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**THE EFFECT OF CLASSWIDE PEER TUTORING ON THE SKILL
PERFORMANCE AND FITNESS LEVELS OF STUDENTS WITH
DISABILITIES IN AN ELEMENTARY PHYSICAL EDUCATION INCLUSION
CLASS**

by

Christopher Farrell

A Thesis

Submitted to the
Department of Interdisciplinary and Inclusive Education
College of Education
In partial fulfillment of the requirement
For the degree of
Master of Arts in Special Education
at
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Thesis Chair: Amy Accardo, Ed.D.

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Dedications

I would like to thank my family, friends, and co-workers for the love and support.

I would not be who I am without all of your help.

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I would like to extend my gratitude to Rowan University. I enjoyed and appreciate all of my undergraduate and graduate courses at Rowan University. Also, I would like to acknowledge Professor Amy Accardo. Thank you for your continuous support and feedback throughout the thesis process.

Abstract

Christopher Farrell

THE EFFECT OF CLASSWIDE PEER TUTORING ON THE SKILL PERFORMANCE
AND FITNESS LEVELS OF STUDENTS WITH DISABILITIES IN AN
ELEMENTARY PHYSICAL EDUCATION INCLUSION CLASS

2018-2019

Amy Accardo, Ed.D.

Master of Arts in Special Education

This single subject study used an ABAB research design to investigate the effect of classwide peer tutoring (CWPT) on the skill performance and fitness levels of students with disabilities. Data was collected from nine students with disabilities who are members of a fourth grade physical education inclusion class. During the baseline phases of this study, students received instruction through whole-class direct instruction provided by the physical education teacher. During the intervention phases of this study, students participated in CWPT sessions. Skill performance in this study was determined through students demonstrating skill cues while shooting towards a target. Fitness levels were measured through the use of the Pacer Test, a cardiovascular endurance measurement. Students with disabilities were paired with typically developing peers in their same class and they took turns serving in the roles of tutor and tutee. The results of this research study suggest that students with disabilities showed an increase in skill performance and fitness levels as the result of using CWPT. Participant satisfaction surveys indicate a high level of enjoyment and satisfaction with CWPT.

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Chapter 1

Introduction

This study focuses on the effect of classwide peer tutoring (CWPT) on the skill performance and fitness levels of students with disabilities in an elementary physical education inclusion class. Students with disabilities should be educated in their least restrictive environment, which is often the general education classroom. Hott (2012) describes CWPT as a flexible, peer-mediated strategy that involves students serving as academic tutors and tutees. Using CWPT, a higher performing student is paired with a lower performing student to review critical academic or behavioral concepts, and then the positions are reversed and students switch roles.

According to the National Center for Educational Statistics (2018), 6.7 million students, or 13% of all public school students, were receiving special education services during the 2015-2016 school year. For general Physical Education classes, 92% of students with disabilities in grades 1-7 were mainstreamed (United States Government Accountability Office (USGAO, 2010). Since most students with disabilities are included in general education physical education classes (USGAO, 2010), physical education teachers may benefit from the investigation of CWPT as a method to better individualize and differentiate instruction to meet the needs of all students. According to the U.S. Department of Health and Human Services (2008) children and adolescents should have 60 minutes or more of physical activity daily. Physical activity can provide long-term health benefits for children and adolescents with disabilities (HHS, 2008)

Statement of Problem

Inclusion classes are made up of students with and without disabilities. The physical education teacher is responsible for instruction, feedback and assessment of all students in the classroom. IDEA (2004) defines child with a disability as a child who has a disability which is defined in one of the thirteen disability categories in IDEA and who needs special education and related services because of the disability; or a child aged 3-9 who is experiencing a developmental delay. According to IDEA (2004), the thirteen disability categories are autism, deaf-blindness, deafness, emotional disturbance, hearing impairment, mental retardation, multiple disabilities, orthopedic impairment, other health impairment, specific learning disability, speech or language impairment, traumatic brain injury, visual impairment, and developmental delay. Students with intellectual disabilities demonstrate lower levels of cardiovascular endurance, muscular strength, and higher levels of obesity than their typically developing peers (Frey, Stanish, & Temple, 2008).

Significance of the Study

CWPT provides students with peer-assessment and feedback. This additional individualized peer feedback may provide motivation for students with disabilities to increase their effort and fitness in the physical education classroom. A review of literature shows that there is very little existing research and literature of CWPT in Physical Education, and the research that exists is spread between different grade levels and different skills or units of instruction. The results from this study could influence elementary physical educators to incorporate CWPT into their inclusion classes. This

study will compare the skill performance and fitness levels for students with disabilities using whole class instruction and CWPT.

Purpose of the Study

The purpose of this study is to determine the effect of CWPT on the skill performance and fitness levels of students with disabilities in an elementary Physical Education inclusion class. The goals of this study are (a) to measure the effect of CWPT on the physical education skill performance for students with disabilities, and (b) to measure the effect of CWPT on the fitness levels of students with disabilities using the Pacer Test.

Research Questions

1. Will CWPT have an effect on the skill performance of students with disabilities in an elementary physical education inclusion class?
2. Will CWPT have an effect on the fitness levels of students with disabilities in an elementary physical education inclusion class?
3. Will students with disabilities be satisfied with CWPT in an elementary physical education inclusion class?

An A-B-A-B single-subject research design will be used to determine if CWPT is effective for students with disabilities in the Physical Education classroom.

Key Terms

Hott (2012) describes CWPT as a flexible, peer-mediated strategy that involves students serving as academic tutors and tutees. Typically, a higher performing student is paired with a lower performing student to review critical academic or behavioral concepts. Metzler (2011) described direct instruction in physical education by having the teachers structure the learning so that the students can proceed in small steps. Tasks and skills are divided into smaller tasks and students advance through the steps in a developmentally appropriate process. Teachers provide explanations, instructions, and demonstrations to the students and provide feedback while students practice.

Chapter 2

Review of the Literature

According to the United States Government Accountability Office (2010) most students with disabilities are included in general physical education classes and attend these classes with the same frequency as their typically developing peers. Ninety-two percent of students with disabilities in grades 1-7 have been included in general physical education classes (USGAO, 2010). According to the U.S. Department of Health and Human Services (2008) children and adolescents should have 60 minutes or more of physical activity daily. Physical activity can provide long-term health benefits for children and adolescents with disabilities (HHS, 2008).

To provide inclusive classrooms, physical education teachers should plan and provide instruction to meet the needs of a diverse community of learners with various skill levels (Tripp, Rizzo, & Webbert, 2007). The most common strategies used by physical education teachers to accommodate students with disabilities in inclusive physical education classes are to simplify instructional content or to vary the difficulty of the material being taught (USGAO, 2010). Physical education teachers are in need of additional strategies to be prepared to teach and understand this population of students in their classrooms. CWPT is one instructional strategy that could be used to increase the skill performance for students with disabilities in general physical education classes (Ayvazo & Ward, 2009; Houston-Wilson, Lieberman, Horton, & Kasser, 1997; Johnson & Ward, 2001; Ward & Ayvazo, 2006). According to Cervantes, Lieberman, Magnesi, and Wood (2013) CWPT can contribute to an inclusive setting for students with

disabilities by allowing more practice time and by increasing the opportunities for students to perform the desired skills accurately.

Inclusion in Physical Education

Wiskochil, Lieberman, Houston-Wilson, and Peterson (2007) conducted a research study to determine the effects of trained peer tutors on the academic learning time in inclusive physical education classes for students with visual impairments. There were four participants with visual impairments chosen for this research study from grades 3-11 who were paired with same-age tutors from the tutee's physical education class. Wiskochil et al. (2007) used an academic learning time coding sheet that focused on motor engaged behaviors, motor appropriate, motor inappropriate, waiting, not motor engaged behaviors, and on-task and off task. Wiskochil et al. (2007) used a single-subject delayed multiple-baseline A-B design which included 4-6 physical education classes as a baseline, before introducing the intervention of peer tutors for 6-8 physical education classes. The results of this study show an increase in the percentage level of academic learning time for all participants by a mean of 20.8%. Furthermore, the results indicate that peer tutors could effectively give instruction, demonstrate skills, provide feedback, and monitor the tutees (Wiskochil et al. 2007).

CWPT and Skill Performance

CWPT can be an instructional method in which peers will be used to provide feedback and assessment to classmates (Johnson & Ward, 2006). Johnson and Ward (2006) conducted a research study to determine if CWPT in physical education had effects on the number of total trials, the number and percentage of correct trials, and

teacher's organization of lesson time during a third grade striking unit. Eleven third graders participated in this study over the course of 20 lessons in the Striking Unit (Johnson & Ward, 2006). Johnson and Ward (2006) used six elements to their CWPT research study including teams, peer dyads, practice time and task cards, partner check, posting team scores, and goal setting. The teacher trained the class in the use of CWPT on the first day of the striking unit through the use of explanations, student modeling, and student practice with feedback and question answering (Johnson & Ward, 2006). As a result of this study Johnson and Ward (2006) report a decrease in the total number of trials for all students, with nine out of eleven students increasing the number and percent of correct trials, and no difference in the use of the teacher's time and organization.

Similar results were found in a study by Ayvazo and Ward (2009), which used CWPT in a sixth grade volleyball unit. The purpose of this study was to examine the effects of CWPT for four subjects, males and females with average to low volleyball skills (Ayvazo & Ward, 2009). The researchers used a single-subject A-B-A-B withdrawal design to implement CWPT in the volleyball unit (Ayvazo & Ward, 2009). Ayvazo and Ward (2009) conducted this research study at the beginning of a volleyball unit which lasted twenty lessons and focused on the volleyball skills of a set, forearm pass, overhead pass, and underhand serve. All lessons of the study were video recorded and students were scored by six graduate and undergraduate college students who were enrolled in a physical education teaching course (Ayvazo & Ward, 2009). The data from Ayvazo and Ward (2009) shows that three of the four students improved their performance in total trials and correct trials while using CWPT. The results from this study suggest that CWPT in physical education can be successful for increasing skill

performance and total number of trials (Ayvazo & Ward, 2009). Ayvazo and Ward (2009) recommend that students not be allowed to choose their partners and that tutors should be sufficiently trained in order to effectively provide feedback and hold their partner accountable.

Ward and Ayvazo (2006) conducted a research study to determine the effects of CWPT in physical education for kindergarten students with autism. The researchers collected data to determine if CWPT improved the skill of catching for two students with autism and two students who were not classified as having a disability (Ward & Ayvazo, 2006). This research study was conducted in a charter school which focused on inclusion for students with autism. Ward and Ayvazo (2006) conducted this study over 26 lessons and used a single subject A-B-A-C withdrawal design. The baseline for this study was whole group direct-instruction and the intervention used was CWPT (Ward & Ayvazo, 2006). The first intervention paired students with autism and typically developing peer tutors who followed the teacher's instruction to provide feedback, prompting, or assistance, during skill practice (Ward & Ayvazo, 2006). During the second intervention, Ward and Ayvazo (2006) had the peer tutors focus on modeling the correct skill performance as well as on-task engagement in the lesson. Data collected from this research study suggested that CWPT improved the total number of catches and the total number of correct catches for students with autism. However, the results for the typically developing students during this study were mixed, with one student showing an increase in the total number of catches and correct catches, and the other student showing very little improvement in the total number of catches and correct catches. Ward and Ayvazo

(2006) suggest that CWPT can be a more effective strategy to increase engagement and skill performance than whole group direct-instruction for students with autism.

