

Collaborative Research and Development of Reciprocal Teaching

In Springfield, Illinois, teachers, administrators, and researchers have worked together to develop, research, and implement a technique to improve reading comprehension.

For five years we have collaborated with teachers, administrators, and researchers in the development of *reciprocal teaching*, an instructional procedure originally designed to teach poor comprehenders how to approach text the way successful readers do. Here we describe the development of this technique and its subsequent implementation in the Springfield, Illinois, schools.

About Reciprocal Teaching

In reciprocal teaching, students and teachers talk to one another about the meaning of text, taking turns leading the dialogue. The dialogue is structured to incorporate four strategies: *generating questions* about the content, *summarizing* the content, *clarifying* points, and *predicting* upcoming content from cues in the text or from prior knowledge of the topic (see box, p. 39). These four activities represent the kinds of strategic engagement experienced by successful readers (Beiter and Bird 1985).

Dialogue—simple conversation with a purpose—was selected as the means of helping students become more successful readers because (1) it is a language format with which children are

familiar, and (2) it provides a useful vehicle for alternating control of the activity between teacher and students in a systematic and purposeful manner. When the teacher leads the dialogue, he or she models the targeted strategies. As the students assume responsibility for leading the dialogue, they practice the strategies within a familiar and meaningful context. In turn, the children's participation provides the teacher with rich opportunities to diagnose their strengths and weaknesses and to provide follow-up



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instruction as needed. The following principles form the theoretical basis for reciprocal teaching:

1. The aim of reciprocal teaching is to construct the meaning of the text and to monitor comprehension.

2. The acquisition of the strategies is a joint responsibility shared by the teacher and the students. The teacher initially assumes major responsibility for teaching these strategies but gradually transfers responsibility to the students for demonstrating their use.

3. All students are expected to participate in the discussions; the teacher encourages each student's participation by supporting the student (for example, providing prompts or altering the demand on the student).

4. The teacher makes conscious attempts every day to release control of the dialogue to the students.

With this sound theoretical foundation for reciprocal teaching, the next step was to accrue empirical support.

Studies of Effectiveness and Efficiency

Our reciprocal teaching research can be clustered into three types of studies: *effectiveness*, *efficiency*, and *feasibility*. (For comprehensive reports, see

references.) In one study of effectiveness, the instruction was conducted by an investigator who worked with children individually or in pairs. The children selected for the study were middle school students with well-developed decoding skills but poor comprehension ability (two to four years below grade level on standardized measures).

To establish that the children were internalizing the knowledge and skills acquired in the experimental setting, they had to demonstrate statistically significant gains on standardized measures of comprehension; their progress had to demonstrate reliable and long-term (six month) gains on criterion-referenced measures of comprehension, as well as improvement on measures taken in social studies and science classes. Following 20 consecutive days of instruction, over 90 percent of the experimental students met these criteria (Brown and Palincsar 1982, Palincsar and Brown 1984).

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In these initial studies, reciprocal teaching was compared with more traditional approaches to comprehension that would rule out explanations of the improvement in terms of practice, time-on-task, and teacher attention.

Yet, from an educator's perspective, efficiency is as important as effectiveness—is the result worth the effort? Therefore, we conducted several studies to determine the efficiency of reciprocal teaching (Brown and Palincsar 1987, Palincsar 1985). We will discuss but one of these, a study that examined the role of student-teacher interaction, which is a substantial cost of reciprocal teaching instruction. In this study, 7th graders were assigned to one of three conditions: (1) reciprocal teaching; (2) a condition in which the teacher modeled the four strategies on each segment of text and the students observed and answered the teacher's questions; and (3) explicit instruction during which the teacher demonstrated and discussed each strategy in isolation for the first half of each session and the students completed worksheet activities using the strategies for the second half. Students in the group in which the teacher modeled the strategies demonstrated no significant gains on the comprehension assessments. While students in the explicit instruction condition did make significant gains, their gains were exceeded by the students in the reciprocal teaching group. Hence, the findings of this study supported the value of the high rate of student-teacher interaction in this procedure.

From Feasibility to Implementation

With empirical data supporting the effectiveness and the efficiency of reciprocal teaching, we sought to measure how reciprocal teaching could best be incorporated into the instructional repertoires of classroom teachers. We received permission to determine the feasibility of implementing this model of instruction from the Springfield, Illinois, schools.

Staff development, of course, was one of the critical feasibility questions. Teachers, support staff, and research-

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ers collaborated to design the following staff development process. First, we encouraged the teachers to reflect on and discuss their instructional goals and their activities for improving students' comprehension, highlighting similarities and differences between their current strategies and reciprocal teaching. Second, we introduced the theory behind the design of reciprocal teaching. Third, the teachers viewed videotapes of reciprocal teaching episodes featuring students the same age as those with whom they would work. After these introductory activities, the teachers participated in several sessions where reciprocal teaching dialogues were role-played. Finally, there was a demonstration lesson in which each teacher and the researcher jointly conducted a reciprocal teaching lesson, followed by a debriefing with the teachers involved in the study. After each of these formal preparation sessions, the teachers received additional coaching as they implemented the dialogues in their respective settings. Provided this preparation, these class-

room teachers showed considerable success in implementing reciprocal teaching, as demonstrated by weekly procedural reliability checks.

