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THE PRACTICAL TEACHER

This Month's Topic:

Reciprocal Peer Tutoring: A Review of the Literature

By Christina Aleman

Florida International University

This issue of **NASET's Practical Teacher** was written by Christina Aleman from Florida International University. It focuses on reciprocal peer tutoring. High stakes testing is a critical factor in the academic success of many students on the quest for a high school diploma (Melekoglu, 2011). Many research studies support the premise that reciprocal peer tutoring has a positive impact on many students, including students with disabilities, across a wide range of academic content areas such as reading, science and mathematics (e.g., Calhoon, 2005; Calhoon, Otaiba, Cihak, King, & Avalos, 2007; Kourea, Cartledge, & Musti-Rao, 2007; Mackiewicz, Wood, Cooke & Mazzotti, 2011; Sáenz, Fuchs & Fuchs, 2005). Thus, reciprocal peer tutoring can be a valuable tool to incorporate into any classroom, as it enables students to take ownership of their learning, as well as play a vital role in the education of their peers. "Peer tutoring is a cost-effective student-mediated instructional procedure in which student dyads or small learning groups work together on instructional tasks" (Dufrene, Reisener, Olmi, Zoder-Martell, McNutt, & Horn, 2010, p. 242). This strategy may enhance and reinforce the educational needs of students who have varying academic capabilities. This publication will focus on a review of the literature on the topic of reciprocal peer tutoring.

Reciprocal Peer Tutoring: A Review of the Literature

High stakes testing is a critical factor in the academic success of many students on the quest for a high school diploma (Melekoglu, 2011). The long venture may be filled with many trials and tribulations for any student; particularly a student identified as learning disabled (LD). The success in high stakes testing requires that decoding, comprehension and all other components of reading are up to par with grade level standards in order to prove mastery of academic content. Over 75% of students with disabilities are currently reading below proficiency level within the public school system (Melekoglu, 2011). In fact, students identified as LD struggle the most in achieving reading success in comparison to nondisabled peers (Melekoglu, 2011). These students not only face challenges in decoding and comprehension, but also lack the motivation to strive toward a seemingly unattainable goal (NJCLD, 2008). Students with poor motivation require instruction on how to use strategies that plant the seed of motivation with the hope that it will make their journey for reading success less impossible and more enjoyable.

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Effects on Reading Components and Other Content Areas

Over a decade of research on reciprocal peer tutoring and its effects on reading and other areas exist. The research examined in this literature review discuss the effects of this supplemental strategy on students who were LD, low achieving students, and students identified as ELL (Calhoon, 2005; Calhoon et al., 2007; Kourea et al., 2007; Mackiewicz et al., 2011; Sáenz et al., 2005). The majority of studies examined show that reciprocal peer tutoring has a positive impact on students showing skill deficiencies, primarily in reading (Calhoon, 2005; Calhoon et al., 2007; Kourea et al., 2007; Mackiewicz et al., 2011; Sáenz et al., 2005).

Reading

Reciprocal peer tutoring has been studied thoroughly in the content area of reading. The majority of the research found on its use for reading improvement was in the components of fluency and comprehension. Studies suggest that the Peer Assisted Learning Strategies program (PALS) program is a weak tool for fluency, particularly for students with special needs and those students lacking English language proficiency (Calhoon et al., 2007; Sutherland & Snyder, 2007; Sáenz et al., 2005). Reciprocal peer tutoring, after years of in-depth research, is considered an evidence-based instructional intervention.

Sight Word Recognition. Reciprocal peer tutoring has shown to be successful across studies in the inclusive setting within the elementary grades (Kourea et al., 2007; Norman & Wood, 2008). Norman and Wood (2008) investigated the use prerecorded sight words on the accuracy of reciprocal peer tutoring feedback of unknown words on low achieving kindergarten students. The results of the study indicated that there was a higher incidence of accurate tutor feedback during the conditions that utilized the peer tutoring paired with the prerecorded sight words device. A prior study by Kourea, Cartledge, and Musti-Rao (2007) found the highest gains occurred during sight word acquisition. Maintenance was established at 87.4%. The Woodcock-Johnson-III (WJ-III) posttest showed a 5-7 month gain in the Word Attack, as well as the Letter Word Identification subtests.

