

The Effects of Peer Tutoring on School-Aged Students with Moderate to
Severe Disabilities in Physical Education

by

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Abstract

The purpose of this synthesis was to examine the existing scholarly knowledge regarding impact of peer tutoring programs on students with disabilities and typically developing students in physical education. Previous research identified several factors that contributed to the benefits and barriers of peer tutoring programs in physical education. Studies reviewed within the critical mass had common themes such as increase in socialization among students, engagement in activities, and improvement of skills. Common barriers that were discovered included, time consuming program, non-trained peer tutors, and peer tutors not participating in activities. Peer tutoring is an instructional strategy that is thought to be difficult to implement, however the benefits outweigh the barriers. Although, previous research notes peer tutoring program being effective and impactful on both students with and without disabilities in physical education, further research is necessary. Further research should study the effects of removing paraeducator proximity while implementing peer tutoring programs.

Keywords: [Peer tutoring, physical education, students with disabilities, typically developing students]

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Chapter 1

Introduction

Students with disabilities are being fully integrated into general physical education class, close to 95% are being placed in regular physical education (Houston-Wilson et al., 1997). This can be both positive and negative. Solely because students with disabilities in physical education can display intense behaviors when “exposed to extreme emotional situations under physical demands” (Ayvazo & Aljadeff-Abergel, 2014, p. 76). To reduce problem behaviors and increase participation, the implementation of different teaching strategies can ultimately determine their success in physical education and give them the one-on-one attention that is needed. Peer tutoring is a teaching strategy that allows students with and without disabilities to interact, become physical active together, and provide support for one another. There are different types of peer tutoring that can be used, for example unidirectional, which is when one tutor is trained to teach their partner and bi-directional or reciprocal where each pair in the peer tutor group take turns teaching each other, one being the tutor and the other being the tutee. Two other types include, class-wide peer tutoring which is breaking the entire class into pairs and each having the opportunity to be the tutor and tutee and cross-aged is when an older student tutors a younger student (Temple & Lynnes, 2008). That being put into consideration, physical education teachers are needed to use the resources they have available to make a successful classroom environment for all students.

Statement of the Problem

The use of peer tutors has been reported as an effective teaching strategy that benefits students with and without disabilities in multiple ways. It provides individualized feedback,

creates an inclusive environment, and is considered cost-effective (Ensergueix & Lafont, 2011). However, there are a variety of peer tutoring methods that can be used. Determining the correct protocols and type of peer tutoring teaching style can ultimately define the success of the strategy. The impact of peer tutoring on both students with and without disabilities can also determine the success of the teaching strategy.

Research Questions

1. What are the types of peer tutoring programs that can be used in physical education?
2. How effective are peer tutoring programs on the inclusion of students with disabilities?
3. What impact does peer tutoring programs have on typically developing children?

Purpose Statement

The purpose of this synthesis is to review the literature on the impact of peer tutoring programs on students with disabilities and typically developing students in physical education.

Operational Definitions

1. Peer tutoring—Trained or untrained same-aged peers that provided individualized instruction to assist in the success of students with disability in physical education class (Houston-Wilson et al., 1997).
2. Physical activity—Movements with the body that use energy to promote health benefits
3. Students with disabilities—Individuals that have mental or physical impairment that restrict or limit one or more major life activities (US Legal, Inc, 1997-2019).

4. Inclusion—The idea that all students should be included and educated within the same environment while meeting the needs of all students educationally and socially (Cervantes et al., 2013).

Delimitations

1. Review was focused on peer tutor programs in physical education.
2. Review was focused on programs affecting students in grades K through 12th grade.
3. All research articles used for this synthesis were published between the years 2000 and 2019.
4. All research articles used for this synthesis were full text and peer reviewed.

Chapter 2

Methods

The purpose of this chapter is to review the methods used to synthesize the impact of peer tutoring programs on students with disabilities and typically developing students in physical education. The studies collected for this synthesis were located using the EBSCO database from The College at Brockport's Drake Library. Within the EBSCO database the following databases were searched: SPORTDiscus, Academic Search Complete, and Physical Education Index.

Within these databases a total number of 10 articles met the criteria for inclusion as part of the critical mass within this literature review. In order for an article to meet the criteria for selection in this synthesis it must have been published between 2000 and present, this will provide the synthesis with the most up to date and current information available. Other criteria for selection included scholarly and peer reviewed articles that were full text. Having scholarly and peer reviewed articles provides more validity within the articles and better overall quality. Other articles or sources selected as part of this literature review provided context about the topic, background information and supplemental information to complete the review. All articles and sources are appropriately cited in the reference section of this paper.

In order to gather valuable articles for this synthesis certain keywords and phrases were used when searching the database. To begin the search process, keywords were determined based on the research question; they are as followed, "Peer tutoring," "Students with disabilities," and "Physical education. The first keyword searched was 'peer tutoring' that resulted in 655 articles found in the Academic Search Complete database. From that point, the search narrowed down further and 'peer tutoring' and 'physical education' were searched together and 57 articles were

discovered. In addition to the two phrases searched, 'students with disabilities' was included and 12 articles were discovered. The next database looked at was SportDiscus and the first key word searched was 'peer tutoring' again and 28 articles were retrieved. Following that search, 'peer tutoring' and 'physical education' were paired and 21 articles were found. In order to find the article related to the criteria, 'students with disabilities' was added to search and 9 articles came through. The last database searched was Physical Education Index. 'Peer tutoring' was searched first and 207 articles were found, then 'peer tutoring' and 'physical education' were searched together which discovered 137 articles. Lastly, 'peer tutoring', 'physical education' and 'students with disabilities' were searched together to narrow the findings down even more and 44 articles came up. From the databases, SPORTDiscus, Academic Search Complete, and Physical Education Index, 10 articles were obtained meeting the criteria's necessary.

Articles that were selected for use in this synthesis were scholarly and peer reviewed articles that were full text. Also, when selecting articles for use in this synthesis it was important that each article selected had valuable information regarding peer tutoring. Such as, the effects of it on both students with and without disabilities, the different types of peer tutor instructional techniques, and the impact peer tutoring has on inclusion within physical education.

Specific criteria were used in order to be a part of the literature review. All of the articles selected were based on the peer tutoring and the impact it as on multiple educational areas, like inclusion, students with and without disabilities, and if there is a positive or negative effect on all involved. Participants in the studies reviewed were both individuals with disabilities and individuals without disabilities.

For this synthesis a total number of 10 articles were used to compile data on the topic of peer tutoring and its effect on students with and without disabilities in physical education.

Articles came from a variety of journals including *Support for Learning*, *Palaestra*, *Physical Educator*, *Journal of Applied Sport Psychology*, *Journal of Teaching Physical Education*, *Adapted Physical Education Activity Quarterly*, *Journal of Visual Impairment and Blindness*, *European Journal of Special Needs Education*, *European Journal of Adapted Physical Activity*, and *American Journal of Health Studies*.

The critical mass for this synthesis is comprised of 315 participants. Within the 10 articles used for the literature review there was a total of 18 students with disabilities, 297 students considered peer tutors ranging between the ages 5 to 16 years old. Disabilities discussed within the articles include average to low skills, moderate disabilities, Autism Spectrum Disorder (ASD), Visual Impairments (VI), and Severe Multiple Disabilities (SMD).

