

The Effect of Peer Tutoring Models on Student Achievement for General Education Students  
and Students Receiving Special Education Services.

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## **Abstract**

The main purpose of this study was to determine the effect of the Classwide Peer Tutoring (CWPT) program on the achievement scores of special education and general education students. The sample consisted of twenty-five students in a co-taught, middle school classroom. Ten of these students had an Individualized Education Plan (IEP), and fifteen students were classified as general education students. The study was conducted over a four-week time period, and the treatment produced varied results. It was determined that although no significant improvement was observed, progress was made in both groups.

# **CHAPTER I**

## **INTRODUCTION**

### **Overview**

With the implementation of No Child Left Behind Act 2001, the appearance of the special education classroom and the students themselves are continually changing. More special education students are being pulled from the self-contained environment and are being integrated into the general education classroom. It is therefore of critical importance for teachers to find the best possible way to reach every student within the classroom. What this researcher has learned through experience is that there is no one way to teach every child. Having a multitude of practices and teaching models at the ready will help educators to provide the most well rounded instruction possible.

The question of whether or not children with special needs should be included within the general education classroom has been debated for years. There have been numerous studies on the efficacy of inclusion, as well as the benefits and pitfalls of such a program. What many researchers have concluded is that the inclusion of special needs students into the general education population has a multitude of advantages. For instance, in her study, Idol (2006) concludes, "... the findings of these interviews strongly support the practice of including students with special education challenges in general education programs" (p. 94). Additionally, Jang (2006) suggests that students who encounter a team teaching model demonstrate more progress than students taught through traditional methods.

While the co-taught or team teaching setting does require a slower pace, it is often one that benefits all students within the classroom. Co-taught classrooms are often comprised of students who receive special education services, students who possess a 504 or accommodation plan, and

students of average or low average abilities. The majority of these students benefit from the slower pace, the availability of multiple teachers, as well as the additional practice and instruction. However, for a co-taught classroom to be successful, both teachers must contribute to the learning environment. According to Lerner (2000), “To make integrative and inclusion placements more effective, it is essential to provide sufficient support through multidisciplinary teams of professionals...” (p. 154). Such settings provide support for all students within the classroom, not just those with special needs. One other aspect to consider is the impact of placing special needs students in a general education setting with non-disabled peers. Fuchs, Fuchs, Mathes, & Martinez (2002) conclude that allowing special needs students to work with their non-disabled peers helps to socially integrate special needs students into peer groups.

Teaching in a co-teaching setting for the last four years has allowed this researcher to see that each child is unique in his or her learning style. In addition, the opportunity to work with a wide variety of teachers and in several content areas helped the researcher to develop a toolbox for teaching. It is important for teachers to consider a variety of teaching styles in order to incorporate a variety of learning styles. With the wide range of academic levels within one classroom, it is vital to find multiple strategies that will benefit all of the students within a given class. One of the biggest issues that teachers face with this wide range of abilities is how to equally incorporate all the various needs and learning styles into one classroom setting. This has led the researcher to examine several personal experiences and the effect of those experiences on her teaching style.

Many personal experiences lead to the development of teaching styles. The researcher for this study had the unique experience of being the younger sister of a special education student and therefore learned early on about the multitude of learning styles, in particular about the

benefits of Peer Tutoring. As is the case in many other homes, in the researcher's own home, her sister was often resistant to the help of her parents, and her patience grew thin with the amounts of practice and repetition required to master material. In early high school, the researcher for this study began tutoring her sister in math and found her much more receptive to the coaching and teaching style of a peer. Since that same resistance as well as the positive effect of tutoring are also readily observable among students in the co-taught setting, the researcher began to consider her own history and the possibility of integrating other teaching methods into the daily classroom routine. An idea began to take shape that programs such as peer tutoring could hold the key to helping to raise the achievement levels of all students within a co-taught classroom.

### **Statement of Problem**

The purpose of this study was to determine the effect of the Classwide Peer Tutoring program on the achievement of special education students versus general education students.

### **Hypothesis**

Class Wide Peer Tutoring will have a positive impact on the academic scores of both special needs and low average students based on the benchmark scores from the first through third quarters. The researcher predicts that, by acting in the role of tutor, students will develop a greater understanding of the material being presented. Tutors are able to verbalize and therefore internalize the steps and concepts. Additionally, peers are often more adept at using verbiage that is more commonly understood among a given age group. Not only are peers able to cut out extraneous information, they are also able to share examples and shortcuts that allow them to better understand the information themselves.

### **Operational Definitions**

The independent variable used in this study was the Class Wide Peer Tutoring program. Peer tutoring was conducted in class by heterogeneously mixed groups of general education and special education students. The dependent variable of this study was academic achievement measured by the Anne Arundel County quarterly benchmark scores.

## **CHAPTER II**

### **REVIEW OF THE LITERATURE**

This literature review attempts to explore the effect of peer tutoring models on student achievement for both general education students and for students receiving special education services. Section one provides a definition and overview of special education services. Section two attempts to define peer tutoring and to provide an overview of several program examples. Section three examines the connections between peer tutoring and special education environments.

