

8-2019

# Class-wide Peer Tutoring Strategies: Advantages for Students with Academic and Social Needs

Jodi Linder  
jllinder@stcloudstate.edu

Follow this and additional works at: [https://repository.stcloudstate.edu/sped\\_etds](https://repository.stcloudstate.edu/sped_etds)

 Part of the [Special Education and Teaching Commons](#)

---

## Recommended Citation

Linder, Jodi, "Class-wide Peer Tutoring Strategies: Advantages for Students with Academic and Social Needs" (2019). *Culminating Projects in Special Education*. 82.  
[https://repository.stcloudstate.edu/sped\\_etds/82](https://repository.stcloudstate.edu/sped_etds/82)

This Starred Paper is brought to you for free and open access by the Department of Special Education at theRepository at St. Cloud State. It has been accepted for inclusion in Culminating Projects in Special Education by an authorized administrator of theRepository at St. Cloud State. For more information, please contact [rswexelbaum@stcloudstate.edu](mailto:rswexelbaum@stcloudstate.edu).

**Class-wide Peer Tutoring Strategies: Advantages for Students**

**with Academic and Social Needs**

by

Jodi Linder

A Starred Paper

Submitted to the Graduate Faculty of

St. Cloud State University

in Partial Fulfillment of the Requirements

for the Degree of

Master of Science

in Special Education

August, 2019

Starred Paper Committee:  
Bradley Kaffar, Chairperson  
Kyounghee Seo  
Frances Kayona

## Table of Contents

	Page
List of Tables .....	4
Chapter	
1. Introduction.....	5
Advantages of Peer Learning Strategies .....	7
Factors That Influence Controversial Results of Peer Learning Strategies.....	8
Research Question .....	9
Focus of the Review.....	9
Importance of the Topic.....	9
Definition of Terms.....	10
2. Review of Literature .....	13
Class-wide Peer Tutoring.....	13
Collaborative Strategic Reading .....	22
Peer Tutoring .....	24
Peer Assisted Learning Strategy .....	28
Total Class Peer Tutoring .....	39
Cross-Age Peer Tutoring .....	42

	3
Chapter	Page
3. Conclusions and Recommendations .....	46
Conclusions.....	46
Recommendations for Future Research .....	47
Implications for Current Practice.....	48
Summary .....	49
References.....	50

### List of Tables

Table		Page
1.	Questionnaire Results for Third and Eight-Grade Students on the Use of CWPT .....	19
2.	Summaries of Class-wide Peer Tutoring Strategies.....	21
3.	Summary of Collaborative Strategic Reading .....	24
4.	Summary of Peer Tutoring.....	28
5.	CONTROL GROUP (words read correctly, questions correct, maze choices correct).....	33
6.	PALS (words read correctly, questions, correct, maze choices correct) .....	34
7.	Results of LST/PALS GROUP (Mean Scores.....	36
8.	Results of CONTROL GROU (Mean Scores) .....	37
9.	Summaries of Peer Assisted Learning Strategies .....	37
10.	DORF Scores for Reading Fluency .....	41
11.	DORF Scores for Reading Comprehension.....	41
12.	Summary of Total Class Peer Tutoring .....	42
13.	Summary of Cross-Age Peer Tutoring .....	44

## Chapter 1: Introduction

According to Fulk and King (2001), an effective instructional method that will help all teachers enhance their students' performance when learning different skills through subject areas, is the use of class-wide peer tutoring. Class-wide peer tutoring is a strategy that keeps students actively involved with their learning while keeping them on-task. Researchers that developed the class-wide peer tutoring model have indicated that class-wide peer tutoring has led to enhanced learning outcomes for students compared to teacher-led instruction.

According to Arreaga-Mayer (1998), class-wide peer tutoring is an instructional approach that engages all learners in a classroom and it enhances performance for accuracy and fluency in the subject areas of spelling, reading, math, science, social studies, and vocabulary. Students are given specific training on how to act as the tutee, or tutor role and their training covers how to correct errors, award points, how to give positive feedback, and instruction on the materials that they will use. Students are paired based on different abilities, language proficiency, or skill levels and then they are given a block of time to tutor while the other student performs the role of the tutee. The teacher will then have the students switch roles after an allotted amount of time and the educator will monitor progress and award points. Points may be awarded to students independently, or some teachers may use an interdependent approach.

The reinforcement system that is used for class-wide peer tutoring may be manipulated, but the most common types are independent and interdependent group contingencies (Hawkins, Musti-Rao, Hughes, Berry, & McGuire, 2009). With independent, students are given points based on their behavior and how they perform academically. Students will then receive a reward based on their total amount of points that they received from their behavior and performance.

Interdependent group contingencies are dependent on the groups' performance in order to receive awards. When using interdependent for class-wide peer tutoring the class is split into two groups and they earn points based on performance throughout a week. At the end of the week, the team with the most points is the one that will receive the reward. Therefore, using a reward system can lead to enhancing behavior and academic performance within a classroom.

Classrooms are continuing to try to enhance academic performance, while also having a positive effect on behavior (Hawkins et al., 2009). There are many different class-wide peer tutoring models that have been extensively researched that have been proven to improve academic and social performance among students. All of the class-wide peer tutoring models are similar, in which both the student and teacher are trained, students are paired, one student is the tutor while the other is the tutee and they will switch roles, students receive and give feedback to one another, and the teacher monitors behavior and performance. However, there are some differences between the models that may be used across class-wide peer tutoring.

There are some slight variations in the peer tutoring models, such as, how should students be paired with their peers (different gender, same gender, skill level, etc.), the time that students are paired for may differ, how often the tutoring sessions will occur may be different across teachers and classrooms, along with the academic skills that will be implemented for the students to use (Hawkins et al., 2009). There are also different types of rewards that students can obtain (independent vs. interdependent), and how long the students may work together may look different across educators and classrooms. The different types of class-wide peer tutoring models that are used to enhance academic and social skill performance are Peer Assisted

Learning Strategies (PALS), Total Class Peer Tutoring (TCPT), Cross-age Peer Tutoring, and Class-wide Student Tutoring Teams (CSTT).

### **Advantages of Peer Learning Strategies**

According to Bowman-Perrott (2009), there are many benefits that are associated with class-wide peer tutoring strategies. There are instructional benefits, along with positive outcomes for students, and it is an effective strategy that can impact teachers' lives in a positive manner.

The instructional benefits that are provided through class-wide peer tutoring strategies are that it can give students one-on-one instruction on a specific skill. It can also provide students with the necessary social skill time as they are required to give their partners positive feedback when correcting errors related to a specific skill and content area (Bowman-Perrott, 2009). These strategies also give students the opportunity to teach and be taught, so they have to role switch and take feedback on different positions when it comes to leadership skills.

The benefit for students is that it is a strategy that will provide students with both academic skills and social skills. It also gives students the opportunity to feel confident in the environment that peer teaching strategies take place in and they are able to feel comfortable and engaged while being involved in cooperative learning. Students are also given the opportunity to master a specific content area while learning to work together with peers and give them appropriate feedback and error correction opportunities when working on a skill. While these are only some of the benefits for students, teachers also benefit from class-wide peer tutoring strategies (Bowman-Perrott, 2009).



Teachers can also benefit from class-wide peer tutoring strategies in many ways too. Due to class-wide peer tutoring strategies, teachers are able to provide immediate feedback to students, along with being able to make quick and effective modifications for students as they are able to observe how they may be learning an area of content while working with their peers. It also is an effective strategy for teachers to use because it cuts down on the amount of work that teachers have to do because it can be aligned with the curriculum that the teacher may be using (Bowman-Perrott, 2009). Using class-wide peer tutoring strategies is also used to help with classroom management and it is implemented for a 30-40-minute time block, which is also beneficial for the teacher to be able to have time to collect data on students to share results immediately with other administrators, teachers, and parents.

### **Factors That Influence Controversial Results of Peer Learning Strategies**

There are some issues that may arise that can reduce the effectiveness of class-wide peer tutoring strategies. One thing that can render the results on whether a strategy is effective or not is the limited amount of time that staff may spend on an intervention. If staff does not spend time implementing the peer learning strategy, it could hinder the effectiveness (Wright & Cleary, 2006). Also, if staff is not provided with manuals or standardized training materials on how to implement the strategy, it will not be used to its highest potential.

