child's representation of the problem (based on past understandings) and the growing anticipation of possible actions as the child proceeds with the task (new learning)" (Gallagher & Wansart, 1991, p. 35). And, it requires motivation, propelled by a sense of self-efficacy (Shunk, 1990).

The demands of intentional learning are especially intriguing when considering the learning profiles of students identified as learning disabled. For example, we know from the longitudinal and cross-sectional studies of Rourke (1976), Calfee (1982), and Spreen (1982) that although children identified as learning disabled did not differ from their nonidentified peers on assessments of cognitive ability when they were 7 and 8 years of age, significant differences were found between identified and nonidentified children when they reached the age of 11 or 12. These findings are particularly true on verbal semantic measures. More specifically, the research conducted by Ceci (1983) suggests that it is with purposive tasks that students identified as learning disabled have particular difficulty. Metacognitive and strategy

deficits cannot be considered the sole cause of learning difficulties (Swanson, 1989; Wong, 1985); however, investigations of the metacognitive knowledge and strategic activity of diverse learners across a number of domains, such as reading (see Garner, 1987) and composition (Englert, Raphael, & Anderson, 1988), attest to the difficulties that young students with LD experience in their quest to acquire and/or display the strategic learning behaviors that promote intentional learning.

As a consequence of the problems exhibited by children with learning difficulties on school-related tasks demanding intentional learning, a series of instructional decisions is often made, quite early in the child's school career, that may serve to exacerbate his or her problems. This phenomenon has been referred to as "differential instruction" (McGill-Franzen & Allington, 1991) and can be illustrated in the literacy domain. Children with LD frequently have histories of poor decoding (Perfetti, 1980; Stanovich, 1985). Understandably, many special/remedial teachers choose to emphasize the instruction of word attack skills from degraded texts, often at the expense of comprehension instruction. Consequently, these children do not receive the same instructional opportunities as their normally achieving peers to learn how to engage in the syntactic, semantic, and schematic analyses of text that complement the use of graphophonemic analysis.

In addition, these children have less opportunity to acquire the background or content knowledge that promotes intentional learning, including experience with and knowledge of various text structures. Children with LD may also have difficulty recalling and reproducing the letters of the alphabet. To redress this situation, teachers may limit students' experiences with writing to copying from the board and word lists, and filling in work sheets, precluding their opportunity to experience the communicative, informational, and creative uses of writing.

Finally, these instructional practices are hypothesized to lead to impoverished understandings regarding the nature of reading and writing, as children often define reading and writing by school tasks. For example, some children define reading as "saying the words right and fast," and writing as "printing the letters neatly and well spaced." It is not difficult to imagine ways in which these impoverished understandings regarding the nature and demands of reading and writing can, in turn, influence the cognitive activity in which children engage, hence leading to problems with intentional learning. We will expand upon and illustrate the relationship between these instructional decisions and the metacognitive and strategic knowledge of students later in this article.

The ability to meet the cognitive and metacognitive demands associated with intentional learning depends on the learner's motivation and beliefs. Intentional learning is certainly facilitated to the extent that learners value the goal toward which they are working, have appropriate expectations for success in attaining this goal, and believe that the activity in which they engage as learners is likely to influence the outcome of their attempts. Negative orientations to learning have long been implicated in children's school-related difficulties (see Licht, 1983; Paris & Oka, 1986; Wong, 1985) and have been the target of interventions in which students not only are taught how to engage in strategic activity, but also are taught to change their attributions for success and failure (Borkowski, Johnston, & Reid, 1986; Butkowski & Willows, 1980).

We have characterized students with learning difficulties as having difficulty with intentional learning accompanied by impoverished understandings regarding the nature and demands of learning, a limited repertoire of strategic approaches to learning, and negative motivational attributions and beliefs. It was this profile that prompted the research programs that we will describe next: reciprocal teaching, and

redefining the contexts of early literacy learning.

Reciprocal Teaching: Learning Dialogues to Enhance Text Comprehension

Reciprocal teaching (see Note 1) refers to an instructional procedure that takes place in a collaborative learning group and features guided practice in the flexible application of four concrete strategies to the task of text comprehension: questioning, summarizing, clarifying, and predicting. The teacher and group of students take turns leading discussions regarding the content of the text they are jointly attempting to understand.

The text is read in segments, silently, as a read-along, or orally by the teacher or a student, depending on the decoding ability of the students. Following each segment, the dialogue leader begins the discussion by asking questions. While the students are encouraged to include in their questions the main content of the text, they are also encouraged to generate questions reflective of wonderment that has been provoked by the text. These questions often become interesting predictions, or springboards for further inquiry. The other participants respond to these questions, raise additional questions, and, in the case of disagreement or misunderstanding, reread the text. The discussion leader then summarizes for the purpose of identifying the gist of the reading, as well as for synthesizing the reading and discussion. Once again, there is discussion for the purpose of achieving consensus on the summary. The third strategy, clarification, is used opportunistically for the purpose of discussing ideas that are ambiguous, have been misunderstood, or are unfamiliar to the group members. Finally, the discussion leader generates and solicits predictions regarding upcoming content in the text. The members base their predictions on their prior knowledge of the topic, clues that are provided in the

text (e.g., subheadings, the structure of the text, embedded questions in the text), or issues that they hope the author will address.

When reciprocal teaching is initiated, there is considerable modeling on the part of the teacher (generally through the use of thinking aloud) regarding the use of the strategies in the context of the dialogue. In addition, the teacher provides the support necessary to sustain each member's engagement in the discussion. This support may be in the form of instruction (e.g., "The author gives us many details in this paragraph after she states her main point that . . ."), modeling (e.g., "The author said earlier that there were three primary causes of the westward movement. We have read about two of them and I would predict that we will now read the third cause"), or prompting (e.g., "I think I see a great 'why' question here. Start your question with 'Why' ").

The Rationale for Reciprocal Teaching

The rationale for reciprocal teaching is derived from both developmental and cognitive theory and research. The strategies are examples of the kinds of cognitive activity that successful learners engage in while interacting with text (Bereiter & Bird, 1985). They serve to encourage the self-regulation and self-monitoring that promote intentional learning (Brown, 1980). Of course, there is nothing unique about the strategies themselves. Historically, the skills inherent in these strategies have figured prominently in reading curricula. What is unique is the context in which these strategies are taught during the reciprocal teaching dialogues.

The context in which these strategies are learned is social, interactive, and wholistic in nature (Englert & Palincsar, 1991). The design of this context was influenced primarily by three theoretical principles prominent in the work of Vygotsky (1978). The first

principle is that the origins of all higher cognitive processes are first social, that is, that mental functioning occurs first between people in social interactions. Over time, what was experienced in the course of those interactions (e.g., dialogues) is internalized, transformed, and made one's own. The second principle is the "zone of proximal development," which Vygotsky used to characterize "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers" (p. 86). Reciprocal teaching was designed to provide a zone of proximal development in which students, with the assistance of teachers and more knowledgeable peers, take on increasingly greater responsibility for an activity. The assistance provided the learner has been compared to scaffolding, in that both temporary and adjusted support is provided, according to the needs of the participants (Palincsar, 1986). Finally, Vygotsky advocated that psychological processes are acquired in contextualized, wholistic activity. Unlike reductionist approaches, in which cognitive tasks are broken into component parts, which are then practiced as isolated and separate skills (Poplin, 1988), Vygotsky urged that the integrity of the activity be maintained so that the learner engages in the whole enterprise. In the case of reciprocal teaching, the strategies are not broken into component skills, nor are they practiced in isolation, out of the context of reading for real purposes.