Data were analyzed using the following methodologies for the studies under review, for example interviews, surveys (Klavina & Rodionova, 2015) and performance assessments, such as task criteria's and video recordings (Ayvazo & Aljadeff, 2014; Ayvazo & Ward, 2009; Iserbyt & Vergauwen, 2011; Klavina et al., 2014). Surveys was another methodology used to gather data for qualitative collection (Klavina & Rodionova, 2015). Other methodologies included, event recording of student's performed trials and A-B-A-B withdrawal design, which can be described as discontinuing and introducing independent variable throughout the lesson (Ayvazo & Ward, 2009). A-B-A-C is another withdrawal design that was intended to evaluate the effects of class-wide peer tutoring on students motor performance (Ward & Ayvazo, 2006). Technical-tactic and decision-making nature to determine motor skills and cognitive assessments, such as multiple-choice tests were used in the study performed by Ensergueix and Lafont (2011). Also, the ForeGround Procedure was administrated in a study to test tennis abilities (Iserbyt & Vergauwen, 2011). Data was also collected using, TIP-TAP to train peer tutors and many studies

practiced using the Computerized Evaluation Protocol of Interactions in Physical Education (CEPI-PE) to determine instructional behaviors throughout the lessons (Klavina, 2008; Klavina & Block, 2008; Klavina et al., 2014; Klavina & Rodionova, 2015). Like the CEPI-PE, Academic Learning Time- Physical Education (ALT-PE) was used throughout many studies such as, Wiskochil, Lieberman, Houston-Wilson, and Peterson (2007), Iserbyt and Vergauwen (2011), and Klavina and Block (2008). A variety of data collection analyses were used to measure variable related to the effects of peer tutoring on students with and without disabilities.

Chapter 3

Review of Literature

The purpose of this chapter is to examine the literature of peer tutoring and its effect on students with moderate to severe disabilities in physical education. Specifically, the following topics will be presented, the types of peer tutoring available, training versus non-training programs and the barriers and benefits of peer tutoring programs.

Peer tutoring in Physical Education

Peer tutoring is a teaching strategy that can be used in multiple educational settings, classroom, gymnasium, etc. There are four different types of peer tutoring programs that can be both beneficial and provide obstacles to the students with and without disabilities and the educator using this strategy. Types of peer tutoring programs are as follows: unidirectional, reciprocal, cross-age, or class-wide peer tutoring (Cervantes et al., 2013). Unidirectional peer tutoring can be defined as a one-on-one situation with a student with and without disabilities. The student without disabilities is the tutor, or the peer providing and instructing information to the student with disabilities. Reciprocal peer tutoring, also known as bidirectional, is where multiple peers take on the role of being both tutor and tutee. Cross-age peer tutoring involves an older student tutoring a younger student. Lastly, Class-wide peer tutoring is a teaching strategy that involves the entire class. All students are paired together or in small groups of four to six and performing tasks as a tutor and tutee. Essentially, creating an effective and dynamic classroom while maximizing resources available to the students (Cervantes et al., 2013). Research has demonstrated that all forms are beneficial, however, some suggest that training tends to be more effective.

Training versus Non-trained

Researchers, Ensergueix and Lafont (2011), studied the impact of training peer tutors and spontaneous reciprocal peer tutoring on school-age children and their motor and cognitive performance. Spontaneous, also referred to as non-trained, peer tutoring was found ineffective compared to trained peer tutors that went through a protocol for providing instruction and feedback appropriately (Ensergueix & Lafont, 2011). The study took place in an urban secondary school in France and was an 8-week table tennis unit in physical education class. Seventy-two students (36 males and 36 females) participated in this study and were separated into three groups, the control group or physical practice (PP) (n=24), the spontaneous reciprocal peer tutoring group (STRP) (n=24) and the trained reciprocal peer tutor group (TRPT) (n=24). With the use of Bonferroni's pairwise comparison analysis method, the study indicated that participants from the TRPT condition performed higher scores than did their counterparts from the SRPT and PP conditions. Meaning, the TRPT had higher scores for motor and cognitive performance than the SRPT for both post-tests. The TRPT showed competency in finding errors and giving advice, resulting in their metacognitive awareness and knowledge of skills in new situations were more advance (Ensergueix & Lafont, 2011). Novice students benefited from training in symmetric dyads and alternating tutor/tutees roles (Ensergueix & Lafont, 2011). Adversely, it was noted that although not trained, spontaneous peer tutoring performed better than the individual physical practice control group of Ensergueix and Lafont (2011) research done.

Corresponding results were found in a study conducted by Klavina (2008) using peer mediated instructions with severe and multiple disabilities students in an inclusive physical education setting. Researcher Klavina, performed this study with twelve students, nine peer

tutors and three students with disabilities. The peer tutors were trained for three 30-minute sessions using the Tips for Teaching, Assisting, and Practicing (TIP-TAP) teaching method. Assessments were given to the tutors at the completion of the training and were required to pass them all to continue as a tutor. As a result of the training the peer tutors, peer-mediate instructional conditions resulted in an immediate increase in interaction behavior between peer tutors and target students. Due to the TIP-TAP teaching protocol, tutors provided more instruction than teachers during the baseline and typically used general feedback more frequently (Klavina, 2008). In a similar study, Klavina and Rodionova (2015) found that the training program, TIP-TAP was effective again on students with disabilities and their physical, instructional, and social interaction behaviors at the middle school age. This study was conducted in an inclusive general physical education class with two instructional support conditions a) teacher-directed and b) peer-mediated. Participants included two middle school students with severe and multiple disabilities and five general education students served as peer tutors, two for one student with disabilities and three for the other. The peer tutors received three 20-minute training sessions using the TIP-TAP protocol as well. Furthermore, findings revealed that when the trained peer tutors were introduced into the study as the intervention, the interaction behaviors between students with and without disabilities increased immediately. Interaction and behaviors were observed and analyze using CEPI-PE or Computerized Evaluation of Interaction in Physical Education. Consider using peer tutors training protocols prior to intervention because students that are novice learners of the same age can mirror, learn and and be supported by their higher skilled students or peer tutors chosen (Ensergueix & Lafont, 2011, p. 394).

Wiskochil, Lieberman, Houston-Wilson, and Petersen (2007), also studied the effects of trained and non-trained peer tutors in physical education. During the baseline of the study, two students with visual impairments were assisted by an non-trained peer tutor. This information was specifically gathered to assess the differences among trained and non-trained peer tutors. The findings revealed that the trained peer tutors helped one student, Roland, to achieve high levelers of academic learnings time (ALT-PE). Same results occurred for the second student, Betty. She too earned a higher amount of ALT-PE while working with a trained peer tutor than an untrained peer tutor. These results compliment the above researchers because the training of peer tutors can affect the academic learning time of students and potential other factors (Wiskochil et al., 2007).

Benefits and Barriers of Peer Tutoring

From the data provided from many scholarly researchers, the benefits of peer tutoring manage to outweigh the barriers, however, they are worth considering when implementing a program. Interactions, socialization, skill improvement, and engagement in activity are areas that were investigated more in terms of peer tutoring being beneficial and possible obstacle to students and educators.

