"Hey, I've Got This Kid": A Study of Multimodal Semiotics in Adapted Physical Education Strategies

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“HEY, I’VE GOT THIS KID”: A STUDY OF MULTIMODAL SEMIOTICS IN ADAPTED PHYSICAL EDUCATION STRATEGIES

by

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DEDICATION

This dissertation is wholeheartedly dedicated to my son, Jon-Walker, who inspires and encourages me daily to be the best human, mother, and teacher I can be, never giving up on me and always showing me unconditional love and support.
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ABSTRACT

General education physical education (GPE) teachers currently face difficulties in providing for the special needs of students with autism spectrum disorder (ASD) in inclusion GPE classes. In addition, there is currently no best practice in how to present information on adapted physical education (APE) strategies to GPE teachers effectively. This study aims to address the problem of practice through a multimodal semiotic approach in offering GPE teachers APE strategies to implement in their inclusion classes. Specially, the study investigates three GPE teachers as they participate in multimodal semiotics and employ APE strategies in inclusion classes.

Three GPE teachers were selected based on previous questions related to the inclusion of students with ASD into GPE classes. In the case study, the GPE teachers are provided APE strategies for teaching students with ASD specific to their questions. Strategies are exemplified in a video format using multimodalities created by the researcher. The GPE teachers provide feedback on the video through a survey.

The case study results support a triad of theories used as a framework. The theories include the learning theories of Vygotsky and Bruner and Kress’s theory of multimodalities. The case study illustrates the use of multimodal semiotics in assisting GPE teachers in meeting the needs of students with ASD in the inclusion classroom is beneficial. Multimodal semiotics provides an effective means of sharing APE strategies with GPE teachers.
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LIST OF ABBREVIATIONS

APE ................................................................. Adapted Physical Education
ASD ............................................................... Autism Spectrum Disorder
CDC ................................................................. Centers for Disease Control
F2F ..................................................................... Face-to-Face
GPE ....................................................................... General Physical Education
ID ........................................................................... Intellectually Disabled
IDEA ...................................................................... Individuals with Disabilities Education Act
IEP ........................................................................... Individualized Education Program
LRE ....................................................................... Least Restrictive Environment
MKO ....................................................................... More Knowledgeable Other
PE ........................................................................... Physical Education
PLC ....................................................................... Professional Learning Community
RTL ....................................................................... Return to Learning
SC .......................................................................... South Carolina
SDE ....................................................................... State Department of Education
SFL ....................................................................... Systemic Functional Linguistics
ZPD ....................................................................... Zone of Proximal Development
CHAPTER 1

INTRODUCTION TO THE PROBLEM AND STUDY

Sara is ten years old and looks like her same-age peers when getting dressed for school in the mornings. She wears her favorite purple shirt and blue jeans. She wears her tennis shoes on Tuesdays instead of her ballet flats because she has physical education (PE). In her hair is a bow matching her purple shirt. After getting dressed and ready, Sara rides the bus to school like her same-age peers as well.

There are differences between Sara and her same-age peers. The purple shirt is her favorite because of the texture. Sara only wears one brand of clothing because of her sensory issues. A picture schedule in her bathroom reminds her as she is getting ready for school that she has PE on Tuesdays. The visual helps Sara stay on a set schedule and routine. She cannot fix her hair because she struggles with fine motor skills and coordination. Sara's mother puts the matching purple bow in her hair. Sara rides a bus to a school outside of her school district attendance area located on the other side of the county. Sara is autistic and attends a school for students with special needs, but she is working towards transitioning to a self-contained class in a satellite program. I am Sara’s PE teacher in the school that is specifically dedicated to students with special needs, like Sara.

In the Upstate of South Carolina (SC), students with special needs have the unique opportunity to be served in a school designed especially for students with disabilities. The school is dedicated to 246 students with intellectual, physical, and/or
emotional disabilities from seven different school districts across one county. In SC, there are three levels of intellectual disabilities (ID), defined and recognized by the State Department of Education (SDE); ID (intellectually disabled), Mild (48-70), ID Moderate (25-48), ID Severe Profound <25, (A. Lawton, personal communication, January 21, 2020). Students attending Sara's school generally function as students with an intellectual disability in the moderate to low ranges. School staff is comprised of administrators, teachers, teaching assistants, coordinators, specialists, therapists, behavior interventionists, nurses, and a school psychologist. Students with severe and profound disabilities attend the school from ages 3 to 22.