Similarly, Houston-Wilson and Dunn (1997) conducted a research study that focused on the effects of untrained and trained peer tutors on motor performance in inclusive physical education classes. This research study paired six participants with developmental disabilities with six typically developing peers to serve as peer tutors (Houston-Wilson & Dunn, 1997). Houston-Wilson and Dunn (1997) used a delayed multiple baseline design for the participants of this study. Data was collected on the five motor skills of horizontal jump, catch, overhand throw, forehand strike, and sidearm strike (Houston-Wilson & Dunn, 1997). After the baseline had been established, Houston-Wilson and Dunn (1997) introduced the intervention of peer tutors who were trained on appropriate cueing, feedback, and task analysis. The results of this study indicate that the untrained peer tutors did not contribute to a significant improvement in motor performance for their tutees; however, the trained peer tutors did assist their tutees with a significant increase in motor performance across the five observed motor skills (Houston-Wilson & Dunn, 1997).

CWPT/ Peer Tutoring on Fitness Levels

Gobbi, Gregoul, and Carraro (2018) conducted a research study to investigate and compare the effects of a peer-tutored physical education program against a general inclusion secondary physical education class for high school students with intellectual disabilities. Gobbi et al. (2018) aimed to compare levels of physical activity, enjoyment of physical activity, and rates of perceived exertion from a peer-tutor program versus a

typical secondary physical education class. There were 19 participants, ages 15-19, involved in this research study who all met the criteria of being students with mild to moderate intellectual disability levels (Gobbi et al. 2018). Participants in this study volunteered to attend an extra one-hour peer-tutor physical education session per week for the entire school year. Gobbi et al. (2018) trained peer tutors prior to the peer-tutor program for two sixty minute sessions. Physical activity levels were measured by using a triaxial accelerometer that recorded inactive time, light intensity physical activity, and moderate to vigorous physical activity (Gobbi et al. 2018). Perceived exertion was assessed immediately after the peer-tutor session on a scale of 0-10 based on one question, "How was your workout?" (Gobbi et al. 2018). The participants' enjoyment of physical activity was investigated through the use of a questionnaire administered orally after each session (Gobbi et al. 2018). The results of this study indicated that the nineteen participants showed an increase in light intensity physical activity, higher enjoyment of physical activity, and higher perceived exertion during physical activity (Gobbi et al. 2018). During this peer-tutoring physical education program, high levels of enjoyment were maintained even through the higher levels of perceived exertion during physical activity (Gobbi et al. 2018).

Stanish and Viviene (2011) conducted a research study at a YMCA which focused on using peer support to increase health-related physical fitness among adolescents with intellectual disabilities. The purpose of this study was to determine if peer-support showed an increase in the engagement of physical exercises and activities, as well as if peer-support showed an improvement in aerobic exercise, weight training, core strengthening, and flexibility (Stanish & Viviene, 2011). The subjects for this study were

ten females and ten males with mild to moderate intellectual disabilities between the ages of 15-21 (Stanish & Viviene, 2011). According to Stanish and Viviene (2011), each subject was paired with typically developing exercise partner who were trained to provide social support, encouragement, feedback, and accurately recording exercises during the exercise sessions. The peer-support program was called Team Up for Fitness (TUFF) and fitness trainers from the YMCA developed personalized fitness plans for all participants which broke down each 60-minute exercise session into three parts; 20 minutes of aerobic training, 20 minutes of weight training, and 20 minutes of core strengthening/flexibility (Stanish & Viviene, 2011). Stanish & Viviene (2011) used a pre-test and post-test for participants which focused on the different health-related components of fitness. The exercise assessments used in this study were the sit-and-reach test, dominant hand grip test, modified curl-ups, 6-minute walk test, and body weight measured on a scale (Stanish & Viviene, 2011). The results of this study indicate an improvement from the pre-test to post-test for participants in the curl-ups, 6-minute walk test, and body mass index (Stanish & Viviene, 2011). Stanish and Viviene (2011) report that there were no changes evident for the participants during the dominant hand grip strength and the sit-and-reach test. This study suggests that as a result of providing social and instructional peer-support, adolescents with disabilities can learn exercise skills and improve their health-related fitness components (Stanish & Viviene, 2011).

Lieberman, Dunn, van der Mars, and McCubbin (2000) conducted a research study focusing on the effect of trained hearing peer tutors on the physical activity levels of deaf students in inclusive elementary school physical education classes. Eight elementary students who were classified as deaf were chosen to participate in this

research study including four boys and four girls (Lieberman et al., 2000). Lieberman et al. (2000) chose peer tutors for the students who were classified as deaf if they met the following criteria: they were in the same physical education class, had good behavior, high fitness levels, and did not have a close relationship with the students with hearing impairments. Peer tutors were trained for four-five thirty minute sessions before the introduction of the intervention (Lieberman et al. 2000). Students' physical activity levels were being scored by the System for Observing Fitness Instruction Time, SOFIT, which uses direct observation to measure students' physical activity levels by momentary time sampling and interval recording during elementary physical education classes (Lieberman et al. 2000). Lieberman et al. (2000) also collected data on the peer tutor's behavior which focused on promoting fitness, demonstrating fitness, instructing generally, monitoring, and off-task. The results of this study indicated increased physical activity levels for each subject of the study after the intervention was introduced, as well as increased physical activity levels for the peer tutors (Lieberman et al., 2000).

Conclusions

CWPT is a version of peer tutoring in which students take on the roles of being the tutor and tutee. CWPT in general physical education classes is one instructional strategy that may increase the skill performance of students with disabilities (Ayvazo & Ward, 2009; Houston-Wilson et al., 1997; Johnson & Ward, 2001; Ward & Ayvazo, 2006). Similar results have been found that CWPT can increase physical activity levels and engagement (Gobbi et al., 2018; Stanish & Viviene, 2011; Lieberman et al., 2000).

The purpose of this study is to determine the effect of CWPT on the skill performance and fitness levels of students with disabilities in an elementary physical education inclusion class. The goals of this study are to measure the effects of CWPT on the physical education skill performance for students with disabilities and to measure the effects of CWPT on the fitness levels of students with disabilities.

Chapter 3

Methodology

Setting

This study was conducted at an elementary school in a suburban school district in south New Jersey. There are five elementary schools and two middle schools in the school district. The elementary school in which this study took place has around 350 students in grades preK-5. The school day begins at 8:50 and ends at 3:20, for a total of six hours and thirty minutes. Students in grades K-5 receive physical education class two times a week for thirty minutes each session. Students in preK receive physical education once a week for thirty minutes.

According to the 2016-2017 NJ School Performance Report, 77.4% of students are White, 12.7% are Hispanic, 4.8% are Asian, 1.5% are Black or African American, and 3.6% are two or more races. Students with disabilities accounted for 29% of the student population. Nine percent of students were considered economically disadvantaged. The enrollment by home language is 92.2% English, 5.1% Spanish, 1.5% Chinese, and 1.2% other. English language learners account for 6% of the population. The average years of experience for teachers in the elementary school is 15.3.

The study was conducted in a fourth grade physical education inclusion class. The physical education teacher has two years of teaching experience at this school and one year of previous experience teaching health and physical education at a local high school.

Participants

All students in the fourth grade inclusion class will participate in the CWPT physical education lessons. Data will be collected and analyzed on all students classified with a disability in the class.

Participant 1 is a nine-year old male student who is classified as having a Specific Learning Disability. He receives pull-out supplementary instruction for reading and displays challenges with fluency, decoding and written language. Math and physical education are two strengths of Participant 1. He is a friendly and cooperative student who always follows the classroom rules and routines in physical education classes and tries his best. Participant 1 shows the ability to successfully interact and communicate with peers in physical education classes.

Participant 2 is a nine-year old male student who is classified as having Autism Spectrum Disorder. He receives a pull-out replacement program for reading and writing, but he is included in general education for mathematics, science, social studies, and the related arts classes. He functions best in a structured setting where rules and limits are clearly stated. Participant 2 attempted to run away from his classroom in previous occasions during an art lesson and a pull-out reading lesson. In physical education classes, Participant 2 is usually very quiet. He sometimes has trouble following the classroom rules and routines and needs redirection.

Participant 3 is a ten-year old male student who is classified as having a Specific Learning Disability. He receives a pull-out replacement program for reading and writing, but he is included in general education for mathematics, science, social studies, and the

related arts classes. He recently moved from Texas and this is his second year attending this school. Participant 3 has shown difficulties with basic reading skills, reading comprehension, and reading fluency. Also, he has difficulties with listening to directions and staying on task during independent work. In physical education class, Participant 3 follows all classroom rules and routines. He participates in the school Sports Club, which is organized by the physical education teacher. Participant 3 is involved in several sports outside of school including soccer, hockey and baseball.

Participant 4 is a ten-year old male student who is classified as having a Specific Learning Disability. He has shown difficulties in the areas of reading comprehension, written expression, and maintaining attention. The strengths of Participant 4 are that he is active in group lessons, good note-taking skills, and shares and models thinking with the class. He is a very friendly child and is well-liked by his peers. In physical education classes, Participant 4 needs frequent redirection to maintain on task during lessons. He does not show much interest in physical education class and does not participate with his best effort.

Participant 5 is a ten-year old male student who is classified as having a Specific Learning Disability. He receives a pull-out replacement program for reading and writing, but he is included in general education for mathematics, science, social studies, and the related arts classes. He also receives speech-therapy once a week. Participant 5 is described as a very active and competitive child who is eager to please peers and teachers. He participates in many physical activities outside of school including soccer, flag football, basketball, karate, baseball, street hockey and lacrosse. He participates in the school Sports Club, which is organized by the physical education teacher. Participant

5 has shown that he is strong-willed and sometimes can shut down or show avoidance and refusal behaviors. In physical education class, Participant 5 always displays his best effort and always follows the classroom rules and routines.

Participant 6 is a nine-year old male student who was born in the United Kingdom and is classified as having a Specific Learning Disability. He lived in Europe until he was five years old before moving to the United States. He receives pull-out replacement for mathematics, but he is included in general education for reading, writing, science, social studies, and the related arts classes. He tends to rush through assignments and has shown difficulties with attention and focus. Participant 6 is described as a social and friendly boy who likes to participate in class and work with his peers. In physical education, he requires teacher prompts and repetition of directions in order to comply with the required tasks.

Participant 7 is a nine-year old female student who is classified as Other Health Impaired, specifically having Attention Deficit Hyperactivity Disorder (ADHD). Her challenges stemming from her diagnosis of ADHD appear to negatively impact her ability to perform adequately in the classroom, access the curriculum without adult support and manage feelings and emotions, and act socially appropriate during peer interactions. Participant 7 is described as being outgoing and friendly, but has a low frustration tolerance and is quick to anger. She seems to do well with structure and support, and benefits from small-group instruction. In physical education class, she usually is eager to please the teacher. There have been instances where she has shut down and refused to participate in activities and got into verbal altercations with peers.