Another blocker that may reduce or make a strategy ineffective is the viewpoints of the consultant compared to the educator when it comes to the students learning disability (Wright & Cleary, 2006). If the consultant and educator disagree on how the framework should be utilized to be effective for a student, the strategy would be ineffective because it may not be used.

## **Research Question**

One major question guides this literature review:

1. What are the advantages of using class-wide peer tutoring strategies for academics and social performance among students with disabilities?

## **Focus of the Review**

I identified nine studies for peer-assisted learning strategies in the review of literature for Chapter 2. My research includes studies ranging in dates from 2005-2016. Studies were included for review if the participants were elementary, middle, or high school students with disabilities.

The EBSCO Host, Academic Search Premier, and Google Scholar were used as a starting point for my literature review of peer-reviewed studies related to class-wide peer tutoring. I used several keywords and different combinations related to the topic of class-wide peer tutoring to locate more appropriate studies that include the following: *peer tutoring, cross-age peer tutoring, total class peer tutoring, PALS, peer-assisted learning strategies, academics, social skills, social deficits, Autism Spectrum Disorders, EBD, students with disabilities, peer tutoring models, collaborative strategic reading, peer support, peer learning, peer teaching, and cooperative learning*. I also searched the table of contents for any recent articles, or journals that had similar terms and keywords in the titles.

## **Importance of the Topic**

As an elementary special education teacher, I work with students who struggle with academics and social skills significantly compared to their same-age peers. Due to them being academically delayed compared to their peers, they will spend 60-80% of their school day

working on reading, math, written language, and social skills in the special education room and 20-40% of their day in their general education rooms. I have had to put students into groups based on their grade level performance, along with focusing on their social skill needs and how much academic time they need in the areas of reading, math, and written language.

In order to make sure that my students are receiving adequate special education services when they are in my room, I want to implement peer-assisted learning strategies to enhance their knowledge in academics and social skills. Using peer-assisted learning strategies will also give me time to assist all students needs within my classroom because I will be able to walk around and give immediate corrective feedback to students as they are working with their peers. Lastly, pairing students to provide them with peer-assisted learning opportunities will make differentiating activities easier as students are able to be put into different groups based on various needs.

### **Definition of Terms**

In this section, I have defined and clarified key terms that are used throughout the literature review.

*Class-wide Peer Tutoring (CWPT)*. Class-wide peer tutoring is a technique that is used to provide students with a learning opportunity to work collaboratively to learn specific academic content. Students are paired with same-age peers to learn how to be an effective tutor, or tutee when teaching, or being taught a specific content area (Ayvazo & Aljadeff, 2014).

According to Fulk and King (2001), student training is a key component of class-wide peer tutoring. Students will need to be taught how to be an effective tutor and tutee, therefore the teacher will need to model and have students roleplay what effective tutoring looks like before

implementing the program. Some components that students will need to know is how to ask content-related questions and how to give appropriate and positive feedback. When students are in the tutor role, they will be asking the tutee questions, while also giving the tutee corrective feedback in a positive and non-offensive manner.

*Collaborative Strategic Reading (CSR).* Collaborative Strategic Reading is a model that is used to enhance skills related to reading comprehension through explicit instruction for struggling readers. For this model, students are put into groups and each student is given a role within the group. Students will then work collaboratively to explore text before reading, during, and after reading while using explicit strategies that will help guide their learning (Boardman et al., 2016).

*Peer Tutoring.* Peer tutoring is a strategy where students help each other as tutors to learn specific academic content through repetition. Students take the role as “one-on-one teachers” where they will practice key concepts, use repetition, provide instruction, and give immediate feedback to their peers (Bowman-Perrott et al., 2013).

*Peer Assisted Learning Strategies (PALS).* PALS, as defined by Fulk and King (2001), is a reading strategy that is used to improve reading fluency and comprehension. Students are paired with one another and then follow three key steps, which include: “1. Partner reading with retell, 2. Paragraph Shrinking 3. Prediction Relay” to improve their comprehension or reading fluency. Partner reading is where one student will read, while the other student listens and then the student that is listening will give critical feedback to the student who read, which may include correcting the reader on words that they may have read wrong. Paragraph shrinking includes having the student who read give a summary in ten words, or less about what the

passage was about. Prediction relay is where both students work together to make a prediction of what they believe will come next in a passage (Fulk & King, 2001).

*Total Class Peer Tutoring (TCPT).* Total Class Peer Tutoring is a form of tutoring that is used in a whole-group setting classroom. It is a tool that will give students ample practice on academic-related skills, while also keeping them actively engaged (Kourea, Cartledge, & Musti-Rao, 2007).

*Cross-Age Peer Tutoring.* Cross-Age Peer Tutoring is a strategy that is used for tutoring where older students are paired with younger students to work on academic content areas. An example of using this strategy with reading fluency would start with the older student reading through a book, while the tutee (younger student) would listen and then they will switch roles (Wright & Clearly, 2006).

## **Chapter 2: Review of Literature**

This literature review examined nine articles that evaluated the advantages of different peer-assisted learning strategies while looking at how they may be utilized to help students with disabilities to perform academically and socially. This chapter is organized into six major sections that include subcategories that fall under peer learning strategies: class-wide peer tutoring, collaborative strategic reading, peer tutoring, peer-assisted learning strategies, total class-wide peer tutoring, and cross-age peer tutoring. Tables are located after each subheading of summaries that show findings that were presented, in chronological order, beginning with the earliest studies to the most recent research.

### **Class-wide Peer Tutoring**

The three studies in this section were conducted in 2009, 2010, and 2014. These studies examined the benefits of using CWPT in a biology class and two different physical education classes.

Bowman-Perrott (2009) examined the benefits of using a class-wide peer tutoring approach compared to using teacher-led instruction in a biology class. The study consisted of 11 students that were identified with Emotional Behavior Disorders (EBD) from 9<sup>th</sup> to 12<sup>th</sup> grade. There were two different classes that were examined during the study. One class was made up of five students (Class 1) and the other class had six students (Class 2).

To measure the benefits of using CWPT, pretests, posttests, 30 second time sampling, token economy, points, and questionnaires were used (Bowman-Perrott, 2009). The pretest and posttest consisted of questions that were related to the biology chapter that students were studying. The test would include vocabulary matching, multiple choice, short answer, and bonus

questions. Tests and materials were modified for students who needed less questions to meet their instructional level. To get the results for on and off-task behavior a 30-second time sampling was used. Students were observed for 30 seconds and during the 30-second time sampling they would be given a + for on-task behavior and a - for off-task behavior. For behavior, token economy was used with students and they would earn tickets based on their behavior. After students earned an allotted amount of tickets, they were able to use them for extra computer time.

The study consisted of CWPT two to three times per week for 30 minutes. The teacher would pair students based off their instructional level (high academic student with a low academic achieving student), whether they were present for the current day, and according to students' ability to work well with the peer that they would be studying with. Students were then given the role of the tutor or tutee to work on vocabulary comprehension and study guide questions. The teacher would set a timer for each task and then the students would switch roles.

Students were given points based on whether they answered questions that the tutor had asked them while they were in the tutee role. When being asked questions geared toward biology, if students responded correctly, they were awarded two points. If they would answer a question wrong, they were given the option to write the correct answer three times while saying it and then they would be given one point. If the answer was still wrong when they wrote it, they would be awarded zero points. One more tool that was used to measure data was a questionnaire that both the students and the teacher participated in taking.

The results of the study showed that there was an increase in academics for Class 1 and Class 2 from pretest to posttest. It also showed an increase for on-task behavior when students

were able to participate in CWPT compared to teacher-led instruction. For Class 1, students were on task 77% of the time during teacher-led instruction and while participating in CWPT they were on task 96% of the time. For Class 2, students were on task 89% of the time during teacher-led instruction and 100% of the time during CWPT.

The teacher that was involved with the study took a questionnaire that involved the following questions:

1. Did the training sessions provide enough information to independently carry out the program effectively?
2. Were the materials used for CWPT useful for students?
3. Were the CWPT procedures academically beneficial for students who were below average ability in the class?
4. Did CWPT procedures help students stay on-task and get involved in instruction?
5. Was CWPT easy to implement a regular daily schedule?