Ayvazo and Aljadeff-Abergel (2014), used class-wide peer tutoring in both a third-grade class (n=41) and eighth grade class (n=30) to explore the effects of the program. This program provided all students in the study with training that lasted three sessions for 30-minutes. Tutors learned appropriate teaching behaviors such as, how to demonstrate, give feedback, and provide instructions. During the intervention, the unit being played in physical education was self-defense and to assess and analyze data, peer performance record sheet for both 3rd and 8th grade classes were implemented. Also, a social skill excellence poster (8th grade) and Best karate

friend chart (3rd grade) were displayed within the gym. A survey was presented at the end of the CWPT unit to get an understanding of the effects of class-wide peer tutoring. From the findings, students enjoyed CWPT mainly for social reasons. Third graders (87% enjoyed) reported it was fun, however, some did not because of problem behaviors and inadequate tutoring abilities.

Eighth graders enjoyed the chance to be the teacher and model for another student. As for participating again in CWPT, 97% 3rd graders said yes and in contrast 73% 8th graders reported 'no'. The 8th grader did not enjoy the repetitive content; lessons and it became 'boring'.

Furthermore, 3rd graders (72%) wanted CWPT to continue because students tended to learn better compared to small group instruction or traditional teacher instruction. As for 8th graders, it was almost equal on each side, half preferred CWPT and half liked typical instruction (Ayvazo & Aljadeff-Abergel, 2014). From the research performed, students enjoyed peer tutoring because of the time allowed for interaction and socialization to occur. Students completed tasks but did it in a manner where communication took place and resulted in increased engagement, performance of skill, and communication. In similar findings, Ayvazo and Ward (2009) conducted research related to the effects of class-wide peer tutoring and student performance level in a 20-lesson volleyball unit. The study design was single subject A-B-A-B, in which total and correct trials of students performances were recorded. Baseline (A) consisted of traditional teaching methods from the teacher. Class wide peer tutoring served as the intervention (B) and the process was repeated (Ayvazo & Ward, 2009). To enhance the implementation of the peer tutoring program, an eight-component lesson was taught to the teacher prior to intervention of CWPT. The target students were average to low skilled, two being male and two being female students in a class of 21 total. The volleyball lessons were 40 minutes in length and the unit lasted for 20 consecutive lessons. Four skills were taught, set, forearm pass, overhand pass, and underhand serve. As for

correct criteria for performance of the skill, this was determined based on accepted critical elements for each skill (Ayvazo & Ward, 2009). As for findings of this study, a considerable difference occurred in the introduction of CWPT for Karen, Ethan and Liz, where total trials increased from baseline to intervention. However, no significant relationship was observed for Don between CWPT and total correct trials. The mean total number of trials demonstrated during the baseline ranged from 11 to 17; however, during the intervention that increased from 16 to 37 trials (Ayvazo & Ward, 2009). As the students became more comfortable with the CWPT, their total number of trails increased as well (Ayvazo & Ward, 2009). This study supports the development of skills with the use of classwide peer tutoring. CWPT demonstrated effectiveness by increasing correct trials and total trials in a volleyball unit with middle school students.

Although the benefits of peer tutoring in this unit of volleyball with third and eighth graders are among many, considerations or barriers are important too. Such as, the complexity of the task the educator is looking to teach, what and how many peer tutors are necessary to make the program successful and the current function level of the students with disabilities (Ayvazo & Aljadeff-Abergel, 2014). Making sure the students stay motivative and are being held accountable for actions being performed in class are important as well.

Furthermore, in addition to using peer tutoring to develop skills Iserbyt, Madou, Vergauwen, and Behets (2011) looked at the effects of peer mediated instruction with tennis related task cards on motor skill acquisition in quasi-experiment. Participants in this study included, 55 (24 boys and 31 girls) or four 8th grade classes in Belgium. In relation to the participants, it's important to consider the amount of experience each student may have prior to the experiment. Of the 55 students, 31 had no experience and 24 had a limited amount of tennis knowledge (Iserbyt et al., 2011). Furthermore, the location of the research took place in a

multipurpose sports hall containing six tennis courts. This was a seven-week intervention where two classes participated in Intervention A: Week 1 introduced a video of midi-tennis, week 2 had a pre-test, weeks 3 through week 6 involved a 40min lesson in midi tennis. While the other two classes participated in this Intervention B: peer mediated setting with reciprocal style of teaching with a posttest of ForeGround at the end of week 7. As for analysis of data collected, three video cameras were used to examine the performance of the students and the ForeGround Procedure was administered during week two as a pretest. A cognitive test of 20 questions, on tactical, technical and rules of tennis was also administered. Also, general time investment was measured using ALT-PE, and looked at management and instructional time. In addition to general time, teaching behaviors were measured with six difference codes instruction/feedback, targeted group, initiative, intonation of the intervention, contents of the intervention, and presence or absence of demonstration (Iserbyt et al., 2011). Using the data analysis techniques listed above, the data revealed in the content areas being measured, success rate, precision, lateral ball placement, and overall index, student-centered instructional environment was as effective as the expert teacher instruction (Iserbyt et al., 2011). It appears students in this study developed and learned through problem solving and by using task cards, which enabled them to guide each other to success in a tennis unit. Furthermore, the motor skills of both conditions revealed that the more experienced students and the novice students improved after the four-week experiment (Iserbyt et al., 2011). Corresponding to multiple other researchers, skill development improved yet again, and enhanced other student abilities and characteristics through the use of a peer tutoring program. For example, becoming more independent using the task cards and less dependent on the teacher for guidance (Iserbyt et al., 2011).

Independence is one characteristic that may be improved by using peer tutoring, however, there are many more, such as interaction behaviors between students with and without disabilities. Klavina and Block (2008), examined the effects of peer tutoring on students with disabilities and their interaction behaviors, like social, instructional, and physical. The participants in this study were elementary age and the target students have severe multiple disabilities. Three target students with disabilities and nine peer tutors, that would rotate between target students participated. The study was conducted in an inclusive PE class, observing teacher-directed, peer-mediated and voluntary peer support for 46 consecutive classes. Through Computerized Evaluation of Interaction in Physical Education (CEPI-PE) and observations/field notes data were analyzed in attempt to understand the effects of peer tutoring. As for the peer tutors of the students with disabilities they were trained prior to intervention for three consecutive days for 30mins. Tutors had to pass all tests in order to continue being a peer-tutor using the TIP-TAP teaching method. Findings from this study revealed instructional and physical behaviors increased during peer-mediated lessons, while social behaviors remained low throughout the study (Klavina & Block, 2008). As far as the target students in the study, their physical activity engagement increased during the intervention sessions. While their interactions with adults began to decrease towards to the end of the intervention. However, due to surrounding adults and unannounced permission from them, the voluntary peer condition lacked of support and interaction between peer. It was also noticed that students with disabilities enjoyed working their peers, social growth occurred, and positive acceptance of their peers with disabilities was demonstrated (Klavina & Block, 2008). Last of all, teachers involved in the study revealed that interactions between students with and without disabilities increased during intervention. This study managed to target many desired variables among other studies, such as physical

engagement, skill development, and social interaction. Interestingly enough, all three variables increased during the intervention portion of the study, typically when introducing peer tutoring.