Phonics and Fluency. Calhoon (2005) studied the implications of reciprocal peer tutoring on teaching phonological skills and fluency in a middle school self-contained language arts classroom, using the PALS strategy and Language Skills Training (LST) program. A contrast treatment group was developed utilizing the Saxon Phonics Reading program. Middle school students with an LD eligibility receiving reading instruction in a self-contained classroom were observed. The dependent measures were taken from subtests of the WJ-III diagnostic achievement test. After 31 weeks of treatment, the research found PALS to be an effective intervention in increasing phonological skills (effect size =1.10).

Sutherland and Snyder (2007) also examined the impact of reciprocal peer tutoring on fluency in students with Emotional or Behavioral Disorders (EBD). Results from the study indicated a decreasing trend in disruptive behavior and increase in active responding, during the intervention phase. However, 15 weeks later, a maintenance phase took place which resulted in the effects not maintaining over time. The lack of fluency growth in LD students, while using PALS in a self-contained middle school language arts class showed that it was not a method of peer-tutoring that promoted an increase of reading speed and accuracy, even when taught explicitly (Calhoon, 2005). Furthermore, Sáenz, Fuchs and Fuchs (2005) also reported that PALS produced minimal increases in the area of reading fluency for ELL students with a LD when measured by the Comprehensive Reading Assessment Battery (CRAB).

According to Calhoon, Otaiba, Cihak, King, and Avalos (2007), who researched further into the impact of PALS on reading skill acquisition in 1st grade dual language classes, found that students who took part in the PALS program exhibited more growth than students who participated in the contrasting condition in all areas, except for letter naming fluency. Moderate growth was evident in segmentation fluency.

Also, PALS showed to have more positive effects on students who were proficient in English, than ELL students in the areas of phoneme segmentation fluency, as well as oral reading fluency. It was also observed that PALS was more helpful to ELL students than students proficient in English in the subtests of Nonsense Word Fluency and Letter Naming Fluency. Research on fluency skill acquisition using reciprocal tutoring was also investigated by Dufrene et al. (2010) during tier II supports of the Response to intervention (RTI) continuum. The results demonstrated an increase in oral reading fluency in all tutored participants on progress monitoring probes. Moreover, Kourea et al. (2007) investigated the strategy in an inclusive 2nd-3rd grade classroom of African American students, including four identified as at-risk. Students showed vast improvements in reading fluency and comprehension during intervention by a 13.7 word difference. Reading fluency and Comprehension gains, based on the WJ-III posttest, indicated a 1 and 3 month increase in the mentioned areas.

Vocabulary. Reciprocal peer tutoring is an effective vocabulary building strategy, primarily for struggling readers. Mackiewicz, Wood, Cooke and Mazzotti (2011) designed a study investigating the effects of incidental teaching of reading vocabulary as a treatment in comparison to incidental teaching supplemented with reciprocal peer tutoring paired with a VoicePod audio prompting device. The results indicated that students recalled a mean of about 4.0 vocabulary words per condition with the combined treatment of incidental teaching, peer tutoring and audio prompting in comparison to solely using incidental teaching, which only resulted in a mean of 1.2 words selected by students per condition. Furthermore, McDuffie, Mastropieri and Scruggs (2009) found that peer tutoring was an effective way to teach science vocabulary to students with LD within an inclusive setting.

Comprehension. Reciprocal peer tutoring has also been used to address difficulties with comprehension in previous research. Sáenz, Fuchs, and Fuchs (2005) investigated the effects of PALS on the comprehension skills of English Language Learners (ELL) compared to the comprehension skills of ELL high and low achieving peers participating in PALS. Reading was measured via The CRAB. The results suggested high levels of improvement in the area of reading comprehension. Moreover, other studies also implied that reciprocal peer tutoring would successfully improve reading comprehension in students in elementary and middle school in both self-contained language arts classrooms, as well as for students with a LD participating in inclusion (Calhoon, 2005; Kourea et al., 2007).

