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Teaching Physical Education Skills to a Student with a Disability Through Video Modeling

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A thesis submitted to the faculty of
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Educational Specialist

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ABSTRACT

Teaching Physical Education Skills to a Student
with a Disability Through Video Modeling

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Video modeling (VM) is a video-based intervention (VBI) that has been implemented with individuals with disabilities to teach various life and educational skills. It is a tool that allows learners to watch a target skill modeled on a pre-recorded video. The learner is able to re-watch a new skill as many times as needed, and the teacher is given the flexibility needed to work with multiple students while providing individualized instruction. The participant in this study was a 13-year-old male with a traumatic brain injury (TBI) and intellectual disability (ID). The participant was enrolled in a life skills class at his junior high school and received special education services under the classification of TBI. This study used a delayed multiple-baseline, across-skills design to examine increased consistency for completing different sports skills in physical education (PE), including a basketball chest pass, football forward pass, and soccer inside foot pass. VM was used successfully to increase task completion rates for all three sports skills. The participant was able to perform the basketball chess pass with 75% to 87.5% accuracy, and the football forward pass and soccer pass with 87.5% accuracy. Prior to the study he could only complete each skill with less than 25% accuracy. Future research is needed on larger samples to empirically demonstrate the efficacy of VM to improve PE skills for special needs students.

Keywords: video-based interventions, video modeling, developmental disabilities, traumatic brain injury, intellectual disabilities, physical education

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CHAPTER 1

Introduction

Educators in the physical education (PE) discipline face the everyday challenge of finding new methods of teaching that will help all of their students succeed, including those with disabilities. According to the United States Centers for Disease Control and Prevention (CDC), data collected from 2006 to 2008 indicated that one in six children have a developmental disability (DD; CDC, 2011). Many teachers may not be trained in how to implement the current interventions available, nor do they have the experience that would help them include students with disabilities (SWD) and provide the optimal learning environment for students with disabilities.

The Individuals with Disabilities Education Improvement Act (IDEA; US Department of Education, 2010) mandates that schools provide appropriate programs for students with learning, physical, or developmental disabilities. IDEA also mandates that SWD are mainstreamed, or integrated into the general education setting (Jenkinson, 2002), which includes the imperative that all students should engage in physical education activities (Fountain et al., 2015). As such, nearly all teachers are responsible for teaching SWD. Fountain and researchers (2015) reported that many teachers feel overwhelmed trying to find ways to help SWD learn as quickly as the general population. Teachers report difficulty finding classroom time to work with individuals who require supplemental instruction to learn a new skill. Some teachers believe it is difficult, maybe impossible, to teach sports skills to a child with disabilities (Fountain et al., 2015).

Despite the difficulties inherent with mainstreaming SWD, classroom integration enables social skills and life skills acquisition in the least restrictive manner (Haslem, 2014). Students also benefit from opportunities to associate with SWD students and learn tolerance (Bailey,

2005; Haslem, 2014). SWD frequently receive less direct interaction time than general education students and can sometimes feel left out while in the classroom (Bailey, 2005). A contributing factor to the division between general education students and SWD is the inability of the SWD to perform sports skills at an average level (Douglas, 2009). SWD need more initial instruction in order to learn to perform various tasks (Fountain et al., 2015).

Video modeling (VM) has emerged as an evidence-based practice that can help SWD learn specific sport skills and techniques that will better enable them to participate in general education classes (Wert-Fittipaldi, 2007). VM is a widely used tool for teaching life skills to students with DD (Sani-Bozkurt & Ozen, 2015). VM enables viewers to break down a task into discrete steps and to watch, learn, and practice at one's own pace (Wert-Fittipaldi, 2007). VM is appropriate for a variety of settings to help learners develop mastery (Canella-Malone et al., 2015). Few studies existed regarding the use of VM in a PE setting.

The U.S. PE core standards require students to develop motor skills and movement patterns and understand movement concepts, principles, strategies, and tactics (Shape America, 2014). Aims and standards of the PE curriculum include (a) social learning through participation in sports, recreation, and leisure activities; (b) increased physical activity to promote fitness; and (c) participation in activities that maintain health and improve physical fitness activity throughout life. Another desired goal of PE classes is to help students learn and exhibit personal and social behaviors that show respect for themselves and others (Shape America, 2014).

SWD are more likely to struggle to succeed in PE classes. Factors that serve as obstacles to success include large class sizes, limited equipment and limited space in which to teach, and students with widely varying levels of interest, skill, and motivation (Wert-Fittipaldi, 2007). The average PE class includes 30-60 students with different levels of abilities who are all involved

simultaneously in an activity (Wert-Fittipaldi, 2007). SWD present an additional challenge to teachers in a mainstreamed setting (Hodge & Place, 2001). Participation in physical activity benefits all people, those with and without disabilities, and it is required that physical educators serve and include all students. SWD inclusion is a way to implement social justice, demonstrating that all people are valued and capable of contributing to our society (Hodge & Place, 2001).

In the past, children with disabilities were often educated in segregated settings because classrooms were not equipped to accommodate their needs, and teachers were inadequately trained to instruct all students based on their individual needs (Zamzami, 2006). Society now recognizes that it benefits everyone when SWD are educated alongside children without disabilities (Zamzami, 2006). In a class where all students learn together, everyone learns tolerance, respect, and empathy (Hodge & Place, 2001). Inclusion enables all students to experience enjoyment and satisfaction realized by participation in general physical education classes (Hodge & Place, 2001).

The purpose of this study was to assess the impact of a VM intervention on a student with disabilities to learning sports skills. If the participant is better able to perform various sport skills and techniques after a VM intervention, and without other coaching interference, it will be an important tool for physical educators. SWD will receive extra time to practice, obtain simpler practice, develop skills that allow them to integrate into the class, participate in various sports, and experience the joy of accomplishment and association.

CHAPTER 2

Review of the Literature

The U.S. National PE core standards require students to develop motor skills and movement patterns and understand movement concepts, principles, strategies, and tactics (Shape America, 2014). Among the aims and standards of a PE curriculum is the notion that through learning and participating in sports, recreation, and leisure activities, people will participate regularly in physical activity and achieve and maintain health-enhancing levels of physical fitness throughout their life. Another desired element of PE classes is to help students learn and exhibit personal and social behaviors that show respect for themselves and others (Shape America, 2014).

With regard to creating a successful PE class, there are a number of obstacles: teachers face large class sizes, limited equipment, and limited space in which to teach (Wert-Fittipaldi, 2007). In addition, the students have various levels of interest, skill, and motivation. The PE class size is 30-100 students with different levels of abilities involved simultaneously in an activity (Wert-Fittipaldi, 2007). SWD resent an additional challenge to teachers as students are mainstreamed (Hodge & Place, 2001). Participation in physical activity benefits all people, those with and without disabilities, and it is required that physical educators serve and include all students. Inclusion of students with disabilities is a way to implement social justice, demonstrating that all people are valued and capable of contributing to our society (Hodge & Place, 2001).

Special Education

IDEA (US Department of Education, 2010) mandates that all schools provide free and appropriate public education (FAPE) for all students, including those with disabilities. Special

educators, educational specialists, teachers, parents, and school local education agency (LEA) collaborate to identify individuals who may have disabilities and need accommodations and specialized instruction. Once a child is identified, the school is required to conduct evaluations and testing that will help the school team determine if a child has a disability, if that disability is adversely affecting his/her education, and if he/she requires specialized instruction in order to achieve FAPE. The thirteen disabilities that a child can qualify under include autism, blindness, deafness, emotional disturbance, hearing impairment, intellectual disability (ID), multiple disabilities, orthopedic impairment, other health impaired, specific learning disability, speech or language impairment, traumatic brain injury (TBI), or visual impairment (IDEA; US Department of Education, 2010).