According to the teacher, she strongly agreed or agreed with all the questions. Students also provided feedback in regard to the study and CWPT. Students stated that CWPT helped them learn Biology and they reflected on how much they liked getting bonus points, along with prizes.

In conclusion, CWPT was a successful strategy to use for both the teacher and the students, especially since it kept students engaged, which led to them being on-task. An implementation for future use includes using a bigger sample size. The size of the sample was detrimental to the study because when using CWPT students are paired with other students, but



students were not given that opportunity in this study due to various reasons of students being absent.

Ayvazo and Ward (2010) examined the benefits of CWPT in a physical education classroom for inclusion purposes for students who have Autism Spectrum Disorders (ASD). The study was implemented in a kindergarten through an eighth-grade charter school. A kindergarten class with 16 students, six students who had ASD were used in the study. There were two target participants that had been diagnosed with ASD that were eight years of age but were included in the kindergarten class due to their functional and cognitive abilities.

Prior to CWPT intervention, students would be provided with 30 minutes of training and a 10-minute recap training before reintroducing skills. Tutoring behaviors that were explained and implemented in training include modeling, correcting errors, and praising. Before the intervention, when the physical educator would go over the skills again with students, he would also remind them to use the skills that they had learned when it came to modeling, correcting errors, and praising their partners.

Tools that were used for the study included an A-B-A-B single subject withdrawal design, along with a performance chart, and a sticker chart to progress on-task behavior. Each physical education lesson was twice a week for 30 minutes and each lesson would start with a 10-minute activity. For each of the 26 lessons that were performed, the physical educator would demonstrate skills and then students would get time to practice. For purposes of evaluating students, all 26 lessons were videotaped and watched by observers.

During CWPT students were dispersed into groups of four and the teacher would then pair students. The participants that had ASD were paired with their peers without ASD. While

paired students were given a tutee and tutor role by their teacher, students who had ASD were only given the role of being a tutee during the study due to their overall skill level. After watching the physical educator, tutors would perform the task twice and then they would ask their partners to do the same task. If tutees did not perform the task within four seconds, the tutor would help them perform it and if students did the skill right away they were praised by the tutor. If tutees tried to do the skill but did it incorrectly, the tutors would continue to help them until they were able to present it correctly.

Overall, student engagement for students with ASD did increase when participating in CWPT in physical education. However, there are many implications that teachers should consider when implementing CWPT for ASD students in their physical education classrooms in the future. Teachers need to take into account the tutor's physical ability, to be able to model certain skills correctly. Educators should also make sure that tasks are developmentally appropriate, along with providing students with proper training before implementing CWPT. A performance chart should also be placed in the classroom as a visual for students with ASD to see how they are performing on certain tasks.

Ayvazo and Aljadeff (2014) studied how class-wide peer tutoring can enhance students' engagement when participating in their physical education class. The study consisted of 41 third-graders and 30 eighth-grade students who were considered at-risk students. Students in the study participated in physical education class in a K-12 charter school that was focused on a karate program to help at-risk students with managing their aggression and learning self-control.

Physical education lessons were 45 minutes long for both groups of students, but third-grade students were able to participate in a lesson twice per week, while the eighth-grade

students participated in lessons three times per week. Before implementing CWPT students were provided with three training sessions that helped guide them to be effective tutors. While receiving training students were to demonstrate behaviors that included (steps 1-3 for third-grade students and steps 1-5 for eighth-grade students):

1. Observing and discriminating performance
2. Demonstrating
3. Providing positive feedback
4. Providing corrective feedback
5. Receiving feedback appropriately

Each lesson was broken up into four to six different karate tasks where the teacher would model each one while explaining critical elements that each task should involve. Students would practice for 2 minutes each and then they would switch roles. Students would measure performance by using a record sheet that had specific karate tasks that students were to perform. The performance sheet would show a task and then it would have one to two elements to complete for third-grade students and three to four elements for eighth-grade students. During recording, tutors would circle correct, or incorrect when the tutee would perform each element. If the tutee continued to demonstrate an element incorrectly, the tutor would then demonstrate the task again for the tutee, to perform again while the teacher would also give corrective feedback.

At the end of the semester, as shown in Table 1, the teacher gave students a questionnaire that consisted of three questions, their answers, and comments:

Table 1

*Questionnaire Results for Third and Eighth-Grade Students on the Use of CWPT*

QUESTIONNAIRE				
QUESTIONS	ANSWERS (3rd grade students)	ANSWERS (8th grade students)	COMMENTS (3rd grade students)	COMMENTS (8th grade students)
Did you enjoy participating in CWPT learning?	87% enjoyed CWPT	64% enjoyed CWPT	Most students enjoyed the social benefits of CWPT  A few boys did not like CWPT due to behavior that was problematic	Students stated that they liked being paired with other students and they liked to teach/model for another student
Would you like to participate in CWPT learning in the future? Why?	97% would participate in CWPT in the future	73% would not participate in CWPT in the future	Students stated that it was fun, they liked being paired with another student, and they learned	Most students stated that they would not participate in CWPT in the future due to the repetitiveness, which caused boredom. They also liked being in a small group better than working with one peer.
In which kind of learning would you prefer to participate: CWPT or small group instruction?	72% liked CWPT compared to small group instruction	45% liked CWPT compared to small group instruction	They liked CWPT because of being able to socialize, they learned more, and students were able to make friendships	Girls voted for CWPT, while boys voted for small group instruction

There was a fourth question that viewed the opinions of eighth-grade students. The question asked eighth-grade students to state what they would change about CWPT and students responded with different responses. Students that were in eighth-grade believed that being able to change partners would make CWPT more enjoyable, along with more practice time when given tasks and adding games.

While this study did not show the results of CWPT being an effective technique, it did review what students and teachers thought about the strategy, along with adaptations to make it more valuable. When implementing CWPT, teachers should teach new materials directly to students before having them carry out CWPT. Teaching new skills can be difficult, therefore, each skill should be taught explicitly, and third-grade students should be taught a few skills at a time, while eighth-grade students have more extensive skills.

Another modification that was stated in the study was changing the amount of time on training and how much time should be spent teaching tutoring behaviors. For third-grade students, each tutoring session should implement one tutoring behavior for a total of three tutoring behaviors, while eighth-grade students should learn two tutoring behaviors each lesson for a total of four to six skills. A third change that was stated in the study was the ability to only use three of the five total tutoring behaviors that students learn with third-grade students while using all five is more appropriate to use with only the eighth-grade students. Another adjustment that was stated looked at different ways of pairing students. There are many different combinations that have advantages and disadvantages. The last two adjustments of the study state that reward systems, along with recording sheets should be geared toward specific grade levels. The reward system and recording sheet motivated third-grade students, while eighth-grade students were not interested in using either.

In conclusion, CWPT is an effective strategy to use with students. While eighth-grade students did not like certain aspects of CWPT, it has shown to be an effective strategy to use with students, especially third-grade students. Overall, CWPT has shown to be successful in benefitting students when it comes to their social interactions with others. Table 2 summarizes

the studies and provides each author of the study, the design, participants that were involved, procedure, and the overall findings.

Table 2

*Summaries of Class-wide Peer Tutoring Strategies*

AUTHOR(S)	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
CLASSWIDE PEER TUTORING (CWPT)				
Bowman-Perrott (2009)	Quantitative	11 students identified with EB/D (five in Class 1 and six in Class 2) 9th-12 <sup>th</sup> Graders	Class-wide peer tutoring training consisted of 2-3 days and it was implemented three times a week for 30 minutes each week. Pretests and post-tests were given that would include vocabulary matching, multiple choice, short answer, and bonus questions. On-and off-task behavior was also something that was assessed.	<ul style="list-style-type: none"> <li>-Gains were made in pre-test to post test results compared to baseline results for CWPT</li> <li>-Students enjoyed using it and teachers feedback indicated it is easy to use</li> <li>-On-task behavior increased during CWPT along with social gains.</li> </ul>
Ayvazo & Ward (2010)	Quantitative	16 students in a kindergarten class (six students with ASD-used two as the target students)	Class-wide peer tutoring was used to enhance students' engagement in a physical education class.	-The two target ASD students that were paired with non-disabled peers, showed gains in their performance during the CWPT interventions.
Ayvazo & Aljadeff (2014)	Quantitative	41 third-grade students 30 eighth-grade students	Class-wide Peer tutoring was used to enhance structured tasks while learning karate and using appropriate social skills	-This study shows there is a significant difference between third-grade students' views on CWPT and eighth-graders views.