The majority of the research on reciprocal teaching has been conducted in reading and listening comprehension instruction by general, remedial, and special educators. Since 1981, when the research program began, nearly 300 middle school students and 400 first to third graders have participated in this research. The instruction was designed principally for students determined to be at risk for academic

difficulty or already identified as remedial or special education students. Typically, the students in our research fell below the 40th percentile on nationally normed measures of achievement. The students entering these studies scored approximately 30% correct on independent measures of text comprehension. Our criterion for success was the attainment of an independent score of 75% to 85% correct on four out of five consecutively administered measures of comprehension, assessing recall of text, ability to draw inferences, ability to state the gist of material read, and application of knowledge acquired from the text to a novel situation. Using this criterion, approximately 80% of both the primary and middle school students were judged successful, generally following 3 months of instruction. Furthermore, these gains were observed to maintain for up to 6 months to a year following instruction (Brown & Palincsar, 1989; Palincsar & Brown, 1984, 1989).

In this article, for the purposes of illustrating the metaphors with which we introduced this piece, and consistent with our focus on young children, we will describe in some detail one study of reciprocal teaching conducted with first graders.

The Lessons

The participants in these lessons were six first-grade teachers, each of whom worked with a group of six students, five of whom were identified as at-risk for academic difficulty, based on teacher opinion and standardized and informal measures of listening comprehension. For example, these children typically scored below the 35th percentile on a standardized test of listening comprehension—the Stanford Early School Achievement Test (Gardner, Rudman, Karlsen, & Merwin, 1982). For each teacher, there was also a matched control group. The children in the control group listened to the same passages that were being used in the discussions with the experimental

children, but responded only to questions regarding these passages, and did not engage in discussions regarding their content.

In the typical reciprocal teaching research, the children worked with an array of unrelated texts, drawn largely from readers and trade magazines for children. This selection of text provided little opportunity for the children to acquire and use knowledge over time. In addition, there was little cumulative reference across texts. In this study, for the purposes of teaching children how to acquire and achieve ownership of new information at the same time that they were learning how to learn from text, the texts the children worked with covered simple science concepts related to animal survival themes, such as adaptation, extinction, and the use of camouflage and mimicry. These shared texts also served to promote a learning community, as the groups explored these principles over time.

The study began with the administration of pretest measures designed to assess comprehension as well as the children's ability to recognize and use the principles that were to be presented in the instructional passages. The comprehension measure was administered by first reading a passage to each child and then asking the child to respond to a series of questions. While the questions included measures of recall and inference, they also included one question designed to test the child's understanding of the theme of the passage. These comprehension measures were administered to the experimental and control children, not only on a pre- and posttest basis, but also throughout the intervention, generally on the following schedule: Following 2 days of dialogue on a theme, the children were administered an assessment passage that concerned yet another instantiation of the theme. Included in the assessments conducted during the intervention were questions designed to measure the child's ability to identify the analogy between the subject of the assessment passage and

subjects that had been discussed in class during the dialogues. For example, the assessment passage used in conjunction with the intervention passages on the garden hunter and lady-' bugs (within the theme of Natural Pest Control) concerned the usefulness of the praying mantis. To assess the students' understanding of the gist of the passage, the teacher asked, "Why do farmers and gardeners appreciate the praying mantis?" To assess the children's ability to relate the analogous information read in the assessment passage with that presented in the instructional passage, the teacher asked, "How is the praying mantis like the lacewing that you learned about in class?" The experimental and control children attained 47% correct on those comprehension assessments administered prior to the thematic dialogues. Upon examination of those questions that assessed the ability to identify the theme of the passage, it was found that the experimental students were successful only 29.2% of the time during baseline. This compares with a mean of 27.2% for the control students.

To assess the children's ability to identify and use the analogy underlying the various topics, and to determine how this ability changed over the course of the discussions, the teachers presented the children with a classification task in which they were asked to sort pictures that represented one of two themes (e.g., protection against enemies and adaptation/extinction). The children were asked to sort the pictures into two piles so that "the ones that go together are in the same pile" and to talk out loud as they thought about which pile they would put each picture into. In addition, when the children were finished sorting, they were asked once again how they had decided which pictures belonged together. This sorting task was repeated three times until each theme and its constituent subjects were sorted. At the time of pretesting, 43% of the sorting decisions made by the experimental children were based on the physical characteristics of the ob-

jects, while only 13% were made based on the thematic similarities. The decisions of the control children were also principally guided by physical characteristics (37% of the time), as they sorted by theme only 14% of the time.

Following the administration of these pretests, both the experimental and control students participated in three lessons designed to introduce them to the concept of "similar," at both a concrete as well as an abstract level. The experimental groups then began their discussions. One passage was read to the children each day, for a total of 20 passages over 20 consecutive days of instruction. The basic format of reciprocal teaching dialogues was used; the children and teacher took turns leading the discussion in which they questioned one another about the content of a passage as it was read in segments. In addition, with each segment, the group summarized the content, generated predictions about upcoming text, and worked to clarify ambiguous information. Because these children were not yet reading conventionally, the teachers read the text aloud. This is an example of "cognitive bootstrapping" (Resnick, 1989), in the sense that although the students do not yet have the skills necessary to read text independently, they are still provided opportunities to learn from text, as well as about text.

The following transcript is provided to illustrate the reciprocal teaching procedure. The children were reading about the snowshoe rabbit and it was the 16th day of dialogue. The teacher had just read a segment of text describing the season in which baby rabbits are born and the ways in which the mother rabbit cares for her babies.

Kam (the dialogue leader): When was the babies born?

Teacher: That's a good question to ask. Call on someone to answer that question.

Kam: Robby? Milly?

Milly: Summer.

Teacher: What would happen if the babies were born in the winter? Let's think.

(Several children make a number of responses, including: "The baby would be very cold." "They would need food." "They don't have no fur when they are just born.")

Kam: I have another question. How does she get the babies safe?

Kris: She hides them.

Kam: That's right, but something else . . .

Teacher: There is something very unusual about how she hides them that surprised me. I didn't know this.

Travis: They are all in a different place.

Teacher: Why do you think she does this?

Milly: Probably because I heard another story and when they're babies they usually eat each other or fight with each other.

Teacher: That could be! And what about when that lynx comes?

(Several children comment that that would be the end of all the babies.)

Travis: If I was the mother, I would hide mine, I would keep them all together.

Kris: If the babies are hidden and the mom wants to go and look at them, how can she remember where they are?

Teacher: Good question. Because she does have to find them again. Why? What does she bring them?

Milly: She needs to bring food. She probably leaves a twig or something.

Teacher: Do you think she puts out a twig like we mark a trail?

(Several children disagree and suggest that she uses her sense of smell. One child, recalling that the snowshoe rabbit is not all white in the winter, sug-

gests that the mother might be able to tell her babies apart by their coloring.)

Teacher: So we agree that the mother rabbit uses her senses to find her babies after she hides them. Kam, can you summarize for us now?