If the data and evaluations conducted indicate that the child's disability is adversely affecting his/her education and specialized instruction is needed, that individual can qualify for an individualized education program (IEP). Once a student qualifies for an IEP, the school is required to provide specialized instruction while also providing accommodations in both their special and general education classrooms (IDEA, US Department of Education, 2010). Special education classrooms include teachers who are trained in special education law and specialized instruction. These classrooms provide smaller-group instruction only for individuals who qualify for an IEP and need individualized instruction at the pace that he/she needs. General education classrooms include both students with and without disabilities and the students are taught based on their grade and age level (IDEA, US Department of Education, 2010).

SWD are entitled to receive education in the least restrictive environment (LRE), which means that students should receive as much instruction as possible with peers who do not receive special education (IDEA, US Department of Education, 2010). This benefits both SWD and

students without disabilities as they learn different skill sets from each other (Hodge & Place, 2001). While the research shows the benefits of inclusion, educators are finding it difficult to provide the best interventions that will help SWD succeed both in the general and special education setting. This is especially difficult for students with moderate or severe disabilities including TBI and ID (Zamzami, 2006).

Traumatic brain injury. A TBI is a severe injury to the brain that is not caused by disease or genetics. TBIs result in unconsciousness and can later affect cognitive and physical functioning (Centers for Disease Control and Prevention & National Center for Injury Prevention and Control, 2013). The CDC reports that 1.5 million Americans suffer from a TBI every year, but some are more severe than others. It was also reported that more than 5.3 million Americans have a disability because of a TBI. Most TBIs are caused by car accidents or falls, but some may come from hypoxia during childbirth, strokes, or other injuries to the head (Centers for Disease Control and Prevention & National Center for Injury Prevention and Control, 2013). When a TBI is severe, an individual can be left with long-term disabilities including intellectual disabilities (CDC, 2013).

Intellectual disability. The American Association on Intellectual and Developmental Disabilities (AAIDD, 2019) defines an ID as "a disability that is characterized by significant limitations in both intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills." Intellectual functioning describes an individuals' ability to learn, reason, and solve problems. Adaptive skills include practical or life skills, social skills, and conceptual skills (AAIDD, 2019). An article published by the CDC (Zablotski, Black, & Blumberg, 2017) explains that an ID is a DD, meaning it is a long-term disability that is prevalent during the developmental years, or before the age of 18 (Zablotski et al., 2017). The

CDC also reported that about 1% of the population in the US has an intellectual disability, including mild, moderate, and severe ID (Zablotski, et al., 2017).

SWD with ID are placed in classrooms with special educators that provide classes for their academic and adaptive needs. Students with ID may have academic goals that align with the US Common Core, specifically math, reading, language arts, and science (IDEA, US Department of Education, 2010). Classes are also provided to teach life skills, transitional skills, and social skills, which are often times called life skills classes. Educators have made strides in helping their students learn academic and life skills but are still facing challenges in their attempts to include them in general education classes (Zamzami, 2006).

Researchers emphasized that some educators believe it is impossible to truly integrate students, especially those with more moderate or severe disabilities (Fountain et al., 2015). This is why in the past, SWD were often educated in segregated settings. Classrooms were not equipped to accommodate their needs, and teachers were not trained to know how to best instruct all of their students at varying levels (Zamzami, 2006). However, society now recognizes that it benefits everyone when SWD are educated alongside children without disabilities (Zamzami, 2006). SWD are still capable of learning and come with their own strengths (Hodge & Place, 2001). In a class where all students learn together, everyone learns tolerance, respect, and empathy. This inclusion allows all students to experience enjoyment and satisfaction realized through participation in general physical education classes (Hodge & Place, 2001).

Special Education and Physical Education

Despite adaptations and accommodations in the PE setting, many children with disabilities struggle to adapt in PE classes. For example, children with DD have difficulty with sensory stimulation. A gymnasium full of a hundred children noisily moving around an area

presents a high sensory load (Menear & Smith, 2011). Students with DD also struggle to follow multi-step directions, which can be especially overwhelming in a noisy gym (Menear & Smith, 2011). In addition to those implications are the high demands of social and communication skills needed to function in a PE setting (Canella-Malone et al., 2015).

Researchers also report that individuals with disabilities report having ample free time (Lee, Dattilo, & Howard, 1994). When they have nothing to fill that time, they may experience loneliness, boredom, or even depression. One way to combat this problem is by providing appropriate instruction in PE classes that will give SWD training and tools to fill their time with lifetime-leisure activities. These activities can bring a multitude of social and emotional benefits (Canella-Malone et al., 2015).

One of the core elements of PE classes is to teach individuals different lifetime-activities that will help them live a healthy lifestyle (Utah State Board of Education, 2016). Lifetime-activities include individual and team sports, recreational activities, and fitness programs. In order to learn these activities, individuals must understand the role of the human body and achieve a level of competency in motor skills and movement patterns (Utah State Board of Education, 2016).

When students are able to access the PE curriculum, they will learn the importance of having respect for the human body (Bailey, 2005). Students must learn to respect their own body as well as others'. When individuals respect their bodies, they understand how their physical health can affect their self-confidence, self-esteem, academics, and social and cognitive developments (Bailey, 2005).

PE not only helps individuals physically, but it also promotes relationships and character building (Fenning, Parraga, & Bhojwani, 2000). Gutierrez and Ruiz (2009) said "physical

education is assumed to provide a vehicle for learning to cooperate with teammates, negotiate and reach solutions for moral conflicts, develop self-control, display courage and learn virtues such as fairness, team loyalty and persistence" (p. 308). If individuals with disabilities can learn some sport skills, or lifetime-activities, they will be able to experience the joy and fulfillment that comes from exercise, recreation, and friendly competition (Lee et al., 1994).

PE can provide lifelong lessons to all students, including SWD, but educators continue to struggle in implementing interventions that accommodate for sensory, emotional, cognitive and physical needs. However, when interventions are implemented, a teacher can make the PE class experience more enjoyable for SWD and it can be one of the most positive classes of the school day (Menear & Smith, 2011). By integrating SWD in a general PE (GPE) class setting, participants can learn tolerance, kindness, sensitivity, and respect (Canella-Malone et al., 2015). This is why educators must continue to collaborate and develop interventions for SWD while implementing the core standards in PE (Menear & Smith, 2011).

Researchers wanted to further understand the implications of involving SWD in a GPE setting. In 2001, Hodge and Place researched children with disabilities in a GPE class. Researchers tested to see how the subjects were included and what types of interactions occurred between SWD and students without disabilities. Hodge and Place (2001) also observed how both sets of students spent their time in class. The researchers specifically looked for how much the students spoke to each other, praised each other, used their first names, gave each other feedback, and had physical contact.

After looking at the interactions between the students, Hodge and Place (2001) observed the teachers. They kept track of time spent on each activity including waiting, transitions, time spent off task, management by the teacher, and time spent on knowledge-based skills. Hodge

and Place (2001) also looked at how the teachers interacted with the SWD. Data was taken on how often the teachers interacted with SWD and what those interactions looked like.

Over a six-week period, Hodge and Place (2001) found that SWD were often rejected, neglected, or were almost like objects of curiosity to the other students. There was neither any emphasis on sportsmanship skills nor specific instruction to help the children with disabilities, and there was little or no interaction between students with and without disabilities (Hodge & Place, 2001). It was also noted that there were very few interactions between the teachers and SWD. The teachers were rarely seen near the SWD and seldom encouraged them to work with their other peers.

Despite their earlier findings, Hodge and Place (2001) concluded that enrolling students, with and without disabilities, in GPE classes led to increased social interaction if the process of inclusivity was practiced appropriately. Appropriate measures included curricular adaptations, instructional modifications, peer tutors, specialists in human resources, and informed decision-making. The recommendation given by Hodge and Place (2001) was to conduct more research on the variables in the GPE setting that impact social interactions in the GPE setting. Looking into those variables might help uncover additional obstacles that hinder social interactions and inclusion of students with and without disabilities, which would in turn allow methods to be developed to better integrate SWD and help them live meaningful, independent lives.