Participant 8 is a nine-year old male student who is classified as having a Specific Learning Disability. He receives a pull-out replacement program for language arts and writing, but he is included in general education for science, social studies, the related arts classes, and mathematics with in-class support from an assistant. His attention has been identified as impeding his educational performance. He becomes easily distracted in large and small group settings and needs teacher prompts to stay on task and follow directions. He performs best with short work periods while receiving praise and reinforcing of desired behaviors. During class discussions, he is very active and confident in his communication skills.

Participant 9 is a ten-year old male student who is classified as having Autism Spectrum Disorder. He receives in-class support for reading and attends group speech-language sessions once a month for forty minutes. Other than that, he is educated in the general education classroom. Participant 9 has been described as a hard worker and willing to challenge himself. The student's disability category is Autistic due to a pervasive developmental disability, which significantly impacts his verbal and nonverbal communication and social interaction that adversely affects his educational performance. He has a history of difficulty with maintaining attention during small and large group instructional settings. He gets distracted easily and needs teacher prompts to stay on task.

Table 1

General Information of Participating Students

Participant	Age	Grade	Gender	Classification
Participant 1	9	4	M	SLD
Participant 2	9	4	M	ASD
Participant 3	10	4	M	SLD
Participant 4	10	4	M	SLD
Participant 5	10	4	M	SLD
Participant 6	9	4	M	SLD
Participant 7	9	4	F	OHI
Participant 8	9	4	M	SLD
Participant 9	10	4	M	ASD

Materials

The study used several assessments to gather data during the baseline and intervention phase. Figure A is the assessment which was used during floor hockey to determine student's shooting form. Each student had the opportunity to shoot a floor hockey ball four times at a hockey net that was placed twenty feet away. Students were being assessed on their shooting form and using the five floor hockey shooting skill cues. Incomplete shots did not affect the score. During the baseline phase, the teacher scored the students based on their demonstration of the skill cues during shooting. During the intervention phase, the peer tutor's scored their partner's demonstration of the skill cues during shooting. Figure B is the assessment which was used during lacrosse determine

student's shooting form. Each student had the opportunity to shoot a rubber lacrosse ball four times at a net that was placed twenty feet away. Students were being assessed on their shooting form and using the five lacrosse shooting skill cues. During the baseline phase, the teacher scored the students based on their demonstration of the skill cues during the lacrosse shooting. During the intervention phase, the peer tutor's scored their partner's demonstration of the skill cues during lacrosse shooting. Figure C is the assessment which was used for both baseline phases for assessing students' fitness levels. Students participated in the Pacer Test which required students to run as long as possible while keeping up with a specific audio cadence that gets progressively faster. Students run back and forth across a twenty-meter space and have to get to the other side before the audio beeps. Each time the students run the twenty meters, they earn one lap. The teacher will record the students' results for the baseline phases. Figure D is the assessment used for the intervention phases of this study. This assessment will have the peer tutors participating and scoring their partners' scores during the Pacer Tests.

Test Administration: Floor Hockey Shooting. Shoot to goal (5-ft. wide) from 20 feet away with a floor hockey ball. Incomplete shot does not affect the score.

Student's Name: _____

Peer Tutor's Name: _____

Cue	Trial 1	Trial 2	Trial 3	Trial 4
Non-dominant hand at the top of stick, dominant hand near middle of stick				
Non-dominant shoulder facing target				
Pull stick back below waist				
Rotates hip forward toward target				
Stick follows through to target				
Total Points				

Final Score: _____ Total points for all trials

Figure 1. Floor Hockey Shooting Assessment.

Test Administration: Lacrosse Shooting. Shoot to goal (5-ft. wide) from 20 feet away with a rubber lacrosse ball. Incomplete shot does not affect the score.

Student's Name: _____

Peer Tutor's Name: _____

Cue	Trial 1	Trial 2	Trial 3	Trial 4
Non-dominant hand at the bottom of stick, dominant hand near middle of stick				
Non-dominant shoulder facing target				
Steps with opposite foot				
Rotates hip forward toward target				
Stick follows through to target				
Total Points				

Final Score: _____ Total points for all trials

Figure 2. Lacrosse Shooting Assessment.

Test Administration: Fitness Pacer Test. Complete as many laps as possible.

Student's Name	Test Score 1	Test Score 2	Test Score 3

Total Score: _____ Total points for all test scores.

Figure 3. Fitness Pacer Test.

Test Administration: Fitness Pacer Test. Complete as many laps as possible.

Student's Name	Peer Tutor's Name	Test Score 1	Test Score 2	Test Score 3

Student's Final Score: _____ Total points for all test scores

Peer Tutor's Final Score: _____ Total points for all test scores

Figure 4. CWPT Fitness Pacer Test.

Research Design

This research study used a single-subject A-B-A-B design. The study took place over a nine-week period. Each phase of the research lasted for two weeks. One week of classes before the first intervention phase was dedicated to train the students on CWPT. The subjects participated in this study two times per week, for thirty minutes each session. During Phase A, baseline data was collected for each subject on their skill performance and fitness levels in the Manipulatives unit of instruction. The teacher used whole class direct instruction to provide instruction to the subjects. During Phase B, the intervention of CWPT was introduced to the subjects. The physical education teacher assigned each student in the class a peer tutor partner. Instructional tasks were presented to the pairs on task cards in words and pictures. Each student had the opportunity in each lesson to be the tutor and the tutee. The role of the tutor was to be to provide instruction, feedback, encouragement, and to record results under the direction of the teacher. The role of the tutee was to attempt the tasks provided by the instructor on the tasks cards. Then, the roles were reversed and the process will continue. Data was collected during the intervention phase on skill performance and fitness levels. During the second Phase A, the intervention was removed and the subjects participated in whole group direct instruction and data was again collected on skill performance and fitness levels. During the second Phase B, CWPT was reintroduced to the subjects and data will be collected on skill performance and fitness levels. After the second Phase B, students completed a survey to identify their satisfaction with CWPT.

Procedures

The baseline data for this study was collected on shooting at a target using the correct shooting cues and using the Pacer Test to assess cardiovascular endurance. After the initial baseline phase, the teacher trained the class in using CWPT. The participants received two thirty-minute sessions of CWPT training. The first intervention phase consisted of CWPT during floor hockey lessons with the students being paired by the teacher. Students were paired by having one student with a disability being paired with one typically developing peer. Data was collected on shooting performance using the shooting checklist and recording the lap total for students during the Pacer Test. The next baseline phase lasted two weeks, and this consisted of whole-class direct instruction during lacrosse lessons. Data was collected on shooting at a target and using the Pacer Test to assess cardiovascular endurance. The second intervention phase consisted of CWPT during lacrosse lessons with the students being paired with the same partner as the floor hockey lessons. Data was collected on shooting performance using the shooting checklist and recording the lap total for students during the Pacer Test.

Measurement Procedures

This research study measured the effects of the intervention CWPT on the two dependent variables of skill performance and fitness levels. Each participant will have two charts of data with each illustrating one of the dependent variables. The hockey (see Figure 1) and lacrosse (see Figure 2) shooting assessments allowed for students to score from zero to twenty points. Students will have four attempts to demonstrate shooting at a target using the skill cues. There are five skills cues for hockey and lacrosse shooting.

Students will receive one point for each skill cue they demonstrate for each shot. The Pacer Test scores (see Figures 3 & 4) can range from zero to one hundred and fifty-seven laps. After the completion of the final intervention phase, each student who participated in the research study completed a Likert scale to determine their satisfaction with CWPT in an elementary physical education inclusion class (see Figure 5).

Classwide Peer Tutoring in Physical Education Survey

Directions: Read each sentence below and put an “X” in the column you feel most accurately describes your feelings.

Statements	Strongly Agree 5	Agree 4	Neither agree or disagree 3	Disagree 2	Strongly Disagree 1
1. I enjoyed using CWPT.					
2. I did not enjoy using CWPT.					
3. I enjoyed being the peer tutor.					
4. I enjoyed being the tutee.					
5. I felt prepared to use CWPT.					
6. The tutor paid attention to my skill performance.					
7. The tutor helped me in the fitness assessments.					
8. I performed better after using CWPT.					
9. I want to use CWPT in another unit.					
10. It was easy to use CWPT.					

Figure 5. CWPT in Physical Education Survey.

Data Analysis

During each phase of the research study, students' scores were collected and recorded into a spreadsheet. Baseline and intervention data were collected and entered into data spreadsheets for skill performance and fitness levels. The baseline and intervention means were recorded for each participant in the study. The intervention and baseline means were compared to determine the effects of CWPT on skill performance and fitness levels. The data for each student was graphed individually and visually analyzed for patterns between students and phases. Student Likert scale scores were entered into a chart to determine the percentages of student responses.

Chapter 4

Results

This ABAB study investigated the effect of CWPT on skill performance and fitness levels. Students with disabilities in a fourth grade physical education inclusion class were assessed through skill cue shooting assessments for skill performance and the Pacer Test for fitness levels. Data was collected from nine students during this study.

Skill Performance

The first research question investigated if CWPT would affect the skill performance for students with disabilities in a fourth grade physical education inclusion class. The research question was addressed through the use of skill cue checklists while the students demonstrated shooting with hockey and lacrosse sticks.

Table 2 shows the skill performance for the nine participants over the four phases. All of the participants in this study showed an increase in skill performance after the initial baseline phase.

Table 2

Group Skill Performance Across Phases

Participant	Baseline I	Intervention I	Baseline II	Intervention II
Participant 1	11	17	13	16
	12	16	15	17
	13	17	15	16
	M=12.00	M=16.67	M=14.33	M=16.33
Participant 2	5	13	10	17
	5	13	9	15
	6	11	10	16
	M=5.33	M=12.67	M=9.67	M=16.00
Participant 3	14	17	16	18
	14	19	18	17
	14	18	18	18
	M=14.00	M=18.00	M=17.33	M=17.67
Participant 4	5	9	8	12
	5	9	10	12
	6	11	10	13
	M=5.33	M=9.67	M=9.33	M=12.33
Participant 5	15	17	17	18
	14	18	18	20
	15	19	18	20
	M=14.67	M=18.00	M=17.67	M=19.33
Participant 6	10	15	17	19
	11	15	18	20
	10	16	17	19
	M=10.33	M=15.33	M= 17.33	M=19.33
Participant 7	11	16	12	16
	12	14	12	16
	12	16	13	16
	M=11.67	M=15.33	M=12.33	M=16.00
Participant 8	10	17	10	13
	8	16	12	15
	10	18	13	16
	M=9.33	M=17.00	M=11.67	M=14.67

Table 2 (continued)

Participant	Baseline	Intervention I	Baseline II	Intervention II
Participant 9	6	12	7	8
	8	13	8	9
	6	12	8	8
	M= 6.67	M=12.33	M=7.67	M=8.33

Note: Skill performance scores are out of 20 possible points.