Kam: The babies are born in the summer . . .

Teacher: The mother . . .

Kam: The mother hides the babies in different places.

Teacher: And she visits them . . .

Kam: To bring them food.

Travis: She keeps them safe.

Teacher: Any predictions?

Milly: What she teaches her babies . . . like how to hop.

Kris: They know how to hop already.

Teacher: Well, let's read and see.

When presenting the first passage within each theme, the teacher was urged to first determine whether or not the children would, in the course of their discussions, focus on the content that represented the theme of that passage. If the children failed to do this, then the teachers were encouraged to make the theme of the passage explicit, following the complete reading of it. However, in subsequent passages related to the theme, the teachers were asked to foster the children's recognition of the theme and information across the texts read. The following analogous dialogue segment illustrates how this occurred in one group reading the passage on polar bears from the theme Protection From Elements. This is the fourth story that the children have read in this theme; the previous stories involved Eskimos, penguins, and the hippopotamus.

The children were discussing the first segment of the text informing them where polar bears can be found. The text made no mention of the other subjects discussed in this theme, and the information related to how the bear

protected itself from the harsh cold had not yet been introduced. Nevertheless, the children recognized similarities between the information presented thus far and information acquired in earlier readings.

Missy (the dialogue leader): Where do the polar bears live?

Teacher: That would be a good question to ask, wouldn't it?

Traver: They live in the snow.

Several children (in unison): Caves.

Traver: They live in a kind of cave.

Rodney: They live in Alaska like the Eskimos do.

Traver: And the penguins.

Teacher: Good for you, you have just pointed out something that is . . .

Traver (interrupting): They [in reference to the penguins] have an ice cave, too.

Rodney (interjecting an observation that leaps across themes): And the polar bear has fur, looks like quills [in reference to an earlier passage about porcupines] but it ain't quills.

Troy: [The fur] is a big glove like.

From here the children made predictions that the glove of the bear could be compared to the layers of clothing discussed when reading about Eskimos.

Outcomes of the Lessons

In discussing the outcomes of the lessons, we will present the results of the comprehension measures administered during and after the intervention, as well as the results of the classification posttest. Recall that the comprehension measures assessed children's understanding of passages that were thematically related but different from the passages about which the discussions were held. During baseline, both the experimental and control students averaged 47% correct on these assessments. The mean for

the first 10 days of instruction (which included discussions of three of the themes) was 49.9% for the experimental groups and 37.7% for the control groups. The mean for the second 10 days of instruction was 70.6% correct for the experimental groups and 39.5% for the control groups.

With regard to their ability to identify the gist of the assessment passages, following the first 10 days of dialogues, the experimental children were correctly identifying the theme of the passage 45.5% of the time, while the control students were doing so only 14.9% of the time. Finally, the mean for the second half of the intervention for the experimental group was 63.9%, while for the control group it was 10.5%.

On questions measuring the children's identification of the analogy between the assessment passage and an instructional passage used during the dialogues, for the first half of the instructional phase the experimental children achieved a mean score of 53.1% while the control children achieved a mean of 27%. For the second half of instruction, the experimental children achieved a mean of 76.6% while the control children earned a mean of 17.3%.

A second measure used to determine the children's ability to recognize and use the analogies inherent in both the instructional examples and novel examples was the classification task. The posttest classification task was administered by presenting pictures of the animals presented during the intervention, one at a time. The children were asked to recall information about each subject (e.g., "This is a porcupine. What do you remember about the porcupine?"). If the students mentioned the theme (i.e., that porcupines have quills that protect them from their enemies), this response was acknowledged. If the child failed to mention the theme, the interviewer commented, "Another interesting fact about the porcupine is that it has spikes or quills all over its body to protect itself from its enemies." This procedure was repeated until piles were constituted for

each of the themes and the children made decisions about the pile in which each picture should be placed. Finally, the children were presented with new exemplars, which they were once again asked to place in a pile while explaining their decision. For example, the yellow jacket was described as a black and yellow flying insect that lives in the United States and likes to eat hookworms, which are harmful insects that live on tobacco plants.

While the children in the control condition sorted principally by physical characteristics and used thematic information only 14% of the time, the children in the reciprocal teaching groups made 54% of their sorting decisions based on thematic similarities and based only 29% on physical traits. In addition, when considering the sorting of novel subjects (i.e., animals that had not been presented in either the instructional or assessment passages), the experimental children used underlying principles that they speculated these animals shared, rather than physical features, 20% more often than did the children in the control condition.

In summary, children in the reciprocal teaching discussion groups indicated changes in their ability to understand text and identify the gist of the passages read, as well as in their ability to recognize and apply the analogical information in the texts.

Reflections on the Lessons and Their Outcomes

In this section, we reflect on a few features of the reciprocal teaching dialogues that illustrate the metaphors we referred to earlier: teaching as scaffolding, learning as bootstrapping, and classrooms as communities of inquiry. These features include the form of discourse, the playfulness observed during the lessons, the role of the teacher, and the role of the texts.

The Form of Discourse. The literature, particularly that generated by sociolinguists and others studying

classroom interactions, offers many illustrations as to the manner in which true conversation among teachers and children is thwarted. The culprits include the asymmetry of power and knowledge between teacher and child (Bloome & Green, 1984), sociocultural differences among children and teachers (Heath, 1983; Michaels, 1986), and organizational constraints in classrooms (Mehan, 1979). These observations suggest that one important key to the successful use of discourse in classrooms is to determine ways in which children can *assume* a voice and teachers can *impart* a voice to them in these dialogues.

Our examinations of the transcripts, as well as interviews with the participating teachers, suggest that the discourse structure in these lessons— defined principally by the use of the four strategies (predicting, questioning, summarizing, and clarifying)—as well as the turn-taking served these very purposes and, hence, scaffolded teacher/child discussion. The strategies provided an entree for the students as they engaged in their roles as discussion leaders. In addition, the strategies provided a mechanism whereby the students could collaborate. Finally, they provided a clear focus for both the teachers and the children in their shared discussions.

Indications of this scaffolding include the fact that both teachers and children labeled the contributions they were about to make to the conversation. For example, on Day 2 of instruction, Ms. Johnson announced to the students: "All right. Listen as I make a summary." In that same lesson, a child in her group followed this pattern when he interrupted the question he was asking with the statement, "This is my question." In addition, teachers labeled children's contributions. For example, on Day 3 a student asked the teacher, "What's a suit of armor?" The teacher's first response was, "Would you like to have that clarified?" In these first-grade groups, although the labeling of the strategies dropped out rather quickly (certainly by Day 5 for the majority of the groups), the template

provided by the strategies continued to be apparent; however, there was a shift in the flexibility with which the strategies were used. Hence, if one were to proceed through the transcripts, for the initial days of instruction, questions were generally followed by summaries, followed by clarifications and predictions. This, in fact, reflects the order in which the teachers introduced the use of the strategies.

Although it occurred at different points in time during the intervention, in each group there was a shift such that the use of strategies came to be driven by the content and the discourse itself. It was at this point that the students began to interject predictions as well as questions, even in the midst of the teachers' oral reading. This shift signaled the movement from ritualized to principled and active use of the strategies and dialogue (Edwards & Mercer, 1987; Wertsch, 1980).