In contrast, other students in the mild or moderate range like Sara will learn skills required to transition to a self-contained class in one of the seven districts' satellite classes the school for special needs supports. A satellite class is a self-contained class in a school located in one of the seven school districts making up the county. The satellite class is an extension of the school in which Sara attends, dedicated to special needs. Each district hosts at least one satellite class for the elementary, middle, and high school levels.

Inclusion is the current trend to handle the increased amount of students diagnosed with disabilities including autism spectrum disorder (ASD). Federal and state regulations, including the Individuals with Disabilities Education Act (IDEA), mandate that all students with special needs be placed in the least restrictive environment (LRE). "The incidence of ASD continues to increase, and ASD has become the fastest-growing disability in the country. Many attribute this increase to better screening and detection" (Winnick & Poretta, 2016, p. 211). New technology advances and information gained
from newly available genetic studies concerning disabilities also allow more students with disabilities to be served in the general education setting.

Students with ASD like Sara often have the opportunity to transition to satellite self-contained classes. Students transitioning to a satellite self-contained class have gained the necessary skills to learn alongside their same-age peers in an environment that is less restrictive than the school dedicated to students with special needs. When students like Sara transition into a satellite class they become part of the growing movement of inclusion. Inclusion puts students like Sara with special needs in Related Arts and specials classes with their same-age, typically-developing peers. Related Arts classes are library, art, music and PE.

As inclusion becomes the norm, students with ASD are being served in general education PE (GPE) classes. Physical education classes are often the first transitional classes when working towards inclusion. According to Tripp et al. (2004), PE classes are the first for inclusion due to mandates but also because PE programs are designed to be accountable for meeting the needs of all students. When GPE teachers have proper training for inclusion practices, this fact makes the inclusion setting a conducive environment for students with disabilities to learn alongside their same-age peers. Inclusion in PE makes use of adapted physical education (APE) practices in the GPE setting for students with special needs (Block, 1994). Ideally, the inclusion GPE classes offer students membership in a learning community with equal access to appropriate PE instruction.

I am a PE teacher with 19 years of teaching experience implementing APE strategies in Sara's school dedicated to students with special needs. A large number of
students in my school have ASD as a primary or secondary diagnosis. I often receive emails and have one-on-one conversations with GPE teachers who teach in the schools with satellite classes regarding adaptations for their students with ASD. Because I teach exclusively in a school specifically designed for students like Sara, these GPE teachers frequently seek my advice. Questions received are often related to students like Sara, who have transitioned into one of the satellite self-contained classes and are part of inclusion PE classes. These conversations most often begin with, "Hey, I've got this kid". The following vignettes are examples of conversations had with three GPE teachers and their concerns for meeting the needs of students with ASD in their inclusion classes.

"Hey, I've got this kid who is autistic and will not participate in class." John is an elementary school student in a satellite self-contained class. He is in the second grade and attends PE class with his second-grade peers. Related Arts classes at his elementary school are inclusive. John is autistic. He struggles with communication and is behind his same-age peers in his gross motor skills development. John is obese. John's GPE teacher struggles with engaging John in physical activity.

According to Whyatt and Craig (2012), ASD is accompanied by sensory-motor deficits, delayed language, and cognitive disabilities. Further studies have shown that students with ASD are more sedentary than their peers and, therefore, more likely to suffer from obesity. "Core symptoms of ASD may relate to weight problems: for instance, children with ASD may lack the social motivation to participate in family meals or in structured physical activities with other children, which might promote healthy weight" (Zuckerman et al., 2014, p. 1709).
"Hey, I've got this kid with autism who just will not follow directions." Joey is a fourth-grade student in an inclusion GPE class. His class is a satellite class in an elementary school in the same county as the school dedicated to students with special needs. Joey has been diagnosed with autism and an auditory processing disorder. The grade level GPE class has 28 students plus Joey. The GPE teacher has difficulty giving directions to the class that Joey can follow. He often acts like he does not understand his teacher's directions and does not stay on task. Joey's processing disorder manifests itself as an attention deficit. Joey is easily distracted in class.