Among all studies, there are barriers that should be considered prior to the implementation of a peer tutoring program. Some other barriers that appeared within this study was the experience level of the tutors in terms of working with students with disabilities previously (Klavina & Block, 2008). This could ultimately determine the success rate of the program and interaction behaviors between students with and without disabilities.

As noted, there are many benefits to implementing peer tutoring within the educational setting. More specifically, in physical education and with students with disabilities, it creates social opportunities, allows for student demonstration and feedback, and is cost-effective. Not only that, but Klavina et al. (2014) discovered an increase or a desire to perform skills independently from the students with disabilities. This study, both qualitative and quantitative, consisted of four students with mild to moderate disabilities and 37 volunteer peer tutors that were trained before the intervention (Klavina et al, 2014). In total 43 observation sessions took place and data were collected using the Computerized Evaluation Protocol of Interactions in Physical Education (CEPI-PE) (Klavina et al, 2014). Due to the peer tutors having three 30 minutes training sessions before working with the students with disabilities, demonstrates success in terms of cooperation between students. Data later revealed the interaction percentage between target students and peer tutors significantly increase during the intervention (Klavina et al, 2014). In addition to interaction and cooperation, the four target students increased independent skills throughout baseline and intervention. Throughout the study, research field notes were taken and interviews were conducted, and the personnel and students that were involved, and it was reported that a positive climate and peer relationships improved (2014).

This study, was very similar to the findings of Klavina and Block (2008), which demonstrated that peer tutoring can be successful in contributing to peer relationships between students with and without disabilities (Klavina et al., 2014).

Ward and Ayvazo (2006) studied the impact of classwide peer tutoring on students with autism and their ability to catch and catch correctly and whether peer tutoring created an inclusive environment. The participants in this study included observing four students total, two with autism (tutee) and two that were typically developing (tutor) (Ward & Ayvazo, 2006). In total, 26 lessons were investigated and recorded; the individuals coding the lessons were assessed on their abilities before the data collection (Ward & Ayvazo, 2006). The two dependent variables were the number of total catches completed by both the student with autism and typically developing peer and the number of correct form catches (Ward & Ayvazo, 2006). The design of this study consisted of an A-B-A-C single-subject withdrawal set-up (Ward & Ayvazo, 2006). Meaning, the physical educator would begin the lesson (Whole Group Direct-Instruction), then Classwide Peer Tutoring was introduced (CWPT-1), followed by another Whole Group Direct-Instruction (WG-2) and finishing with Classwide peer tutoring (CWPT-2) (Ward & Ayvazo, 2006). Results for total catches overall for all four students demonstrated an increase from WG-1 to CWPT-1, then a baseline occurred during WG-2 and later increased again with a descending trend in CWPT-2. While total correct catches demonstrated, some overlap between conditions, 38% overlap occurred between WG-1 and CWPT-1 and 14% between WG-2 and CWPT-2 (Ward & Ayvazo, 2006, p. 240-241). The researchers specifically demonstrated the positive effects of peer tutoring when developing skills with both students with and without disabilities. Catching was the focus, and if the overall physical engagement was determined by total catches completed, one could say that this was successful in creating an inclusive environment.

However, when studying and researching students with disabilities, it's critical to remember that all students are different, all perform skills at different levels, which may result in varied data. Although some data were mixed, the two students with autism, Ben and Peter, improved during the intervention (CWPT-1 and -2) in terms being included throughout the lesson (Ward & Ayvazo, 2006). To achieve success within the incorporation of peer tutoring, high amount of adult encouragement is important, and positive role-modeling is essential for students to observe regularly.

When discussing the implementation of peer tutoring one should consider the cost in terms of the learning that may or not take place for the tutors that are assisting students with disabilities (Ward & Ayvazo, 2006). Typically, many studies have demonstrated unidirectional peer tutoring resulted in one student being the tutor and the other student is the tutee for the unit. Although more research is necessary in this area, the teacher implementing peer tutoring should consider making changes to the peer tutors and cycling through multiple in order to share the cost among many students in the class (Ward & Ayvazo, 2006).

In most of the research performed there has been high correlation between students with disabilities level of engagement and desire to participate when peer tutors are introduced. This similar finding occurred in Wiskochil et al., research on the effects of trained peer tutors on students with visual impairment in physical education class. The participants in this study included, four students with visual impairments (two with low vision and two who were blind) and two to four same-age and same gendered peer tutors from their integrated PE class. The tutors had training that lasted 1 day for 1.5 to 2 hours with tutee and were taped for five lessons prior to intervention to gather baseline data. A staggered method of baseline and intervention to the student was used to show true data collection of the target behavior. The intervention, peer

tutors, lasted for 6 to 8 classes and the tutors had the opportunity to rotate between tutoring (Wiskochil et al., 2007). This single-subject delayed multiple baseline AB design study also used a version of ALT-PE to observe motor-appropriate behaviors through interval recording. This consisted of 6 seconds of recording and 6 seconds of observation. Comparisons in baseline and intervention were used to find changes and variability. To determine effectiveness of peer tutoring, a sighted classmates engagement in activity was compared (Wiskochil et al., 2007). Also, closed and opens skills were assessed to determine the similarity or differences when introducing peer tutoring in those activities. Results indicated that although there was variability among all demonstrated an increase in academic learning time (Wiskochil et al., 2007). Billy, visually impaired student showed drastic changes between baseline and intervention. There was a high level of ALT-PE shown in the intervention (38.8% to 56.9%). Betty had an increase during the intervention as well, but not as significant as Billy's (37.8% to 48.5%). Roland had an upward trend to begin with in the intervention but later showed a downward trend as the days progressed (29.6% to 32.2%). Sally had a variable baseline with a slight down trend toward the end, but the intervention was slightly less variable with an upward trend and slowly decline trend (55% to 60%) (Wiskochil et al., 2007). Trained peer tutors that assisted Roland demonstrated a high level of ALT-PE compared to untrained initially in the study. Similar finding with Betty occurred. Open versus close sports found that peer tutors were effective in helping to increase the participants ALT-PE scores during both types of activities.

As noted, the benefits, outweigh the barriers but they are important to consider when implement peer tutoring programs in physical education classes. Common factors that have been barriers for educators are time constraints to implement the plan, training of peer tutors, and the organization necessary for peer tutoring to be introduced correctly successfully.