#### **Definition of Special Education**

Throughout the history of education, there have always been children within the school setting who could be classified or labeled as having “special needs.” However, it wasn’t until 1975 with the passage of Public Law 94-142, *the Education for All Handicapped Children Act* that the requirement was made for special services to be provided for such individuals. This law was later renamed *Individuals with Disabilities Education Act (IDEA)* in 1983 and has been reauthorized several times since then. Santrock (2000) summarizes IDEA saying, “IDEA spells out broad mandates for services to all children with disabilities... these include evaluation and eligibility determination, appropriate education and the individualized education plan (IEP), and the least restrictive environment (LRE)” (p. 351). Today, special education delivery involves the process of providing individualized educational plans for students with special needs.

In order to meet the requirement of providing the least restrictive environment, schools have changed the means by which services are provided over the last few years. As a result of the passage of No Child Left Behind, the amount of time that students with special needs spend in the general education classroom is consistently increasing. Today, many students with special

needs are able to spend a majority of the school day in the general education setting. However, the needs of some students require that their LRE includes special education services for the entire school day.

There are several ways in which these services can be provided, and placement depends on the needs of the individual student. For instance, some students receive services in a self-contained environment. These students are provided special education services in a special education classroom and are not educated with non-disabled peers. Many of these students require functional life skills programs and require intensive instruction in basic skills. Other students possess the functional skills needed to be active members of society and are therefore integrated into the general education environment in one of three ways. These include mainstreaming, resource rooms, and inclusion. A mainstreaming environment is one in which a student receives a portion of his/her services in a special education classroom and a portion within the general education setting. These students typically participate in non-tested content areas such as social studies and science as well as elective classes such as music and art. Another form of integration is the use of a resource room setting. This is “any setting in the school to which students come to receive specific instruction on a regularly scheduled basis, while receiving the majority of their education elsewhere...” (Idol, 2006, p. 78). Students in this setting are often sent to a resource classroom where they receive more intensive instruction in an area of weakness. For example, students who are weaker in reading skills will often attend a resource room for reading class only. This instruction will take place at the same time as the general education class and will be in place of that instruction. Finally, in an inclusion setting, students are included into a general education setting for 100% of the day and receive their services from both the general educator and from a special educator.

Drawing upon her own research for proof, Idol (2006) contends that collaborative teaching is an effective form of inclusion. She discusses two models of collaborative teaching, suggesting that the models of implementation depend on the needs of the students and the school environment. According to Idol, the “consulting teacher model is a form of indirect special education service delivery in which a special education teacher serves as a consultant to a classroom teacher” (p. 78). This model works best for students who require accommodations, such as extra time or a calculator for all assignments, but who do not need a modification of the curriculum, such as alternative instruction or intervention. The other model Idol recommends is the cooperative teacher model in which “... special education and classroom teachers work together with a variety of co-teaching arrangements in the same classroom to provide educational programs for all students” (p. 78).

Lerner (2000) agrees that cooperative or co-teaching allows each professional to bring a different set of strengths into the classroom. In fact, the co-teaching model continues to grow in popularity and frequency as more schools are attempting to meet the requirements of AYP. Collaborative teaching allows students to access special education services while benefiting from the environment of the general education classroom. Many students feel less stigmatized in a co-taught class because in this setting, they are less likely to be identified as needing special education services.

Idol (2006) also supports the concept that inclusion of special needs students and the utilization of co-teachers helps to improve the achievement of all students. She states that, “36% of the respondents reported that having students with disabilities in general education classes resulted in an increase in the statewide test scores of general education students” (p. 84). Additionally, Idol found that many teachers in her study saw an increase in students’ attitudes

toward students with disabilities, as well as students' levels of self-confidence. The inclusion of special needs students into the general education environment can be beneficial for all students within the classroom. For instance, low achieving students who do not qualify for special education services still receive the support of the special educator and, at times, receive accommodations that would otherwise not be provided in a general education classroom.

Much of the research for cooperative teaching has been compiled within the United States and at the elementary level. However, Jang (2006) investigated the effects of cooperative teaching on student achievement at the secondary level, finding that there was significant improvement in students' scores to support the use of peer tutoring in the secondary environment. Jang saw vast improvements in the average of final exam scores and in the students' attitudes toward achievements in classrooms where cooperative teaching was used. Ultimately, Jang concludes, "Research has shown that team teaching is an effective way of constructing deep learning of concepts while learning alternative ways to teach the same subject matter" (p. 179). Many researchers agree with Jang that cooperative teaching has numerous other benefits such as the providing teachers with the ability to share and experiment with new teaching techniques and increasing collaboration between teachers. Cooperative teaching does not need to be limited to the elementary level. While this approach may require different elements at the secondary level, the results can be just as rewarding and worthwhile as at the elementary level.

Jang (2006) and Mercer and Mercer (2005) share the belief that while there has been little research in the field of cooperative teaching, the benefits outweigh the alternative settings. According to Mercer and Mercer, "Walther-Thomas (1997) reports that the benefits of co-teaching for elementary and middle school students with disabilities include positive feelings

about themselves as capable learners” (p. 28). Jang agrees that while the data did not significantly support the implementation of co-teaching, the surveys completed by the sample indicated a positive attitude toward this model. Students in Jang’s study expressed that they were provided with multiple ways to learn and think differently about a topic.