## **Collaborative Strategic Reading**

The study in this section was conducted in 2016 and it examines the effectiveness of collaborative reading strategies (CSR).

Boardman et al. (2016) evaluated the effects of collaborative reading strategies used for comprehension for students in a general education classroom versus not using collaborative strategic reading (CSR) instruction within a classroom. Participants included 60 fourth- and fifth-grade general education teachers that were randomly assigned as either the treatment or control group. The treatment group included 31 teachers, while the control group consisted of 29 teachers. There were also 1,372 students who participated in the study and 686 were in the treatment group where they received CSR instruction and the other 686 did not receive CSR instruction.

Teachers were given a 1-day training on how to use CSR, along with follow-up trainings throughout the study and biweekly coaching sessions. During the study, teachers were asked to implement lessons 2 to 3 times each week for 50 minutes each. Teachers completed logs that evaluated how much time they spent on CSR. The mean number of sessions that was calculated was 39, and each session was approximately 40 minutes each. Students were also given the Gates MacGinite Reading test for the subtest for comprehension prior to the intervention and prior to their winter break. The Implementation Validity Checklist was also a tool that was used to measure the quality of instruction for the study, along with similarities and differences between classrooms.

Results revealed that students with learning disabilities made significant gains in their reading comprehension compared to their other peers with learning disabilities who did not

receive CSR instruction. The results from the Gates MacGinite Reading from pretest to posttest showed that students with learning disabilities scored 4.86 points higher on their posttest when CSR instruction was included in their classrooms.

Overall, students who had learning disabilities made significant gains in their reading comprehension when CSR was implemented in their class, twice a week for a 14-week period. Teachers also enjoyed using the strategy and they wanted to continue the use of the strategy if they were using it in their classrooms. Also, teachers believed that the strategy benefitted not only students with learning disabilities, but it was also a useful strategy that should be implemented with all learners within their classrooms. Table 3 summarizes the study by author, study design, participants that were included, procedure that was used, and the findings.



Table 3

*Summary of Collaborative Strategic Reading*

AUTHOR(S)	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
COLLABORATIVE STRATEGIC READING (CSR)				
Boardman et al. (2016)	Quantitative	14 elementary schools (urban/suburban). 60 teachers and 31 were assigned to (treatment) implement CSR and 29 were assigned to the control group (95% of teachers were female-majority Caucasian). Teaching experience ranged from 1-30 years and 40% held a master's degree. 1,372 students participated in the study (686 (12%) for treatment and 686 for control-(10%) Sped. Half of the students were ELL learners and the average age was 10.	<p>Teachers were given a one-day training on how to use CSR, along with following up on trainings throughout the study and biweekly coaching sessions.</p> <p>Teachers were to implement lessons 2 to 3 times each week for 50 minutes each.</p> <p>The Gates MacGinite Reading test (comprehension subtest) was used prior to the intervention and prior to winter break and the Implementation Validity Checklist was used to measure the quality of instruction for CSR</p>	<p>From the data collected, teachers taught more lessons within shorter amounts of time (40 min. sessions)</p> <p>The Gates MacGinite Reading test gave data from pre-test and post-test and LD students scored 4.86 points higher on the test when being in a class that implemented CSR</p> <p>Students without LD did not make significant gains, but those with LD made tremendous gains in reading comprehension when involved in a 14-week bi-weekly session in CSR</p> <p>Teachers saw benefits for all learners and reported that they would continue to use CSR and students and teachers provided more feedback through this process.</p>

**Peer Tutoring**

The study in this section is a meta-analysis that explores peer tutoring across first-grade through 12<sup>th</sup>-grade. It examines grade levels, academic content areas, time that is spent using

peer tutoring, different reward systems to promote positive reinforcement, and at-risk students, or those who are labeled as having an Emotional Behavior Disorder (EBD) or Learning Disabled (LD).

Bowman-Perrott et al. (2013) evaluated the effect that peer tutoring has on all students, including those with disabilities and without.

The meta-analysis consisted of 26 studies that included grades 1 through 12 between the years of 1984 and 2011. Participants consisted of 938 students, which included mostly male, African-American and Caucasian individuals. Each study was to examine grade levels, along with academic content area, rewards that were used, time that sessions were conducted, and to include students who had a disability or were at-risk. However, there were four studies that did not report any implementation of having students who were at-risk, or who had disabilities in their study. The results for each area that was to be examined in each study are as follows:

1. Grade level

When viewing studies for elementary and secondary grades, each level represented a grade that was used the most across studies. For the elementary grades, first through fifth-grade, the grade level that was represented the most was fourth-grade. For secondary students, which included grades six through 12, it was sixth-grade that was represented the most across studies. Peer tutoring was found to be more effective for middle school and high school students (secondary) than for elementary students.

2. Academic Content Areas

For the content area of reading, ten studies were conducted. There were also six studies that viewed spelling and another six that implemented math. Vocabulary and

social studies were the other areas that were used within the studies. One study did implement Science but was disregarded due to the study being a weak design.

### 3. Time

The median number of minutes that was calculated for the studies was an average of 480 minutes for peer tutoring sessions. The least amount of time that studies provided peer tutoring opportunities was 280 minutes and the maximum amount of time was slightly over 1,000 minutes.

### 4. Rewards

Studies that used rewards viewed it as an important component to motivate students. For middle and high school students, using a reward showed a positive effect to get them to participate in peer tutoring.

### 5. Disability/At-risk

Out of the 26 studies that were conducted, 23 of them included students who had disabilities or were considered at-risk. When viewing all studies, 11 of them gave results that separated students and their disability category. Most studies consisted of students who were either labeled under the category of learning disability (LD), or emotional behavior disorder (EBD).

Many limitations were presented in the meta-analysis that should be examined for future research. One limitation was that the studies all used tools, but what they used to measure with varied from standardized tests to informal tests. Another limitation to the studies was that not all studies used the same tutoring strategy. Some of the studies kept students' data separated for

students with disabilities and grade level, while others did not. Therefore, many questions still remain for future studies that include:

1. What is the minimum number, or sessions that is needed for students to continue to gain positive results from peer tutoring?
2. Does the tool that is used to measure the academic outcome effect the results of peer tutoring when using more of a standardized approach compared to a formal assessment?
3. If students have more than one disability, does that affect their outcomes?
4. What might studies look like for other students with disabilities, other than just LD or EBD students?
5. Is there a grade level that would benefit more than another with the use of peer tutoring?
6. When implementing rewards, what grade level would profit more from a reward system?

Overall, the meta-analysis presented multiple studies that determined that using peer tutoring increased students' academic gains compared to students who did not receive peer tutoring. Studies viewed grade level, academic areas, time, rewards, and students who had disabilities, or were at-risk. Rewards are an important component for secondary students, as they are a great motivator. However, there were many limitations and further research should be conducted for future studies that include peer tutoring. Table 4 summarizes the study for Peer tutoring.

Table 4

*Summary of Peer Tutoring*

AUTHOR(S)	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
PEER TUTORING				
Bowman-Perrott et al. (2013)	Quantitative	<p>The meta-analysis reviewed tutoring programs across many studies (65) students in grades (1-12)</p> <p>Had to be a single-research design that did not include peer tutoring as the baseline</p> <p>Included peer tutoring as an academic intervention and needed to be same age tutoring, or cross-age</p> <p>26 articles were reviewed from 1984-2011 (938 participants--most were male)</p> <p>Most studies were implemented in a general education room and then were followed by special education</p>	<p>The research looked at many areas across studies that focused on the following: Grade level, dosage (intensity, duration, and number of sessions), reward, disability/at-risk, and content area (reading, math, and social studies)</p> <p><i>Tau dummy coding and Cohen's d effect sizes</i> were used across research</p>	<p>Grade Level: Peer tutoring was slightly more effective for middle/high school students than for elementary.</p> <p>Dosage: The average dosage was 480 minutes</p> <p>Rewards: Middle/High school students benefitted more from rewards than elementary</p> <p>Status: Most participants were either at-risk, or had a disability</p> <p>Content Area: Most commonly used to least commonly used was:</p> <ol style="list-style-type: none"> <li>1. Vocabulary</li> <li>2. Math</li> <li>3. Reading</li> <li>4. Spelling</li> <li>5. Social Studies</li> </ol> <p>Academic gains were made for elementary and secondary students due to peer tutoring and rewards continued to affect the interventions</p>

**Peer Assisted Learning Strategy**

There are three studies in this section; one study was conducted in 2000, while the other two studies were administered in 2005. The studies reviewed the benefits of the PALS strategy

on academics and social benefits for students who were English Language Learners (ELL) and those who struggled with reading.