Summary

The purpose of this chapter was to determine the effects of peer tutoring on students with and without disabilities in physical education. Overall there were different ways to implement a peer tutoring program, as well as benefits and barriers. The different types of peer tutoring programs, unidirectional, bi-directional or reciprocal, class-wide peer tutoring, and cross-aged peer tutoring allows educators to choose which program would fit their students most appropriately (Temple & Lynnes, 2008). Although, many studies focus on reciprocal peer tutoring and unidirectional, all demonstrated both benefits and barriers. Benefits included such things as, inclusive education, social, physical, and instructional behaviors, and improvement in skills. Houston-Wilson, Dunn, Hans and McCubbin (1997) stated that peer tutoring can be stimulating and motivating environment that establishes areas for communication, interaction, and socialization to occur. Not only is socialization occurring, but skill development and improvement in physical fitness as well. The barriers of peer tutoring are critical to the implementation of this teaching style. Possible barriers, such as complexity of the task, what and how many peer tutors are necessary and the current function level of the students with disabilities are considerations to think about prior to implementation. Others include the experience level of the tutors, the cost at which an educator is willing to take on their tutors and not enough supporting staff (Ayvazo & Aljadeff-Abergel, 2014; Klavina & Block, 2008; Ward & Ayvazo, 2006). These minor barriers are manageable when physical education teachers are given the tools to do so. Implementation of peer tutoring in the most appropriate and effective manner will determine the success of the program and the impact it has on student's social interaction, physical skill development, and level of independence.

Chapter 4

Discussion

The purpose of this chapter is to present the results of the review of literature on the impact of peer tutoring programs on students with disabilities and typically developing students in physical education and how these results align with the purported research questions which guided this synthesis project. In addition, recommendations for future research as it relates to the effect of peer tutoring on students with and without disabilities in physical education are presented.

The results of this review of literature revealed the following, peer tutoring programs are effective when implemented with trained tutors and is either class wide or reciprocal tutoring. Peer tutoring programs also, improves physical ability and skill level of students with disabilities, creates socialization opportunities, and encourages peer acceptance. Multiple researchers discovered that although effective, peer tutoring is also a time-consuming process to implement, requires willing students to participate, and may cost abled-bodied students not to engage in activity.

Discussion

Research Questions

As part of this literature review, several research questions were posed. The first research question of what types of peer tutoring programs can be used in physical education revealed multiple responds from expert researchers. Each peer tutoring program involve different needs and resources to allow for a successful program. Programs such as, unidirectional, reciprocal, cross-age, or class-wide peer tutoring (Cervantes et al., 2013). The most studied peer tutoring

programs are classwide and reciprocal. Classwide peer tutoring can be defined as whole class participating and being matched with two or three other students. reciprocal peer tutoring means having students in pairs or small groups and one student gives instruction and feedback while the other student performs the skills. Both these programs, classwide and reciprocal peer tutoring were found to be effective in creating socialization opportunities, improving skills, and creating an environment that was inclusive (Ayvazo & Aljadeff-Abergel, 2014; Klavina & Block, 2008; Klavina et al., 2014).

The second research question, how effective are peer tutoring programs on the inclusion of students with disabilities, demonstrated a variety of positives and negatives for students with disabilities ranging from moderate to severe. Researchers Klavina and Block found that peer tutoring program increased social, instructional, and physical behaviors, however in terms of being inclusive, students would still seek for permission from adult figures to engage with students with disabilities (2008). The ultimate goal is to encourage student engagement with one another without the permission, access, or consent from an adult to do so. Decreasing that superior title of an adult is important for peer interaction and inclusion. Klavina et al., (2014) also contributed to the findings of creating an inclusive setting through peer tutoring revealed collaboration and success although which as a result created an inclusive environment for students with and without disabilities. Although, creating a positive peer culture was the result from this study, similar to Klavina and Blocks findings, fading the teaching assistant is necessary to create a more inclusive. As many researchers discovered, peer tutoring is an effective teaching strategy that creates inclusive environment, however peer tutoring also helps with the development of the peer tutors assisting both positively and negatively.

The third research question looked at the impact peer tutoring programs had on typically developing students, although not answered thoroughly, results revealed benefits and barriers. Ward and Ayvazo (2006) discussed the cost typically developing students take when becoming a peer tutoring but the benefits, like becoming socialized with each other and more accepting are critical to consider as well. Also, many staff personnel involved in studies noticed more positive peer interactions and cultures surrounding the students after implementing a peer tutoring program (Klavina et al., 2014). Ayvazo and Aljadef-Abergel (2014) implemented a classwide program which as a result allowed all students to socialize and engagement with one another. Consider when implementing programs like classwide peer tutoring, allowing students to take part in the pairing process can create more interest and participation among the students. Overall, classwide and other peer tutoring programs, this instructional strategy has been prove beneficial to all students.

Effectiveness of Peer Tutoring

As a physical educator, there are many factors to consider before implementing a peer tutoring program. Peer tutoring programs are time consuming, but extremely beneficial to all students, require students to be trained as tutors, but results in successful interaction and instructional behaviors, and allows for socialization to occur but may increase off task behaviors. Even though there are barriers, from the studies presented, the benefits largely outweighs the negatives. Peer tutoring has been demonstrated in many studies as being successful in providing socialization opportunities for students with and without disabilities and creates peer acceptance. Peer tutoring also develops skills and enhance physical fitness among students with disabilities. Although, students without disabilities may decrease in skill development, physical educators looking to implement this instructional strategy should consider rotating tutors to resolve this

potential issue. Overall, peer tutoring is a teaching strategy that can be effective when implemented appropriately. Appropriately means, training peer tutoring because this was found more beneficial than non-trained tutors, allowing for multiple tutors for rotations to occur among the peer tutors, practicing skills students may be familiar with or are considered experts, and as the instructional teacher providing support and encouragement throughout the unit. Students through modeling and imitation which means when demonstrating and teaching skills, create an inclusive environment and show care towards all. That being said, this synthesis thoroughly demonstrates and reveals the findings from many scholarly expertise in the field of physical education and peer tutoring, stating peer tutoring is an effective teaching strategy for students with and without disabilities.

Recommendations for Future Research

In reviewing the data base on the impact of peer tutoring programs on students with disabilities and typically developing students in physical education the following limitations were noted regarding the studies under review. Studies included close proximity of adult support with students with disabilities resulting in students not engaging with one another enough (Klavina & Rodionova, 2015). Also, the teacher's knowledge of peer tutoring prior to implementing the program and their unwillingness to give more responsible to the tutors can effect the results and successfulness (Klavina et al., 2014). Another limitation includes after student peer tutors were done with their expectations as a tutor, the student with disabilities was then, not involved or socializing with other peers. This limitation can be described as creating a more inclusive environment. Lastly, an additional limitation that was noted was the use of only two peer tutoring programs in majority of the articles, reciprocal peer tutoring or classwide. A

study could be done to examine the effects of one peer tutoring program over another to essential develop positives and negatives of them both.

Based on these limitations and other insights related to the literature the following recommendations for future research should be considered:

1. Voluntary peer tutoring program, finding whether students are willing to work with students with disabilities without being asked.
2. Finding whether one peer tutoring program is more impactful or effective than another.
3. Training teachers in peer tutoring programs to allow for more success.

Summary

The purpose of this literature review was to determine the impact of peer tutoring programs on students with disabilities and typically developing students in physical education. Delimiting variables were used to do an exhaustive data-based search which yielded x number of articles. These articles were then systematically used to determine the impact of peer tutoring programs on students with disabilities and typically developing students in physical education. Research revealed peer tutoring programs to be effective in socializing students, improve physical skills within the class, and creating an inclusive environment. Peer tutoring programs like classwide and reciprocal also demonstrated the ability to recognize instructional behavior among the students and increased engagement and participation. All in all, teaching strategies that are innovation and encourage inclusion, like peer tutoring, are essential to any educational environment. Although, there may be many steps, failed attempts, non-engaged students, peer tutoring programs have demonstrated their ability to be an effective strategy when educating and impacting both students with and without disability in physical education.