### **The Definition of Peer Tutoring and Several Powerful Models**

Students learn in different ways and from a variety of people. Students can learn more from one teacher than from another, from their parents, siblings, and often, from their peers. Mercer and Mercer (2005) define peer tutoring as “an instructional arrangement in which the teacher pairs two students in a tutor-tutee relationship to promote learning of academic skills or subject content” (p. 51). The concept of peer tutoring and the methods by which it is implemented has altered over the years. Nonetheless, each approach offers benefits as well as a few pitfalls for various students. Turnbull, Turnbull, Shank, Smith, and Leal (2002) support the idea that students are more natural teachers for their peers. Not only do peers use age-appropriate language and examples, they are also more inclined to use helpful examples rather than just providing answers (Ibid). In turn, a student may be more willing to listen to the ideas and explanations of a peer than those of an adult. Students often feel more comfortable admitting to their peers than to their teachers that they are confused or do not understand something. Additionally, multiple perspectives and explanations can help to clarify any misconceptions. Mercer and Mercer discuss several studies conducted on peer tutoring and find that “peer tutoring produced more than twice as much achievement as computer-assisted instruction” (p. 51). The various models discussed in this literature review will provide evidence to support the usefulness of peer tutoring.

One of the first and most popular models of peer tutoring is Classwide Peer Tutoring or CWPT. According to Maheady, Mallette, and Harper (2006), CWPT is one of the oldest and most researched models. Developed in the early 1980's by the Juniper Gardens Children Project, it was designed to improve the basic skills of students in grades 1-6. This model uses peers to supervise the practice session and provides a game format for learning as well as a weekly evaluation of progress (Mercer & Mercer, 2005). This is a same-age peer tutoring program that utilizes student tutoring pairs and reciprocal teaching (Fuchs et al., 2002). Reciprocal teaching assigns various stages of the learning process such as summarization, clarification, and predictions, to individual members. The assignments are rotated throughout the group once a section has been completed. Studies have found that CWPT,

Increased students' active engagement during instruction in grades 1 to 3, improved pupil achievement at grades 2, 3, 4 and 6, reduced the number of CWPT students in need of special education services by grade 7, and decreased the number of students who dropped out of school by the end of grade 11. (Maheady et al., p.67)

Similar observations and support for CWPT are provided by Kamps, Greenwood, Arreaga-Mayer, Veerkamp, Utley, Tapia, et al. (2008). Their study supports the idea that peer tutoring increases the amount of student engagement as well as the amount of practice and support students receive. In comparison to traditional teacher-directed models, peer tutoring provides students with smaller, interactive groups. In this type of environment, students feel more secure and comfortable asking for assistance. In addition, peer tutoring provides more opportunities for guided practice than does teacher-led discussion.

Dufrene, Noell, Gilbertson, and Duhon (2005) investigated the extent to which CWPT is implemented within the school setting. Their research supports the use of CWPT, as well, noting significant improvements in the engagement in instruction and social skills and social interactions when this approach is implemented. For instance, students who participate in CWPT

are found to be more likely to be supportive of students with special needs. Furthermore, CWPT allows students with and without special needs to interact more frequently than in a traditional classroom. This interaction often leads to the formation of new friendships and social interactions that support the learning environment. Once students feel accepted and well-supported within the classroom, their chances for success drastically increase. Dufrene et al. caution that the efficacy of CWPT improves only when the program is implemented as designed (i.e. the number of sessions per week). However, they also contend that CWPT is a manageable program for teachers to implement.

There are few articles that examine the use of peer tutoring models in secondary schools versus in elementary schools. Kamps et al. (2008) examined models typically used in the elementary environment and hypothesized that these programs could also be effective in the middle school environment. Jang's (2006) study also indicates the benefits of peer tutoring at the secondary level. One suggestions offered by these researchers is that the implementation of CWPT at the secondary level requires additional motivational and behavioral management components. Additionally, CWPT is more effective with random assignment to classes as well as when the variations and styles of the tutors has been determined. Finally, due to the differences in secondary scheduling, there is not always the appropriate amount of time for correct implementation of CWPT (Kamps et al.). Many of the researchers agree that peer tutoring can be viable for use at the secondary level. These researchers agree that peer tutoring programs can increase academic success as well as build social skills and social acceptance.

Team Competition vs. Team Cooperation is an interesting element of CWPT. Also known as Classwide Student Tutoring Teams or CSTT, this method is a combination of CWPT and Slavin's student team learning. In this model, after the teacher presents new material, students

gather in four-person, heterogeneously mixed groups and rotate the role of tutor and tutees. One student at a time is provided with the answer key and points are awarded for good cooperation, teaching the steps, appropriate manners, and constructive support from all members of the group (Maheady et al., 2006). At the end of the week, the most improved and most outstanding teams are recognized by the teacher. This can be an effective way to engage and motivate students as the program awards positive behaviors. Many children thrive from competitive, yet supportive situations. In CSTT, students are encouraged to work together as a team and thus tend to be more supportive of their teammates. Maheady et al.'s research demonstrated that with this approach, "students' weekly math quiz scores increased by an average of 20 percentage points... academic gains for students with special needs closely paralleled and occasionally succeeded those of their non-disabled peers" (p. 69). Providing a supportive but still competitive environment appears to be a beneficial way to encourage student achievement and motivation within the classroom setting.