Other Content Areas

Research studies in other content areas support the use of reciprocal peer tutoring as a worthwhile strategy in the classroom (Mayfield & Vollmer, 2007; McDuffie, Mastropieri & Scruggs, 2009). Some of the content areas benefitting from reciprocal peer tutoring have been math and science. Content area vocabulary and procedural knowledge, such as pre-algebra equations skills in students have increased through the use of peer tutoring.

Math. Mayfield and Vollmer (2007) examined the effectiveness of peer tutoring, as an instructional strategy, to increase accuracy on pre-algebra skills such as decimals and long division in a study conducted in a group home setting with elementary-aged female students who were victims of abuse. The results indicated that all tutoring pairs showed an increase in accuracy upon the start of the sessions and displayed maintenance during the implemented maintenance phase of the study. The tutors mastered an average of 50% of skills presented, and the tutees mastered 60% of the skills presented.

Science. McDuffie et al. (2009) explored the effects of peer-to-peer tutoring on 7th grade students across two school districts, to include students with and without disabilities who participated in inclusion. Tutoring was used to address science vocabulary and major concepts. The findings suggested that students did better when participating in peer-tutoring groups, than in conditions with using only traditional science instruction.

Implementation

Reciprocal peer tutoring can be implemented in a variety of ways. There are programs such, such as PALS, as well as the informal implementation of tutoring by educators. Additionally, technology can be incorporated to help maximize the strategy for more novice students. Thus, this strategy is a multifaceted and one that can be tailored to best suit the needs of students and their teachers.

Peer Assisted Learning Strategy (PALS)

According to several studies reviewed, PALS is a type of reciprocal peer tutoring program, focusing on comprehension that is used in class-wide peer tutoring. It is scripted and teacher led. The program has three main activities that include: partner reading and retell, paragraph shrinking, as well as prediction relay. However the majority of the time is centered around reading comprehension (Calhoon, 2005; Calhoon et al., 2007; Sáenz et al., 2005; Sutherland & Snyder, 2007). PALS has been suggested as a supplement to core reading instructional programs, as it lasts 25% of a 90-minute reading block for half of the school year (Calhoon et al., 2007). PALS has shown to be a beneficial supplement to instruction in many research studies, especially for students who are LD, EBD, ELL or struggling readers (e.g., Calhoon, 2005; Calhoon et al., 2007; Sáenz et al., 2005; Sutherland &

Snyder, 2007). PALS has been used as strategy in inclusion classrooms for the purpose of promoting positive social interactions regardless of differing academic ability (Sáenz et al., 2005).

Teacher Structured Peer Tutoring

Many studies have used reciprocal peer tutoring without incorporating PALS have also uncovered positive impact on reading skills (e.g., McDuffie et al., 2009; Mayfield & Vollmer, 2007; Mackiewicz et al., 2011; Norman & Wood, 2008; Kourea et al., 2007; Dufrene et al., 2010). In peer tutoring structured by the teacher, the length of tutoring sessions vary according to material being taught as well as the purpose. Additionally, it has been incorporated in different content areas, not just in reading and has shown to increase vocabulary comprehension and math fluency (Mayfield & Vollmer, 2007; McDuffie et al., 2009).