Social Learning Theory

One way to emphasize inclusion and make it possible in the classroom is by giving children tools that lead to their success in the classroom (Bailey, 2005). Children will succeed if they are able to participate in the classroom and contribute in ways that are seen as positive.

This can sometimes be a challenge because large class sizes make it difficult for teachers to give individual attention to students (Wert-Fittipaldi, 2007).

Teachers often use modeling to teach their students specific skills, especially in PE. Modeling is part of a larger theory called the social learning theory (SLT). Educators often utilize SLT as part of the learning process. This theory has widely influenced the way that educators teach and has influenced modeling. Bandura (1961) developed social learning theory through observations of children mimicking adults' behavior. This was the genesis of Bandura's SLT—that we learn by observing others and often mimic behavior of those around us, especially those who we respect (Bandura, 2014).

Physical educators model skills when instructing their students, but each student learns at a different pace, especially those with disabilities (Wert-Fittipaldi, 2007). This is why educators have a hard time meeting the needs of the students across the broad spectrum of abilities. It is difficult for educators to gauge what the pace should be in the classroom and give additional specific instruction to those who need it (Wert-Fittipaldi, 2007). Video modeling (VM) can be useful for teaching those who need additional specific and systematic instruction.

Video Modeling

Video modeling (VM) is a technique that involves demonstration of desired behaviors through video representation of the behavior (Bellini & Akullian, 2007). Educators usually select a task relevant to a skill or class they teach and record an individual performing the task. The video can then be used for another individual or group to view how to correctly perform the task or skill (Bellini & Akullian, 2007). VM is useful for adults, children, individuals with disabilities, and individuals without disabilities. VM can be very useful in teaching step-by-step skills that are more complex to individuals with learning disabilities. Video modeling can also

be useful in teaching fluid and shorter skills to individuals with disabilities (Ayres, Bryant, Foster & Mechling, 2014; Canella-Malone et al., 2015; Nikopoulos & Keenan, 2006).

Through research, educators have identified prerequisite skills that are needed in order for VM to be an effective intervention, meaning the participant must be able to do certain skills in order to benefit from the intervention. Kellems and Edward (2015) recommended that a checklist of prerequisite skills be developed and presented to the participant for verification prior to giving an intervention. Prerequisite skills typically include (a) the ability to attend to a video, (b) cognitive or intelligence skills high enough to understand the content, (c) ability to operate the device where the intervention is being used, (d) ability to see (e) ability to hear, (f) understand the language used on the device, and (g) ability to read if written directions are used (Kellems & Edward, 2015).

It is also noted that the complexity of the video and the way it is shown should correspond with the disability and intellectual ability of the participant (Kellems & Edward, 2015). If a student is in seventh grade but reads on a first-grade level, any written instructions should be written on a first-grade level. When a student has a short attention span, the video should be intriguing and use a model that is relatable (e.g., same age and/or gender) and short enough to catch the viewers' attention long enough to learn the skill. If there are any vision or hearing disorders, adjustments should be made in order for the viewer to understand the content.

Educators must also choose specific and appropriate skills for the student to learn. Kellems and Edward (2015) suggested that the criteria for choosing a skill addresses the following parameters: (a) beneficial skill level for the learner, (b) the student's capability of learning the skill, (c) observable level of the skill being clear, and (d) the skill being well-

defined. For an educational setting, a skill should correspond with what is being taught in the classroom, specifically with the U.S. Common Core.

VM has also been used to help viewers learn social skills and play skills. In order for students to access the curriculum, they must learn how to socialize with their peers, and part of that is playing and learning social skills (IDEA, US Department of Education, 2010). Students with DD particularly struggle because oftentimes they lack the ability to communicate effectively and relate to their peers, especially if they are functioning at a lower cognitive level (Canella-Malone et al., 2015). Thus, researchers have conducted research on VM with social skills and leisure skills and why it could be beneficial in the PE setting.

Nikopolous and Keenan (2006) used VM to successfully teach children with autism spectrum disorder (ASD) social play skills. In their study, they were able to work with four participants with ASD, ranging in age from 7-10. The experiment aimed to teach four new behaviors through four different videos. The behaviors included social initiation, reciprocal play, initiative response, and object engagement. The researchers monitored progress by measuring the amount of time the participants displayed target skills during each phase of the intervention. Some participants needed extra sessions of the intervention to learn the skills, but all four were able to build a sequence of social behaviors and spent more of their play time demonstrating the target skills. They also noted that acquiring social validity was successful. The researchers provided recordings of the participants in each phase of the study to ten different mothers. The women were then instructed to pick out segments where the students demonstrated the target skills at a typical rate to children without disabilities. All ten women indicated that the participants spent more time engaging in the target skills after exposure to the intervention.

Nikopoulos and Keenan (2006) found several reasons why VM is an effective strategy, including it being cost-effective and useful for students who need specific and individual instruction. They also noted that participants were able to maintain the skills without reverting back to the videos a month later. However, if the students did need reminders, they could easily provide the videos again to the participants.

Another study, by Canella-Malone et al. (2015), used video prompting (VP) to teach 14 different leisure skills to students who had significant disabilities. VP, which is similar to VM, can be very useful in teaching step-by-step skills that are more complex to individuals with learning disabilities, whereas VM is useful in teaching fluid and shorter skills (Canella-Malone et al., 2015). In this particular study, Canella-Malone et al. (2015) noted that VP was the chosen VBI (video-based instruction) used in order to teach more complex skills.

The participants in the study varied in disabilities including ID and ASD and ranged in age from 10-22. Prior to the intervention, the participants were given a survey to assess how familiar the participant was with 14 different activities, which were the target skills. The participant had to indicate if he or she had participated in the activity before and if they enjoyed it. The participants were then taught 14 different tasks, or activities, through VP. Afterward, the participants completed another survey that allowed them to rate the activities on how well they enjoyed the activity.

Canella-Malone et al. (2015) discovered that first individuals with disabilities often have a lot of free time, but may lack the skills that allow them to participate in different leisure activities. Second, several of the participants were able to improve upon but not completely master the skills. Third, the participants changed their answers regarding preference of tasks when they learned to properly perform the skills. Canella-Malone et al. (2015) concluded that

this was because they started to prefer things they weren't previously familiar with and gained the desire to participate in these new skills.

Summary

VM is a successful means of teaching life skills to all learners. Research has shown that VM has not only helped individuals who have disabilities learn and practice tasks, but if they need help learning how to perform a specific task, they can refer back to the video and be more independent in learning. They can also continually practice these skills without always having to ask or seek help from a teacher, parent, or coach (Canella-Malone et al., 2015).

VM is used in the public-school setting to teach SWD various life skills. It allows educators flexibility in their teaching and independence for SWD. Educators strive to provide individualized services to their students that allow learners to receive individualized instruction, which can seem impossible when working with many students with various needs. This study has been designed to examine the possibility of using VM to teach SWD various PE skills and investigate the acceptance of the intervention with educators.

Research Questions

In this study, VM was used to teach a male student with ID and TBI how to learn three new sports skills in his PE class. The key questions for this study were as follows:

1. What is the effectiveness of using VM as a means of teaching novel physical education skills to this individual with disabilities?
2. What is the social validity of using VM as a means of teaching novel PE skills to this individual with disabilities?

CHAPTER 3

Method

Participant

The participant in this study was a 14-year-old male student in the eighth grade and will be referred to using the pseudonym *Jacob*. Jacob qualified for the study based on the following criteria: (a) attends a life skills class, (b) participates in a PE class, (c) qualifies for an individualized education program (IEP), (d) can speak the English language, (e) diagnosed with a DD, (f) has the ability to hear, (g) has the ability to attend to a video, (h) and has the ability to operate an electronic tablet.