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APPENDIX

Author	Title	Source	Purpose	Methods & Procedures	Analysis	Findings	Discussion/ Recommendations	Research Notes Commonalities/Differences
Ayvazo, S. & Aljadeff-Abergel, E.	Classwide peer tutoring for elementary and high school students at risk: Listening to students' voices	<i>Support for Learning</i>	Article discusses the implementation and modifications of peer tutoring in grades 3 and 8 in inner-city chart schools, directed towards students in special education programs and social needs.	Third grade (n=41) and eighth grade (n= 30) received three lessons for peer tutoring outside of educational class time. Third grade had 3 target behaviors that needed to be demonstrated at a peer tutoring, eighth graders had five target behavior to demonstrated. Peer tutoring groups (n=4) were separated based on ability (belt color) in the karate unit. Classes were 45 minutes in	Peer performance record sheet for both 3 rd and 8 th grade classes. Also, a social skill excellence poster (8 th grade) and Best karate friend chart (3 rd grade) displayed within the gym. A survey was presented at the end of the CWPT unit.	Students enjoyed CWPT mainly because of social reasons. 3 rd graders (87% enjoyed) reported it was fun, however, some did not because of problem behaviors and inadequate tutoring abilities. 8 th graders enjoyed the chance to be the teacher and model for another student. As for participating again in CWPT, 97% 3 rd graders said yes and in contrast 73% 8 th graders reported no. the 8 th grader did not enjoy the repetitive content and lesson and it became 'boring'. Small-group vs	There is a noticeable difference between elementary and secondary students cognitive and affective levels. CWPT would need to be introduced to students and practiced with familiar content and skills. Peer tutoring training sessions need to be slower and explained more in depth for 3 rd graders versus 8 th graders. 8 th graders can handle more information at once. When pairing students, consider cognitive, psychomotor and social skill levels, gender preference pairing and overall ability. Also, when possible teacher	Students were assigned a partner, however, they linked up with another dyad (n=4), which allowed for more socialization and engagement to occur. The idea of switching partners should be considered when participating in CWPT because some may know more than others. Allowing those students to share their information with others could be beneficial. The 3 rd graders seemed more interested and engaged throughout the implementation of CWPT. The 8 th graders, enjoyed it at first but slowly lost interested as the semester went on. Giving more responsibility to the 8 th graders could have increased participation rates. The public posting of dyads and groups
(Ayvazo & Aljadeff-Abergel, 2014)								

				length and students would switch roles halfway through class (tutor—tutee).		CWPT, 3 rd graders (72%) wanted CWPT to continue because learning better in small groups and it was split for 8 th graders, half preferred CWPT and some liked small-group lessons.	can allow students to take part in pairing process to allow for more engagement. Overall, CWPT is an evidence-based instructional strategy that has proven to provided multiple benefits to all students.	progress is great way to motivate the students for elementary ages. As for the 8 th graders, making it worth something is critical, like a grade.
Ayvazo, S., & Ward, P	Effects of classwide peer tutoring on the performance of sixth grade students during a volleyball unit	<i>Physical Educator</i>	To examine the effects of CWPT on four sixth grade students in a volleyball unit.	The study design was single subject A-B-A-B, in which total and correct trials of students performances were recorded. Baseline (A) traditional teaching methods from teacher, Classwide peer tutoring (B) and the process was repeated. 8 components was taught to the teacher prior to	Two digital video camcorders were recording all lessons near the target students and event recording system was used to collect data on student's performed trials. Tallies were given for correct behavior observed during a 20min duration of time.	Considerable difference occurred in the introduction of CWPT for Karen and Ethan's, total trials increased from baseline to intervention. Liz had an increase in total trials from baseline to the first CWPT introduction and a recovery to baseline data was shown. No functional relationship was observed for Don between CWPT and total correct trials. The mean total number of	Allot more time to implement an A-B-A-B design study, students began to understand and were more comfortable with CWPT by the second implementation of it. Students need to be held accountable for their teaching behaviors during CWPT, providing feedback and support is important. Having tutors go through extensive training is critical to development of the tutees. The groups made were student	Self-selection of peer tutors can increase engagement, or it can decrease success rates and skill development. Recognize what students are in the class to determine the best strategy for your group. Also, it is critical to train peer tutors prior to implementing this teaching method. Making sure tutors understand what is expected can lead to a larger increase in development of skill, responsibility, and socialization. Consider wiring students to get a more in depth look and understanding of what is being said during
(Ayvazo & Ward, 2009)								

				<p>implementation of the CWPT. The participants were average to low skilled both male (n=2) and females (n=2) and were in a class of 21 students total. Lessons were 40min in length and the unit lasted for 20 consecutive lessons. Four skills were taught, set, forearm pass, overhand pass, and underhand serve. Correct criteria was determined based on the textbooks and had two criterial elements for each skill</p>		<p>trials demonstrated during the baseline ranged from 11 to 17; however, during the intervention that increased to 16 to 37 trials.</p>	<p>selected, in order to increase success teacher assignment is recommended. Demonstrations of skills is also important; task cards are questionable to the success of CWPT and not needed necessarily.</p>	<p>practice portion of peer tutoring episodes.</p>
<p>Ensergueix, P., & Lafont, L.</p>	<p>Impact of trained versus spontaneous</p>	<p><i>Journal of Applied Sport Psychology</i></p>	<p>To compare the effectiveness of two different forms of</p>	<p>Urban secondary school in France, 8</p>	<p>Experimental task of a technical-tactic and</p>	<p>Bonferonni's pairwise comparison indicted that</p>	<p>Figure out a way to include all students in the study for equality and</p>	<p>Examine how this training could be adapted to satisfy other</p>