Individual Results- Skill Performance

Figure 6 shows the skill performance scores for Participant 1 across the four phases. Participant 1 showed a consistent increase from both of the baseline to intervention phases for skill performance. During the initial baseline phase, Participant 1 demonstrated an overall mean of 12.00. Participant 1 showed an increase during the initial intervention phase to 16.67. During the second baseline phase, Participant 1 demonstrated an overall mean of 14.33. Participant 1 showed an increase during the final intervention phase to 16.33.

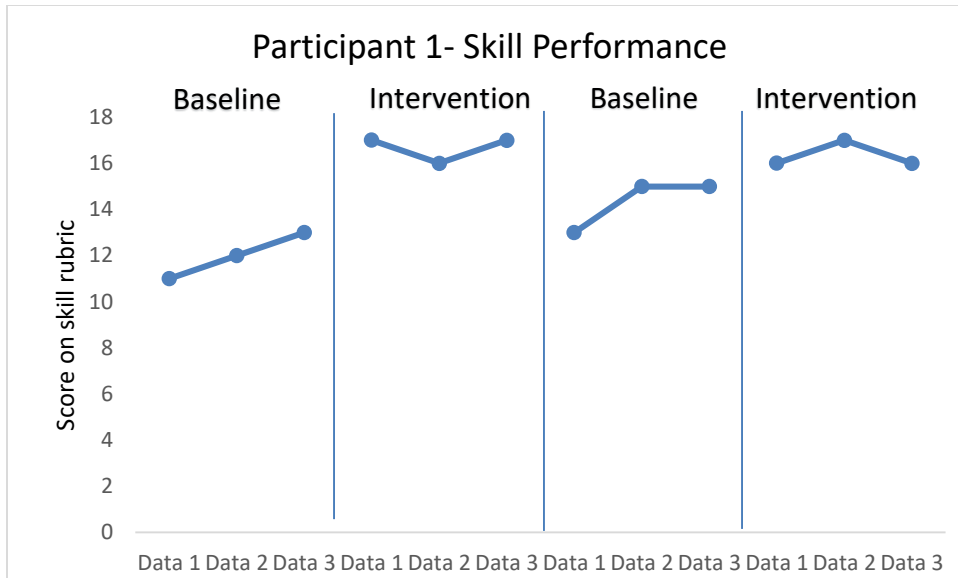


Figure 6. Participant 1 skill performance scores across all phases.

Figure 7 shows the skill performance scores for Participant 2 across the four phases. Participant 2 showed a consistent increase from both of the baseline to intervention phases for skill performance. Participant 2 had the lowest overall mean for skill performance in the initial baseline phase out of all of the participants. During the initial baseline phase, Participant 2 demonstrated an overall mean of 5.33. Participant 2 showed a significant increase during the initial intervention phase to 12.67. During the second baseline phase, Participant 2 demonstrated an overall mean of 9.67. Participant 2 showed an increase during the final intervention phase to 16.00.

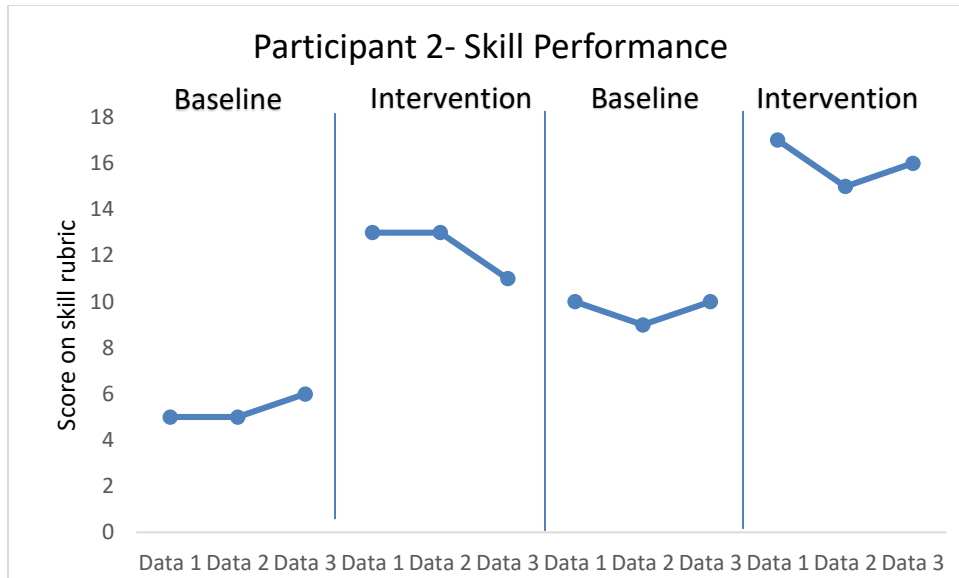


Figure 7. Participant 2 skill performance scores across all phases.

Figure 8 shows the skill performance scores for Participant 3 across the four phases. Participant 3 showed a consistent increase from both of the baseline to intervention phases for skill performance. During the initial baseline phase, Participant 3 demonstrated an overall mean of 14.00 and scored the same score for each data entry. Participant 3 showed an increase during the initial intervention phase to 18.00. During the second baseline phase, Participant 3 demonstrated an overall mean of 17.33. Participant 3 showed a small increase during the final intervention phase to 17.67.

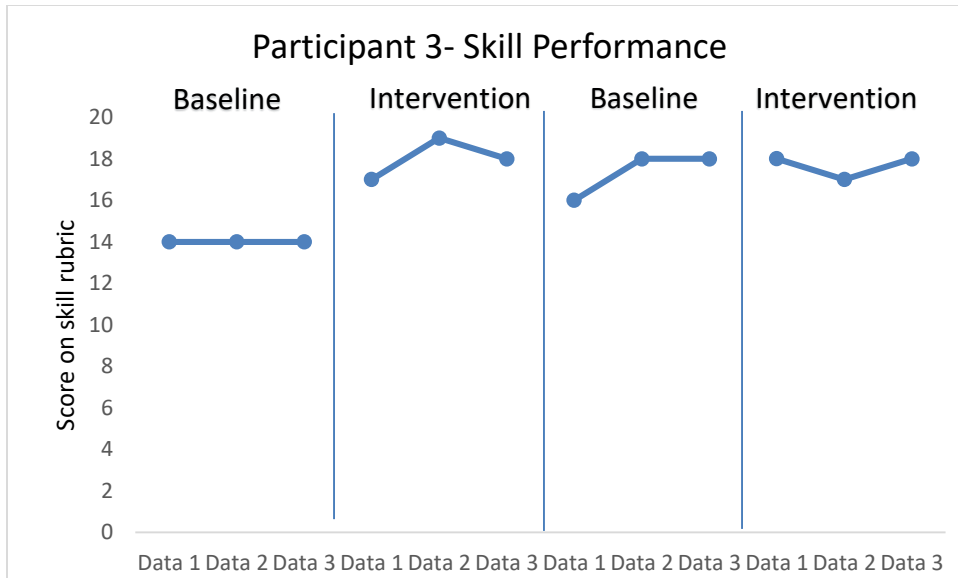


Figure 8. Participant 3 skill performance scores across all phases.

Figure 9 shows the skill performance scores for Participant 4 across the four phases. Participant 1 showed a consistent increase from both of the baseline to intervention phases for skill performance. During the initial baseline phase, Participant 4 demonstrated an overall mean of 5.33 and had the lowest overall mean out of all the participants in the study. Participant 4 showed an increase during the initial intervention phase to 9.67. During the second baseline phase, Participant 4 demonstrated an overall mean of 9.33. Participant 4 showed an increase during the final intervention phase to 12.33.

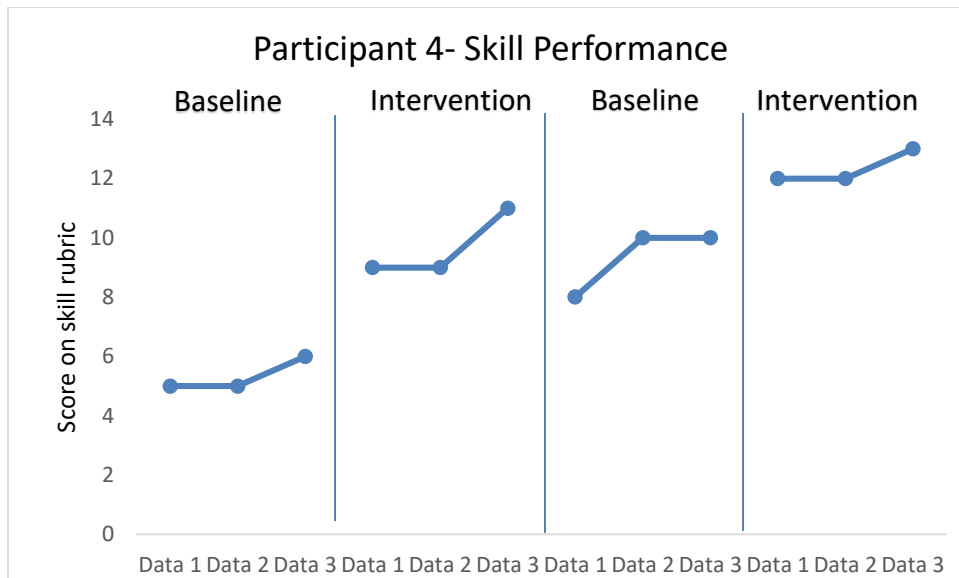


Figure 9. Participant 4 skill performance scores across all phases.

Figure 10 shows the skill performance scores for Participant 5 across the four phases. Participant 5 showed a consistent increase from both of the baseline to intervention phases for skill performance. During the initial baseline phase, Participant 5 demonstrated an overall mean of 14.67 and had the highest overall mean out of all the participants in the study. Participant 5 showed an increase during the initial intervention phase to 18.00. During the second baseline phase, Participant 5 demonstrated an overall mean of 17.67. Participant 5 showed an increase during the final intervention phase to 19.33. Participant 5 finished with the highest overall mean out of all of the participants. Participant 5 scored twenty out of twenty for the last two data entries in the final intervention phase.

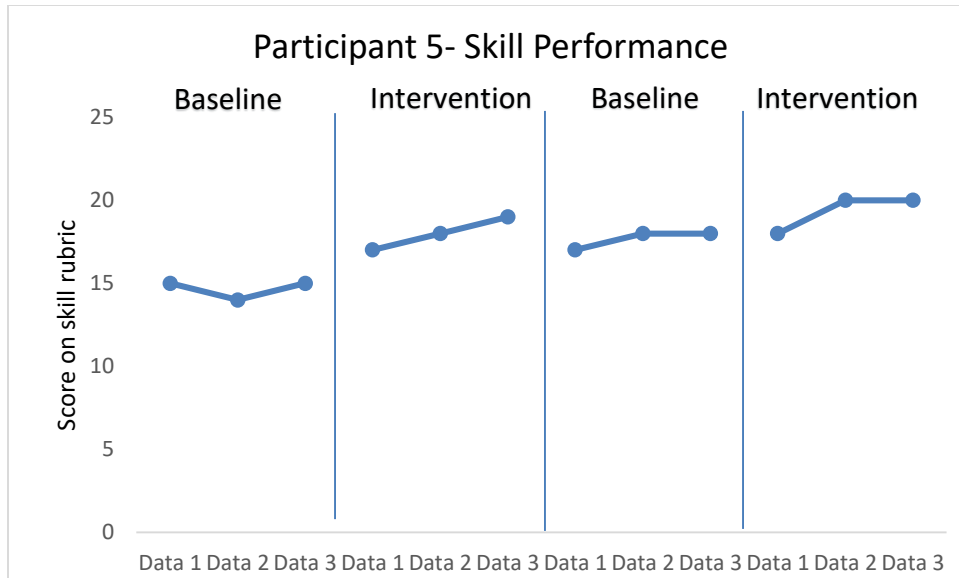


Figure 10. Participant 5 skill performance scores across all phases.