The participant had a traumatic brain injury (TBI) in 2006 and has traumatic optic neuropathy. His Full-Scale Intelligence Quotient (FSIQ) score on the Woodcock-Johnson Cognitive Test was a 54. The participant and his parent gave informed voluntary consent (see Appendix A) and assent written at an appropriate level of cognitive functioning. The participant's school district and the institutional review board (IRB) approved this study. The participant received a $30 gift card for completing the intervention.

Setting

This study took place in a suburban school district in the western United States with a population of approximately 33,000 and surrounded by other rural and suburban areas. The school had 1,100 students; the majority were White students with less than 10% Hispanic, Asian, African-American, Pacific Islander, or American Indian. Approximately 120 students qualified as having a disability or Title I program eligible.

The intervention took place within the gymnasiums and grass fields at the junior high school. The gymnasiums have 12 basketball hoops separated by dividers. Along the east side of

the gymnasiums, there are male and female locker rooms that lead out to the grass fields. There are also two other doors alongside the gymnasium that lead to the grass fields. The grass field is a circular field behind the school that can easily be set up into soccer, football, kickball, or a number of other fields. The subject always participated in the study in a separate room. This ensured that he could not observe the other students enrolled in the PE class in order to maintain independence in the study.

Measures

Skills checklist. The skills checklist details learning steps required for skill mastery and was used by trained raters to record observations (Appendix D). The skills checklist was developed by adapting lesson plans for sports skills on PE Central (Galati, 2003). These lesson plans provide descriptions for each step in a PE skill that also comply with shortened verbal cues that were used in the VM intervention. Baseline, treatment, and maintenance sessions were video recorded with an iPod camera for use by observers to rate the skill step completion, and by the student for feedback.

Guided interview. The primary investigator used semi-structured interviews to collect data from the participant, physical education teacher, and special education teacher regarding the effectiveness of the study (Appendix B). Questions included degree of intervention effectiveness and participant's engagement enjoyment.

Procedures

Once institutional review board permission was obtained, teachers sent emails to all the parents of students in the life skills classes. Originally the PI received permission to work with six participants in the life skills, including Jacob. However, three of the students did not meet the pre-requisite skills, one student moved, and one switched out of his PE class. The PI was

able to work with Jacob and the firsts step in the data collection process was to collect skills baseline data.

Baseline skills data. Prior to the video modeling intervention, baseline data were collected by asking the participant to demonstrate the target skill a minimum of six times. The participant entered the gym or field and was asked to demonstrate the target skills without any instruction. For example, when the participant was asked to perform a chest pass, the principal investigator (PI) provided the participant with a ball and said, "Show me a chest pass." Observers then collected data on how many steps the participant was able to complete within each target skill. Target skills were not shown or discussed before the intervention to ensure that the specific skills were taught only by the video.

Intervention. The intervention was implemented by showing target skills videos modeled by a same aged peer and of the same sex for three PE sports skills in the place where the skill would be learned and practiced. The video modeling for chest passes was shown in the gym, and soccer and football skills were shown outside on the grass fields where the skill typically would be practiced and performed. The researcher handed the participant the device and directed the student to the video. If the participant had difficulty viewing or hearing the video, it was shown an extra time. Each time the participant finished watching the full video, the participant was asked to demonstrate steps in the target skill. The participant had two opportunities to see the whole video and then demonstrate the steps even though there were times the participant went up to a week between practicing the target skills. This was due to attendance issues or inconsistencies with the school schedule. Table 1 summarizes the number of steps to master each skill and the length of each video.

Table 1

VM Skills Details

Skill	Task Analysis Steps	Length
Basketball Chest Pass	8	45 sec
Football Forward Pass	8	47 sec
Soccer Inside-Foot Pass	8	42 sec

Data was collected intermittently in order to accommodate the student's schedule and analyze the effectiveness of the intervention. After the participant was able to demonstrate the skill with 85% accuracy or higher, the skill was considered learned, and the intervention was removed to see if the skill would be maintained. Skills were considered maintained if the participant was able to perform the skills with 85% accuracy or higher at least 2 weeks after intervention was removed.

Post-intervention skills data. Data was taken during and after the intervention to assess whether or not the participant was able to improve his skills as he practiced and then maintained those skills. Multiple observers observed and recorded this data in order to discover the instances of sports skills improvement. Observers also video recorded the intervention and participant so that the observer could look back and assess the performance and steps demonstrated to improve the quality of data collection. The task sheets included a table that listed each skill and allowed the data collector to note whether the participant executed each step in the target skill. A guided interview with the participant and teachers assessed social validity. The interview assessed whether the intervention was successful and if the educator would use it in the future. The questions are also included in Appendix B.

Maintenance data. Once the participant demonstrated consistently that the task was mastered, the maintenance phase began. In order to show consistency, the researcher collected six consecutive data points at or above 85% of steps correct in each skill during the intervention

phase and began collecting maintenance phase two weeks after intervention. Mastery was met when the student was able to demonstrate the skill with 85% accuracy. The participant was then asked to demonstrate each skill without viewing the intervention to show maintenance. The participant was able to continue the learned skills consistently throughout the maintenance phase.

Inter-observer agreement. An important aspect of validity and reliability within a study is inter-observer agreement. To avoid the potential for biased observations, an additional trained observer evaluated each task for data collection. When multiple individuals collect data, the data can then be assessed for consistency. If all observers agree on findings, inter-observer agreement is attained. An additional researcher participated to provide inter-observer ratings for each phase of the study. The rater watched recorded videos of the participant in each phase of the study and recorded how many steps were completed correctly in each phase using the same task analysis sheet that the PI used. The data for the inter-observer agreement is found in Table 2.

Table 2

Average Individual Percentages of Inter-Observer Reliability

	Basketball Chest Pass			Football Forward Pass			Soccer Inside Foot Pass		
Phase	BL	INT	MT	BL	INT	MT	BL	INT	MT
Percentages	100%	100%	100%	100%	100%	100%	100%	100%	87.5%

Note. BL indicates baseline measurement, INT indicates intervention phase, and MT indicates maintenance phase.

Social validity. Social validity was measured through a guided interview with the PE teacher, the resource teacher, and the participant. Both teachers were asked the same questions: What are your overall impressions of using the video modeling intervention for the participant? Do think that this was an appropriate intervention for students with disabilities? Do you think the student enjoyed watching the sports skills videos? Do you think the videos had a

positive impact on the student's performance in PE? Do you think there are any negative side effects to watching the videos? Will you continue to use VM as an intervention to help SWD learn PE skills?

The student was asked similar questions but directed toward his experience. His questions include: What did you think about using the videos to learn new sports skills? Did the videos help you learn? Did you enjoy watching the videos? Do you feel like you can do the skills in games when you play in PE? Did you ever not like watching the videos, or ever feel frustrated? Do you want to keep watching videos to help you in your PE class?

Research Design

A delayed multiple baseline research design was used to address the research questions. Researchers, including Canella-Malone et al. (2015) have used multiple baseline design studies to compare data before, after, and during VM interventions. Multiple baseline designs are the most common type of single-case design due to the simplicity and flexibility of the design. The design allows researchers to pick an intervention and test it across multiple participants, settings, stimuli, or times. It is also useful when the intervention needs to be tested at random times across different variables (Kennedy, 2005).

In this study, the independent variable was the VM intervention and skills being taught: kicking a soccer ball/passing to a teammate, shooting a basketball, and throwing a football. The dependent variable was how many steps of each skill were executed correctly.

A delayed multiple baseline design is sometimes used in the education system. There are many variables that affect researchers' ability to meet with participants, so a delayed design allows for unanticipated schedule changes and absences with the participant (Heward, 1987). In this particular design, initial baseline and intervention began and then subsequent baselines were

added later with different skills. The researcher also had to schedule the baseline, intervention, and maintenance data collection for each target skill according to the availability of each setting for the study. The participant needed his own space to watch the video and the appropriate setting to perform a skill (e.g., a gym to practice a chest pass in basketball).

