Peer Assisted Learning Strategies (PALS) for Math

Why Is This Strategy Useful?

Peer-Assisted Learning Strategies (PALS) combines peer tutoring with instructional practices to improve student proficiency in mathematics. PALS has been shown to be effective for all students, with an increased benefit seen in secondary students with mathematics disabilities, a group that research shows often leaves school with mathematics proficiency levels that are six to seven years lower than their peers. This approach creates a community of learners in which all students in a classroom are partnered with other students in the classroom to actively share in the learning process.

Description of Strategy

Peer-Assisted Learning Strategies is a 30-minute mathematics activity implemented two to four times a week and is designed to complement existing mathematics curricula. Teachers identify and pair students who require help with specific skills (tutee) with students who are the most appropriate to help other student learn those skills (tutor).

To conduct PALS, the tutor models a series of verbal statements or questions that the tutee uses to guide him- or herself through concrete knowledge of mathematical skills. Each series of verbal statements or questions requires a verbal or written action by the tutee. The tutor responds every time the tutee writes and speaks an answer. When the tutee is correct, the tutor circles the correct answer, and when the tutee is incorrect or expresses confusion, the tutor provides as much additional help as needed. The problem sheets are divided into four equal parts. For the first problem set, the student pair completes the interaction just described. The tutee then works the next problem set more independently; the tutee explains his or her work to the tutor and, while the tutor listens, corrects incorrect statements, relying on the same correction procedure used for the first problem set. Then, the two students reverse roles and repeat the same sequence. The tutor offers praise or corrects the tutee as necessary, providing additional help if needed. Every few weeks, the tutoring assignments are changed.

Research Evidence

At least one randomized controlled trial supports this strategy. One study looked at 92 learning disabled secondary school students. Students were randomized into a treatment or control group. The treatment group received PALS training for eight weeks to become familiar with the process, then participated in PALS for 15 weeks during that time, study data was collected. A significant difference was seen between groups, with the PALS group outperforming the control group on computation scores. The study administered questionnaires to the students and teachers to gain qualitative feedback regarding the program. Overall, students’ attitudes towards PALS were positive. They reported that they liked working with a partner and believed it helped them improve and work harder in math. The teachers also liked PALS and thought it was beneficial to the students and to themselves.
Sample Studies Supporting this Strategy


Available at: http://rse.sagepub.com/cgi/content/abstract/24/4/235

The purpose of this study was to examine the effects of peer-assisted learning strategies (PALS) and curriculum-based measurement (CBM) on the mathematics performance of secondary students with disabilities. Ten classes with 92 students in Grades 9 through 12 participated. All students were significantly below grade level and received mathematics instruction in self-contained resource rooms. Classrooms were randomly assigned to PALS/CBM or the classroom mathematics program (control). PALS/CBM was implemented twice weekly and CBM was conducted weekly for 15 weeks. PALS/CBM students improved their computation math skills significantly more than control students, but no significant difference was found on concepts/application math skills. On questionnaires, teachers and students indicated that they (a) liked using PALS, (b) felt PALS was helpful in increasing mathematics skills, (c) thought CBM graphs increased motivation to work hard in math, and (d) would like to participate in PALS/CBM again. Results are discussed with respect to research and practice.

Additional Resources


Peer-Assisted Learning Strategies, background information available at: http://kc.vanderbilt.edu/pals/