Figure 11 shows the skill performance scores for Participant 6 across the four phases. Participant 6 showed a consistent increase from both of the baseline to intervention phases for skill performance. During the initial baseline phase, Participant 6 demonstrated an overall mean of 10.33. Participant 6 showed a significant increase during the initial intervention phase to 15.33. During the second baseline phase, Participant 6 demonstrated an overall mean of 17.33. Participant 6 showed an increase during the final intervention phase to 19.3. Participant 6 finished the final intervention phase tied for the highest overall mean out of all of the participants.

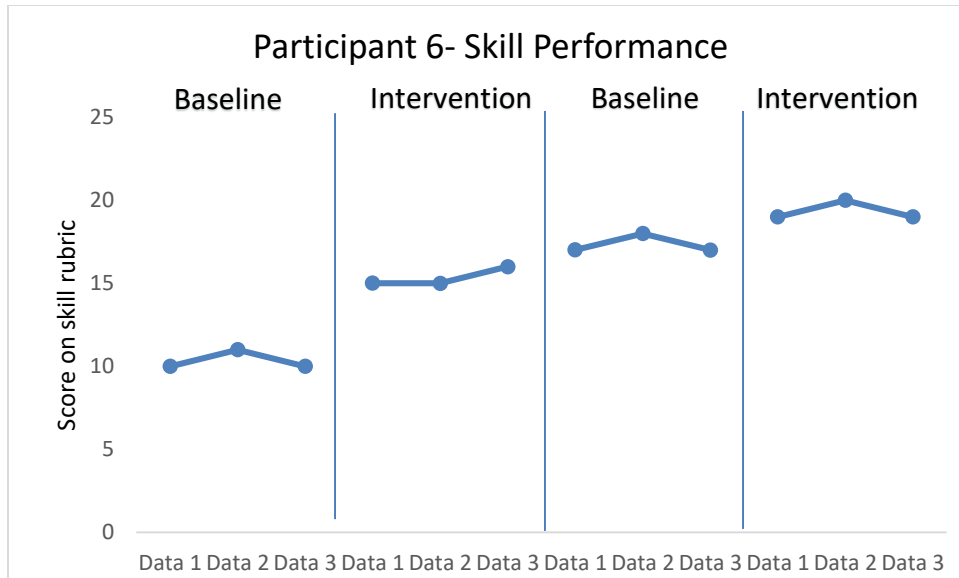


Figure 11. Participant 6 skill performance scores across all phases.

Figure 12 shows the skill performance scores for Participant 7 across the four phases. Participant 7 showed a consistent increase from both of the baseline to intervention phases for skill performance. During the initial baseline phase, Participant 7 demonstrated an overall mean of 11.67. Participant 7 showed an increase during the initial intervention phase to 15.33. During the second baseline phase, Participant 7 demonstrated an overall mean of 12.33. Participant 7 showed an increase during the final intervention phase to 16.00.

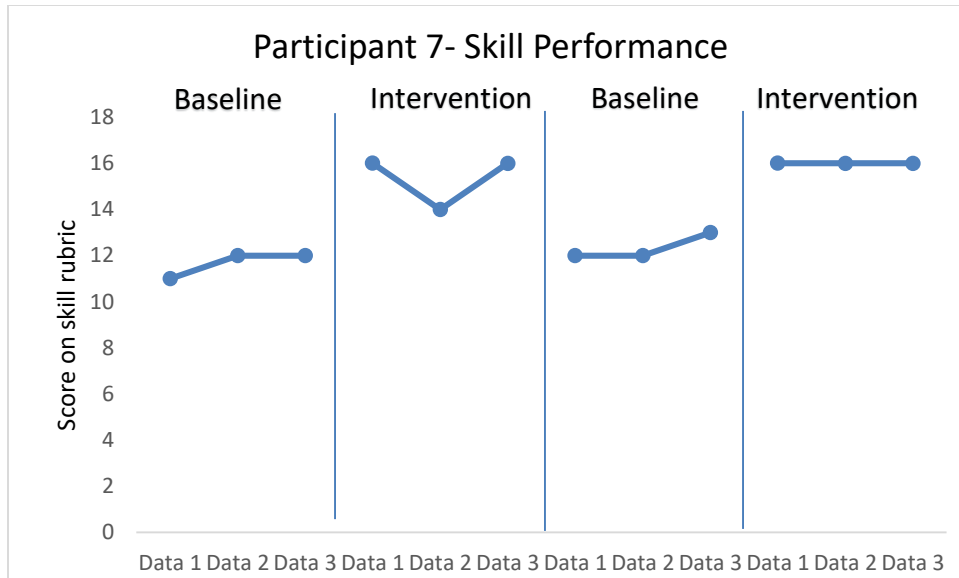


Figure 12. Participant 7 skill performance scores across all phases.

Figure 13 shows the skill performance scores for Participant 8 across the four phases. Participant 8 showed a consistent increase from the baseline to intervention phases. During the initial baseline phase, Participant 8 demonstrated a mean of 8.33. During the initial intervention phase, Participant 8 showed a significant increase in score on the skill performance rubric to 17.00. This phase was the biggest increase in score for any participant in any phase. During the second baseline phase, Participant 8 showed a slight increase in score. Participant 8 showed an increase from the second baseline phase the final intervention phase.

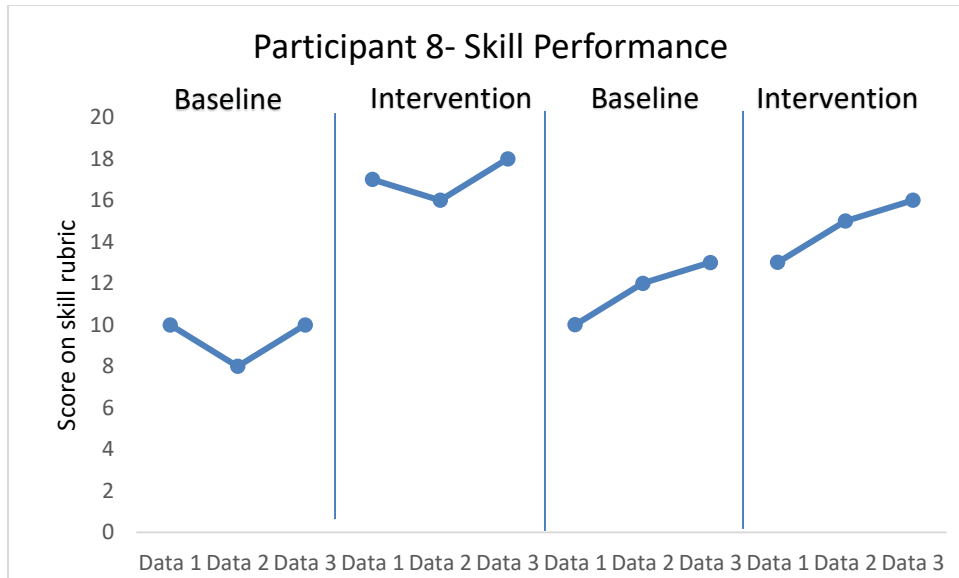


Figure 13. Participant 8 skill performance scores across all phases.

Figure 14 shows the skill performance scores for Participant 9 across the four phases. Participant 9 showed a significant increase from first baseline to intervention phases for skill performance. During the initial baseline phase, Participant 9 demonstrated an overall mean of 6.67. This was the lowest starting baseline score out of all of the participants. Participant 9 showed an increase during the initial intervention phase to 12.33. During the second baseline phase, Participant 9 demonstrated an overall mean of 7.67. Participant 9 showed a small increase during the final intervention phase to 8.33. This was the smallest increase in score from baseline to intervention phases for any participant during this study.

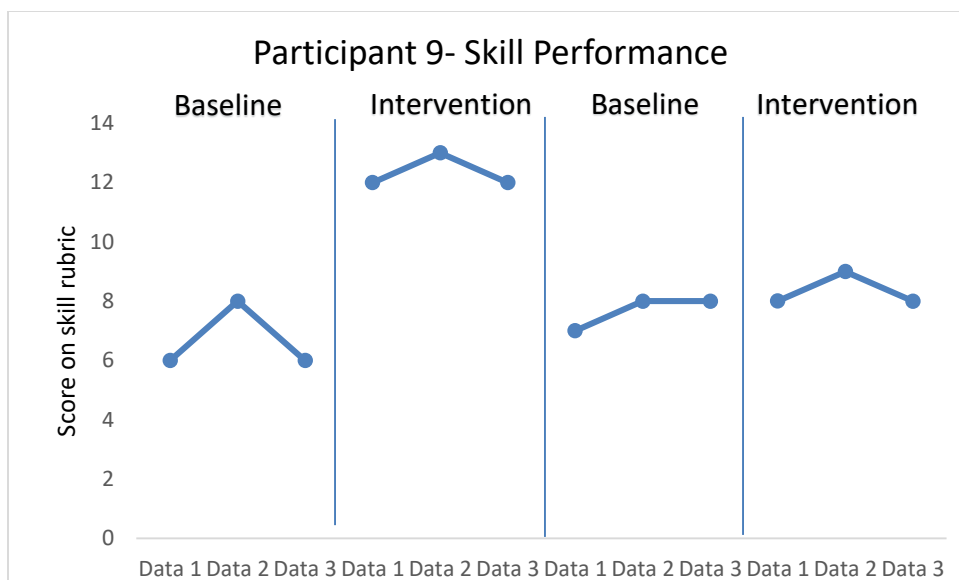


Figure 14. Participant 9 skill performance scores across all phases.

Fitness Levels

The second research question investigated if CWPT would affect the fitness levels for students with disabilities in a fourth grade physical education inclusion class. The research question was addressed through the use of the Pacer Test.

Table 3 shows the fitness levels for the nine participants over the four phases. All of the participants in this study showed an increase in their fitness levels after the initial baseline phase.

Table 3.