Vaughn et al. (2000) examined the effects using two different interventions with elementary students. The study explored the ability of using peer reading (PR) to enhance reading fluency and the use of collaborative reading strategy (CSR) to increase students' comprehension.

The study was conducted in two elementary schools and there were 111 third-grade students who participated, along with eight teachers. The CSR group had a total of 55 participants, while the PR group had a total of 56. All eight teachers were volunteers and were female. The four teachers that were involved with PR had their bachelor's degrees and had taught anywhere from 6 to 18 years (average was 10 years of experience). The other four teachers that examined CSR ranged with their teaching experience from 1-5 years (average was 3 years), and out of the four, three had their bachelor's degrees and one had her master's. Teachers were provided with training, which included three hours of initial training, a follow-up before implementing their strategy which consisted of 2 hours, after school meetings, and weekly co-teaching and modeling sessions for a total of four weeks. After 4 weeks of co-teaching and modeling sessions were complete, sessions were cut down to twice a week until the end of the study.

The study was conducted over a 12-week period during students second semester. Each intervention was implemented two to three times per week. PR students were paired according to ability levels. A stronger reader was then paired with a weaker reader and the students would

take turns reading for 3 minutes. The more fluent reader would read first while the other reader would listen and then they would switch roles. The students would also be involved in a 1-minute timing and after reading, they would chart how many words that they read. CSR students were to use before, during, and after reading strategies that consisted of preview, click and clunk, get the gist, and wrap-up. Students were given a learning log where they could document with their partner what they had examined with each strategy.

There were two different standardized tools that were used during this study. For fluency, the TORF (Testing of Reading Fluency) was used to document how many words a student read within a minute. For comprehension, the GORT-3 (Gray Oral Tests-3) was used to measure how fast students read, their accuracy, and it was used to give a comprehension score. An Implementation Validity Checklist (IVC) was also used to examine teachers use of being able to implement the strategy that they were using.

The results of this study did not indicate that students increased their comprehension, but students did make gains in their reading fluency. However, there are many implementations for future research to enhance the outcome of using PR and CSR. One implementation is using more time to learn and implement the interventions. Due to the study only being conducted over a 12-week period, CSR was not fully being used until the fourth week of the intervention. Another important aspect to look at is teacher delivery because not all teachers will teach content the same way with the highest quality of instruction. Therefore, students could have been unprepared to take the GORT-3 because CSR did not provide them with all the essential skills to take a multiple-choice formatted test. A final way that the study could have been enhanced is by having a larger sample size that would have consisted of students who would receive both

interventions and another sample that would be considered the control group and would not have received any reading intervention strategy.

According to Sáenz, Fuchs, and Fuchs (2005), many students come from backgrounds where Spanish is their first language, and due to an increase in identifying Spanish-speaking students as having learning disabilities; Sáenz et al. conducted a study on how to enhance reading performance through PALS for ELL students with learning disabilities.

Sáenz et al. (2005) conducted a study that consisted of 12 general education teachers and 132 native Spanish-speaking students that were in third grade through sixth grade. The 12 general education teachers only taught reading, while other subject areas were team taught. The study was conducted in transitional bilingual classrooms that were randomly assigned to the PALS strategy and those classrooms were compared to classrooms that did not implement the strategy. Each student that participated in the study met the criteria as an ELL learner, which was determined according to the Woodcock Munoz Language Survey.

Students were placed into categories based on having a learning disability, being a low achiever, being an average achiever, or being a high achieving student. For students who participated in PALS, there were 10 students who had learning disabilities, 18 who were classified as low achievers, 17 students who were average achievers, and 17 who were high achievers. For the control group, there were 10 students who were classified as having a learning disability, 18 who were low achievers, 18 students who were average achievers, and 14 students who were high achievers. Due to students relocating, there were 13 total students who dropped out of the study.



According to Sáenz et al. (2005), teachers and students received training prior to using PALS. PALS was utilized in reading sessions, three times per week for 35 minutes each. While participating in PALS students were engaged in three different activities that included partner reading with story retell, paragraph shrinking, and prediction relay. During the study, students were awarded points for behavior while they utilized each of the activities and they were either put on either team A, or on team B. For the control group, teachers were asked to continue teaching reading how they had previously taught it and then they were to submit lesson plans that were reviewed and given a percentage based on how activities were spent per week. Lesson plans were also given a percentage based on how much of a lesson was given to students by the teacher compared to how much was given by peers.

Lesson plans included a percentage of how much instructional time was spent one-to-one with students, how much instructional time was teacher-led, and how much time there was for peers to interact. There were differences between PALS and the three domains compared to the control group. For PALS, students spent 26% of their time involved in one-to-one activities, while the control group only spent 13% of their time participating in one-to-one activities. There was also a difference between the two groups and how much time each group had with teacher-led instruction and peer interaction. The PALS group used teacher-led instruction 78% of the time and peer planned activities 22% of the time, whereas the control group was led by an instructor 94% of the time and students participated in peer activities 6% of the time.

Tools that were implemented in the study were a teacher and student questionnaire, along with the Comprehensive Reading Assessment Battery (CRAB). Questionnaires were given to viewed teachers and students' opinions on how PALS was beneficial socially and academically.

The CRAB assessment was given as a pretest and a posttest for students to get scores based on three different components, which included how many comprehension questions students got right (10 questions), how many words students read correctly (3-minute timing), and how many maze choices were correctly completed (correct replacement). The tables below lists pretest results compared to posttest results for the control group (Table 5) and for PALS (Table 6). Each table represents the mean score for words read correctly, comprehension questions, and maze choices. It also compares students who have learning disabilities to those who achieve low, average achievers, and high achieving students.

Table 5

*CONTROL GROUP (words read correctly, questions correct, maze choices correct)*

Types of Students	WORDS READ CORRECTLY		QUESTIONS CORRECT		MAZE CHOICES CORRECT	
	Pretest Results	Posttest Results	Pretest Results	Posttest Results	Pretest Results	Posttest Results
Learning Disabilities	182.38	177.83	1.67	1.50	6.92	6.33
Low Achieving	278.94	296.94	3.23	3.14	8.94	10.05
Average Achieving	309.95	318.39	4.28	3.86	8.71	10.00
High Achieving	371.33	408.35	5.89	4.50	12.23	.25

Table 6

*PALS (words read correctly, questions correct, maze choices correct)*

Types of Students	WORDS READ CORRECTLY		QUESTIONS CORRECT		MAZE CHOICES CORRECT	
	Pretest Results	Posttest Results	Pretest Results	Posttest Results	Pretest Results	Posttest Results
Learning Disabilities	190.08	218.83	1.54	2.71	6.58	7.58
Low Achieving	259.90	278.97	2.87	4.05	8.02	9.17
Average Achieving	309.75	323.15	3.89	4.43	9.93	11.05
High Achieving	342.29	384.37	5.43	6.58	11.44	13.44

The results conclude that using PALS as a strategy can increase reading comprehension skills for all students, including ELL students. Teachers stated that PALS was easy to use and students enjoyed using the activities that were implemented in PALS.

Calhoon (2005) stated that many students struggle with reading, especially those that are receiving special education services. Therefore, there are three components that have shown to be effective in helping students with reading disabilities that include small groups for students, getting and giving immediate feedback, and having extensive practice on a certain skill.

In this study, there were four teachers who were randomly selected from two different middle schools to participate. Two of the teachers were participants in LST(Linguistic Skills Training)/PALs classroom, while the other two were teaching reading activities with no other implementations. There was a total of 38 students (32 sixth-grade students, five seventh-grade students, and one eighth-grade student) who qualified for special education services that were

included in the study. Each student spent at least 50-70% of their time in a special education classroom and each were reading at least three grade levels below their current grade.

The tool that was used in the study as a pretest and a posttest for students was the Woodcock-Johnson III. The subtests that were administered included letter-word identification, word attack, reading fluency, and passage comprehension. The Woodcock-Johnson III was administered 2 weeks prior to the intervention for the pretest and for the posttest, it was given right after the intervention.