Students with ASD communicate differently than their normally-developing peers. Communication is one area in which GPE teachers have had to use guesswork when teaching students with ASD in their attempts to maintain attention, having to monitor and adjust often as they search for successful communication methods. Processing difficulties are common in students with ASD, and "the process of language acquisition may be different for some children with ASD" (Reinhartsen et al., 2019, p. 2448). Vygotskian theories state teachers serve as conduits for learning tools, with language as one of the most essential tools (Vygotsky, 1978). The use of specific language or communication methods other than a dialogical approach is needed by GPE teachers when working with students with ASD.

"Hey, I've got this kid with autism, and he cannot motor plan. He cannot sequence skills together during activity." James is a sixth-grade student. He is in a satellite self-contained class but attends GPE classes with other sixth-grade boys in his middle school. James is behind his same-age peers in sports-related skills. He is very clumsy when
performing skills. The GPE teacher has been seeking better ways to help James be more successful.

Students with ASD may also display physical disabilities, especially in the development of gross motor skills and coordination compared to their same-age peers in an inclusion PE class. "Children commonly develop motor functions through peer interaction and play; however, children with ASD often lack the social and communicative skills necessary to participate in physical play with others, thus limiting their motor development" (Dieringer et al., 2017, p. 421). While GPE teachers are familiar with teaching gross motor skills, they may not be skilled in providing the necessary physical prompts for students with ASD. Prompting is commonly used to help build skills (Dieringer et al., 2017).

Vygotskian theories of constructivism rely heavily on social context and collaboration for learning. Vygotsky's social-constructivist theory outlines authentic learning through interactions with the belief that cognition is a product of social interaction (Vygotsky, 1978). Vygotsky's theory can be applied to the ASD students in the GPE classes but, more importantly, to the GPE teachers' needs for APE strategies. The emails and conversations with the GPE teachers illustrated collaborative social interactions but only in a monomodal approach to communication. Viewing the GPE teachers' concerns in monomodal semiotics through a socio-constructivist lens required the teachers to create meaning from only my written or spoken communications. Kress (2010) theorized that multimodal communication creates meaning-making through semiotic tools, implying that various communication modes beyond email or conversation present more learning opportunities for GPE teachers. This study addressed
the problem of monomodal semiotics. It explored the implications of multimodal communication in providing APE strategies for GPE teachers to integrate into their inclusion classrooms for students with ASD.

**Problem of Practice**

In the recent past as the number of special needs students such as the ones illustrated above increased, it became evident to me that many GPE teachers in satellite classes across my Upstate county in South Carolina were not familiar with the inclusion environment. Specifically, GPE teachers had limited knowledge and experience needed to adequately provide for the needs of students with ASD. General education PE teachers whose certification did not require training for students with special needs were not equipped or provided enough support to be effective in the inclusion setting teaching students with ASD and were challenged to guess how to engage students with ASD in physical activity. The GPE teachers needed help with the inclusion of students with ASD, and I needed an effective mode of presenting information for APE strategies in a meaningful way. Ly and Jung (2015) explained a shift in discourse towards acknowledgment of the value of imagery and visual communication for meaning making. To own the shift in this study I needed a means of visually and aurally providing APE strategies for GPE teachers to ensure the methods were successfully represented. Presenting strategies in only written text or oral conversations lacked efficacy. The intervention carried out in this action research was designed for that purpose. The problem of practice investigated was how to provide for GPE teachers' needs in the most effective modes for meaning-making to occur for the benefit of engaging students with ASD.
"The need for teachers who have both knowledge and ability to teach students with special needs is more critical today than ever before" (Mader, 2017, para. 5). General PE teachers have limited practical knowledge needed to implement effective inclusion practices (Storm, 2006) and are often left to "figure it out on the job" (Mader, para. 4). General PE teachers are among educators who embark on teaching ill-prepared each day, without the additional knowledge concerning APE strategies needed to be successful in teaching students with ASD (Piletic & Davis, 2010). "Many physical education teachers are not trained to address the needs of students with disabilities in an inclusive physical education class" (Jin et al., 2013, p. 372). Educators can learn to adapt their existing programs (Greenwood & Levin, 2007), but it is difficult for even the best teacher to meet student needs without the proper training and resources. Not only was the information provided to GPE teachers for inclusion practices inadequate, but the mode in which it was communicated was also deficient. Replying to GPE teachers’ questions by writing or verbal communication did not satisfy the need for an illustrative example of APE strategies. Kress and van Leeuwen (2006) suggested images, still or moving, to enhance meaning. Providing the GPE teachers with meaningful content presented in multiple modes allowing them to learn from and replicate, was also an existing problem.