Interestingly, this shift was experienced by both teachers and students. For example, teachers who initially read the segments of text with no pauses were observed to look up from the reading of the text at opportune times (e.g., when they read information that confirmed the group's predictions).

The strategies, then, provided a means for the children to "try out" their ideas; however, in addition, they represented language in the form of tools (Vygotsky, 1978) to be used, in a public manner, to solve the problems of understanding these texts and their inherent themes. How the teachers induced children to use these strategies as tools is equally important for understanding the outcomes of these discussions. This brings us to the feature of playfulness in the dialogues.

Playfulness. Playfulness assumed an important role in drawing students into these discussions. For example, Mrs. Mackey's group was about to listen to a story about the porcupine. She began the dialogue:

Mrs. Mackey: Our first story is called "The Porcupine." Now, we usually

predict from the title, don't we?" So, obviously the story is going to be about—what, Chris?

(One of the lessons one learns early on in discussions with first graders is that nothing is "obvious.")

Chris: A porcupine has a friend that's a cactus and he has a girlfriend that's another cactus.

This led to an array of predictions from other members of the group that were largely fantasies. We observed a considerable degree of tolerance across teachers for these flights of fancy. Discussions with the teachers suggested that such playfulness had an important role in enticing young children to become engaged in the text as well as with the strategies. How teachers responded to this playfulness differed. On some occasions teachers provided the children with information, for example, "Oh, what if I told you this was a true story?" while on other occasions the teacher would simply read the text and allow the children to deduce such things for themselves.

The Role of the Teacher. An additional feature that is useful in explaining the outcomes of reciprocal teaching instruction is the role of the teacher supporting, or scaffolding, the students' engagement in the dialogues. Griffin and Cole (1984) draw our attention to the fact that the support adults provide in the zone of proximal development is not necessarily a matter of amount but of kind. Indeed, our examinations of the transcripts revealed that successful teachers called upon a broad array of conversational devices and opportunities to support these young children's discussions; even within one lesson, and certainly across lessons, teachers were observed to use cued elicitations, paraphrasing of children's contributions, choral responses, framing of the children's responses, selective use of praise, silence, and more. In the classroom discourse literature, some of these devices assume a negative connotation. For example, cued elicitations and paraphrases are

often associated with teacher control and the masking, rather than bridging, of student and teacher understanding (Edwards & Mercer, 1987). Our observations of students and teachers engaged in dialogues, and our evaluations of the outcomes of those dialogues, suggest that each of these devices assumes value (both negative and positive) only when examined in its complete context as defined by the children, the history of the instruction, and the text, to identify but a few of these variables (Erickson, 1982).

The Role of the Text. One important contrast between these lessons and earlier reciprocal teaching dialogues was the use of the thematically arranged texts. The fact that the children were working with shared texts that constituted a usable, coherent, and connected body of knowledge and the fact that these texts became part of a common knowledge base further promoted a community of learners.

In summary, reciprocal teaching is an instructional procedure that was designed to supplement the ongoing curriculum, particularly for the purpose of improving students' ability to engage in intentional learning from text. The focus of our most recent research continues to be intentional learning within the literacy domain, specifically within special education classrooms. In the next section, we discuss ongoing research in which we are collaborating with special education teachers for the purpose of redefining the literacy curriculum itself.

Redefining the Early Literacy Curriculum of Special Education Students

We began this phase of our research by conducting observations in primary grade special education classrooms to determine both the demands as well as the opportunities for intentional learning in these settings (see Note 2). The classrooms we were observing in served children from ages 7 to 10. Each

student had been identified as learning disabled and/or emotionally impaired. The children represented a heterogeneous group whose school-related difficulties reflected an interaction among learner characteristics (for example, physical and medical conditions), familial backgrounds (poverty, single-parent homes), and school history (poor attendance). Seventy percent of the children were white and 30% were African-American.

With regard to literacy achievement, at the beginning of the school year most of the children recognized almost all the letters of the alphabet. Half of the children could read a few sight words and were reading from a pre-primer. The writing assessment indicated that several of the children could write in sentences with some conventional spellings. A majority of the children used preconventional forms of writing, such as random letter strings, patterned letter strings, and invented spellings. Several children refused to do anything but copy environmental print.

As we observed and reflected with the classroom teachers, these concerns were raised: First, the children spent most of their time working alone on fairly low-level skills. They were mired in materials that both children and teachers found to be uninteresting and largely irrelevant to their lives. They seldom engaged in reading and writing of extended texts for the purpose of achieving or conveying meaning.

The experiences the students did have with reading and writing (i.e., reading directions to complete worksheet pages and copying board work) led to impoverished understandings regarding the nature of reading and writing. For example, in our interviews one child explained that reading was "a piece of paper—on a piece of paper." The children suggested that good readers "read fast and loud." With regard to writing, one child explained that "good writers have strong muscles so that they can do cursive." Another suggested that the way to become a good writer was "to practice

and hope and hold your pencil right." The children defined writing as "copying the morning news" and "doing your five times each" (in reference to their spelling list).

These impoverished understandings of the nature and purposes of reading and writing contributed to the children's depressed competence with reading and writing activities, the severity of which could not be explained exclusively in terms of the children's learning difficulties. Furthermore, of considerable concern to the teachers was the fact that these children were alienated from literacy experiences. For example, one teacher recognized the considerable routine and "sameness" in his class, causing him a degree of ambivalence. On the one hand, he believed that the high degree of structure and routine was essential to successful classroom management and learning. On the other hand, he expressed his personal dissatisfaction with the tedium of the routine, even remarking, "Boredom is a deadly enemy in this classroom."

We concluded from these observations and interviews that the occasions for literacy learning were neither personally meaningful nor developmentally appropriate. This led us to shift our emphasis from strategy instruction to creating with the teachers a classroom culture that would support and sustain meaningful, appropriate encounters with literacy. This culture, we hypothesized, would provide the context in which strategy instruction for intentional learning could take place.

Beginnings

We selected two instructional routines as springboards for introducing a new context in these classrooms: story time and handwriting. This instruction took place three times weekly over the course of the school year. The students continued to receive reading instruction, including phonics instruction, in their standard reading programs. We will first describe, in general terms, the modifications we in-

troduced, followed by specific illustrations of these changes.

Traditionally, in these classrooms story time was quiet time, with little interaction occurring before, during, or following the reading. The teacher selected the stories, which covered an array of topics and themes. Children never wrote in preparation for or in response to the story. Story time was an isolated, special activity in the day, and served as a rest period after the noon recess. Handwriting, on the other hand, consisted of copying from the chalkboard sentences that the children and teachers had generated during "morning news," as well as completing work sheets that reinforced letter formation.

The initial modification introduced to story time was the selection of themes that would guide the choice of literature and provide topics for writing. Whereas before there was little interaction during the reading of stories, we now established multiple opportunities for children to engage in interactions before, during, and after story reading. In keeping with the spirit of cognitive bootstrapping, we gave the children books and magazines and encouraged them to talk about what they were learning from their emergent readings of these texts, by, for example, using their background knowledge, discussion with peers, identifying their sight words, and employing their sounding-out skills to figure out what the text was about. The children were receptive to these occasions, particularly to the opportunity to share their preconventional readings of the stories/articles from the "stage" of the reader's chair.