It is also noted that this study concluded with a single-subject design. The study was originally intended for multiple participants, but due to unseen obstacles in the educational setting another accommodation was made. Researchers, including Kennedy (2005) found that single-case studies provide flexibility. This type of study is commonly preferred among educators because things change so often with their schedules, students, and the resources they are given.

Data Analysis

A visual analysis was used to look for changes in level, trend, and slope with the implementation of VM. The visual analysis involved data charted across all three phases and all three target skills. Using the visual analysis, we were able to look at the percentage of steps completed correctly in each phase across all three PE skills. This allowed us to analyze the effectiveness of the intervention by comparing the data to the completion criteria in each phase.

CHAPTER 4

Results

The results discuss the functional relationship between using VM as an instructional method for teaching SWD sport skills and the percentage of steps SWD could then complete correctly. This section also discusses the social validity of using VM to teach sports skills to SWD. Baseline, intervention, and maintenance results are shared to compare task completion across the study.

The skills completed by the participant prior to intervention showed that the student did not know how to perform the skills in the VM intervention. The participant was not able to perform the steps in all three sports skills above the predetermined accuracy level of 85%, as seen in Figure 1. He was only able to complete 12.5% to 25% of the steps in each skill correctly.

The first skill Jacob worked on was a chest pass in basketball. His baseline data consisted of six trials where he was able to complete one to two out of eight steps correctly with this first skill. His task completion rate was on average 12.5%. The second skill Jacob worked on was a forward pass in football. Baseline data for this skill included six trials where he was able to complete zero to one steps correctly, or 0% to 12.5% accuracy. The third skill included a soccer inside-foot-pass. Jacob was able to perform the skill with 12.5% accuracy, with one out of eight steps completed correctly in six trials.

After baseline was taken for each skill, the participant was exposed to the video modeling intervention for each skill. The participant was asked to perform each sports skill until criteria (85%) was reached for 2 sessions. The first VM intervention Jacob was exposed to was a chest pass for basketball. Jacob was asked to watch the VM intervention and then complete the steps in the skill. After exposure to the intervention, Jacob was asked to perform the chest pass skill

nine times. Jacob performed seven out of eight steps correctly in each trial, which is a task completion rate of 87.5%. The second skill Jacob was exposed to was the football forward pass. After exposure to the VM intervention, he performed seven out of the eight steps correctly in six trials. His task completion rate for all trials was also 87.5%. For the third skill, Jacob was asked to complete an inside foot pass for soccer. Jacob performed five to eight of the eight steps correctly in six trials. During his first trial he was only able to perform five of the eight steps correctly but completed seven of the eight steps correctly when prompted to perform the task just like the video. His task completion rate ranged from 62.5% to 87.5%.

Maintenance data was collected two weeks after the last intervention trial. Maintenance conditions were the same as baseline data, and the participant did not have access to the intervention video. Jacob was able to maintain all three skills. When the participant was asked to complete the target skill without the video, he was able to demonstrate each step he learned during the intervention phase.

Jacob demonstrated the chest pass basketball skill in six trials. He was able to maintain his first learned skill with a task completion rate of 75% to 87.5%. Jacob then was asked to perform the forward pass in football and maintained that skill with 87.5% accuracy. He completed seven out of eight steps correctly in six trials. He performed at the same rate for the third skill, the inside-foot pass for soccer. He completed seven out of eight steps correctly, or 87.5% accuracy. Results for each of the baseline, intervention, and maintenance periods for each sport skill is depicted in Figure 1.

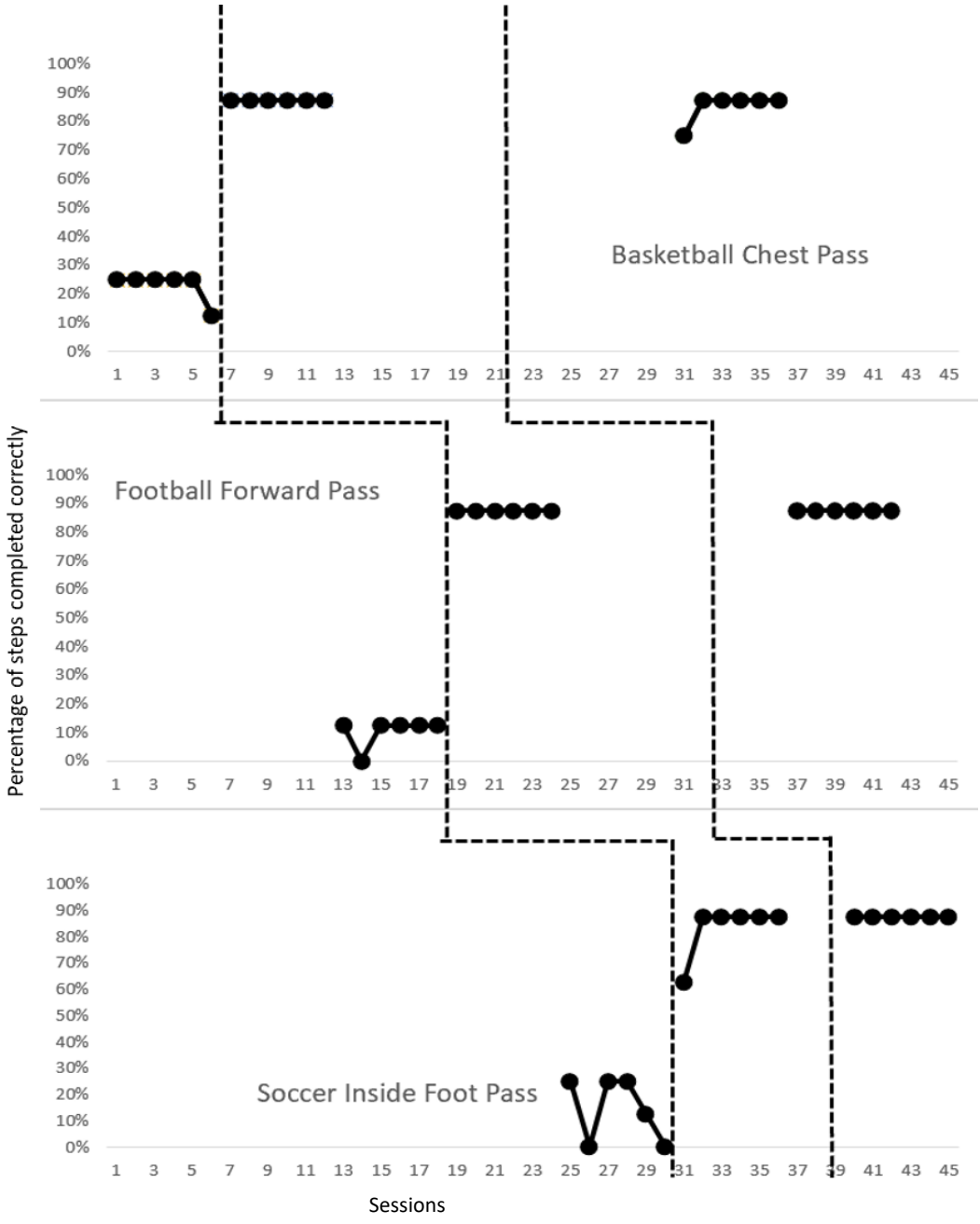

Figure 1. Graph of steps completed correctly in baseline, intervention and maintenance phases for each skill. The y-axis represents the percentage of steps completed correctly. The x-axis represents which session the particular phase took place.

In terms of social validity, the PE teacher reported that VM was valuable for Jacob's skill acquisition. She believed Jacob enjoyed the intervention and that it was an important tool for

teaching PE to special needs students. She believed it had a positive impact on his performance and that there were not any negative side effects, and she was open to using VM in the future.