Extensive training was given to students before implementing LST/PALS. The LST consisted of 3 days a week (51 hours total) where students learned about phonetics, phonology, and morphology. PALS was implemented two days a week (34 hours total) where students learned about partner reading, paragraph shrinking, and prediction relay.

The control group followed a reading program called Saxon Phonics Intervention that was coupled with a Skill Acquisition program (SRA). Training for Saxon Phonics Intervention was implemented 3 days a week, and each session was 40 minutes long. The SRA was used only 2 days per week with only one session of training with additional training provided only when needed. Teachers also received a 1-day training where they were trained on their specific program, which included LST/PALS, or the control group (Saxon Phonics Intervention/SRA). At least 3 days a week, teachers were observed by research assistants and the research assistants were able to answer questions, along with being able to provide the teachers with support and feedback.

The results of the study concluded that when students took the pretest Woodcock-Johnson III there were no significant differences between the treatment groups. Posttests that

were performed using the Woodcock-Johnson showed that the LST/PALS group outperformed the other group in the subtests that include letter-word identification, word attack, and passage comprehension. However, the subtest that was used for reading fluency showed no results between the two groups. While the LST/PALS group showed gains in the three subtests, there are no results that show that this program will close the reading gap. The tables below show the results from the Woodcock-Johnson comparing the pretest and posttest results, along with the growth of the LST/PALS group (Table 7) versus the control group (Table 8). Table 9 summarizes PALS for two different studies.

Table 7

*Results of LST/PALS GROUP (Mean Scores)*

GROWTH (letter-word identification, passage comprehension, and word attack)			
NAME OF TESTS	PRETEST RESULTS	POSTTEST RESULTS	GROWTH
Letter-Word Identification	80.22	87.83	7.61
Passage Comprehension	78.88	85.44	6.55
Word Attack	89.27	98.22	8.94
Reading Fluency	80.33	80.16	-0.16

Table 8

*Results of CONTROL GROUP (Mean Scores)*

GROWTH (letter-word identification, word attack, and reading fluency)			
NAME OF TESTS	PRETEST RESULTS	POSTTEST RESULTS	GROWTH
Letter-Word Identification	77.95	78.20	0.25
Passage Comprehension	77.80	76.60	-1.20
Word Attack	85.45	88.75	3.30
Reading Fluency	78.95	79.60	0.65

Table 9

*Summaries of Peer Assisted Learning Strategies*

AUTHOR(S)	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
PEER ASSISTED LEARNING STRATEGIES (PALS)				
Vaughn et al. (2000)	Quantitative	<p>8 third-grade teachers and 111 students (12-week study)</p> <p>16 of the students were enrolled in special education services, or were identified as being dyslexic</p> <p>8 classrooms were to use one of two interventions</p> <p>1. PR (partner reading approach-fluency)</p> <p>2. CSR approach-comprehension</p>	<p>The study compared two interventions.</p> <p>The interventions were Peer Reading, which was used to enhance students' fluency and Collaborative Strategic Reading that was used to enhance comprehension.</p> <p>Tools that were used included: TORF-used for fluency, GORT-3-used for comprehension, and IVC-used for how teachers implemented their intervention</p>	<p>Reading fluency increased!</p> <p>Comprehension did not increase, but implementations for future research examine important aspects</p> <p>-CSR took longer to implement</p> <p>-Teacher's do not teach with the same quality of instruction</p> <p>-Did CSR set students up for success when taking the GORT-3?</p> <p>-Was the sample size large enough?</p>

Table 9 (continued)

AUTHOR(S)	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
Saenz, Fuchs, & Fuchs (2005)	Quantitative	132 Native Spanish-Speaking ELL students (Grades 3-6th)/12 reading teachers	<p>The study was conducted to examine the effects of PALS on reading performance</p> <p>-During PALS students participated in three activities (partner reading w/story retell, paragraph shrinking, and prediction relay)</p> <p>-CRAB tests for three things (number of words read correctly, number of comprehension questions read correctly, and maze choices correct)</p>	<p>-Students reading comprehension increased because of PALS whether the students were ELL with LD, or not</p> <p>-Not enough research to indicate it helps with fluency</p> <p>-Teachers also find PALS easy to use</p>
Calhoon (2005)	Quantitative	<p>38 students (32 students were sixth-graders, five students were seventh-graders, and one student was an eighth-grader)</p> <p>Students spent at least 50-70% of their time in special education classes and were reading at least three levels below their grade level</p> <p>Four teachers (two teachers were involved in LST/PALS group and two teachers were in the control group)</p>	<p>-The study was conducted to examine the effect of LST/PALS compared to a control group that used Saxon Phonics Intervention</p> <p>-The Woodcock-Johnson III was used before and after to examine student outcomes on letter-word identification, word attack, reading fluency, and passage comprehension (pretest and posttest)</p> <p>-Training was given to students (3x a week for 51 hours) and teachers (1 day)</p>	<p>-Pre-tests showed no difference on the Woodcock Johnson III compared across interventions</p> <p>-Post-tests on the Woodcock Johnson III, specifically in the subtest areas of letter-word identification, word attack, and passage comprehension showed that the LST/PALS group outperformed the control group that was using the Saxon Phonics Intervention</p> <p>-Subtest for Reading fluency: showed no significant difference between the groups.</p>

### **Total Class Peer Tutoring**

This study was conducted in 2007 to examine the effects of total class peer tutoring on student maintenance for students with disabilities. Students were to increase their sight word recognition, fluency and comprehension skills due to being involved in total class peer tutoring.

Kourea et al. (2007) conducted a study to assess if total class peer tutoring (TCPT) could increase student maintenance when it comes to sight word recognition, fluency, and comprehension.

The study was conducted in a second- and third-grade adjoined co-taught classroom. The classroom had 14 total students in which half received 50-60% of the time outside of the classroom for special education services. Out of the 14 total students, there were six males and eight females. Peer tutoring sessions were conducted for 30 minutes each on Mondays, Tuesdays, and Wednesdays. Out of the 14 total students, only six were included in the results for this study and four students (one second-grade student and three third-grade students) were identified as at-risk due to lower performance on the Woodcock-Johnson III subtests, while the other two were included in special education as having learning disabilities (second-grade students).

Various tools were used to measure sight word recognition, fluency, and comprehension during the study. The Woodcock-Johnson III included four different subtests, which are reading fluency, passage comprehension, letter-word identification, and word attack. Another tool that was used during the study was the DIBELS oral reading fluency (DORF) Progress Monitoring Passages, and constructed paragraphs. Questionnaires were given at the end of the intervention to students, teachers, and parents. Students were interviewed by graduate students and they were



asked 12 questions using a scale that ranged from *very much liked*, to *didn't feel anything to didn't like*. Students were also asked six open-ended questions that asked them about how they felt and thought about TCPT. Teachers were also asked two open-ended questions about the program, along with 12 other questions that were rated on a scale from one to four (1-strongly disagree and 4-strongly agree). Parents were given a questionnaire that had seven questions and were rated on a 1 to 4 scale that was used with the teachers. Parents were also asked to answer one open-ended question in regard to their own thoughts on TCPT.

According to Kourea et al. (2007), at the beginning of the study, all students were tested on each of the subtest areas on the Woodcock-Johnson III. Each week students were also given a pretest before the intervention for TCPT started. During the tutoring sessions, students were involved in five different skills that included them to participate in a team huddle, practice, rewarding, and charting. Students participated in a posttest, which included a re-evaluation on the Woodcock-Johnson four subtest areas.

Results showed that the six participants learned more words during TCPT, along with increasing their comprehension and reading fluency on DORF passages. The tables below (Table 10 and Table 11) summarize the DORF scores for comprehension and reading fluency of each participant while showing an increase from the results of classroom instruction to peer tutoring.