As with the reading activity, we assumed that the children could write, even though a number of them were still unsure of the letter names and had not yet acquired consistent phonemic awareness. Scaffolding was essential to introducing the children to writing. First, we modeled the use of invented spellings. That is, the teacher talked aloud to the children while writing about choices of letters, based on

sounds as well as known spellings. Second, to ease the demands of topic selection, we encouraged the use of topics that were suggested by the literature themes and our discussions of the readings. As the children wrote, additional scaffolding was provided to individual children by teachers who held their words and sentences in memory for them as they struggled to match letters and sounds.

In contrast to the enthusiasm we witnessed in the emergent reading experiences, the novel writing experiences met with a different response. Unlike very young children, these children knew that there are right and wrong ways to spell words. Initially, there was considerable resistance to the notion of using invented spellings. In fact, there were tears and even a few outright refusals when the children first learned that there would be no sentences on the board or books from which to copy. One child, for example, when first asked to generate her own piece of text, slid a social studies book out of the shelf under her desk top, onto her lap, and copied the entire table of contents. In time, however, "spell it the way you hear it" became a rallying cry as the children urged one another along.

These apprehensions about invented spellings were shared by the teachers, who were concerned about additionally confusing a group of children already prone to more than their share of confusion. However, as the teachers observed after several months of experimenting with the use of invented spellings, "I think that, for the first time, in the several years that I have worked with some of these children, they understand what a word is." "They seem to better understand what I mean when I keep saying, 'sound it out' as they read."

Rationale Informing the Redefinition of Literacy Contexts

As with reciprocal teaching, the rationale for the changes we introduced came from cognitive and developmen-

tal theory, including research on developmental spelling and emergent literacy. We planned many instructional opportunities in which learning could occur in social and interactive ways, ranging from paired readings and reader's chair to peer writing conferences and author's chair. In addition, we were particularly concerned with the transition from a reductionist and atomistic approach to literacy instruction to one in which the integrated nature of reading and writing and the uses of reading and writing for meaningful purposes were prominent.

We used the following characteristics as a template for designing with the teachers the lessons we would implement. First, we wanted the children to experience four levels of literacy (see Wells, Chang, & Maher, in press): (1) performative, in reference to the decoding and printing associated with literacy; (2) functional literacy, or the use of literacy for interpersonal exchange; (3) informational literacy, for the communication of knowledge; and (4) epistemic literacy, for creative, exploratory, and evaluative uses. We planned experiences in which these levels of literacy would be experienced simultaneously to enrich the children's conceptions of literacy and to provide a broader range of reasons for wanting to learn to read and write.

Second, we wanted to instruct, model, and guide students in the use of specific thinking strategies that would enable them to engage in these levels of literacy. Third, we wanted to select themes and topics that, in addition to capturing the interest and attention of the children, would provide occasions for children to acquire, organize, and use knowledge in and out of school over time. In addition, influenced by the research on developmental spelling and emergent literacy (Gentry, 1987; Henderson & Beers, 1980; Read, 1986; Teale & Sulzby, 1986; Temple, Nathan, & Burris, 1982), we encouraged children to read and write "their own way," accepting all preconventional forms of literacy as equally legitimate and meaningful. These emergent

readings and writings become, as Bookman (1984) described, "a window to general cognitive development and [serve] as a specific instance of cognitive/linguistic problem solving" (p. 21). Finally, we wanted to plan occasions for the children to think and collaborate with the teacher and with one another in meaningful uses of literacy.

Illustrative Lessons

We have selected a few lessons to illustrate how this template translated into actual lessons. These lessons took place between January and April of 1991 in two special education classrooms, each of which had 11 children meeting the characteristics that we described previously. We have decided to focus on storytelling time to illustrate the nature of the changes.

One story the children worked with was entitled, "Franklin in the Dark" (Bourgeois & Clark, 1986). (Franklin is a turtle whose fear of dark places has led him to imagine that his own shell is inhabited by monsters, ghosts, and other unsavory characters.) Each child had been given a three-ring binder that served as a personal journal in which they would maintain their writings and revisions. As a prelistening activity, the children wrote journal entries about the things they were afraid of— or, in the case of 10-year-old boys who claimed to be fearless, about the fears of family members. After encouraging the children to share their journal entries (an opportunity for reading self-generated text), the teacher introduced the book. The children were asked to identify the genre, with supporting evidence, and to make predictions about the story. An illustration on the book cover, depicting a desolate turtle dragging his shell behind him, prompted the children to suggest that this would be a make-believe story.

After generating a series of predictions, the children listened as the teacher began to read. Unlike the passive listening we had observed in story time prior to the intervention, the chil-

dren actively participated, spontaneously demonstrating their knowledge of story structure and their personal constructions of meaning: "Franklin is the name of the character." "His problem is he's afraid of the dark; that's my problem too!" "He oughta get hisself a night light." The student who made this suggestion later reminded everyone, with considerable pride, that he had predicted the author's solution.

As the teacher read the story, she called the children's attention to the story elements that they had been listening for in previous stories. She revisited their predictions, but she also called the children's attention to how Franklin might be feeling as he journeyed the world over, discovering that everyone he met had learned to deal with fear of some kind. "How would you feel if you were Franklin at this point?" "How," she asked, "does the author tell you that Franklin is surprised with what he is learning?" The teacher invited the children to join her in a second reading. The illustrations and predictable text supported the children in their choral reading.

Following the reading, the teacher introduced a writing activity by sharing her own fear of swimming, and by inviting the children to help her think of solutions to this problem. Then the children were asked to write a response to the story of Franklin in their journals. The response could be to write about solutions to the fear they had raised earlier, or to write a new story in which they were the character seeking help with a fear.

In a future session, the children shared their journal entries with their classmates. The writing process continued as, with the assistance of the teacher, the children edited their entries to substitute conventional spellings for interventions. Revisions were completed at this mechanical level over several months. The work of Fitzgerald (1987) and others suggests that this is not unusual. We were anxious to broaden the children's conceptions to the idea level, but their teachers urged that we hold off, as these children were

unaccustomed to sustained writing during even one session. Asking them to sustain their attention for the same piece of writing over several days seemed inappropriate. We respected the teachers' opinions on this matter and delayed the introduction of "author's chair," a format in which the children select one of several pieces in their writing folders to share with their classmates, to solicit comments for revisions.

To further describe the nature of scaffolding in these lessons, we will describe how we introduced students to the process of revision, taking them beyond the mechanical level. As we explored a variety of themes with the students, none seemed as appealing as those that dealt with people. Influenced by the topics the students chose to discuss and write about, we settled on themes related to friendship. This meant that we would explore friendship through both the writing and the reading that we did. Also, with this theme we chose to focus more systematically on planning, organizing, and revising one's writing. To facilitate this, the teachers began by composing a story with the children, first discussing some events they would possibly like to write about, then listing all the ideas they had for this story, and finally enlisting the children's help as they transformed the ideas into text. The children easily assumed ownership of the story, choosing ideas from their list and organizing these ideas into a story.

To foster a similar process of planning and organization among the students, we encouraged them to work in triads before they began their writing, to list—as the teacher had—ideas they would like to weave into their stories, and to help one another think of interesting ways to assemble those ideas. Following this pattern, with the teacher initially modeling, and the students planning collaboratively and then writing independently, the students were asked to select one from several writings that they would like to revise to make more interesting, exciting, or complete. The teacher once again used

his writing and thought aloud, using a form of self-questioning, about how he might revise his writing. As the students began to get the gist of the teacher's activity, they added additional questions about the teacher's writing and suggested additional revisions.