Group Fitness Scores Across Phases

Participant	Baseline I	Intervention I	Baseline II	Intervention II
Participant 1	28	38	33	42
	26	41	30	44
	30	43	35	45
	M=28.00	M=40.67	M=32.67	M=43.67
Participant 2	15	16	10	17
	12	19	14	22
	15	20	16	23
	M=14.00	M=18.33	M=13.33	M=20.67
Participant 3	27	41	40	44
	29	35	36	48
	31	45	37	51
	M=29.00	M=40.33	M=37.67	M=47.67
Participant 4	7	12	10	15
	7	14	12	18
	9	16	13	19
	M=7.67	M=14.00	M=11.67	M=17.33
Participant 5	51	87	80	90
	60	85	83	92
	63	88	85	93
	M=58.00	M= 86.67	M=82.67	M=91.67
Participant 6	35	62	37	64
	40	60	39	66
	34	65	44	67
	M=36.33	M=62.33	M=40.00	M=65.67
Participant 7	19	53	33	50
	22	54	18	58
	26	57	27	60
	M=22.33	M=54.67	M=26.00	M=56.00
Participant 8	9	21	10	22
	8	21	16	24
	13	23	14	27
	M= 10.00	M=21.67	M=13.33	M=24.33

Table 3 (continued)

Participant	Baseline	Intervention I	Baseline II	Intervention II
Participant 9	15	29	20	32
	17	30	19	35
	17	33	24	38
	M=16.33	M=30.67	M=21.00	M=35.00

Note: Fitness scores for the Pacer Test can range from 0-247 laps.

Individual Results- Fitness Levels

Figure 15 shows the fitness level scores for Participant 1 across the four phases. Participant 1 showed a consistent increase from the baseline to intervention phases for fitness levels. During the initial baseline phase, Participant 1 demonstrated an overall mean of 28.00. Participant 1 showed a significant increase in the initial intervention phase to 40.67. During the final intervention phase, Participant 1 showed a significant increase from the final baseline phase.

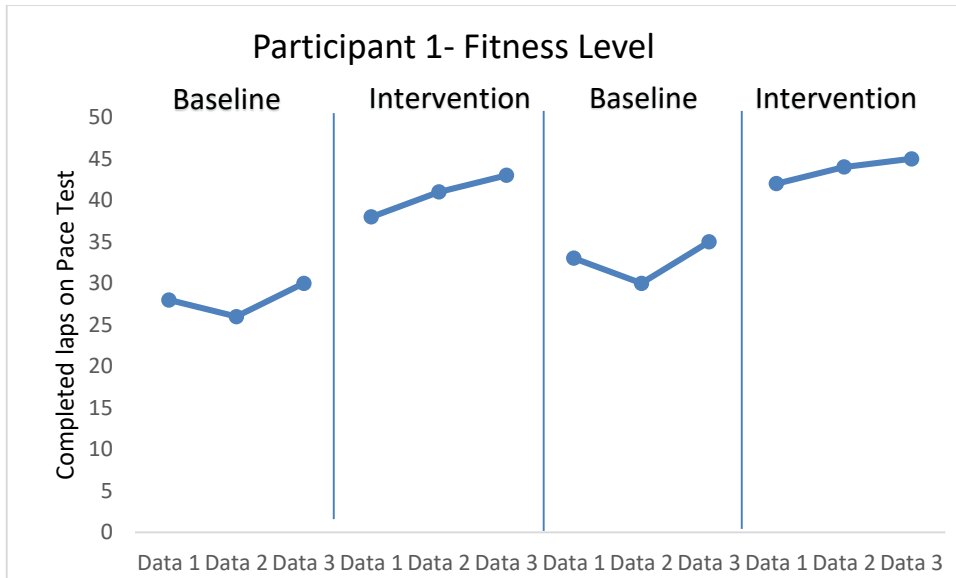


Figure 15. Participant 1 fitness scores across all phases.

Figure 16 shows the fitness level scores for Participant 2 across the four phases. Participant 2 showed an increase from both of the baseline to intervention phases for fitness levels. Participant 2 had the lowest overall increase in mean for fitness level scores out of all of the participants for each phase. During the initial baseline phase, Participant 2 demonstrated an overall mean of 14.00. Participant 2 showed an increase in the initial intervention phase to 18.33. During the second baseline phase, Participant 2 demonstrated an overall mean of 13.33. Participant 2 showed an increase during the final intervention phase to 20.67.

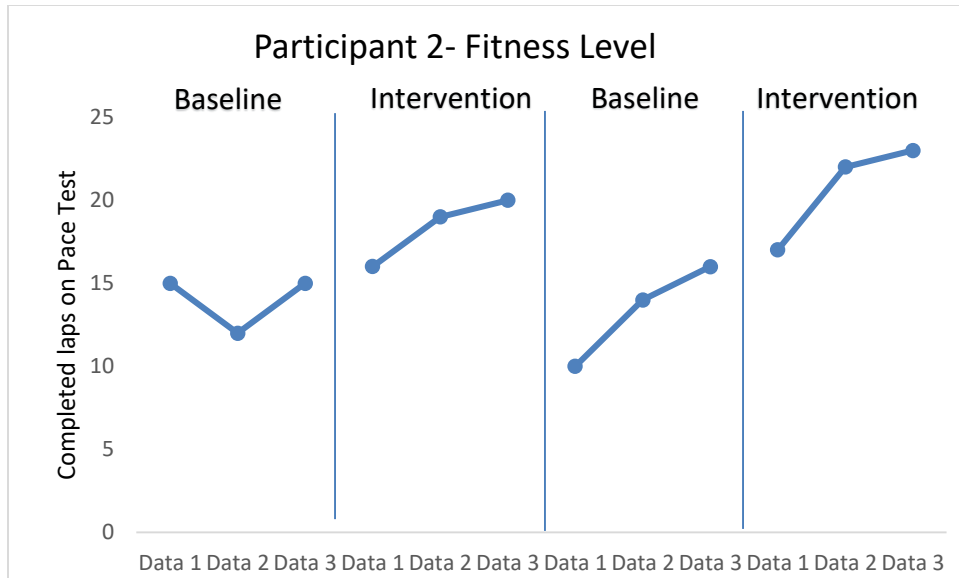


Figure 16. Participant 2 fitness scores across all phases.

Figure 17 shows the fitness level scores for Participant 3 across the four phases. Participant 3 showed an increase from both of the baseline to intervention phases for fitness levels. During the initial baseline phase, Participant 3 demonstrated an overall mean of 29.00. Participant 3 showed an increase during the initial intervention phase to 40.33. During the second baseline phase, Participant 3 demonstrated an overall mean of 37.67. Participant 3 showed an increase during the final intervention phase to 47.67.

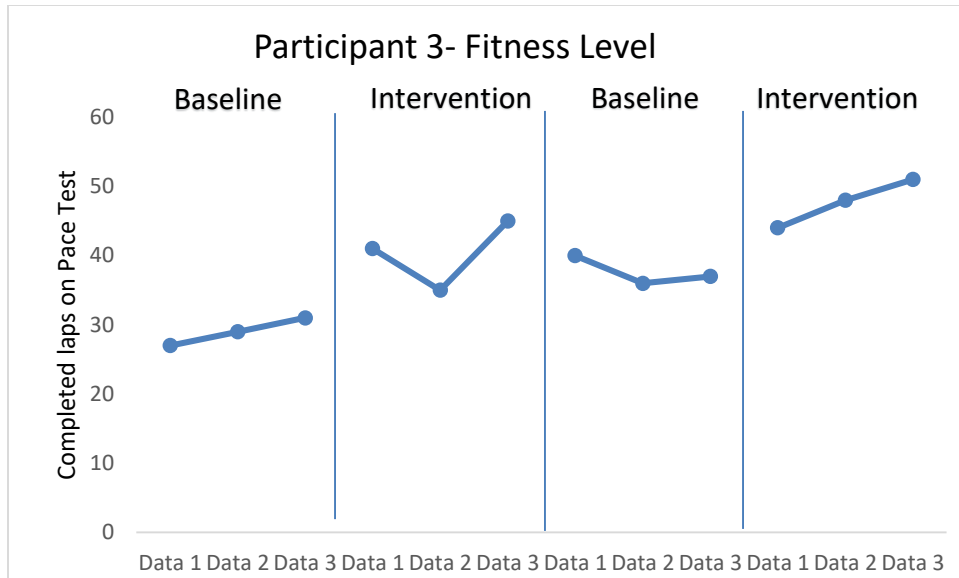


Figure 17. Participant 3 fitness scores across all phases.

Figure 18 shows the fitness level scores for Participant 4 across the four phases.

Participant 4 showed a consistent increase from both of the baseline to intervention phases for fitness levels. Participant 4 had the lowest overall mean for fitness level scores out of all of the participants for each phase. During the initial baseline phase, Participant 4 demonstrated an overall mean of 7.67. Participant 4 showed an increase during the initial intervention phase to 14.00. During the second baseline phase, Participant 4 demonstrated an overall mean of 11.67. Participant 4 showed an increase during the final intervention phase to 17.33.

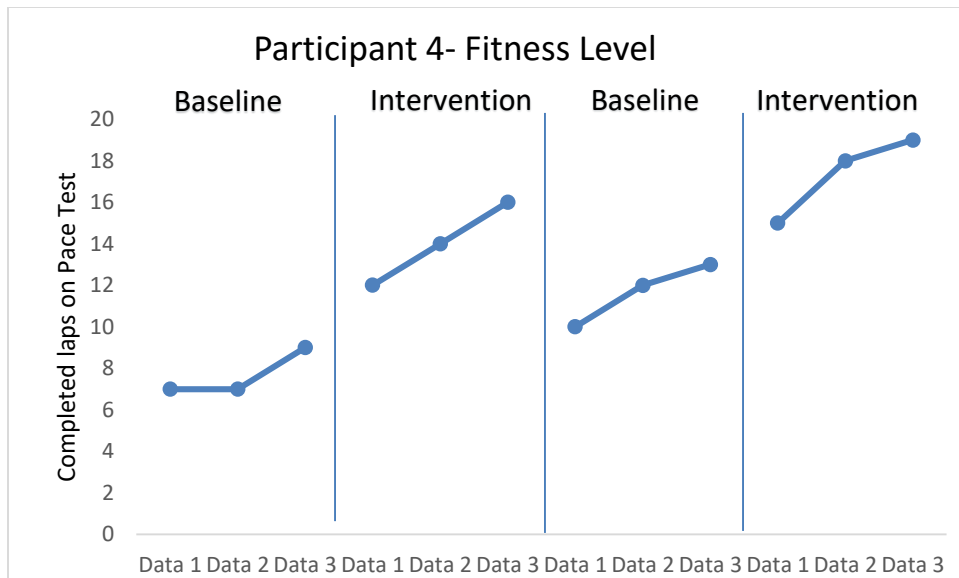


Figure 18. Participant 4 fitness scores across all phases.

Figure 19 shows the fitness level scores for Participant 5 across the four phases. Participant 5 showed an increase from both of the baseline to intervention phases for fitness levels. Participant 5 had the highest overall mean for fitness level scores out of all of the participants for each phase. During the initial baseline phase, Participant 5 demonstrated an overall mean of 58.00. Participant 5 showed an increase during the initial intervention phase to 86.67. During the second baseline phase, Participant 5 demonstrated an overall mean of 82.67. Participant 5 showed an increase during the final intervention phase to 91.67.