Several researchers examined the reasons behind why Hispanic bilingual children often perform poorly in schools. Madrid, Canas, and Ortega-Medina (2007) urge teachers to focus on motivating and providing opportunities for students to interact with their peers. Examining the benefits and drawbacks of team competition versus team cooperation and its relationship to peer tutoring, Madrid et al. saw vast improvements in the student test results from pretests to the posttests. The majority of the students in the sample improved from 12-13% to 80-92% accuracy, and Madrid et al. concluded that these results were a direct impact of the use of peer tutoring models. This was especially evident when comparing the 14-36% increase from the traditional teacher-led model. According to Madrid et al., "The findings of this study are consistent with the idea that the competitive nature of instructional programs in the United States may be related to

lower levels of achievement among Hispanic bilingual children” (p.156). Madrid et al. conclude from their study that while Hispanic culture does not always promote competition within the classroom, their culture does support cooperative learning. Therefore, the researchers suggest that teachers should provide their students with models of cooperative learning that are beneficial for all students, such as the use of peer tutoring programs. While not all teachers are faced with bilingual children, many classrooms do have a wide variety of ethnicities and socioeconomic levels. Therefore, Madrid et al.’s study is useful in that it provides support for the use of peer tutoring with non-disabled students as well as with all low-achieving students.

Peer Assisted Learning Strategies (PALS) is yet another model of peer tutoring with roots in classwide peer tutoring. PALS “is a version of CWPT that provides students with extended opportunity to practice both basic skills and higher-order cognitive strategies in reading and math” (Fuchs et al., 2002, p. 205). This model has three variations that target students in grades 2-6 for reading and math (Maheady et al., 2006). The PALS program was first developed to meet the needs of a greater range of students. This strategy uses many of the elements of CWPT, but incorporates research based instructional strategies (Maheady et al.; Mercer & Mercer, 2005). Additionally, this program pairs one higher and one lower achieving student together, which provides beneficial support for both the tutor and tutee. Many children learn material better once they are able to teach the concepts to another person. The PALS program provides tutors with this opportunity to strengthen their own learning while providing support to a lower-achieving student. Many teachers support the idea that material is often easier to understand once they themselves have learned how best to present it to students.

Researchers tend to agree that PALS is an extremely useful model as it provides several alternatives not supported in CWPT. For example, Fuchs et al. (2002) state that the one-to-one

tutoring provides students with greater interactions and more frequent, immediate feedback. These researchers also agree that PALS fosters positive social development for all students, especially students with learning disabilities. The more chances for interaction with non-disabled peers that special education students have, the more students with disabilities are able to increase their achievement.

In their study, Hughes and Fredrick (2006) examine the combination of Classwide Peer Tutoring and Constant Time Delay or CTD and the incorporation of these two interventions into teaching vocabulary to students with learning disabilities. According to Hughes and Fredrick, CTD “is a response-prompting procedure that incorporates a near-errorless approach to learning, frequent opportunities to respond, and immediate feedback and consequences for students’ responses” (p. 2). This model focuses on the repetition of correct responses until the student is independent in the procedures. Hughes and Fredrick conclude that the combination of these programs is beneficial for teaching vocabulary to students with learning disabilities. These researchers also indicate that one teacher from the study implemented these programs into her science curriculum and found noticeable improvements in the assessments of all her students. Thus, Hughes and Fredrick’s findings support the concept that peer tutoring models can be easily integrated into the general curriculum.

One final model of peer tutoring is what Wright and Cleary (2006) refer to as “cross-age peer-tutoring” (p. 99). Wright and Cleary, who discuss the benefits of cross-age peer-tutoring in elementary schools, saw significant improvements in tutees’ reading fluency. While tutors had a less substantial rate of increase, they, too, improved in their reading fluency through the use of cross-age tutoring. This suggests that while cross-age peer-tutoring is beneficial to the tutees, other more programs may provide greater benefit both the tutor and tutee (Ibid). Clearly, not all

peer tutoring models benefit all ranges of students. Just as individual reading interventions sometimes support one specific population and exclude another, the same can be said for peer tutoring models. Cross-age peer-tutoring might be more beneficial for students in lower elementary. However, Wright and Cleary do not recommend this model for increasing the academic skills of tutors as well as tutees.

Despite the differences in peer tutoring approaches, what is common to all programs is that they encourage the process of teaching a skill. For example, many middle schools employ high school students in after school tutoring programs. This type of peer tutoring provides tutees with the additional practice they need while at the same time refreshing the skills of the high school students. Furthermore, this approach allows the high school tutors to work collaboratively with teachers who provide the tutors with additional teaching and learning techniques to add to their own toolboxes.

### **What are the connections of collaborative teaching to peer tutoring?**

Studies (Hughes & Fredrick, 2006; Mathes & Fuchs, 1994; Calhoon, 2005; Fuchs et al, 2002) support the use of peer tutoring with students with mild disabilities. Hughes and Fredrick state that “Studies conducted with students with mild disabilities, and students who are low-achieving minority have demonstrated an increase in math, reading, social studies, spelling and vocabulary skills with CWPT” (p.3). In their study, Mathes and Fuchs demonstrate that students enrolled in peer tutoring programs show greater gains than students who do not receive this intervention. Similarly, Fuchs et al. (2002) found that programs such as PALS allowed students with learning disabilities to become socially equal with their non-disable peers. This conclusion provides extremely valuable support for peer tutoring in inclusive classrooms. According to

Fuchs et al., “PALS, and perhaps other peer-tutoring programs when implemented with fidelity, may be an important and feasible means by which teachers can integrate students with LD into both the academic and social life of mainstream classrooms” (p. 213). Calhoon (2005) also suggests that age-appropriate peer tutoring programs can improve student achievement at the secondary levels. Additionally, many of the textbooks pertaining to special education (Lerner, 2000; Mercer & Mercer, 2005; Turnbull et al., 2002) support the use of peer tutoring methods within inclusive settings. Peer tutoring can be a relatively easy way to provide students with the extra practice they need, while at the same time developing their social skills as well as their academic motivation.