The participant's life skills teacher reported that she observed that VM interventions work for some students and not so well for others in her past experience. It worked well with Jacob because he is capable of learning expectations and watching videos. He also thinks it is fun. She reported that other students struggle and have struggled in the past with similar interventions. She believes that he thought VM was "cool" and enjoyed having a tablet. She believes it had a positive impact on his performance and that there were not any negative side effects. She reported that she would use VM as an intervention with this student.

The participant reported that the intervention was "fun and that I looked cool." He believed it helped him with his skills. He enjoyed watching the videos and loved watching himself perform the skills when he was recorded. When asked if he was ever frustrated watching the videos, he replied no. He then reported that he would like to keep doing it.

CHAPTER 5

Discussion

The results of this study confirmed earlier research that VM is an effective tool for basic sports skills for one SWD (Cihak, Fahrenkrog, Ayres, & Smith, 2010; Sani-Bozkurt & Ozen, 2015; Wert-Fittipaldi, 2007). The present study findings indicate that a VM intervention enabled a SWD to learn basic sports skills to mastery levels. The participant performed each sports skill 87.5% correctly and maintained each skill correctly 87.5% of the time. The student also reported that he enjoyed learning these skills via VM.

Previous research indicates that video-based interventions have been used for academic skills, life skills, and leisure skills, but this study helps us explore the possibility of using it in a PE setting (Canella-Malone et al., 2015; Kellems & Edwards, 2015; Nikopoulos & Keenan, 2006). This is important because the purpose of the PE setting is for developing athletic, leisure, and healthy-lifestyle skills (Shape America, 2014). The participant's life skills teacher reported that she had used VM before on academic skills in the classroom but had never thought to use them in a PE setting or in a general education setting. This could be a useful tool to help students slowly mainstream in the general education setting because with large group instruction it is difficult to accommodate students who need smaller-group instruction (IDEA, US Department of Education, 2010). She reported that for this particular student, this may be a useful intervention since he meets the pre-requisites and since he enjoys it.

These findings are important and encouraging. Researchers report the difficulty of mainstreaming SWD with widely varying levels of interest, skill, and motivation especially when some PE classes have up to 60 students (Wert-Fittipaldi, 2007). In this study, VM gained acceptance for teaching physical skills as a means of leveraging PE teachers' time. VM enabled

a SWD to break down a physical skill into discrete steps and to watch, learn, and practice at one's own pace as shown in previous studies (Sani-Bozkurt & Ozen, 2015). The participant was able to replay the VM as many times as necessary to gain mastery, thereby freeing up PE teachers to move other students onto more complex skills while SWD work independently to gain mastery on basic skills.

Ubiquitous internet access provides unlimited VM accessibility using a variety of easy-to-use platforms. Cihak et al. (2010) used an internet-enabled laptop computer for a video-based instruction with SWD to show clips of correctly executed sports skills and then recorded the students to highlight areas for improvement. Students were able to use VM and self-modeling to work independently to correct performance. Mobile internet access enables VM viewing and allows the viewer to complete the task in the setting where the skill is performed, such as a basketball court. If the student required additional practice to master the task, he or she simply replayed the video. Internet access to VM content enables students to practice the skill after school and acquire more complex skills more quickly.

Adoption of VM for physical skill acquisition is a function of users' perception of its usefulness, ease of use, social acceptance, and facilitating conditions (Venkatesh, Thong, & Xu, 2012). VM adoption and PE classroom integration is a result of educators' and students' belief that VM can improve physical skill acquisition and retention. Studies like this one can be used to encourage the use of VM by demonstrating its effectiveness. As reported earlier, Jacob successfully acquired and maintained all three physical tasks. As a result of that positive experience, responses to the social validity questionnaire showed a positive acceptance for the usefulness and willingness for use of VM to learn new skills and for educators to use VM as an intervention for certain SWD.

Similar to the study by Canella-Malone et al. (2015), the social validity indicates that the student started to prefer these skills over past learned ones, and it was reported that the student was more likely to participate in these skills or ask to do them. The participant's parent happened to drop by the school and was asked if the student reported anything about the intervention. The parent reported that the student frequently asked if he could play basketball and football more and was excited for the Special Olympics. The mother reported that she felt like this intervention prepared him for that, which indicates that VM helped him in another setting. Both the PE and life skills teacher reported that the student asked about the researcher and if he got to work with the iPad that day. It was also noted that the student enjoyed using the iPad and working on the skills.

The student had some physical impairments that made it difficult to perform some tasks. The student qualified for the study because he met the pre-requisite skills, but it was learned later that minor adjustments needed to be made to help him access the intervention and help him perform the task. It is important for educators to create checklists and pre-requisite skills for an intervention, but sometimes adjustments are made (Kellems & Edwards, 2015). For example, the student had to bend his knee in order to complete each target skill. This was difficult for him because he was very bow-legged and could not fully bend his knee. Mastering some skills was more difficult for him because of this physical impairment. The participant also had some vision issues, which required the researcher to ensure that the participant was able to see the video. It was found that the brightness needed to be adjusted and a larger iPad (iPad 2) was needed to properly view the video. It was also noted during data collection that the student may not be able to perfect each step in the physical skill if he could not physically bend his knees properly. It is required to bend your knees in an athletic position for the first step of each skill, and he was not

able to physically do that. This caused him to only complete each target skill with 87.5% accuracy, but did not prevent him from achieving the target skill. For example, he was able to complete the chest past to the intended recipient although he did not bend his knees properly.

Another area to discuss was the process of keeping the student motivated during the study. Part of the data collection included filming the participant so that other observers could analyze the step completion across skills and phases. Although the recordings were intended for the additional observers, the participant enjoyed watching the videos and was motivated by seeing himself perform a skill. This was an unplanned strategy to motivate and reward the student for meeting expectations. The participant was also motivated by showing his peers what he learned in the intervention. He thrived from attention and verbal praise from his peers.

Limitations

Study limitations include generalization to a specific population, specific sports skills, and school resources. This student has the capacity to perform these skills but due to some physical impairment, he may not be able to perform more difficult tasks. Students in life skills classes who are eligible for this intervention must be able to utilize both of their arms, their core, and their feet. This is why some students were not able to participant in the study and reflects the limitation of only having one participant.

Schools that implement this type of intervention must have access to technology and have extra space for students to watch and practice skills. Ideally, a student would want to utilize the VM intervention in the area where they would perform the target skill, but if they do not have access to mobile technology this might create some difficulties. Additionally, if there is not extra space or room, the student may not have an ideal environment to watch and appropriately view the videos.

The effectiveness of the intervention was also limited by the amount of time participants and the school had to dedicate to this study. This included working around school, internship, and volunteer schedules. Responses to the social validity questionnaire indicated that VM could be utilized in school, but the school would have to make videos and take the time to show them to the students. Generalizability across population would require this study to be replicated with a greater variety of participants, including females and students with various disabilities such as ASD, ID, other forms of TBI, and so on. Future research may also involve students with multiple diagnoses.

The participant was sometimes late to his first period PE class and would sometimes have to come in during another time to complete his given tasks for that day. The PI and participant would have to switch locations of the research study depending on the availability of gyms and weather conditions. The PI recorded the participant in one of the two main gyms or on a grass field located behind the gyms. The participant was also recorded in an extra space next to the gym where equipment is stored so that he had space to work without being disturbed by other students. Student technicians or resource technicians accompanied the PI and participant. Each meeting with the participant was not spaced out exactly. Due to attendance or conflicting student activities, the participant was not always able to participate in the research study as scheduled. This made it difficult for the PI to collect consistent data. It was unclear to the PI if the outcome would have been different if the time intervals between data collection had been consistent.

Modifications also had to be made due to interferences that commonly occur in a public school setting. On three different occasions, the participant was asked to re-watch a video because he was not able to hear the video. This was because a neighboring classroom was playing loud music, so the PI would have to show the video until the participant was able to pay

attention and hear the instructions. On another occasion, the participant struggled to stay on task during the intervention because he got distracted by a peer who walked into the room.