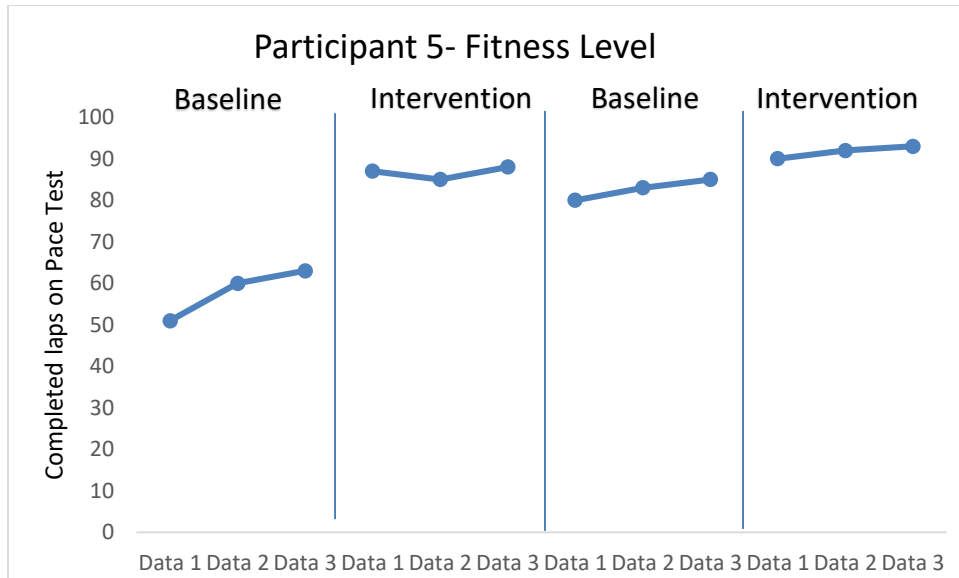


Figure 19. Participant 5 fitness scores across all phases.

Figure 20 shows the fitness level scores for Participant 6 across the four phases. Participant 6 showed a significant increase from both of the baseline to intervention phases for fitness levels. During the initial baseline phase, Participant 6 demonstrated an overall mean of 36.33. Participant 6 showed an increase during the initial intervention phase to 62.33. During the second baseline phase, Participant 6 demonstrated an overall mean of 40.00. Participant 6 showed an increase during the final intervention phase to 65.67.

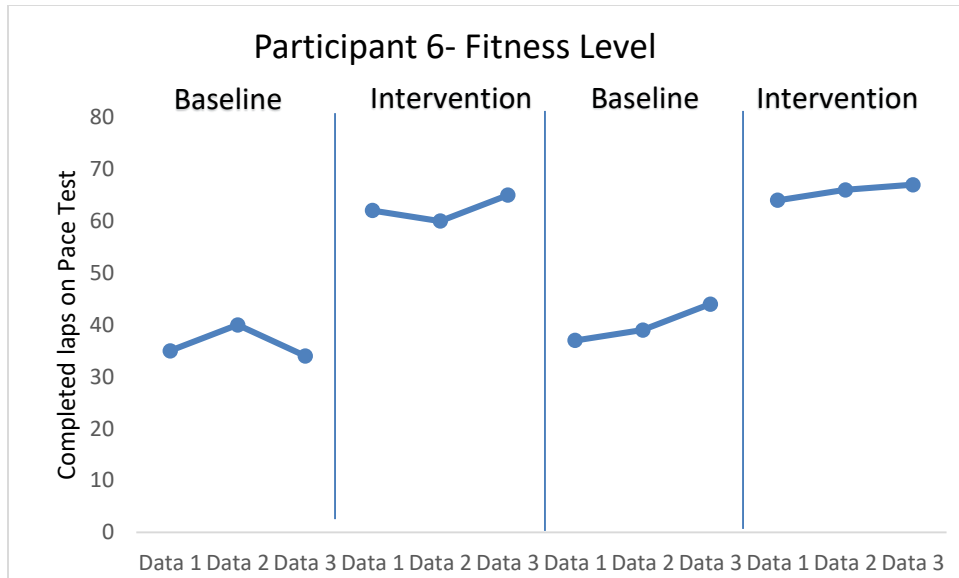


Figure 20. Participant 6 fitness scores across all phases.

Figure 21 shows the fitness level scores for Participant 7 across the four phases. Participant 7 showed a significant increase from both of the baseline to intervention phases for fitness levels. Participant 7 had the highest overall increase in mean for fitness level scores out of all of the participants for each phase. During the initial baseline phase, Participant 7 demonstrated an overall mean of 22.33. Participant 7 showed an increase during the initial intervention phase to 54.67. During the second baseline phase, Participant 7 demonstrated an overall mean of 26.00. Participant 7 showed an increase during the final intervention phase to 56.00.

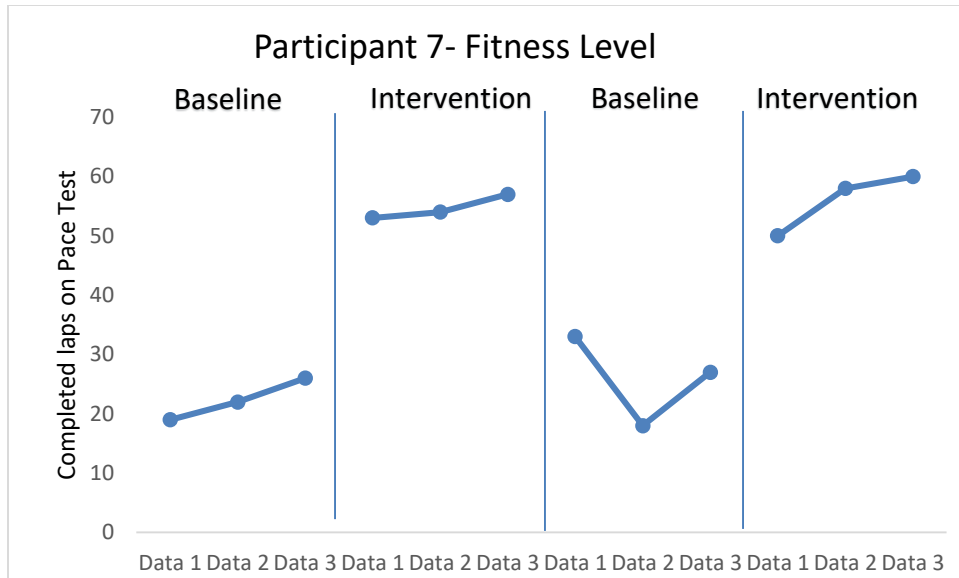


Figure 21. Participant 7 fitness scores across all phases.

Figure 22 shows the fitness level scores for Participant 8 across the four phases. Participant 8 showed a significant increase from both of the baseline to intervention phases for fitness levels. During the initial baseline phase, Participant 8 demonstrated an overall mean of 10.00. Participant 8 showed an increase during the initial intervention phase to 21.67. During the second baseline phase, Participant 8 demonstrated an overall mean of 13.33. Participant 8 showed an increase during the final intervention phase to 24.33.

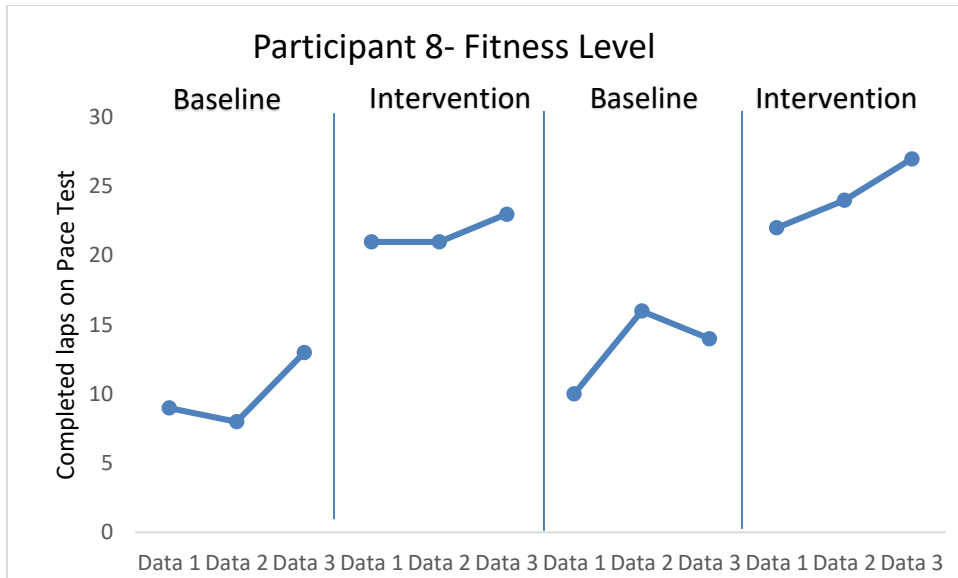


Figure 22. Participant 8 fitness scores across all phases.

Figure 23 shows the fitness level scores for Participant 9 across the four phases. Participant 9 showed an increase from both of the baseline to intervention phases for fitness levels. During the initial baseline phase, Participant 8 demonstrated an overall mean of 16.33. Participant 8 showed an increase during the initial intervention phase to 30.67. During the second baseline phase, Participant 8 demonstrated an overall mean of 21.00. Participant 8 showed an increase during the final intervention phase to 35.00.

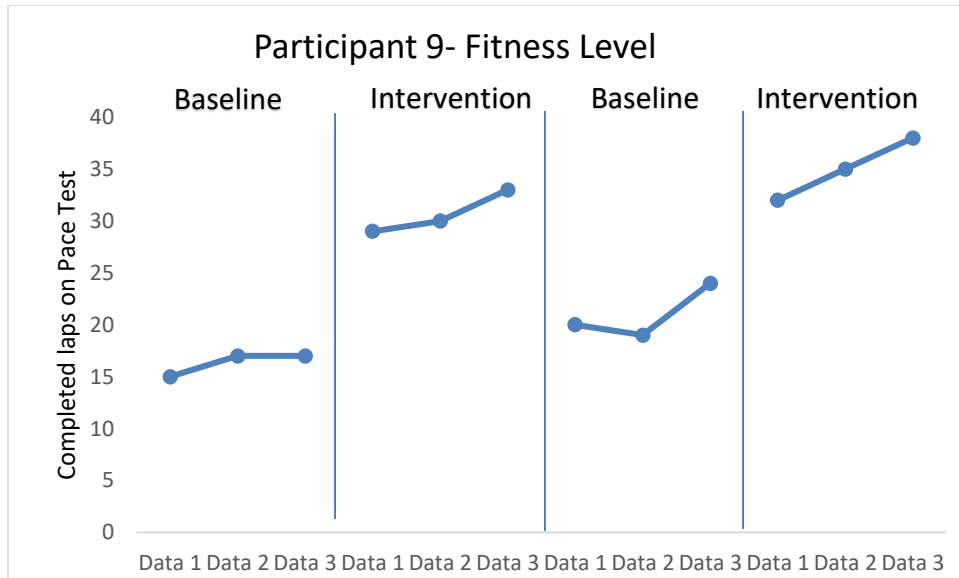


Figure 23. Participant 9 fitness scores across all phases.

Group Results

Table 4 shows the group mean and standard deviations for both the skill performance and fitness levels for all of the participants across all four phases of this study.

Table 4.

