

Reciprocal Peer Tutoring for Math

Why Is This Strategy Useful?

Reciprocal peer tutoring (RPT) is a cooperative learning strategy which capitalizes on the benefit students receive from preparing to tutor one another. Using this strategy, the tutor advances his or her skills through the process of constructing an explanation of the problem for the tutee. RPT emphasizes having the peer tutor prompt and praise the peer tutee and seek the classroom teacher's help if needed, rather than having the tutor provide instruction or elaborate explanations beyond their ability level. Research indicates that RPT is successful in promoting student achievement and student adjustment in content areas, such as mathematics.

Reciprocal peer tutoring is a strategy that can be used with students with a wide range of disabilities and at all grade levels. In addition, RPT has shown promising results in increasing achievement levels for low-achieving students.

Description of Strategy

Successful implementation necessitates training all students in the process and roles of peer tutoring. To implement a reciprocal peer tutoring session, the teacher can utilize the following steps:

1. Design lessons to reinforce skill already taught to students.
2. Identify a specific learning objective to be presented by tutor.
3. Teach students how to be tutors.
4. Provide a script of prompts for the tutor.
5. Provide necessary flash cards or lists of skills to the tutors.
6. Provide a daily log to record tutoring session.

In addition, students must be taught methods for seeking help, such as directly asking for help, and continuing to ask for help until they understand. If students do not feel comfortable directly asking for help, the tutor and tutee could develop a signal system. The tutee could signal the tutor when he or she needs help. Examples of signals are pointing to the self, pointing to the tutor, or taps on the hand, book, or table. Continual monitoring and feedback from the teacher help students engaged in peer tutoring stay focused on the lesson and improve their tutoring and learning skills.

Research Evidence

At least one randomized controlled design study supports the use of this strategy. Forty fourth- and fifth-grade public school students participated in this study. The study was conducted in a large urban city in the Northeast. Individual participants were assigned randomly to one of two experimental conditions, reciprocal peer tutoring or practice control. In the reciprocal peer tutoring (intervention) condition, students were paired into dyads and they rotated tutor and tutee roles to do math practice work. In the practice (control) condition, the participating students worked independently. Teacher and student behavior, student self-concepts, and student math performance were measured and observed. Direct observation revealed that the RPT intervention was associated with significantly higher teacher and student rates of active task-related behavior as compared to controls. Peer students and teachers were considered to be actively engaged when they were productively involved in the academic task assigned to the dyad. Moreover, findings indicated that students who received training and practice in RPT

performed significantly higher than the control group students on measures of both mathematics computation and self concept.

Sample Studies Supporting this Strategy

Ginsburg-Block, M., & Fantuzzo, J. (1997). Reciprocal peer tutoring: An analysis of “teacher” and “student” interactions as a function of training and experience. *School Psychology Quarterly* 12, 134-149.

The purpose of this study was to investigate the relationship between peer-tutoring interactions of dyads with experience in a reciprocal peer tutoring (RPT) program in mathematics, versus dyads with no experience in RPT. It was hypothesized that students who participated in the RPT condition would exhibit significantly greater amounts of behaviors associated with effective peer teaching than students in the Practice Control (PC) condition and that these behaviors would be associated with mathematics achievement and student reports of behavioral conduct and social competence. Forty academically at-risk fourth- and fifth-graders from an urban elementary school were randomly assigned to either RPT or PC conditions. Group difference data revealed that RPT participants displayed significantly higher rates of mathematics achievement, self-report of social acceptance and behavioral conduct and higher rates of observed teacher and student task-related behavior as compared to controls. Correlational analyses showed that peer student active engagement in academic activity was positively related to curriculum-based mathematics test scores. Unique to the literature on peer tutoring interactions is this study's examination of the relationship between observations of student interactions and student self-report of social acceptance and conduct.

Additional Resources

Math Peer Tutoring. http://www.k8accesscenter.org/training_resources/mathpeertutoring.asp

Peer Tutoring.

<http://www.nichcy.org/Research/EvidenceForEducation/Pages/MathPeerTutoring.aspx>

Peer and Cross-Age Tutoring. <http://www.nwrel.org/scpd/sirs/9/c018.html>