Many of the sources examined in this literature review support the use of peer tutoring models. Not only has research shown increased levels of achievement for students with special needs, there is also evidence of increased achievement for the tutors themselves. The ability to demonstrate mastery in one’s own words to another individual will often increase the level of understanding for both tutor and tutee. Also, peer tutoring models increase the level of social acceptance for a multitude of students. Maheady et al. (2006) discovered that, “Students also reported that they had developed new friendships and increased their self-esteem as a result of using CSTT” (p.69). Throughout this literature review, a common theme emerges: there is strong support for the use of peer tutoring models to develop social skills, which in turn, helps to improve academic success.

### **Effects of Peer Tutoring in the Reading and Language Arts classrooms**

Several studies support the use of peer tutoring models within the reading classroom. In addition to those studies mentioned previously, Medcalf, Glynn and Moore (2004) examined a

school wide approach to peer tutoring in writing and indicated vast improvement in academic and social skills. Their study evaluated cross-age peer tutoring which was then incorporated into the writing process. What Medcalf et al. discovered is that improvements in tutees' writing skills included improvements in the rate and accuracy with which students were writing. Additionally, interviews from teachers and tutees indicate that this is a favorable process for both teachers and students.

To support the use of peer tutoring within the reading classroom, Mathes and Fuchs (1994) examined the utilization of this approach with reading comprehension for students with mild disabilities. Mathes and Fuchs' conclusions support the evidence from other studies that indicate that peer tutoring is an effective practice for students with mild disabilities, especially within the reading and language arts classrooms. In addition, their research supports cross-age peer tutoring; as Mathes and Fuchs state, "Results indicated that both groups of special education tutors benefited from tutoring younger general education students and that the general education students also made significant reading achievement gains" (p. 11). Overall, there are strong indications that peer tutoring can be beneficial in improving the reading success of students with mild disabilities. However, researchers do state that peer tutoring is only one intervention that can be used to improve reading levels. When used in combination with teacher-led instruction, peer tutoring can help to promote growth in reading skills.

Calhoon's (2005) study indicates that peer tutoring is effective for middle school students with reading disabilities, asserting that "Research on remedial reading programs for older students with reading disabilities (RD) has indicated that although they accelerate reading growth, these programs do not significantly close the reading gap and normalize the reading skills of students with RD" (p. 424). Hence, it is important for teachers to find interventions that

incorporate instructional strategies, provide multiple opportunities to practice necessary skills, and create smaller groups with immediate feedback. Calhoon therefore supports the use of peer tutoring for students with disabilities. Her research has demonstrated an increase in student engagement and guided practice, as well as indicating that PALS has shown improvements in the reading comprehension of high school students.

### **Summary**

With the implementation of No Child Left Behind, the appearance of the special education classroom and the students themselves are continually changing. Therefore, it is vital for all teachers find the best possible ways to support the academic success of all students within a classroom. While peer tutoring is not a widely utilized intervention, there is a great deal of research that supports its effectiveness. Many of these reviewed studies have also connected student success to the implementation of peer tutoring programs.

The goal of No Child Left Behind and other educational legislation is to increase the academic success of all children, and peer tutoring programs have been shown to be effective in accomplishing this goal. Due to the individual nature of each child, not all peer tutoring programs will be effective in every classroom. However, the multitude of programs in practice helps to provide teachers with numerous viable options. Therefore, due to the varying needs of students and of each school setting, the type of approach and the extent to which peer tutoring is utilized will differ from school to school. However, to address the wide variety of student learning styles and achievement levels, it is important for each school setting to implement a peer tutoring system that draws upon the strengths of teachers and students alike.

## **CHAPTER III**

### **METHODS**

This study was conducted to determine the affect of peer tutoring on special needs and general education students.

#### **Design**

The study utilized a pre-post test design using scores from the Anne Arundel County Public Schools' Language Arts curriculum. The dependent variable in this study was the level of student achievement which was measured with the third quarter benchmark test. In this study the independent variable was the peer tutoring provided to special education and general education students.

#### **Participants**

The students in this sample were a convenient sample from one co-taught language arts class. There were twenty-five students in the class. Ten of these students have an Individualized Education Plan (IEP) and fifteen students are in general education. The students were predominantly White/Caucasian; there were five Hispanic students, one African American student, and one Asian student. Although no student was receiving ESOL services, there were several students for whom English is not their first language, nor is English the predominant language spoken in the home. According to the 2008 Maryland State Assessment for Reading, there were seven students who scored in the advanced range, sixteen who scored proficient, and one student who scored basic. One student transferred in from out of state and therefore did not participate in last year's Maryland state testing.

## **Instrument**

The measure of achievement instrument included an analysis of performance by students on the AACPS quarterly Language Arts benchmarks. This measure provides teachers with a sense of student comprehension of the topics presented. Anne Arundel County teachers mainly use this as an informal means of assessment. The validity of this measure is strong due to the fact that questions are pulled directly from the county curriculum. AACPS curriculum guides are derived from the Maryland Voluntary State Curriculum (VSC). The textbooks used by Anne Arundel County are allied with the VSC, and testing items on quarterly benchmarks are carefully selected based on this curriculum. This test has been used as an assessment for the last ten years and was updated for the 2008-2009 school year.