Suggestions for Future Research

Further research may look at whether or not this intervention can be generalized across participants and settings. Researchers may also want to know if VM is effective for more difficult sport skills. VM is widely used among participants with ASD, but is this particular intervention effective with that population? Can schools with less space and technological resources provide the same experience to their students?

Additionally, researchers could observe students performing the task in settings where they would apply the sports skills. The participant's mother indicated that the intervention in this study was helping him get ready for the Special Olympics. After maintaining the learned skill, one could observe if these skills transfer in the classroom or in a relevant event such as the Special Olympics.

Implications for Practitioners

Physical educators are constantly advocating for the importance of physical activity and learning social skills through PE. However, school districts in the country are constantly adjusting the requirements to provide and enroll students in PE or similar classes. It is important for students in the general education setting and special education to receive health and PE classes. As long as these classes are offered, it is important to continue to explore methods to help SWD become more involved and receive better instruction in PE classes. When deciding what VM interventions to use with these students, it is important for practitioners to understand the answers to the following questions: (a) What skills will the student enjoy learning? (b) Are the skills taught aligned with the state curriculum? (c) Will this help the student be more

involved with his peers? and (d) Will this help the student perform the physical activity that he or she needs to obtain the health benefits that physical activity provides?

As another way to prepare for VM implementation, an educator must create a task-analysis sheet describing how the intervention will work. Things that need to be considered are the equipment that will be used to record and show the video, what the target skill will be learned, what the student can currently already do, what type of video will be used, who the model will be, where the video will be filmed, who will perform necessary video editing and how, and how the progress will be monitored (Kellems & Edwards, 2015).

Kellems and Edwards (2015) also discuss how each step in the task analysis needs to be carefully planned and executed. From analyzing this study, it is recommended that a tablet is used to record and show the VM intervention because a tablet is easy to use and carry around. There are apps, including iMovie, that are useful in adapting recorded videos. iMovie allows the recorder to adjust the speed, audio, and visual elements of the video. When choosing the skills model, the educator should consider using a model that is similar to the learners' age; it is also beneficial if he or she is someone the viewer knows (Kellems & Edwards, 2015). The location of where the video is filmed should match the location of where the viewer will practice the skill to make it as relatable as possible. The skill chosen should not be something that the student can already do, but should not be overly demanding. (Kellems & Edwards, 2015).

The delivery of the intervention should also be highly planned. In order to assess the effectiveness of the intervention, the student should not have other opportunities to learn the skill (Nikopoulos & Keenan, 2006). If the educator wanted to teach a basketball skill, he/she would need to provide the VM intervention prior to teaching a basketball unit so that the student could not receive any other instruction or observe his/her peers practicing the basketball skill. The

educator would also want to make sure that the student also understands how to use the equipment and can properly access the equipment (Kellems & Edward, 2015). One suggestion from this study is to ask the student to watch the video in a quiet corner of the classroom and use headphones so he/she can focus on the video.

A skills checklist is highly recommended to monitor progress of the student. The educator will want to record how many steps of the target skill the student can complete prior to the intervention (Kellems & Edward, 2015). This should be done at least three times to get consistent data (Burns & Gibbons, 2008). The educator will then record how many steps the student completes correctly during the intervention stage, or when the student is exposed to the VM. It is recommended that data is collected at least six times during this phase. The educator will then want to know if the student is able to maintain the skill without using the intervention by again recording the number of steps completed correctly after a period of time has passed since the intervention. Research studies have shown that it is important to wait at least a week or more after the intervention phase to collect maintenance data, and collect up to three data points (Burns & Gibbons, 2008; Kellems et al., 2017).

Throughout the process, it is important to keep the student motivated and to keep a routine (Pierce & Cameron, 2002). If the student does not respond to the intervention right away, he/she might not understand the expectations or may not be motivated. If a student is not motivated, he/she needs a rewards system. The student may also need some coaching in the beginning on what is expected of him/her when using a tablet and what to do if he/she needs help. The student will also need to practice watching the video and then transitioning to practicing the target skill. These steps may vary due to the personality of the student, type of equipment used, location of the intervention, and target skill (Pierce & Cameron, 2002).

Conclusions

In this study, the investigator was able to examine the effectiveness of VM in teaching PE skills to SWD in a public-school setting. This study used a delayed multiple baseline design across skills. The investigator collected baseline, intervention, and maintenance data across three different sports skills taught in PE classes. This research design allowed flexibility for the examiner and participant in a school setting where students' schedules often change and allowed the examiner to continue the study while working with unanticipated absences or schedule changes from the participant.

The researchers saw an increase in steps completed correctly after the implementation of the VM intervention with the three new learned skills. The student was also able to maintain learned skills without having to review the VM intervention. The participant and educators reported having positive experiences with the intervention. Educators also reported that VM would work well with students who have ID and attend physical education classes.

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APPENDIX A

Consent Form

Parental Permission for a Minor

Introduction

My name is Robin Huddleston. I am a graduate student from Brigham Young University. I am conducting a research study about teaching physical education skills through video modeling. I am inviting your child to take part in the research because he/she is a student a XXXX Junior High, is receiving special education services, and is participating in a physical education class.

Procedures

The participation of your child in this study will require the completion of demonstrating different physical education skills, watching videos and then demonstrating those skills again. This should take approximately 10-15 minutes of your child's time each session. These sessions will occur during the summer for about eight weeks with a total of approximately 9 hours.

If you agree to let your child participate in this research study, the following will occur:

- We will look into your child's academic records and IQ scores to better understand our participants
- Your child will show us some sports skills
- Watch a video to learn sports skills
- Spend 9 hours in 8 weeks for about 15-30 minute meetings

Risks

Your child will be asked to complete new tasks, which may cause frustration. I will reduce frustration by answering any questions or concerns you, or your child may have. If your child indicates in any way that he/she does not want to participate, we will stop immediately. There is a risk of loss of privacy, which the researcher will reduce by not using any real names or other identifiers in the written report. The researcher will also keep all data in a locked file cabinet in a secure location. Only the researcher will have access to the data. At the end of the study, data will be stored in a locked office and only the researchers will have access to that data.

Confidentiality

The research data will be kept in a secure location and only the researcher will have access to the data. The data will be kept electronically on a computer and will be password-protected. At the conclusion of the study, all identifying information will be removed and the data will be kept in a locked office. The researchers will store the information for three years and then the data will be destroyed.

Benefits

There are no direct benefits for your child's participation in this project. However, your child may benefit from receiving individualized instruction in the PE setting. It is also hoped that your child will help us learn better techniques to teach different sports/physical education skills.

Compensation

Student participants will receive a $30 gift certificate for participating and completing the research study.

Questions about the Research

Please direct any further questions about the study to Robin Huddleston at 435-319-9382 or robinhuddleston9@gmail.com. You may also contact Ryan Kellems at 801-422-6674 or rkellems@byu.edu.

Questions about your child's rights as a study participant or to submit comment or complaints about the study should be directed to the IRB Administrator, Brigham Young University, A-285 ASB, Provo, UT 84602. Call (801) 422-1461 or send emails to irb@byu.edu.

You have been given a copy of this consent form to keep.

Participation

Participation in this research study is voluntary. You are free to decline to have your child participate in this research study. You may withdraw you child's participation at any point without affecting your child's grade, standing in school, or treatment from his/her teachers. Once a child withdraws from the study, they will continue instruction with their physical education teacher and do not have to complete anymore activities involved with the study.

Child's Name:_____ Date:_____

Parent Name:_____Signature:_____

Child Consent

What is this research about?

My name is Robin Huddleston. I am a student at Brigham Young University. I am working with Ryan Kellems. We are doing a study to test if videos are good for learning new skills. You are invited to take part because you are a student at XXXX Junior High School. You are also participating in Physical Education classes and learning new skills.

