

Summary of the Reciprocal Teaching Episode

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The reciprocal teaching exercise tests students' ability to explain why RT improves reading comprehension in terms of use newly learned ideas about learning and metacognition. Basically students try to explain the mental processes involved in questioning, clarifying, summarizing, predicting lead to comprehension.

Summary of student performance. I have used the RT exercise in both PBL and non-PBL classes. Overall, the results are encouraging. In effect, the PBL students were better able than the non-PBL students to transfer relevant concepts to the new problem—to carry out “intentional, mindful abstraction of something from one context and application in a new context” (Salomon and Perkins, 1989). PBL students used relevant disciplinary concepts and established plausible connections to explain why RT improves comprehension. Non-PBL students failed to make causal connections, and also resorted to intuitive beliefs as the basis for their explanations.

The following excerpt by a PBL student illustrates the use of disciplinary ideas.

Reciprocal teaching improves students' understanding because it helps students to construct meaning of the material. . . the process of formulating a question forces students to look over the material to try to find the main ideas. . . summarizing the material helps the student get a hold on the main ideas. Putting the material in their own words helps to make connections in a tangible way within the mind of the student. . . predicting is important. . . because it helps the students to see how this material fits into the overall picture. . .

This kind of explanation represents significant progress over the intuitive approaches of the non-PBL students. About one third of the students in both sections of the PBL classes attained this level of explanation. The table below shows the percentages of PBL students who used causal connections to explain why reciprocal teaching improves reading comprehension. Explanations with at least one causal connection indicate an incipient understanding of how RT affects comprehension. More fully developed responses contained multiple causal connections.

Quality of Explanations in two PBL Classes	Fall 1998 posttest (n=29)	Spring 1999 pretest (n=31)	Spring 1999 posttest (n=31)
One causal connection in the explanation.	34%	31%	48%
Multiple causal connections in the explanation.	28%	14%	35%
Percentage of students in the class with at least one causal connection.	62%	45%	83%

In a follow-up study four months after the course, I tested 15 students (about half the class) to determine what they remembered and understood about reciprocal teaching. Students read a brief summary about reciprocal teaching and then tried to explain why RT improves reading comprehension. Eleven students gave at least one causal connection response (e.g., “clarifying to other students makes them read it over if they do not understand it and saying it out loud to others will help them remember. Summarizing the material in his/her own words is helpful because then the students get the main idea and leave out the unnecessary and it becomes more clear.”). These data suggest that students' understanding endures several months after the course.

The PBL students demonstrate an emerging ability to use disciplinary concepts to think analytically about the relationship between teaching and learning. Although their explanations were not always accurate or fully developed, the majority of PBL students advanced beyond intuitive beliefs and superficial responses in this exercise.

Despite important advances in their understanding, many students did not make causal connections (38% and 17% in fall and spring, respectively). Moreover, a sizable percentage of students produced only one causal connection in their responses (34% and 48% in fall and spring, respectively). An important question is, “Why don’t all the students get it?” After studying relevant concepts, why can’t all of the students adequately explain why reciprocal teaching improves reading comprehension?

There are two important sources of difficulty. First, students have to work with a large amount of unfamiliar material. As novices, learning is often slow going and halting. This is reflected in the large number of students who produced only one causal connection. They appear to have an incipient understanding of how RT works. Second, students may already have a theory that explains learning differently than the cognitive perspective. Many students gave generic explanations which construe RT as an external force that makes understanding happen (e.g., they assert that RT “forces” the child to think). This idea is consistent with a view of learning as a process in which information is acquired through exposure, reinforcement or direct manipulation of objects. According to some researchers, this view of learning is typical of teachers (Levin and Ammon, 1992, 1996; Ammon and Hutcheson, 1989). In contrast, the cognitive model construes learning as conceptual change—new understanding results from interactions between prior knowledge or cognitive structures and new information and experiences. Their prior concept of learning may make it difficult for students to view learning in terms of covert mental activity.