## **Procedure**

Students were arranged numerically based on their scores on the 2008 Maryland State Assessment in Reading. With the assistance of the general education teacher, the co-teacher sorted students into 3 groups: the highest performing group, an average group, and a lower average group of students. This information was then used to create peer-tutoring teams of three to four students. The arranging of students based on MSA scores provided teachers with heterogeneously mixed teams that were comprised of at least one high performing student, one average performing student, and one lower performing student. The highest ranked student was placed on team one, the second highest on team two, and so on until all students had been placed on a team.

Once teams had been determined, the teachers provided students with the procedures and peer tutoring rules. Teams were given time to collaboratively create a team name and decorate

their team's work folder. In each peer tutoring session, teams were provided with a study guide for the lesson as well as an answer key for these questions. The teams were also provided with a deck of numbered cards equal to the number of questions on the study guide. One student was to select the top card which corresponded to the question that the team answered. The student sitting to the left of the card selector was designated as the "tutor" for that question. This student read the question aloud. All other students on the team answered the question independently and each shared his/her answer with the team once the task was completed. The tutor checked teammates' responses against the answer key and awarded five points for accuracy. Two points were also awarded if teammates rewrote the correct response twice. No points were given or taken away for incorrect answers. Once this process was completed, the folder rotated one student to the left and the procedures were repeated.

Teachers were actively monitoring this process and providing clarification and assistance when needed. In addition, teachers monitored the way in which tutors taught the skill as well as their explanation of the correct answers. Teacher awarded bonus points for good teamwork and cooperation as well as for following the procedures correctly.

Once tutoring sessions were completed, points were tallied up and recorded in the team folders as well as on a large posted chart. At the end of a week, teachers recognized the winning team along with teams that had made significant improvements. Students remained in peer tutoring teams for four to six weeks.

## CHAPTER IV

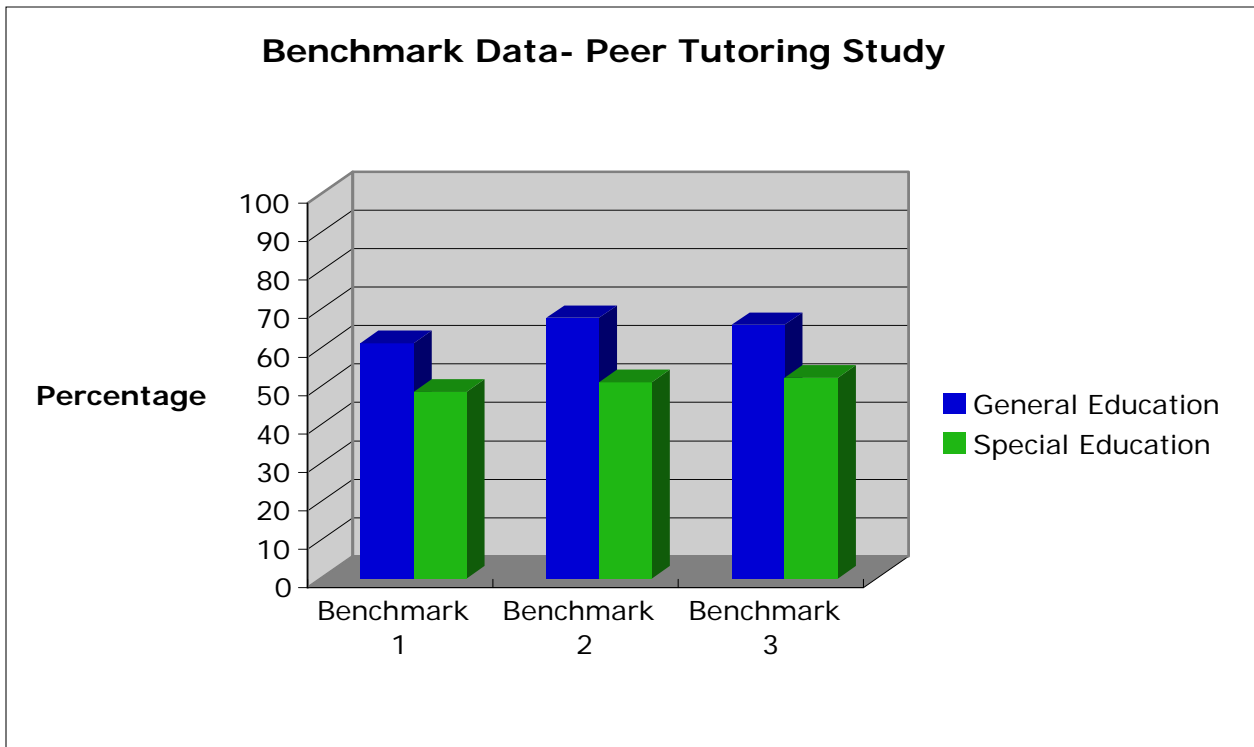
### RESULTS

The data from this study produced varying results. Due to the need to study both general education and special education students, there are several important areas to consider when examining the data. On the first benchmark test, the general education students obtained a mean score of 12.13 (60%), and special education students obtained a mean score of 9.78 (48%). The difference between scores was not statistically significant,  $t(22) = 1.71$ ,  $p = .10$ . On the second benchmark test, general education students obtained a significantly higher score ( $M = 14.13$ ) than special education students ( $M = 10.33$ ),  $t(22) = 2.96$ ,  $p < .05$ . On the third and final benchmark general education students obtained a significantly higher mean score ( $M = 19.77$ ) than special education students ( $M = 15.63$ ),  $t(19) = 2.29$ ,  $p < .05$ .