To reinforce the concept of their classrooms as communities of inquiry, the students engaged in a variety of joint projects. For example, they assembled a class book entitled "Our School" for the purpose of informing new students about life at their school. They wrote a chapter about school rules, took photos of their favorite people and places in the school, planned and conducted interviews with significant people in the school, and wrote about those people and places. During a unit on whales, the students created a mural depicting the things they both wondered and learned about as they read and listened to information about whales from multiple sources, in-cluding books, newspapers, journals, videotapes, and tape recordings.

Throughout our instruction, we placed considerable emphasis on communicating to the children that they were capable of learning from print—even though they were not yet conventional readers—by listening to text, and studying the pictures from children's nature magazines, trade books, and newspaper articles.

Outcomes

These lessons represent only a modest beginning to our goal of introducing alternative conceptions of literacy learning that focus on making sense of literacy, as well as our goal of using literacy to make sense of the world. Data have been collected via individual interviews with the students in which we have assessed metalinguistic knowledge, attitudes toward reading and writing and toward them-selves as readers and writers, knowledge about reading and writing, and reading and writing achievement. In addition, lessons have been videotaped and field notes taken during each lesson, documenting the exchanges between the teacher and children, as well as among targeted children. Because the data collection with individual children is still in progress, we will focus our discussion of outcomes on the field notes and children's writings that we have collected on an ongoing basis.

To date, we have seen a shift from procedural to epistemic questioning, an increase in the children's willingness to take risks with the content, a more intense interest in learning to read—particularly from self-generated text—the use of unsolicited writing for personal expression, and an interest in sharing and displaying knowledge.

Further illustration of change has been observed in the children's writ-

FIGURE 1. Ben's first attempt to "write his own way," demonstrating stable concept of "word."

ing. The sheer amount of their writing has increased, and shifts have been observed from random and patterned letter strings to invented and conventional spellings, with the children experimenting with vowels, consonant blends, and digraphs. The children began writing complete thoughts, and conventions such as spacing between words emerged. The writings indicate that the children's understanding of print reflect the developmental progression observed among nonidentified children given opportunities to write.

In Figures 1, 2, and 3 we present three writing samples by one child, Ben, a second grader. Ben's first attempt to "write his own way" was an emotional and difficult event for this youngster, as well as for us. Ben's previous writing experiences had been limited to copying from the chalkboard, and the task of producing original text overwhelmed him. He cried silently as a researcher sat at his side, encouraging him to "write what you hear" in response to the story, *Clifford the Big Red Dog* (Bridwell, 1985). Eventually, Ben drew an illustration of Clifford riding on the back of a truck and labeled his drawing, GilCISHe (see Figure 1). He was unable to read the label back, but indicated that the writing was about Clifford. His use of letter-name spelling demonstrates that he did indeed have a stable concept of "word" (Temple et al., 1982). One month later, when the novelty of writing his own way had begun to wear off and Ben had gained some confidence in his ability to compose text, he demonstrated much greater knowledge of spelling. This time he wrote: IyAddobAdog zcanKtBks (I want to be a dog. They can catch burglars) (see Figure 2). In this example, we could see to a greater degree the influence of Ben's phonetic knowledge. The strategy he is using is a systematic process of matching letters to sounds (Gentry, 1987). In the final example, Ben's contribution to the class book chapter on rules, he wrote:

Do your best every day
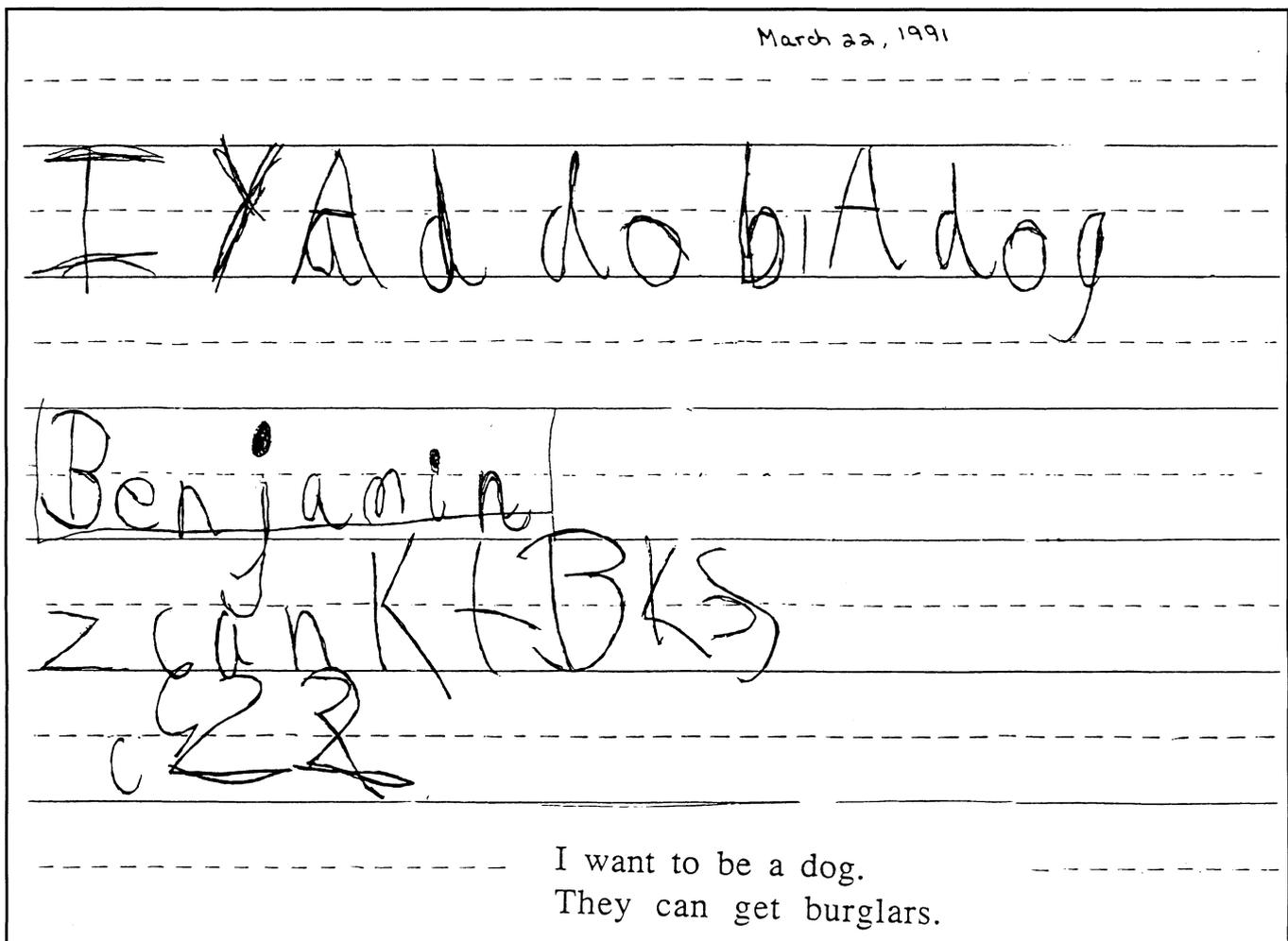DODfit (Don't fight)
DODKS (Don't cuss)

FIGURE 2. Student's writing sample demonstrating increased knowledge of spelling.