If you want to take part, you will use an iPad and watch videos that will help you learn new sports skills. You will:

- Show us some sport skills
- Watch videos to learn new skills
- Do the skills you see in the video
- Spend approximately 9 hours over 8 weeks, in 15-30 minute meetings
- Allow me to know test scores (IQ), diagnosis, and academic records for report

Can anything bad happen to me?

You will be learning some new skills that might be harder to do. If you get frustrated or sad, I will help you and answer any questions.

Can anything good happen to me?

We don't know if being in this study will help you. But you get to help us learn about using videos for teaching students.

Will anyone know I am in the study?

We won't tell anyone you took part in the study. When we are done with the study, we will report on what we learned. We won't use your name in the report.

Do I have other choices?

It is up to you if you want to participate in the study. You do not have to do it and can quit and any time. It will not hurt your grades at school.

You will receive a $30 gift certificate for being in this research study. Before you say yes to be in the study, make sure you ask Robin to tell you more about anything that you don't understand. If you want to be in this study, please sign and print your name.

Name (Printed):_____Signature:_____Date:_____

APPENDIX B

Social Validity Interview Questions

1. (a) What are your overall impressions of using the video modeling intervention for the participants? (b) What did you think about using the videos to learn new sports skills?
2. (a) Do you think that this was an appropriate intervention for students with disabilities? (b) Did the videos help you learn?
3. (a) How do you think the students enjoyed watching the sports skills videos? (b) Did you enjoy watching the videos?
4. (a) Do you think the videos had a positive impact on the student's performance in P.E.? (b) Do you feel like you can do the skills in games when you play in PE?
5. (a) Do you think there are any negative side effects to watching the videos? (b) Did you ever not like watching the videos, or ever feel frustrated?
6. (a) Will you continue to use VM as an intervention to help SWD learn PE skills? (b) Do you want to keep watching videos to help you in your PE class?

*(a) Questions for teachers (b) Questions for student/participant.

APPENDIX C

Skills Checklist

Skills checklist – basketball chest pass

Observer:_____ Student:_____

Key: + if completed correctly, - if completed incorrectly

Date/ Stage (BL, INT, MT)	Ready Position (1)	Hands at Chest (2)	Elbows Out (3)	Step (4)	Shift (5)	Push (6)	Extend (7)	Thumbs Down (8)
Baseline								
Intervention								
Maintenance								

*Target steps in skill=8

Add number of steps completed correctly and divide by steps in skill to get percentage.

APPENDIX D

Recruitment Material

Teacher / Staff Recruitment

Introduction

A research study is being conducted by Robin Huddleston, School Psychology Graduate Student at Brigham Young University to determine the effectiveness of using video modeling to teach physical education skills. She is working under the direction of Ryan Kellems, Assistant Professor at Brigham Young University in the Department of Counseling Psychology and Special Education. Your students who participate in physical education classes and want to further participate in the classroom are invited to participate. We are looking for students who qualify for special education services under the categories of intellectual disabilities, Autism Spectrum Disorders, or developmental disabilities and can understand the English language.

Procedures

If you and your student agree to participate in this research study, the following will occur:

- Your student will be asked to complete multiple activities without instruction to collect baseline data
- Your student will be asked to watch video modeling systems for instructional purposes
- Your student will be asked to complete the tasks as seen in the videos
- Your students total time commitment will be 9 hours over 8 weeks
- You will be asked to complete brief pre- and post-surveys concerning the intervention
- You will be asked to help obtain correct eligibility categories and IQ scores
- Your total time commitment will be 10 minutes

The study consists of about 8 weeks of interventions and will take approximately 8 hours over the 6 weeks to complete. Intervention sessions will take approximately 15-30 minutes at 3 sessions per week.

Risks/Discomforts

Your students may get frustrated in the process of learning new skills that challenge them. There is also a risk of privacy that the researcher will reduce by not using any real names or other identifiers on the report. The researcher will also keep all data locked up in a file cabinet in a secure location. Only the researcher, or principal investigator and the advisor, will have access to the data. At the end of the study, data will be kept in the researcher's office.

Benefits

The benefits of this study include individualized instruction for your students. It is also hoped, that through their participation, we will be able to assess video modeling as a tool for teaching physical education skills to students with intellectual and developmental disabilities.

Confidentiality

The research data will be kept in a secure location and on a password protected a computer. Only the researcher and their advisor will have access to the data. At the conclusion of the study, all

identifying information will be removed and the data will be kept in the researcher's locked office.

Compensation

Students who participate in the study will receive $30 in gift cards at the completion of intervention sessions.

Participation

Participation in this research study is voluntary. You have the right to withdraw at any time or refuse to participate entirely without jeopardy to your position or relationship with the university.

Questions about the Research

If you have questions regarding this study, you may contact Robin Huddleston at robinhuddleston9@gmail.com for further information.

Note to Teachers

Dear Teachers,

Thank you for your support for my research project to help students develop physical education skills. For the purpose of the research, we want to make sure the conditions are fairly well-controlled to be able to say with a relative degree of confidence that a change in performance for the students was a direct result of activities related to the research procedures. At the completion of the project, we will be pleased to share the videos with you as a continued resource for you and your students.

In order to do that, here are a couple of things for you to keep in mind.

- We do not want to interfere with business as usual in your classroom.
- Please keep your routines and curriculum the same throughout the end of the school year
- Specifically, since we are looking at physical education skills, do NOT change the way you teach and model physical education skills throughout the rest of your class.
- Also, do NOT change any programming you have in place for teaching and supporting your students in physical education classes

As the researcher, I will not tell the students who the other participants are. It is likely the students will talk about what they are learning and their frustrations or successes. Thus, they may figure out who the other participants through this manner. We will not instruct the students not to talk about it. Talking about what they are learning will help them more fully implant the concepts into long-term memory and help them to generalize the tasks. I do ask that you not provide specific feedback or instruction to the students.

At the completion of the study, we will be pleased to provide you with a couple of our videos and data collection sheets for your continued use.

Thank you again for your support to your students and me.

Robin Huddleston
BYU Graduate Student

Recruitment Script for Parents of Participants

Dear Parents,

Robin Huddleston, a BYU graduate student is looking for people to take part in a research study. Her goal is to help individuals with intellectual and developmental disabilities, as well as Autism Spectrum Disorder, practice physical education skills. The plan involves using video modeling. Due to this being research, we don't want to tell your child too much about what the activities will involve. There are a few things to note:

- Your child needs to be enrolled in a physical education class
- It will take about 9 hours over 8 weeks.
- Your child will meet with her for about 15-30 minutes, four times a week.
- If you are selected and complete the project, your child will get a $30 gift card.

If you are interested, you may take a flyer and tell your child and his/her teacher you would like to take part.

Teachers,

Please list the names and contact information for students interested in taking part in the research study.

Thank you for your cooperation.
Robin Huddleston

WANTED

Participants for a research study using videos to teach different sport skills.

Looking for:

- Individuals in life skills resource classes with intellectual disabilities, developmental disabilities, or Autism Spectrum Disorder
- Of any gender
- In grades 7-9
- Have an active IEP or service plan
- Enrolled in and can participate in a PE class
- Has previously volunteered to participate in the current study

Participation will include:

- Completing multiple activities without instruction to collect baseline data
- Watching video models for instructional purposes
- Completing the tasks as seen in the video prompts
- Completing probes about information in the videos

*All participants who complete the study will receive a Gift Card for $30.

If you have questions regarding this study you may contact:
Robin Huddleston
robinhuddleston9@gmail.com
(435) 319-9382

Or you may contact my mentor:
Ryan Kellems
rkellems@byu.edu
(801) 422-6674

If you have questions regarding your rights as a participant in research projects, contact:

IRB Administrator
A-285 ASB
Brigham Young University
Provo, UT 84602
(801) 422-1461
irb@byu.edu