A next set of statistics was performed to determine if there was significant improvement from one benchmark test to another based on the type of group (general education or special education students). On the first benchmark test, general education students obtained a mean of 61% of items correct as compared to the second benchmark test for which students obtained a mean of 67% of items correct. This was only marginally statistically significant,  $t(14) = -2.06$ ,  $p = .06$ . General education students obtained a higher score (66%) on the third test. Although the mean score on the third test was higher than the mean score on the first test, there was no significant improvement.

On the first benchmark test, special education students correctly answered 48% of the items, and their scores increased to 49% correct on the scored test. However, this increase was not statistically significant,  $t(8) = -.05$ ,  $p = .96$ . In comparing the first scores to the third benchmark scores, students also displayed an increase (48% to 52%). However, this increase was

again not statistically significant with  $t(7) = -.78$ ,  $p=.46$ . Finally, there was only a four point increase from the second to the third tests scores, 49% to 52% respectively. Again, this difference was not statistically significant with  $t(7) = .57$ ,  $p=.58$ .



## **CHAPTER 5**

### **DISCUSSION**

As previously stated, due to the nature of the sample, this researcher's hypothesis must be considered in two separate lights. First of all, it was stated that Class Wide Peer Tutoring would have a positive impact on both general education and special education students. It was also thought that through the teaching process, all students would develop a greater understanding of the material being presented.

A comparison of the progress made by general education students to that of special education students shows that the data does support the hypothesis. In this study, the general education students typically outperformed special education students on each benchmark. In addition, both groups made gains between each benchmark. However, a comparison of the performance of each group independently with a t-test demonstrates that neither group's performance was significantly different from one another. Therefore, when examining this data, it is possible to consider that the Class Wide Peer Tutoring program was not as successful as originally thought. Due to the lack of statistical significance, it is difficult to support the statement that this program had a major impact on student success.

#### **Theoretical Consequences**

The results of this study support multiple theories. One of the major influences that Classwide Peer Tutoring and the co-taught environment have on a student is the development of what Erikson termed Industry vs. Inferiority. With the implementation of CWPT, students were developing a sense of independence that allowed them to grow without adult assistance. Students were learning to rely on their own peers and to make assertions based on previous knowledge and current experiences through this program. Students were also developing their self-esteem as

they become more confident in their participation and answers within the small group of peers. In addition, the co-taught setting provides students with a safe environment that is more suited to their academic needs and allows for this growth in independence and industry. This method of inclusion provides multiple chances for small group instruction as well as the opportunity to learn from several teachers.

Vygotsky's Sociocultural Theory, which states that social interactions are vital for personal growth can also be applied to this study. With the use of CWPT, students are continually interacting with and learning from their peers. There is often a translation of ideas from peers that differs from those of adults which creates a more concrete understanding of the lesson. The observed improvement in testing scores, as well as student motivation and self-esteem levels, supports Vygotsky's theory.

### **Threats to Validity**

There are several threats to the validity of this study. Two of the most influential threats were that of consistent participation and sample selection. There were many days when several students were absent. Only on the last day of the study were all students present. This had a great impact on the validity of the experiment as many groups had unequal amounts of students and therefore the daily accumulated points differed. In addition, several students had missed the initial explanation of the program and therefore time for instruction and the activities were reduced due to the need to explain procedures and expectations..

In addition, these absences led to an inconsistency of instruction. Since Class Wide Peer Tutoring relies heavily on the instruction of peers, it is imperative that all students are consistently present. It has been previously stated that all students have their own strengths and

weakness. If a particular student was not present during material that he/she had as a particular strength, it may have diminished the value of instruction of the other members in the group.

Due to the nature of this study, a truly random sample was not attainable. The school staff sets up a class based on the needs and scores of students. Therefore, a co-taught classroom is composed of students who possess an IEP and require daily special education services. The remainder of students was then “randomly” selected by the computer system to compose a heterogeneously mixed class. However, in recent years, school personnel have hand-selected the general education students to fill a co-taught classroom with students who are English as a Second Language Learners or students with lower state testing scores. This provides a convenient sample for this study, which could have also had a great effect on the outcome of the results.

Another threat to the validity of this experiment was experimental mortality. While no students moved into or out of the class due to relocation of their families, several students were rescheduled to other classes before and during the actual experiment. One student was moved into a higher section just as the sampling process and group selection was in progress. Another student was moved into another section for behavioral reasons. These two students altered the grouping and type of instruction received in the respective teams.

### **Connections to Previous Research**

This researcher found that there were many similarities between other similar studies. One conclusion that seemed to be accepted across the board was that Classwide Peer Tutoring (CWPT) helped to improve the motivational levels of the students within the study. In addition, the academic success of students in both special education and general education tended to

improve. These conclusions can also be applied to the current study. In the Kamps et al. (2008) study, researchers observed that:

The use of CWPT at times combined with additional motivational and management procedures resulted in moderate to large effects for middle school students' improvements in learning of weekly reading and social studies content. (p. 139)

The current researcher noticed an increased level of motivation and teamwork among her students. While they were reluctant at first, students eventually appeared to like working in their cooperative teams and working towards a common goal. In addition, there was a noticeable increase in the students' test scores.

