THE ANSWER LAB
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THE QUESTION

Which instructional practices can be used by both special education and general education teachers to improve academic achievement among students with disabilities?

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Schools across the nation are searching for a best way of educating together students with and without disabilities. One popular approach is Response to Instruction (RTI), a way to deliver inclusive and effective education to virtually all children. RTI's most noteworthy feature is its multiple tiers of increasingly intensive instruction. However, in practice, schools have had trouble correctly implementing how students are moved along between tiers. A promising means of addressing this problem and improving the effectiveness of RTI is known as Peer-Assisted Learning Strategies (PALS), a suite of programs in reading and mathematics that were validated as supplements in the general classroom.

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THE EVIDENCE

PALS Overview

The principle behind Response to Intervention is that most children are expected to respond adequately to classroom instruction (Tier 1). Those who do not respond sufficiently in Tier 1 are moved to small group instruction (Tier 2). Students unresponsive in Tiers 1 and 2 are provided individualized intervention (Tier 3). Despite best intentions, this approach has proved difficult to implement partly because too many students are moved from Tier 1 to Tier 2, thereby undermining the small-group intensity of Tier 2 instruction. A means of addressing this problem is to adopt Peer-Assisted Learning Programs in Tier 1 that have been developed and proven to supplement core classroom instruction.

The teacher in a PALS classroom organizes her students in pairs to work 2-4 times per week for 20-30 minutes per session. Pairs work on a highly structured set of activities that provide guided-instruction and practice on academic content, including foundational-level skills and higher-order strategies. PALS programs encourage teachers to establish a classroom routine that is meant to foster productive academic behavior and socio-emotional growth. These are supported in two ways:

1. Intensive 1:1 peer interactions allow frequent opportunities for students to ask and respond to questions, to obtain immediate corrective feedback, to experience sustained academic engagement, and to responsibly participate in constructive peer-to-peer social interactions.
2. PALS facilitates differentiated instruction. For instance, PALS teachers may assign different pairs to simultaneously work on different levels of text or different mathematics skills, sometimes using varying levels of scaffolds or supports.

Components of Reading PALS and Math PALS

Manuals and Training

A different PALS manual is provided for teachers in each grade and content area. The manual explains the program structure and provides the materials for implementation. Manuals also contain detailed scripted lessons to use in training the class to conduct PALS. As procedures/activities are taught, they are incorporated into the PALS sessions. New activities are gradually added as students gain experience. Training is completed over 4-6 weeks.

Coach and Player Roles

The teacher pairs a higher-performing student with a lower-performing student. Pairs are reassigned every 2 weeks in Math PALS and every month in Reading PALS. In Reading PALS, one student in each pair is designated first reader, the other as second reader. Students reverse roles half-way through each activity. In Math PALS, the students are referred to as Coach and Player. Students switch roles half-way through the Coaching component (see Table 2b). Hereafter, we refer to the tutor role as Coach and the learner role as Player. The Coach guides the Player step-by-step through the lesson's activities by asking questions and providing corrective feedback for each error and praise for correct responses.

The PALS program is explicitly scripted for the Coach and Player so students have clear guidelines for their roles in the learning process. Typically, in Reading PALS, the higher-performing student starts as Player; the lower-performing student, as Coach. This permits the higher-performing student to model correct reading for the lower-performing student. In Math PALS, the higher-performing student begins as Coach to model correct execution of the procedure or strategy and to model productive methods for giving feedback and explanations.

Teacher Role

The teacher conducts the PALS training lessons during the first 4-6 weeks. Then, as the program is implemented, she oversees each session. She announces the start of the PALS lesson and directs students to move to sit next to partners. In the early grades, the teacher conducts a scripted overview of the lesson. In all grades, the teacher uses paired time to walk around the classroom to answer student questions, listen to pairs, and provide help or feedback as needed. The teacher also announces when students are to switch PALS activities and roles, and she ends the session by praising groups for strong PALS interactions.

Activities, Content, Session Duration, and Number of Lessons

PALS shares a basic organizational structure across the grades and across reading and mathematics. However, the activities differ by grade level and content area. Tables 1a and 1b outline the activities by content area and grade. Tables 2a and 2b outline the content, duration of lessons, and number of lessons addressed by for reading by grade within reading versus math.

PALS Research

Scores of studies have been conducted by us and by others examining PALS efficacy on students' reading and mathematics outcomes, as well as its effects on the social standing of students with disabilities in PALS classrooms. This report provides references for a sample of PALS studies

(conducted by the Fuchs Research Group). Additional studies have been conducted by researchers across the United States and abroad. These studies generally used the most rigorous experimental designs.

Over the years and grade levels in which we have conducted our evaluation studies, findings have nearly always found that students in PALS classrooms learn more than those in No-PALS classrooms. This has been true for students with learning disabilities and students who began the year with low, average, or high levels of academic performance. Thus, PALS appear to benefit all types of student learners. Additionally, students with learning disabilities are generally better known, better liked, and have more friends in PALS than in non-PALS classrooms.

That said, 10% to 20% of children in PALS classes do not benefit from the program. Whereas PALS is appropriate for many, including many at-risk children with and without disabilities, it is not an appropriate program for all students. Specifically, it is not a sufficiently intensive program for those with the most serious learning problems. Such children will require strong Tier 2 or Tier 3 interventions to make adequate progress.

CONCLUSIONS

PALS can be used to supplement an array of core reading and math programs and, as shown in research, it provides a "safety-net" for students who require additional structured practice to achieve reading and math benchmarks. Moreover, and not incidentally, teachers and students enjoy PALS. Teachers report that it is easy to implement. Due to its demonstrated effects within high-quality randomized control trials, its affordability (less than $2 per student), and its ease of use, PALS has become a popular educational innovation that is used widely throughout the United States. It has been translated in many languages for implementation in countries across the globe.

PALS manuals, which provide all materials for implementing PALS (except library reading material) and scripted lessons for teachers to prepare classrooms to implement PALS, are available for grades kindergarten and 1-6 in reading and in math. For information on obtaining PALS manuals, go to **www.peerassistedlearningstrategies.com**. The website provides additional information on PALS as well as on validated small-group reading and math interventions developed for Tier 2 and Tier 3 interventions.

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