Bee GD Avre D (Be good every day) Kown And STn (Come and sit down) I LikHOMSk (I like Holmes School). (see Figure 3)

In this final example, we note that Ben still shows some confusion with memory for letter shapes (he wrote *w* for *m* in *come*, and the words in the cartoon bubble are written from right to left). Fitting letters neatly on the lines is another concern, as seen in Ben's multiple attempts to cross *t*s and form capital *D*s. He still does not hear some medial consonant and vowel sounds (*dod* for *don't*, and *K*s for *cuss*). Despite these confusions and limitations, however, Ben generated a much longer piece of text with relative physical ease and great enthusiasm for the opportunity to contribute to the class book. We also note growth in his spelling, which is now transitional (Beers, cited in Henderson & Beers, 1980; Gentry, 1987), as he uses both his phonetic knowledge to experiment with spelling (he wrote a *c* and a *k* for *cuss*), and his memory for some conventional spellings.

In the next section we discuss our reflections on these lessons. Although for ease of presentation we are isolating the same features that we used to guide our discussion of reciprocal teaching, we recognize the highly interactive nature of these features.

Reflections on the Lessons

Forms of Discourse. At the outset of this study, the discourse in the classrooms reflected the elicitation, response, and evaluation patterns so frequently documented in classroom discourse (Mehan, 1979). In contrast, as story time became more instructionally purposeful, and as teachers allowed opportunities for student input, the changes observed in discourse were observed at several levels.

While teachers still elicited student involvement through questioning, the types of questions generated by the teachers changed from simple, literal questions to questions that invited multiple and diverse responses. This, in turn, led to differences in the discourse patterns themselves, including an increase in the children's responding, not only to the teacher, but also to one another. In addition, evalua-
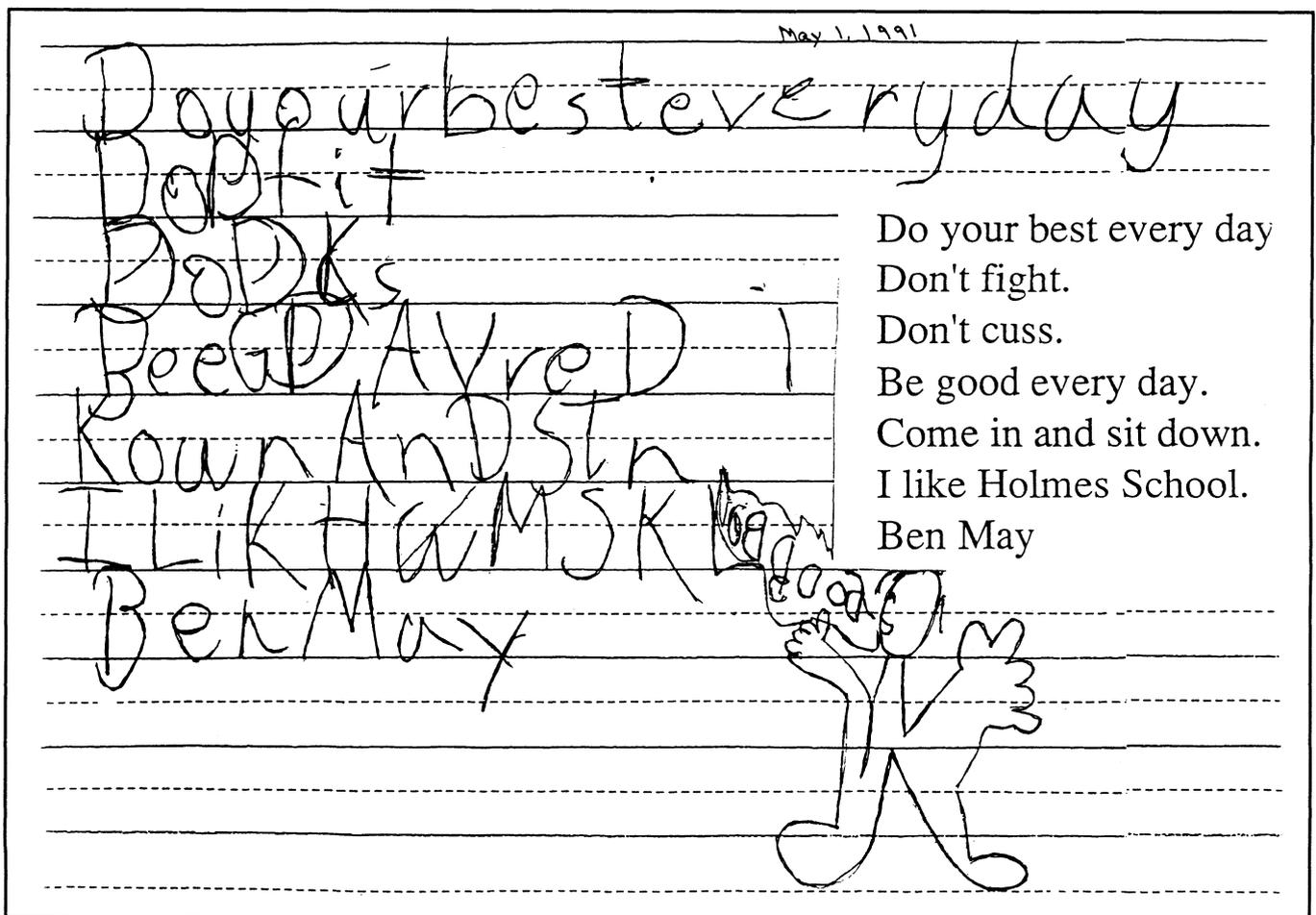
FIGURE 3. Despite some confusion and certain limitations, Ben was able to generate a long piece of text with relative ease and enthusiasm.

tions of responses were offered by the students as well as the teachers.

In addition to changes in the nature of elicited responses, we observed a new phenomenon: the spontaneous interjection of student comments. For example, during story reading, students commented on events transpiring in the text and anticipated upcoming events. For example, during the reading of the true story, *Humphrey the Lost Whale* (Tokuda & Hall, 1986), the students offered a stream of evaluations regarding the rescue attempts that were being made, as well as their personal opinions as to how they might help Humphrey find his way back to the San Francisco Bay. These spontaneous interjections reveal ways in which the children were actively constructing meanings for the text and monitoring their understanding of it.

Playfulness. We have commented on the importance of playfulness in the reciprocal teaching dialogues; a similar playfulness and enjoyment began to figure in our activities with these students. Much to our surprise, given how difficult the writing activity was for the initial months, writing became a reliable source of enjoyment and engagement for many of these children. In fact, there were a number of days when the students proposed that we include writing in lessons in which there had been no plans to write.