Madrid et al. (2007) indicated an increase in academic success through the use of CWPT, explaining that

Both tutoring conditions exceeded the teacher-led condition. Over all of the students and all of the tutoring sessions, the size of the gains made by students in the team-tutoring conditions compared favorably with those obtained in prior studies of peer tutoring. (p. 158)

In addition, Mathes & Fuchs (1994) state that

In general, students with mild disabilities who participated in peer tutoring reading interventions made greater reading achievement gains than control students who experienced typical teacher-directed reading instruction without researcher direction. (p. 14).

These conclusions are also supported in the current study conducted by this researcher.

The main difference between the current study and others like it is that the testing data did not show statistical growth. Success was attributed to the personal observations made by the teachers, the researcher, and the students themselves. This difference was due to a lack of time required for proper implementation of the study and program. One other major difference of this study was attributable to the nature of the classroom in which it was conducted. There were a limited number of studies for CWPT that are conducted within the middle school or secondary

environment. Additionally, there were few to no studies conducted with an entirely co-taught classroom. Many of the studies comparing special education students to general education students utilized a sample that was comprised of students from a variety of classes. No study indicated that all students were from the same classroom and had been together since the beginning of the school year. In this respect, this researcher found that it was beneficial to use the co-taught setting to determine the effectiveness of the CWPT program.

### **Implications for Future Research**

Further research of the CWPT program in the co-taught setting would be beneficial to determine the true success of this program. However, after discussion with the general educator of this sample class, it was determined that both teachers would enjoy utilizing this program with future classes. While it is agreed that CWPT would not be appropriate for all units of study, both the general educator and this researcher observed strong improvements in their students that support the use of this program.

This researcher observed that a more reliable means of assessment should be employed. A discussion among colleagues revealed that county benchmarks do not provide the most accurate assessment of student growth but instead measure only whether or not students understood the current topic of study. Also, the Anne Arundel County Benchmarks are written for all academic levels and are therefore typically advanced beyond the abilities of the students within this study.

In addition, a more accurate assessment of the program would be gained if CWPT were to be used throughout the school year and with multiple groups of students. This, too, would provide a more reliable analysis of CWPT and its effects on both the general education and special education populations. The CWPT program contains a variety of methods for improving

the academic success and motivation of a wide array of students. With the goal of No Child Left Behind to include all students and boost student abilities, CWPT provides teachers with a unique method to meet these requirements. Giving students ample time and opportunity to become academically independent and confident will allow for a lifetime of growth and education that will, in turn, produce well-educated individuals.

## REFERENCES

- Calhoon, M. (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.
- Dufrene, B., Noell, G., Gilbertson, D., & Duhon, G. (2005). Monitoring implementation of reciprocal peer tutoring: Identifying and intervening with students who do not maintain accurate implementation. *School Psychology Review, 34*(1), 74-86.
- Fuchs, D., Fuchs, L., Mathes, P., & Martinez, E. (2002). Preliminary evidence on the social standing of students with learning disabilities in PALS and No-PALS classrooms. *Learning Disabilities Research & Practice* (Blackwell Publishing Limited), 17(4), 205-215.
- Hughes, T., & Fredrick, L. (2006). Teaching vocabulary with students with learning disabilities using classwide peer tutoring and constant time delay. *Journal of Behavioral Education, 15*(1), 1-23.
- Idol, L. (2006). Toward inclusion of special education students in general education. *Remedial & Special Education, 27*(2), 77-94.
- Jang, S. (2006). Research on the effects of team teaching upon two secondary school teachers. *Educational Research, 48* (2) 177-194.
- Kamps, D., Greenwood, C., Arreaga-Mayer, C., Veerkamp, M., Utley, C., Tapia, Y., et al. (2008). The efficacy of classwide peer tutoring in middle schools. *Education and Treatment of Children, 31*(2), 119-15

- Lerner, J. (2000). *Learning Disabilities: Theories, Diagnosis, and Teaching Strategies*. New York, NY: Houghton Mifflin Co.
- Madrid, L., Canas, M., & Ortega-Medina, M. (2007). Effects of team competition versus team cooperation in classwide peer tutoring. *Journal of Educational Research*, 100(3), 155-160.
- Maheady, L., Mallette, B., & Harper, G. (2006). Four classwide peer tutoring models: Similarities, differences, and implications for research and practice. *Reading & Writing Quarterly*, 22(1), 65-89.
- Mathes, P., & Fuchs, L. (1994). The efficacy of peer tutoring in reading for students with mild disabilities: A best-evidence. *School Psychology Review*, 23(1), 59.
- Medcalf, J., Glynn, T., & Moore, D. (2004). Peer tutoring in writing: A school systems approach. *Educational Psychology in Practice*, 20(2), 157-178.
- Mercer, C., & Mercer, A. (2005). *Teaching Students with Learning Problems*. Upper Saddle River, NJ: Pearson Education, Inc.
- Santrock, J. (2000). *Children*. New York, NY: McGraw Hill.
- Turnbull, R., Turnbull, A., Shank, M., Smith, S. & Leal, D. (2002). *Exceptional Lives: Special Education in Today's Schools*. Upper Saddle River, NJ: Merrill Prentice Hall.
- Wright, J., & Cleary, K. (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.