Student Pairing Techniques

Student pairing for the purpose of tutoring varies according to student attitudes, abilities and setting. In one study, pairs were established according to whether or not the girls shared a home, and served as both the tutor and tutee within the assigned pairs (Mayfield & Vollmer, 2007). In another study, researchers paired students according to compatibility based on academic achievement and behavior (Mackiewicz et al., 2011). In addition, in a study conducted in an inclusion setting, peer tutoring pairs were determined based on similar skill ability, as evidenced in four subtests of the WJ-III (Kourea et al., 2007). In research studies using PALS, a low achieving student is paired with a high achieving student in each dyad (Calhoon, 2005; Calhoon et al., 2007; Sáenz et al., 2005; Sutherland & Snyder, 2007). Thus, there are many various forms of data can be considered when attempting to pair students suitably for tutoring. Special considerations should be made for students with special needs. For example, within a study in self-contained EBD classroom by Sutherland and Snyder (2007), not only were academics analyzed for effective student pairing, but behavior that may hinder learning as well. Within that study, the teacher collected data from the Interpersonal Competence Scale for Teachers (ICS-T), along with academic achievement data in order to create the most compatible student pairs. Pairing should be thoroughly thought out in order to promote the most effective outcome.

Audio Prompting

Instructional feedback that is immediate and accurate has the greatest impact on the level of success of peer tutoring as well as skill acquisition (Mackiewicz et al., 2011; Norman & Wood, 2008). Furthermore, if two struggling learners are paired together for peer tutoring sessions, the inconsistent level of accurate feedback may hinder the success of the intervention (Norman & Wood, 2008). Thus, research of the use of audio prompting in reciprocal peer tutoring has shown to aid the process when tutoring is conducted with a majority of low achieving students. The use of audio prompting may help reduce the need for constant teacher monitoring and students reported enjoyed using audio devices such as a VoicePod audio prompting device and the MiniMe audio device (Mackiewicz et al., 2011; Norman & Wood, 2008). Student level of engagement increased through the use of such devices, thus aiding on task behavior during intervention.

Benefits of Implementation

The implementation of reciprocal tutoring has many known advantages. According to Mackiewicz et al., (2011), the educational needs of both students involved in sessions are met via the carefully selected instructional material and each student is given the opportunity to be both the tutor and tutee. Thus, the learning stage is neutral and the students' most sought after competitors are themselves. Also, reciprocal peer tutoring is an evidenced-based strategy that fosters learning through collaborative groups for the purpose of increasing students' enthusiasm and commitment to the academic content presented (Norman & Wood, 2008). The majority of the previous studies reviewed suggest that peer tutoring is a productive form of student-to-student interaction that increases learning across a variety of skills and content areas (Calhoon, 2005; Calhoon et al., 2007; Kourea et al., 2007; Mackiewicz et al., 2011; Sáenz et al., 2005). Furthermore, reciprocal peer tutoring has shown to be enjoyable for the students and teachers across different content areas as well (Calhoon, 2005; Calhoon et al., 2007; Kourea et al., 2007; Mackiewicz et al., 2011; Sáenz et al., 2005). The strategy has shown to decrease disruptive behaviors and increase time on task across setting (Sutherland & Snyder, 2007; Fuchs & Fuchs, 2005; Otaiba et al., 2007). This benefit is of great importance for students, particularly those who have struggled retaining skills in the past or have low motivation in the classroom.

Peer tutoring provides opportunities for extra practice, immediate feedback and instructional delivery (Calhoon, 2005). Hence, since students become active agents in their learning, teachers are alleviated to perform other tasks to optimize learning in the classroom. This procedure allows teachers to focus on working with small groups, while other students participate in productive peer, social interactions that enable the growth of various skills. Students trained in reciprocal peer tutoring are able to continue with the strategy regardless of the transition of word list, chapter or unit.

The method of intervention can smoothly transcend itself from content area to content area with minimal teacher monitoring, if proper training is provided prior to its initial use. It is an efficient way to productively manage instructional time and guarantee that learning is taking place for all students.

The review of literature supports the proposed action research plan that will examine whether the use of reciprocal peer tutoring increases the level to which students with learning disabilities decode words and recall sight words in an inclusive classroom. More research is needed on using peer tutoring as an intervention for sight words, as well as for decoding. Reciprocal peer tutoring is an evidence-based technique that can be customized or individualized by the teacher to suit the needs of his or her students. Additional skill practice is critical for retention of skills, particularly in students who are LD. Developing self-worth through teaching others may help these students obtain the skills that are needed to exhibit mastery on standardized assessments and continue to purpose future educational endeavors throughout their lives.

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