The initial classroom study was conducted voluntarily by four remedial reading teachers, who worked with middle school students in groups of four to eight (Palincsar and Brown 1984). The next study in the sequence was conducted by the entire middle school reading staff (six teachers) of the Springfield District, instructing groups that ranged in size from 7 to 17. Each teacher taught one experimental and one control group, comparing reciprocal teaching with basic skill instruction, for 25 consecutive school days. At the teacher's recommendation, 20 days of reciprocal teaching dialogues were preceded by five days of teacher-led instruction to introduce the students to each of the four strategies in isolation and to provide the teachers with information about the students' ability to use the strategies. Despite the size of the groups, 72 percent of the 71 students in the experimental groups demonstrated statistically significant gains on the assessments, compared to 20 percent of the 76 students in the control groups (Palincsar, Brown, and Samsel in preparation). In subsequent studies 1st grade teachers implemented reciprocal teaching as instruction in listening comprehension with at-risk students (Palincsar and Brown in press).

Success Factors

A number of factors have served to sustain interest in reciprocal teaching in the Springfield schools: the use of "instructional chaining" (Cazden et al. 1978) for inservice education and teacher-peer collaboration, (2) the alignment of instructional objectives with assessment, and (3) an array of incentives.

Through the use of instructional chaining, a network was developed throughout the district for the many teachers who were using reciprocal teaching. Remedial reading staff members, who had the longest history with the research projects, as well as classroom teachers who had participated in

Reciprocal Teaching in a 1st Grade Classroom

The following excerpts are taken from a reciprocal teaching lesson with a group of six 1st grade students, five of whom were identified as at-risk for academic difficulty. This lesson occurred on the sixteenth day of instruction.

Teacher, introducing the story: Today we will be reading a story called "The Snowshoe Rabbit." Does anyone have a prediction about what this story will be about?

Traver, predicting: It might tell . . . he lives in the snow probably . . . and it might tell you—you might think this is crazy—but it might tell if he's got shoes or something.

Teacher: It did say *snowshoe*, didn't it?

Manny, predicting: It might just be that his feet really look like shoes.

Teacher: All right, maybe his feet look like shoes and that's why it's called "Snowshoe Rabbit." What would you like to know or learn about the snowshoe rabbit?

Rodney, predicting: If he wears shoes or not. Where he lives. . . .

Kim: I want to know is it a rabbit or a boot.

Meara: What the rabbit eats.

Teacher: All right. Those are all good predictions. Let's see if this is what the author wrote. *Reads the first sentence of the story:* How far can you jump? *Asks the children:* What do you think the author is going to tell us?

Meara: How far the rabbit can jump.

Teacher, reading from the story: "A snowshoe rabbit can jump 15 feet." *Asks the children:* Was Meara right?

Children: Yes.

Teacher continues to read the first paragraph describing the speed and strength of the snowshoe rabbit. She then calls on the child who is to lead this portion of the discussion.

Teacher: Troy is our teacher.

Troy, questioning: How fast does the rabbit run?

The group talks about how fast and far a snowshoe rabbit runs. They begin to quibble about the exact numbers.

Teacher: Do you think it is important to remember all these numbers?

Children: NO!

Kim: The rabbit runs very far.

Meara: And very fast.

Teacher: Do you think there's any reason why he jumps so high or runs so fast?

Troy: Maybe if an enemy comes he could get away.

Traver: To protect itself.

Teacher: Troy.

Troy, summarizing: This part told us about he can go far and he can jump fast. *Predicting:* It might tell us where he lives, what state he's in.

The teacher continues to read the next part of the story which describes where the snowshoe rabbit lives and what it looks like, including its hind feet and coloring. The reading is interrupted once by a child asking the teacher to clarify hind. Meara is the next discussion leader.

Meara, questioning: How did the snowshoe rabbit get its name?

Troy: Probably from the white snowshoes—its feet are furry.

Kim: Its back feet are big furry feet.

Teacher: Have you ever seen, well, it looks like a tennis racket and it's strapped onto the bottom of their shoes and people walk on them?

The children all talk at once about whether they have seen this.

Teacher: They need these to help them get through the snow. So that they will not sink in the snow but stay . . .

Children: On top.

Meara, summarizing: This was about how the snowshoe rabbit got its name and it lives in the mountains.

Teacher: That's a good summary! Do you have any predictions?
And so the story goes.

the studies, conducted inservice sessions, often with the research team. In addition, these teachers were available to provide demonstration lessons in their own classrooms as well as in others' classrooms. Before the teachers began this work, their principals attended information sessions conducted by the district reading coordinator; the principals also attended inservice activities. By 1987-88, after taking part in the role-play and demonstration lessons, approximately 150 teachers in 23 buildings had participated in dissemination efforts.

Besides instructional chaining, the teachers met in peer support groups to discuss the progress of their classes as well as the difficulties they encountered. By sharing transcripts of different discussions of the same story, the teachers learned from one another. Another positive outcome of the support groups was the reinforcement teachers received from their peers as they engaged in joint problem solving.

With the leadership of the remedial reading teachers, the district has developed a new reading achievement instrument with a number of items designed to measure the four strategies of reciprocal teaching. The district has also provided support in the form of incentives such as released time for inservice sessions, substitutes for classroom visits, and official recognition for the work of developing and testing new ideas.

In the Spirit of Collaboration

When asked to evaluate the reciprocal teaching program, a teacher recently wrote:

The reciprocal teaching approach has been very effective for actively involving children. . . . The children now stop the lesson and ask for clarification whenever they hear something they don't understand. . . . It is very enlightening to hear all of the different points of view that a group of 1st graders can share. The children learn that sometimes there are several different ways of saying the same thing and that . . . there are many right answers to the same question. The students gain an understanding and an appreciation of what teaching and learning is all about as they take their turns at "being the teacher."

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We would like to offer the same appraisal of the process of collaboration in conducting school-based research: collaboration fosters active involvement for all participants. It provides the opportunity to hear different points of view. What we learn may well be that there are different ways of saying the same thing and that there are many right answers to the same question. Finally, we can all gain an understanding and appreciation of what teaching and learning are all about, as each of us—teachers, administrators, students, and researchers—take our respective turns at "being the teacher." □

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