Table 10

*DORF Scores for Reading Fluency*

READING FLUENCY		
STUDENTS	CLASSROOM INSTRUCTION (DORF SCORES)	PEER TUTORING (DORF SCORES)
Student 1	14.7	16.5
Student 2	20.5	23
Student 3	24.6	35.4
Student 4	21.8	23.3
Student 5	29.2	32.9
Student 6	23.4	26.8

Table 11

*DORF Scores for Reading Comprehension*

READING COMPREHENSION		
STUDENTS	CLASSROOM INSTRUCTION (DORF SCORES)	PEER TUTORING (DORF SCORES)
Student 1	2.3	3.9
Student 2	3.0	3.8
Student 3	2.8	4.2
Student 4	2.8	4.1
Student 5	1.6	3.2
Student 6	2.8	3.9

During maintenance, each student continued to recall words that had been practiced during tutoring. On the Woodcock-Johnson, two of the subtests, which include letter word identification and word attack showed an increase of 5-7 months growth. The subtests for

reading fluency and passage comprehension improved 1-3 months for students. The table below summarizes TCPT.

Table 12

*Summary of Total Class Peer Tutoring*

AUTHOR(S)	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
TOTAL CLASS PEER TUTORING (TCPT)				
Kourea, Cartledge, & Musti-Rao (2007)	Quantitative	14 African American Students (eight girls and six boys). Data were collected for only six target students (ages 7-8) two students with disabilities/four at risk	Peer tutoring was held 3x per week for 30 minutes.  Students completed one session of training. They took a pre-test at the beginning of the study that was from the subtests on the WJ-III.  There were four components: the tutor huddle, practice (praise), testing, and rewards. The posttest was comprised of the subtests from the WJ-III.	During Total Class peer tutoring students sight word acquisition skills increased, especially for two of the students who had disabilities. There was one student who had a slight decrease in her skills.  Students did not significantly increase their comprehension and fluency skills.  For subtests, students made the most gains with letter-word identification and word attack.

### **Cross-Age Peer Tutoring**

Wright and Clearly (2006) conducted a study to determine if Cross-Age Peer Tutoring was an effective strategy to use to increase oral fluency among students. Participants included tutors and tutees from four different elementary schools. The study consisted of 14 second-grade tutees and 13 third-grade tutees that participated, along with 13 third-grade tutors and 14 fourth-grade tutors. Trained college students served as the site coordinators and they collected curriculum based measured oral reading fluency probe scores for tutors and tutees before and

during cross-age peer tutoring implementation. During the study, tutors met with their tutees twice a week for 20 minutes per session.

Results revealed that tutors and tutees showed gains in reading fluency while receiving cross-age peer tutoring (Wright & Clearly, 2006). For tutors, before cross-age peer tutoring was implemented they were reading at an average fluency rate of 73 words per minute and during cross-age peer tutoring their fluency rate increased to 83 words per minute. For tutees, before beginning cross-age peer tutoring they were reading at an average fluency rate of 52 words per minute and during tutoring, they read at an increased average rate of 70 words per minute.

Wright and Clearly (2006) concluded that tutors showed less progression than tutees, but cross-age peer tutoring is an effective strategy to use to show an increase if used for reading fluency purposes. Although this was not the purpose of the study, the authors gave recommendations for schools to use when implementing cross-age peer tutoring, along with guidelines that schools should abide by to make sure that cross-age peer tutoring is effectively used. Table 13 summarizes the study for cross-age peer tutoring, and it provides the author of the study, gives the type of design, participants that were involved, procedure that was used, and the overall findings.

Table 13

*Summary of Cross-Age Peer Tutoring*

AUTHOR(S)	STUDY DESIGN	PARTICIPANTS	PROCEDURE	FINDINGS
CROSS-AGE PEER TUTORING				
Wright & Clearly (2006)	Quantitative	Four elementary schools (average range of students in each building were between 265-592. From the four schools, 13 tutors were selected from third grade and 14 from fourth grade. 14 tutees were selected from second grade and 13 from third grade. (same/mixed gender-based on schedule compatibility)- these students were selected due to reading delays	<p>Site coordinators (college students) were trained with three, 3-hour sessions. Site coordinators gave tutors four sessions of training.</p> <p>When tutoring started, tutors met with tutees 2x a week for 20 minutes</p> <p>Data were collected from oral fluency before, and during cross-age peer tutoring. The oral fluency norms were from Shapiro and they were at each student's instructional level.</p>	<p>Reading Fluency Increased!</p> <p>Before implementation students read at a mean fluency rate of 52 words per minute and during the treatment phase (when being tutored) students increased their mean fluency rate to 70 words per minute.</p> <p>Before tutoring tutors read an average of 73 words per minute from passages at their instructional level. During tutoring, they increased their fluency rate to 86 words per minute.</p> <p>Therefore, tutors showed less progression than tutees (many were reading at third grade levels w/materials but are reading fourth grade materials, or above)</p>

In conclusion, this chapter reviewed nine studies that observed the advantages of using class-wide peer tutoring strategies to enhance academic and social performance for students with disabilities. The strategies that were examined include class-wide peer tutoring, collaborative strategic reading strategy, peer tutoring, peer-assisted learning strategies, total class-wide peer

tutoring, and cross-age peer tutoring. Chapter 3 will provide discussion of the research and future implications.

### **Chapter 3: Conclusions and Recommendations**

The purpose of this literature review was to examine the advantages of class-wide peer tutoring strategies and the benefits that each strategy may have on academic and social performance for students. Chapter 1 provided background information on the topic, along with key terms that were used throughout the paper. Chapter 2 examined nine different research articles that were reviewed and summarized. Chapter 3 will review and discuss the research, along with recommendations for future implications.

#### **Conclusions**

I reviewed nine studies that examined six class-wide peer tutoring strategies and explored the benefits for each strategy presented for students, academically and socially. Three of the studies used CWPT (Ayvazo & Aljadeff, 2014; Ayvazo & Ward, 2010; Bowman-Perrott, 2009), one used CSR (Boardman et al., 2016), one used peer tutoring (Bowman-Perrott et al., 2014), three used PALS (Calhoon, 2005; Sáenz et al., 2005), one used TCPT (Kourea et al., 2007), and one used cross-age peer tutoring (Wright, & Cleary, 2006).

Out of the nine studies that were reviewed, six of the studies looked specifically at academic enhancement, specifically reading in the areas of fluency and comprehension (Boardman et al., 2016; Bowman-Perrott et al., 2014; Calhoon, 2005; Kourea et al., 2007; Sáenz et al., 2005; Wright, & Cleary, 2006). The other three studies examined student engagement, along with social performance (Ayvazo & Aljadeff, 2014; Ayvazo & Ward, 2010; Bowman-Perrott, 2009). Two of the studies took place in a physical education classroom to examine student engagement and social gains, while Bowman-Perrott (2009) studied students' performance in a biology class, along with on-task and off-task behavior.

## **Recommendations for Future Research**

Further research is needed on CWPT and each of the strategies, due to dated research and a small amount of studies for each area. Future studies should include more research on training for students and teachers, how many tasks or social skills are appropriate for each grade level, the importance of pairing students, and the significance of using reward systems.

Another area that should be examined more through research is training when it comes to each strategy. The strategies that are used under CWPT all require training, but future studies should explore how much time should be used for training students and teachers to be effective in using them. For students with disabilities, studies should also investigate if additional training is necessary.

When students receive training, emphasis is placed on teaching them social skills, along with skills related to the academic content area that they are learning. Students who are older are supposed to receive different social skills and tasks than younger students. Therefore, future research should expand on what is appropriate across age levels and academic areas, while also looking at how students should be paired when tutoring.

Pairing is important when exploring tutoring strategies because the way students are paired can increase or decrease their overall experience. Cross-age peer tutoring pairs students up so that an older student is with a younger student, but for other studies that were involved, students may have been paired with same sex peers, more than one same-age peer, or with another student who may be behind developmentally, academically, or have a disability that could range from severe to mild. Depending on whether students are working on social skills, or



academic skills more research should dive deeper into what will be most effective for students when working on these areas.

Motivators, or rewards should also be reviewed in future studies due to many studies using them alongside tutoring strategies.

### **Implications for Current Practice**

Research supports that peer-assisted learning strategies have been effective in increasing student motivation, along with their academics and social skills. With ever growing classrooms and funding being at an all-time low, teachers are having difficulties meeting all the needs of learners in their classrooms. Though teachers use differentiation, there is not enough time in the day to prepare each and every student with an activity that will be at their academic level. Therefore, implementing peer-assisted learning strategies can help reduce time differentiating for students because teachers are able to give immediate feedback, make modifications for students right on the spot, and can align the strategy with the content area that they are teaching.