<p>(Ensergueix & Lafont, 2011)</p>	<p>s reciprocal peer tutoring on adolescent students</p>		<p>reciprocal peer tutoring (RPT) on the motor and cognitive performance of adolescents in physical education setting</p>	<p>week table tennis unit that met once a week. 72 students participated (36 males and 36 females). Lesson 1 consisted of separating students based on skill. Scores could range between 30points to 105 point (higher the score the more skilled). Then the students were paired up. 48 were matched together and the remaining 24 were not (control group). Lesson 2 to lesson 5 was experimental training. Post-test was given twice, lesson 6 and lesson 7.</p>	<p>decision-making nature. Two trials separated by 1-min time-out and entailed an adult expert. One trial the expert sent 20 balls every 2 to 3s, 7 were high-flight type balls and 13 low-flight balls. Recorded each's performance. Cognitive skills were tested during lesson 6 with multiple-choice questionnaire. Skill assessment was scored based on two variables, action efficiency (AE) and choice</p>	<p>participants from the TRPT condition higher scores than did their counterparts from the SRPT and PP conditions. The TRPT had higher scores for motor and cognitive performance than the SRPT for both post-tests. TRPT showed competency in finding errors and giving advice. Metacognitive awareness and application of knowledge and skills to new situations. Novice students benefited from training in symmetric dyads and alternating tutor/tutees roles</p>	<p>involvement. Peer tutoring is high organizational variable, that needs to be considered when implementing it.</p>	<p>physical activity requirements.</p>
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				Three learning conditions, Physical practice, spontaneous reciprocal peer training, and trained reciprocal peer tutoring. Trained peer tutors had a 2 hour training session and before lesson 2.	relevance (CR). A 2x3x2 (gender x learning condition x assessment period) mixed model multivariate analysis of variance was examined and a 2x3 (gender x learning condition) multivariate analysis was administrated			
Iserbyt, P., Madou, B., Vergauwen, L., & Behets, D.	Effects of peer mediated instruction with task cards on motor skill acquisition in tennis	<i>Journal of Teaching in Physical Education</i>	Comparing the motor skill effects of a peer teaching format by means of task cards with a teacher-centered format in a tennis unit.	55 (24 boys and 31 girls) 8 th grade students were involved in this quasi-experimental study in Belgium. All lessons and test took place in a multipurpose sports hall containing 6 tennis courts. This was a seven-week	3 video cameras were used to examine the performance of the students and the ForeGround Procedure was administered during week 2 as a pretest. Cognitive test of 20 question test, on tactical, technical and rules of tennis.	Forehand error rate revealed higher error rates in student-centered lessons, particularly during weeks one. Motor skill improvement and learning differences between novice and experienced players shows the quality and validity of ForeGround testing, midi's	Task cards and peer tutoring or student-centered learning takes a serious amount of accustomization from both students and teacher. Independence in higher with tasks cards rather than teacher-centered learning. Task cards have been found to decrease management time and instruction time when	Traditional style of teaching does not necessarily encourage learning to take place, task cards can increase communication and socialization. When content is appropriate, design and content are age-related, task cards can give attention to social wellness and increase motor goals in physical education.
(Iserbyt et al., 2011)								

				<p>intervention. One class participated in this intervention: Week 1 introduced a video of mid-tennis, week 2 had a pre-test, weeks 3 through week 6 involved a 40min lesson in mid tennis. Two class participated in this intervention: peer mediated setting with reciprocal style of teaching with a posttest of ForeGround at the end of week 7.</p>	<p>General time investment was measure using ALT-PE, measuring management and instruction. Teaching behaviors were measured with six difference codes instruction/feedback, targeted group, initiative, intonation of the intervention, contents of the intervention, and presence or absence of demonstration. A using ANOVA 2x2x2 (conditions x experience x tests) factorial was examined also, 2 x 4 (conditions x</p>	<p>tennis program, and assessment protocol. Peer tutoring task cards was as effective as teacher-centered condition. Task cards required more communication between students through giving and receiving feedback and instruction, decision making together, and listening to one another.</p>	<p>structured appropriately and can enhance self-responsibility for learning.</p>	
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					lessons), and knowledge was measured.			
Klavina, A. (Klavina, 2008)	Using peer-mediated instructions for students with severe and multiple disabilities in inclusive physical education: A multiple case study	<i>European Journal of Adapted Physical Activity</i>	To determine the effect of peer-mediated and teacher-directed instructions on the activity engagement time of students with severe and multiple disabilities (SMD).	Nine general education students served as peer tutors (four for Eric, two for Laura, and three for Mary). Tutors were trained in three 30-minute sessions and the last two sessions the tutors worked with their tutee. Assessments were given to the tutors and they had to pass them all to continue. PE classes were 45mins in length and class size was 25 to 30mins. 46 sessions were analyzed of the part a) 20 min main	Single subject delayed multiple baseline research design was used. TIP-TAP was used to train the tutors. Variables examined were instructional behaviors observed by the tutors and activity engagement or physical behaviors by tutee or student with SMD. Computerized Evaluation of Interaction in Physical Education (CEPI-PE) was used to examine instructional	Peer-mediate instructional conditions resulted in an immediate increase in interaction behavior between peer tutors and target students. Tutors provided more instruction than teachers during the baseline. General feedback was used more frequently by tutors. Activity engagement was significantly higher during peer-mediated instruction than baseline. Tutors showed comparable levels of activity engagement with their tutees as teacher during baseline.	Using teacher prompts and reinforcement at the beginning of the peer support, and gradually fading may lead to more involvement because students will be more comfortable. Selecting random participants could differentiate data or interaction measures because tutors had previous experience working with students with students	Peer-mediated instruction can be feasible mean of providing age-appropriate and frequent instruction during GPE class for students with SMD. Peer tutoring can promote positive attitudes and communication between tutors and tutees or students with disabilities. When trained, tutors applied techniques learned during training sessions.

				part of activity and b) 10 mins of last part of GPE.	behaviors. Wilcoxon Signed-Rank test found differences between instructional and physical engagement, Wilcoxon-Mann-Whitney U test assessed differenced between groups, and Spearman Rank Correlation Coefficient analyzed activity engagement for both tutors and tutees.			
Klavina, A., & Block, M. E.	The effect of peer tutoring on interaction behaviors in inclusive physical education	<i>Adapted Physical Activity Quarterly</i>	The purpose is to assess the effects of peer-tutoring on students with disabilities, more specific, interaction behaviors like, instructional, social, and	Students are elementary age and the target students have severe multiple disabilities. The study was conducted in an inclusive PE class,	Computerized Evaluation of Interaction in Physical Education (CEPI-PE) and observations/field notes. Peer tutors were trained prior,	Instructional and physical behaviors increased during peer-mediated lessons, while social remained low. All target students increased in physical activity	The changing of peer tutors is recommended so all students have a chance to be an assistant and increase the changes of the students being more accepting. It's important that	Continue to encourage peer support and more social interaction. Try to do a peer-tutoring lesson or day during each unit in physical education. Students will become more comfortable working with everyone if it is practiced more often. Compared to other
(Klavina & Block, 2008)								

			physical behaviors.	observing teacher-directed, peer-mediated and voluntary peer support for 46 classes. 3 target students and 9 peer tutors, they rotated between target students.	three consecutive days for 30mins, had to pass all test in order to continuing being a peer-tutor. TIP-TAP steps were used during training sessions	engagement during the intervention sessions. While their interactions with adults began to decrease towards to the end of the intervention.	the tutors get to know their student they are working with. This can give both students the best experience. The close proximity of an adult could have affected the results of the study. Fading that prompt could lead to more interaction and less isolation and segregation from activities and instruction. However, students were asking fro permission still to engage with student with disabilities, decreasing that superior title is important for peer interaction and inclusion.	studies, TIP-TAP seems to be a positive and effective way of training peer tutors. It increases interaction and instructions were provided accurately and successfully. This is one of the only studies that allowed for voluntary peer support, it wasn't the most successful, but interaction did occur. Most studies resulted in students with disabilities feeling a sense of belonging, companionship, and included in class during peer-mediated interventions.
Klavina, A., Jerlinder, K., Kristén, L., Hammar, L., & Soulie, T.	Cooperative oriented learning in inclusive physical education	<i>European Journal of Special Needs Education</i>	The purpose of the study is to assess the implementation of peer tutoring among three	Four students with moderate disabilities and 37 peers without disabilities	The study used the CEPI-PE tool to collect data while observing 43	The percentage of interactions between target students and peers increased. The study	Findings contribute to the successful collaboration that students with and without disabilities in inclusive GPE.	Giving peers more responsible when assisting a student with disabilities can be challenge for a teacher's assistance to accept.