Group Mean and Standard Deviation for Study Variables

Variable	Mean	Standard Deviation
Baseline Skill Performance	9.93	3.53
Intervention Skill Performance	15.00	2.87
Baseline II Skill Performance	13.04	3.81
Intervention II Skill Performance	15.55	3.49
Baseline Fitness Levels	24.63	15.69
Intervention Fitness Levels	41.04	23.59
Baseline II Fitness Levels	30.93	22.14
Intervention II Fitness Levels	44.67	24.03

Participants in the skill performance phases showed an overall mean increase from the baseline to intervention phases. The mean for the initial baseline phase for skill performance was 9.93. During the initial intervention phase, the overall mean increased to 15.00. The overall mean for the second baseline phase was 13.04 and increased to 15.55 for the second intervention phase. This is a notable increase in skill performance scores. The standard deviation scores were relatively low and consistent throughout the skill performance phases. The initial baseline phase had a standard deviation of 3.53 and slightly lowered to 2.87 during the first intervention phase. The second baseline phase had an overall standard deviation of 3.81 and slightly decreased to 3.49 for the final

intervention phase. The results indicate an increase in skill performance during the intervention phases.

Participants in the fitness level phases showed an overall mean increase from the baseline to intervention phases. The mean for the initial baseline phase for fitness levels was 24.63 and increased to 41.01 for the initial intervention phase. The overall mean for the group for the second baseline phase for fitness levels was 30.93 and increased to 44.67 during the final intervention phase. The increase in overall mean from each baseline to intervention phase was significant. The standard deviation score for the overall fitness levels during the initial baseline phase was 15.69 and increased to 23.59 for the initial intervention phase. The second baseline phase for fitness levels had a standard deviation of 22.14 and slightly increased to 24.03 for the second intervention phase. The results indicate an increase in skill fitness levels during the intervention phases.

Satisfaction Survey

The final research question of this study asked if students would be satisfied with the use of CWPT in an elementary physical education inclusion class. All nine of the participants in this research study completed a Likert Scale survey based on their experience and satisfaction with the use of CWPT. The Likert Scale survey consisted of ten questions and was completed after the final intervention phases. Answers were scored on a scale of 1 through 5, 1 for strongly disagree, 2 for disagree, 3 for neither agree or disagree, 4 for agree, and 5 for strongly agree.

The results of this survey indicate that most students responded positively about the use of CWPT. Eight out of nine participants in this study strongly agreed or agreed that they enjoyed using CWPT. One participant of this study responded that they did not enjoy using CWPT. All of the participants responded that their peer tutor helped them during the fitness assessments. Two participants responded that they did not feel prepared to use CWPT. Seven out of the nine participants strongly agreed that they enjoyed being the tutor and the tutee. Eight out of the nine participants responded that they performed better after using CWPT.

Table 5

Student Survey Results, N=9

Statements	5 Strongly Agree (%)	4 Agree (%)	3 Neither agree or disagree (%)	2 Disagree (%)	1 Strongly Disagree (%)
1. I enjoyed using CWPT.	77.78	11.11	0	11.11	0
2. I did not enjoy using CWPT.	0	11.11	0	11.11	77.78
3. I enjoyed being the peer tutor.	77.78	0	11.11	11.11	0
4. I enjoyed being the tutee.	77.78	0	0	22.22	0
5. I felt prepared to use CWPT.	55.56	22.22	0	22.22	0
6. The tutor paid attention to my skill performance.	66.67	22.22	11.11	0	0
7. The tutor helped me in the fitness assessments.	88.89	11.11	0	0	0
8. I performed better after using CWPT.	77.78	11.11	11.11	0	0
9. I want to use CWPT in another unit.	66.67	11.11	11.11	11.11	0
10. It was easy to use CWPT.	44.44	33.33	0	22.22	0

Chapter 5

Discussion

The purpose of this research study was to investigate the effects of CWPT on the skill performance and fitness levels of students with disabilities in a fourth-grade elementary physical education inclusion class. CWPT was used during skill performance and fitness assessments. This research study also wanted to determine if students would be satisfied with the use of CWPT.

Findings

This research study provided data that shows students with disabilities showed an increase in skill performance and fitness levels as a result of CWPT. Each participant in this research study showed an increase from the baseline to intervention phases for skill performance. Also, each participant showed an increase from the baseline to intervention phases for fitness levels.

The results of this research study corroborate similar findings that CWPT is one instructional strategy that could be used to increase the skill performance for students with disabilities in general physical education classes (Ayvazo & Ward, 2009; Houston-Wilson, Lieberman, Horton, & Kasser, 1997; Johnson & Ward, 2001; Ward & Ayvazo, 2006). Ayvazo and Ward (2009) conducted a research study using CWPT in a sixth grade volleyball unit. The purpose of their research study was to determine if CWPT would have an effect on the volleyball skills of a set, forearm pass, overhead pass, and underhand serve. In this study, three out of four participants increase their skill

performance scores. Ayvazo and Ward (2009) suggest that CWPT can be an effective instructional approach to increase skill performance and total trials for skill practice. The present research study shows a higher amount of participants who increased their skill performance.

Ward and Ayvazo (2006) conducted a research study to determine the effects of CWPT in physical education for kindergarten students with autism. The study focused on catching skills for two students with autism who were paired with two typically developing peers. Ward and Ayvazo (2006) used the peer tutors to follow the teacher's instruction to provide feedback, prompting or assistance, and modeling correct skill performance and on-task behavior. In the present study, peer tutors were used in the same manner with the added task of recording and scoring the tutees. The data collected from Ward and Ayvazo (2006) suggest that CWPT improved the skill performance scores for students with Autism. The present research study had two students with Autism who were paired with typically developing peers. Similarly, both students with autism in the present study showed an increase in skill performance. They also showed an increase in their fitness levels as a result of CWPT.

Houston-Wilson and Dunn (1997) conducted a research study to determine if untrained peer tutors and trained peer tutors would have an effect on the skill performance for jumping, catching, overhand throw, forehand strike, and sidearm strike. Houston-Wilson and Dunn (1997) suggested that the untrained peer tutors did not contribute to a significant improvement in skill performance. However, Houston-Wilson and Dunn (1997) suggested that trained peer tutors assisted their tutees which resulted in improvements in skill performance for all of their skills tested. The present research study

only used trained peer tutors, but all students showed improvements in skill performance and fitness levels.

Gobbi, Gregoul, & Carraro (2018) conducted a research study to investigate and compare the effects of a peer-tutored physical education program against a general inclusion secondary physical education class for high school students with intellectual disabilities. Gobbi et al. (2018) aimed to compare levels of physical activity, enjoyment of physical activity, and rates of perceived exertion from a peer-tutor program versus a typical secondary physical education class. The results indicated that all nineteen participants showed an increase in light intensity physical activity, higher enjoyment of physical activity, and higher perceived exertion during physical activity. The present study shows similar results with all participants showing an increase in their fitness levels. Eight out of nine participants reported that they strongly agreed or agreed that they enjoyed using CWPT. The research studies differ because the present research study included elementary-aged participants and Gobbi et al. (2018) included secondary-aged students.

Similarly, Stanish and Viviene (2011) conducted a research study which focused on using peer support to increase physical fitness of adolescents with disabilities. The purpose of the study was to determine the effects of peer-support on engagement of exercise and aerobic exercise levels. Stanish and Viviene (2011) reported that students with disabilities showed an increase in aerobic fitness and engagement in exercise as a result of peer-support. The present research study yielded similar results of all participants showing an increase in fitness levels and eighty-eight percent of participants reporting enjoyment using CWPT. The studies differed because the present research

study used CWPT in an elementary school physical education class and Stanish and Viviene (2011) used peer-support at a local YMCA.

The physical education teacher chose the pairs for the CWPT and paired one typically developing student with one student with a disability. During the baseline phase, the physical education teacher used whole class direct instruction to teach skills and fitness activities. During the intervention phases, CWPT was used and the level of student engagement increased. Students were given specific jobs and roles under the teacher's supervision and the students were prepared to handle their positions. Student engagement was very evident during skill performance and fitness activities. During the fitness assessments, students were not only motivating and cheering for their peer partner, they were cheering and chanting support for all of the students in their class. Similar results were found that reported CWPT can increase physical activity levels and engagement (Gobbi et al., 2018; Stanish & Viviene, 2011; Lieberman et al., 2000).

Limitations

There are several factors that could have had an influence on this research study. First, the amount of participants in this research study could have impacted the study. This research study included nine participants from a fourth grade inclusion class. More participants included into this research study would have provided more data to determine the effects CWPT had on the skill performance and fitness levels of the participants.

The amount of time that was dedicated to this research study was limited to the college requirements and the participants' class schedule of two thirty-minute class

sessions per week for physical education. A longer research study could have provided more data on the effects of CWPT on skill performance and fitness levels.

Another limitation is that the participants completed the same fitness assessment for each phase. The participants had more experiences through the phases of this research study. Also, the students remembered their previous scores and were trying to score higher in the later phases.

Implications and Recommendations

This research study adds to the limited existing research on CWPT in physical education. The findings suggest that CWPT may help to increase skill performance and fitness levels for students with disabilities. This research study consisted of eight male participants and one female participant. The disabilities of the participants included six participants with a specific learning disability, two participants with autism, and one participant classified as other health impaired.

The participant surveys indicated that eight out of nine participants enjoyed using CWPT. All participants reported that using CWPT helped them during the fitness assessments. Seven out of nine participants reported that they would like to use CWPT in another unit. However, I feel that only one week of peer tutor training, which consisted of two thirty-minute sessions, was not enough time for the students to feel comfortable and properly prepared to use CWPT. The participant surveys indicated for feeling prepared to use CWPT that five participants strongly agreed, two student agreed, and two students disagreed. For CWPT being easy to use, participants replied with four participants which strongly agreed, three students agreed, and two students disagreed. The responses

indicate that more training time on the use of CWPT would benefit the peer tutors and tutees.

After implementing CWPT in this research study, there are some recommendations for physical education teachers who are contemplating using CWPT. I would suggest that the teacher pick the groups for CWPT. The participants will be spending much time talking and working together, that it is essential that they can cooperate during this process. Using your knowledge of the students and help from the classroom teacher, it is possible to select appropriate peer tutor pairs.

It is recommended that CWPT be used for longer instructional units (Ayvazo & Ward 2009). The amount of time invested into choosing and training peer tutors would not be beneficial for smaller instructional units. Longer units will provide more time to collect data and analyze the effects of CWPT.

It is also recommended that physical education teachers begin implementing CWPT with one class or one grade level at a time. This will allow the teacher to become familiar with CWPT and how the students respond to it. The first time implementing CWPT requires much time for planning and preparation. Using only one class, the physical education teacher can focus on implementing it correctly and figuring out what the best way to adapt it to their classes. Then, the teacher can use this experience to influence future lessons with CWPT.

Summary

The results of this study indicate that CWPT can be an effective strategy for elementary physical education inclusion classes. All of the participants in this study showed an increase in skill performance and fitness levels as a result of CWPT. The group means showed an increase for skill performance and fitness levels from each baseline to intervention phase. Eight out of nine participants reported that they enjoyed using CWPT and seven participants reported that they would like to use CWPT in the future.

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