There was some levity in the discussions, which bordered on hilarity when the children read *The Nice Walk in the Jungle* (Bodsworth, 1989) and urged the boa constrictor to devour the teacher. The role of humor in the classroom has received little attention, leading Singer and Singer (1979) to comment on the "Scroogian" ethic in classrooms. The work of Bruner (1986) and Cazden (1974), among others, would suggest that there are rich affective, cognitive, and linguistic consequences for using play and humor in instructional activity. One of the positive outcomes the teachers identified in the reading and writing interactions was the opportunity to use and learn

about the humor and interests of their children. The joint reading and writings provided new mechanisms for teacher–child interactions.

Role of the Teacher. Perhaps the most striking adjustment the teachers and students made in the course of this research was to the participation structures that prevailed in their classrooms. Cazden (1986) defined the participation structure as "the rights and obligations of participants with respect to who can say what, when, and to whom" (p. 437). These classrooms were accustomed to traditional participation structures, in which the teacher initiated and sustained most of the activity in the classroom. With the introduction of interactive reading and writing activities, many novel participation structures were created. Adjusting to these new ways of interacting was often a challenge. The teachers felt the shift in "control" and were anxious not to lose behavioral control for the sake of a more equitable distribution of control for learning activity. The use of the "routine" inherent in peer conferencing and reader's and author's chairs helped ease the adjustment. While the teachers still occasionally complain of "too much new" going on, there are no longer complaints about boredom.

In this research, the role of the teacher shares many of the same characteristics observed in reciprocal teaching, principally in terms of the teacher modeling cognitive activity, making visible the thinking processes useful to reading and writing, and scaffolding children's efforts to read and write. The opportunity to meet regularly (at least weekly) as a research team, as well as the opportunity for the teachers to meet with one another, has been essential to supporting the teachers in these redefined roles as well as informing the research agenda itself.

Role of Text. For the children in this study, text had formerly been viewed as a tool with which to practice decoding skills. By mastering a

sequence of such skills, it was assumed the children would become fluent oral readers.

The role of text has expanded along several dimensions throughout the study. Trade books became the foundation of instructional materials. The children were also given opportunities to read from sources such as newspapers, children's magazines, commercially prepared charts, and posters. The most important addition was that of student-generated text, which appeared in original stories, responses to literature, and student-created murals and charts.

A second dimension that change occurred along was that of personal choice. Children had opportunities to select magazines and library books for some lessons. Although choice of text was not an option for all lessons, we felt that such instances generated motivation for exploring text.

Evidence for another change in the role of text stemmed from instances in which students referred to previous stories or discussions. The thematic selection of text created opportunities for students to access and use information read or discussed earlier for the purposes of comparison and contrast, as well as supporting predictions regarding new text.

The single most important change was that the children had opportunities for sustained engagement with complete texts. We used multiple copies of stories so that children could follow along with text that was too challenging for them to read on their own.

Summary

Our metaphors of teaching as scaffolding, learning as cognitive bootstrapping, and classrooms as communities of inquiry have guided our collaboration with teachers to realize enriched contexts for intentional literacy learning.

We have witnessed slow, gradual changes in the culture of these special

education classrooms. These changes emerge through lessons designed to accommodate higher levels of discourse and opportunities for the children to become engaged as intentional learners.

Our rationale for advocating strategy instruction has matured, as well. We no longer assume merely that strategies need to be taught to children in the context of meaningful literacy events, but rather that children deserve opportunities to reveal the strategies they develop independently as they generate their own text and confront print in meaningful situations.

We are also reconceptualizing the roles of the teacher and curriculum. As children construct their own hypotheses about literacy and their own strategies for literacy learning, teachers need to assist them in refining, modifying, and adapting these strategies to meet the demands of the many tasks at hand.

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NOTES

REFERENCES

Bereiter, C., & Bird, M. (1985). Use of thinking aloud in identification and teaching of reading comprehension strategies. *Cognition and Instruction, 2*, 131–156.

Bereiter, C., & Scardamalia, M. (1989). Intentional learning. In L.B. Resnick (Ed.), *Knowing, learning, and instruction: Essays in honor of Robert Glaser* (pp. 361–392). Hillsdale, NJ: Erlbaum.

Bloome, D., & Green, J. (1984). Directions in the sociolinguistic study of reading. In P.D. Pearson, R. Barr, M. Kamil, & P. Mosenthal (Eds.), *Handbook of reading research* (pp. 395–421). New York: Longman.

Bodsworth, N. (1989). *A nice walk in the jungle.* Australia: Penguin.

Bookman, M.O. (1984). Spelling as a cognitive developmental linguistic process. *Academic Therapy, 20*(1), 21–32.

Borkowski, J.G., Johnston, M.B., & Reid, M.K. (1986). Metacognition, motivation, and the transfer of control processes. In S.J. Ceci (Ed.), *Handbook of cognition, social, and neuropsychological aspects of learning disabilities* (pp. 41–53). Hillsdale, NJ: Erlbaum.

Bourgeois, P., & Clark, B. (1986). *Franklin in the dark.* New York: Scholastic.

Bridwell, N. (1985). *Clifford the big red dog.* New York: Scholastic.

Brown, A.L. (1980). Metacognitive development and reading. In R.J. Spiro, B.C. Bruce, & W.F. Brewer (Eds.), *Theoretical issues in reading comprehension* (pp. 453–481). Hillsdale, NJ: Erlbaum.

Brown, A.L., Bransford, J.D., Ferrara, R.A., & Campione, J.C. (1983). Learning, remembering, and understanding. In J.H. Flavell & E.M. Markman (Eds.), *Vol. 3, Handbook of child psychology: Cognitive development* (pp. 177–266). New York: Wiley.

Brown, A.L., & Palincsar, A.S. (1989). Guided cooperative learning and individual knowledge acquisition. In L.B. Resnick (Ed.), *Knowing and learning: Issues for a cognitive psychology of learning. Essays in honor of Robert Glaser* (pp. 393–451). Hillsdale, NJ: Erlbaum.

Bruner, J. (1986). Play, thought, and language. *Prospects, 16*, 77–83.

Butkowski, I.S., & Willows, D.M. (1980). Cognitive motivational characteristics of children varying in reading ability: Evidence of learned helplessness in poor readers. *Journal of Educational Psychology, 72*, 408–422.

Calfee, R.C. (1982). Literacy and illiteracy: Teaching the non-reader to survive in the modern world. *Annals of Dyslexia, 32*, 71–91.

Cazden, C. (1974). Play with language and metalinguistic awareness: One dimension of language experience. *The Urban Review, 7*, 28–39.

Cazden, C. (1986). Classroom discourse. In M. Wittrock (Ed.), *Handbook of research on teaching.* New York: Macmillan.

Ceci, S.J. (1983). An investigation of the semantic processing characteristics of normal and language/learning disabled children. *Developmental Psychology, 19*, 427–439.

Edwards, D., & Mercer, N. (1987). *Common knowledge: The development of understanding in the classroom.* London: Methuen.

Englert, C.S., & Palincsar, A.S. (1991). Reconsidering instructional research in literacy from a sociocultural perspective. *Learning Disabilities Research and Practice, 6*, 225–229.

Englert, C.S., Raphael, T.E., Fear, K.L., & Anderson, L.M. (1988). Students' metacognitive knowledge about how to write informational texts. *Learning Disability Quarterly, 11*, 18–46.

Erickson, F. (1982). Taught cognitive learning in its immediate environments: A neglected topic in the anthropology of education. *Anthropology, and Education Quarterly, 13*(2), 149–180.