(Klavina et al., 2014)			elementary Swedish schools.	were apart of the study. The data collection was both qualitative and quantitative due to interviews conducted during the study.	physical education classes. Also, interviews with physical education personnel.	indicates that peer tutoring is to be successful in contributing to peer relationships between students with and without disabilities. Interview findings consisted of positive remarks regarding peer relation culture and environment.	Although quantitative results did not demonstrate much change in social interactions between baseline and intervention, qualitative data presented positive changes in students interactions and acceptance of one another. Creating a positive peer culture was result from the study that many school personnel was impressed with. Fading the teaching assistant is necessary to create a more inclusive, independent environment rather than the student with disabilities being dependent on an adult still. Possible research in the academics of tutors could improve this study.	Teacher development is a major factor that can be the making or breaking of an inclusive environment. This study's finding are supported by previous research and report that peer tutoring teaching strategies have positive effects on students with disabilities on their activity engagement during physical education.
Klavina, A., &	The effect of peer	<i>European Journal of</i>	This study assessed the	It was conducted in	Peer tutors received three	Interaction behavior data	Voluntary peer involved was not	Again, close proximity of adults effected the

Rodionova, K.	tutoring in physical education for middle school students with severe disabilities	<i>Adapted Physical Activity</i>	effect of peer tutoring on physical, instructional, and social interaction behaviors between middle school age students with severe and multiple disabilities (SMD) and peers without disabilities.	an inclusive general physical education class with two instructional support conditions a) teacher-directed and b) peer-mediated. Participants included two middle school students with severe and multiple disabilities and give general education students were peer tutors, two for one student with disabilities and three for the other.	20 min. training sessions using the TIP-TAP (Tips for Teaching, Assisting, and Practicing) teaching method. A single subject multiple baseline research design was used, 1) baseline—teacher directed instruction and 2) intervention—peer-mediated lesson. CEPI-PE was used to analyze physical, social, and instructional behaviors and to identify the effect of the intervention	collected indicated high levels of socialization between Jimmy and adults, Carl had a lower interaction rate. Isolation from activity occurred more with Jimmy than with Carl. Immediately, interaction levels increased when peer-mediated instruction occurred. No significant difference in interaction levels occurred for Carl when comparing peer-mediated condition and teacher-directed condition.	occurring in this study, students tended to only interact with Jimmy when directed by teacher.	results and the interaction of students with disabilities with students without disabilities. Compared to other findings, data was not significant in terms of activity level changing between baseline and intervention.
(Klavina & Rodionova, 2015)								

					was calculated. Wilcoxon test was used to compare interaction behaviors across the study.			
Ward, P., & Ayvazo, S.	Classwide peer tutoring in physical education: Assessing its effects with kindergartners with autism	<i>Adapted Physical Activity Quarterly</i>	Study the impact classwide peer tutoring has on students with autism and their ability to catch and catch correctly	Four students, two typically developing (tutors) and two that have autism are being observed for their total number of catches and total number of complete catches during 26 lessons.	Observers were assessed on their ability to record a critically correct catch and an A-B-A-B single-subject withdrawal design was used. (Whole Group Direct-Instruction), then Classwide Peer Tutoring was introduced (CWPT-1), followed by another Whole Group Direct-Instruction (WG-2) and finishing with Classwide	Results for total catches overall for all four students, an increased from WG-1 to CWPT-1, then a baseline occurred during WG-2 and later increased again with a descending trend in CWPT-2. While total correct catches demonstrated, “38% of the data points overlapped between WG-1 and CWPT-1, and 14% overlapped between WG-2 and CWPT-2	Demonstrates the positive effects of peer tutoring when developing skills with both students with and without disabilities. overall physical engagement was determined by total catches completed, one can say that this was successful in creating an inclusive environment. When studying and researching students with disabilities its critical to remember that all students are different, all perform skills at different levels, which may result in	Because data found for both Ben and Peter were varied, this study does not necessarily support other findings in relation to intervention being more effective than whole group instruction in terms of involving students with disabilities more. Although, completion of correctly performed catches did occur more frequently in CWPT than teacher-directed. Decisions about instruction were based on whole-group rather than individually based which could have hindered the target students performance. More studies need to be performed regarding CWPT.
(Ward & Ayvazo, 2006)								

					peer tutoring (CWPT-2)		varied data. Peer tutors tend to take a loss when assistant because improvement in their own performance may not occur. Consider multiple peer tutors to rotate through.	
Wiskochil, B., Lieberman, L. J., Houston-Wilson, C., & Petersen, S.	The effects of trained peer tutors on the physical education of children who are visually impaired	<i>Journal of Visual Impairment & Blindness</i>	Examined the effect of trained peer tutors on the academic learning time—physical education (ALT-PE) score of children with visual impairments.	Four students with visual impairments (two with low vision and two who were blind) and two to four same-age and same-gendered peer tutors from their integrated PE class. A criteria was used in the selection process. These tutors had training that lasted 1 day for 1.5 to 2 hours with tutee. For to five lessons were taped	Single-subject delayed multiple baseline AB design was used in the study. A version of ALT-PE was used to observe motor-appropriate behaviors interval recording data was demonstrated, 6 seconds of recording and 6 seconds of observation. Comparisons in baseline and intervention	Billy (visually impaired student showed drastic changes between baseline an intervention. There was a high level of ALT-PE shown in the intervention (38.8% to 56.9%). Betty had an increase during the intervention as well, but to as significant as Billy's (37.8% to 48.5%). Roland had an upward trend to begin with in the intervention but later sowed a downward trend as the days	The training of peer tutors may be the cause to Betty's and Roland's increase in ALT-PE levels. The findings suggest that the training of the tutors can increase the teaching techniques used by the tutors.	Difficult to generalize the findings from this study because students had different visual sight and were different ages. Thus, increasing the amount of studies conducted is important to gather adequate data.
(Wiskochil et al., 2007)								

				<p>prior to intervention to gather baseline. A staggered method of baseline and intervention to the student was used to show true data collection of the target behavior. Intervention lasted for 6 to 8 classes and the tutors had the opportunity to rotate between tutoring.</p>	<p>were used to find changes and variability. To determine effectiveness of peer tutoring, a sighted classmates engagement in activity was compared. Closed and opens skills were assessed too to determine the similarity or differences when introducing peer tutoring those activities</p>	<p>progressed (29.6% to 32.2%). Sally had a variable baseline with a slight down trend toward the end, but the intervention was slightly less variable with an upward trend and slowly decline trend (55% to 60%). Trained peer tutors that assisted Roland demonstrated a high level of ALT-PE compared to untrained initially in the study. Similar finding with betty occurred. Open vs Close sports findings indicted that peer tutors were effectives in helping to increase the participants ALT-PE scores during both types of activities.</p>		
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