As a professional who previously taught in a general education classroom for 3 years, I struggled to find the time and energy to differentiate instruction and activities for all of my learners. Now, as a special education teacher with kindergarten through sixth-grade students, it is even more important that I am able to work with and meet the needs of all of my students within my classroom. I have tried implementing some of the peer-assisted learning strategies due to my caseload going from 14 students to 20 students without proper training, but through the process I learned a lot.

The way that students are paired with peers is important because when students are paired with same-age peers, the dynamic was a lot different in my classroom than when an older student

would be paired with a younger student. I also noticed that if I used a reward system, my students were much more motivated to complete tasks efficiently than if there was nothing to work toward. Another significant take away was how much time I would save differentiating activities for each student at their academic ability. Each of my students needs to work on fluency, comprehension, and sight words, but using cross-age peer tutoring saved me time and my students loved it! One last critical component that was shocking to me was how beneficial the strategies were for my students socially. I have most of my students for most of the day and they miss out on a lot of social interaction with their peers but using peer-assisted learning strategies gives them the opportunity to put their social skills to use.

### **Summary**

Peer-assisted learning strategies keeps students actively involved with their learning while keeping them on-task in the subject areas of spelling, reading, math, science, social studies, physical education, and vocabulary. There are many different kinds of tutoring models to use that include: Class-wide Peer Tutoring, Collaborative Strategic Reading, Peer Tutoring, Peer Assisted Learning Strategies, Total Class Peer Tutoring, and Cross-Age Peer Tutoring. Overall, peer-assisted learning strategies benefit students academically and socially, but more research should view the many implications that the studies presented.

## References

- Arreaga-Mayer, C. (1998). Increasing active student responding and improving academic performance through class-wide peer tutoring. *Intervention in School and Clinic, 34*(2), 89–94. Retrieved from <http://login.libproxy.stcloudstate.edu/login?qurl=http%3a%2f%2fsearch.ebscohost.com%2flogin.aspx%3fdirect%3dtrue%26db%3deric%26AN%3dEJ577320%26site%3dehost-live%26scope%3dsite>.
- Ayvazo, S., & Aljadeff, A. E. (2014). Class-wide peer tutoring for elementary and high school students at risk: Listening to students' voices. *Support for Learning, 29*(1), 76–92. <https://doi.org/10.1111/1467-9604.12047>
- Ayvazo, S., & Ward, P. (2010). Research application. Assessment of class-wide peer tutoring for students with autism as an inclusion strategy in physical education. *Palaestra, 25*(1), 5–7. Retrieved from <http://login.libproxy.stcloudstate.edu/login?qurl=http%3a%2f%2fsearch.ebscohost.com%2flogin.aspx%3fdirect%3dtrue%26db%3daph%26AN%3d53844296%26site%3dehost-live%26scope%3dsite>.
- Boardman, A. G., Vaughn, S., Buckley, P., Reutebuch, C., Roberts, G., & Klingner, J. (2016). Collaborative strategic reading for students with learning disabilities in upper elementary classrooms. *Exceptional Children, 82*(4), 409–427. <https://doi-org.libproxy.stcloudstate.edu/10.1177/0014402915625067>
- Bowman-Perrott, L. (2009). Class-wide peer tutoring: An effective strategy for students with emotional and behavioral disorders. *Intervention in School & Clinic, 44*(5), 259–267. Retrieved from <http://login.libproxy.stcloudstate.edu/login?qurl=http%3a%2f%2fsearch.ebscohost.com%2flogin.aspx%3fdirect%3dtrue%26db%3deric%26AN%3dEJ577320%26site%3dehost-live%26scope%3dsite>.

fsearch.ebscohost.com%2flogin.aspx%3fdirect%3dtrue%26db%3daph%26AN%3d38227443%26site%3dehost-live%26scope%3dsite.

Bowman-Perrott, L., Davis, H., Vannest, K., Williams, L., Greenwood, C., & Parker, R. (2013).

Academic benefits of peer tutoring: A meta-analytic review of single-case research.

*School Psychology Review*, 42(1), 39–55. Retrieved from <http://login.libproxy.stcloudstate.edu/login?qurl=http%3a%2f%2fsearch.ebscohost.com%2flogin.aspx%3fdirect%3dtrue%26db%3daph%26AN%3d86877018%26site%3dehost-live%26scope%3dsite>.

<http://login.libproxy.stcloudstate.edu/login?qurl=http%3a%2f%2fsearch.ebscohost.com%2flogin.aspx%3fdirect%3dtrue%26db%3daph%26AN%3d86877018%26site%3dehost-live%26scope%3dsite>.

<http://login.libproxy.stcloudstate.edu/login?qurl=http%3a%2f%2fsearch.ebscohost.com%2flogin.aspx%3fdirect%3dtrue%26db%3daph%26AN%3d86877018%26site%3dehost-live%26scope%3dsite>.

Calhoun, M. B. (2005). Effects of a peer-mediated phonological skill and reading comprehension program on reading skill acquisition for middle school students with reading disabilities.

*Journal of Learning Disabilities*, 38(5), 424–433. <https://doi-org.libproxy.stcloudstate.edu/10.1177/00222194050380050501>

<https://doi-org.libproxy.stcloudstate.edu/10.1177/00222194050380050501>

<https://doi-org.libproxy.stcloudstate.edu/10.1177/00222194050380050501>

Fulk, B. M., & King, K. (2001). Class-wide peer tutoring at work. *TEACHING Exceptional Children*, 3449–3453. Retrieved from <http://login.libproxy.stcloudstate.edu/login?qurl=http%3a%2f%2fsearch.ebscohost.com%2flogin.aspx%3fdirect%3dtrue%26db%3deeric%26AN%3dEJ635033%26site%3dehost-live%26scope%3dsite>.

<http://login.libproxy.stcloudstate.edu/login?qurl=http%3a%2f%2fsearch.ebscohost.com%2flogin.aspx%3fdirect%3dtrue%26db%3deeric%26AN%3dEJ635033%26site%3dehost-live%26scope%3dsite>.

<http://login.libproxy.stcloudstate.edu/login?qurl=http%3a%2f%2fsearch.ebscohost.com%2flogin.aspx%3fdirect%3dtrue%26db%3deeric%26AN%3dEJ635033%26site%3dehost-live%26scope%3dsite>.

Hawkins, R., Musti-Rao, S., Hughes, C., Berry, L., & McGuire, S. (2009). Applying a randomized interdependent group contingency component to class-wide peer tutoring for multiplication fact fluency. *Journal of Behavioral Education*, 18(4), 300–318.

<https://doi-org.libproxy.stcloudstate.edu/10.1007/s10864-009-9093-6>.

<https://doi-org.libproxy.stcloudstate.edu/10.1007/s10864-009-9093-6>.

<https://doi-org.libproxy.stcloudstate.edu/10.1007/s10864-009-9093-6>.

Kourea, L., Cartledge, G., & Musti-Rao, S. (2007). Improving the reading skills of urban elementary students through total class peer tutoring. *Remedial & Special Education*,

*28(2)*, 95–107. Retrieved from <http://login.libproxy.stcloudstate.edu/login?qurl=>

<http://login.libproxy.stcloudstate.edu/login?qurl=>

<http://search.ebscohost.com/login.aspx?direct=true&db=daph&AN=24418867&site=ehost-live&scope=site>.

Sáenz, L. M., Fuchs, L. S., & Fuchs, D. (2005). Peer-assisted learning strategies for English language learners with learning disabilities. *Exceptional Children*, 71(3), 231–247.

Retrieved from <http://login.libproxy.stcloudstate.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=daph&AN=16265039&site=ehost-live&scope=site>.

Vaughn, S., Chard, D. J., Bryant, D. P., Coleman, M., Tyler, B.-J., Linan-Thompson, S., & Kouzekanani, K. (2000). Fluency and comprehension interventions for third-grade students. *Remedial & Special Education*, 21(6), 325–335. <https://doi-org.libproxy.stcloudstate.edu/10.1177/074193250002100602>

Wright, J., & Cleary, K. S. (2006). Kids in the tutor seat: Building schools' capacity to help struggling readers through a cross-age peer-tutoring program. *Psychology in the Schools*, 43(1), 99–107. <https://doi-org.libproxy.stcloudstate.edu/10.1002/pits.20133>.