Students with ASD's unique needs have been largely unaddressed because GPE teachers were not provided adequate support and training to work with students with ASD and did not know how to modify their lessons or adapt their equipment (Piletic & Davis, 2010). Physical education teachers in the Upstate of SC were looking for outside resources to provide help in meeting their students' needs. The problem identified was GPE teachers were not skilled in APE strategies and inclusion practices for meeting
students' needs with ASD. General PE teachers needed a combination of visual and aural examples of teaching strategies in the GPE setting for students with ASD.

**Research Question**

How can the questions of GPE teachers in the inclusion setting be answered best with practical and worthwhile APE teaching strategies through a video format and multimodal communication so that they can engage students with ASD in inclusion GPE classes?

**Purpose of Study**

The purpose of the case study was to determine if GPE teachers could transform from lack of engagement of a student with ASD to demonstratively promoting the participation of students with ASD in the inclusion setting with the use of a video that provided multimodal opportunities for learning. The study investigated how the video impacted the transformation of knowledge using multimodal communication. Physical education is an essential element for students with ASD to encourage lifetime fitness skills. For students with ASD, PE is more than fitness testing and sports skills; it is lifetime goals of being physically active and practicing social skills. Tyler et al. (2014) found a decrease in physical activity among students with ASD. "Therefore, we encourage parents, teachers, and administrators to include students with ASD in physical fitness and physical activity and provide them with individualized information about associated behaviors that can impact their health into adulthood" (Tyler et al., 2014, p. 5). Addressing the GPE teachers' needs with a viable means of meaning-making benefited students with ASD in physical activity, creating lifetime fitness opportunities.
The study examined how I could collaborate with GPE teachers to best answer specific questions of GPE teachers teaching in the inclusion setting with practical and worthwhile APE teaching strategies via a video format and multimodal communication. A video allowed the GPE teachers to have information at their disposal to use when needed, repeatedly. Multimodal communication was more appropriate for assisting GPE teachers than replying to emails with only written descriptions or providing verbal responses during a conversation. It also allowed for the teachers to implement self-assessments and scaffolding.

**Theoretical Framework**

Vygotsky was a learning theorist with sociocultural beliefs and a focus on cognitive development and is credited with creating the zone of proximal development (ZPD) (Gindis, 1995). While his work is generally applied to children, the theory of ZPD combined with scaffolding is also pragmatic for practicing teachers and can be used in teacher education (Fani & Ghaemi, 2011). What might a Vygotskian approach to teachers' education look like in the GPE classroom for students with ASD?

Vygotsky believed that students with disabilities "need specially trained teachers" (Gindis, 1995, p. 79) and a "differentiated curriculum" (p. 79). The research study also suggested that students with ASD need PE teachers with special training. General education PE teachers would benefit from a curriculum dedicated to the inclusion of students with ASD. Suppose GPE teachers were allowed to collaborate with me to address their concerns about the inclusion of students with ASD. In that case, they would also have the opportunity to construct their own understanding of inclusion (Wells, 2001). Wells promoted a dialogic approach to learning grounded on the works of
Vygotsky. This study provided organized communication using video technology to create a means of social learning across distance.

What teachers can do on their own versus "strategically mediated assistance from more capable others" (Fani & Ghaemi, 2011, p. 1551) defines Vygotsky's ZPD for teacher education. Fani and Ghaemi (2011) also called this theory the zone of proximal teacher development (ZPTD). Vygotsky said, "development is not a straight path" (Gindis, 1995, p. 78). The ZPTD begins with self-assistance requiring reflection and moves through scaffolding stages towards reoccurrence with expected conflicts along the way (Fani & Ghaemi, 2011). According to Warford (2011), it is the conflicts that provide the best environment for learning. "Substantial learning occurs in periods of conflict, confusion, and surprise" (Warford, 2011, p. 256). "There is value in cognitive conflict" (p. 256).

Harry Daniels is a Professor of Education who draws on post-Vygotskian theory to study processes of collaboration. He is an author and editor of books about Vygotskian theories and pedagogy with celebrated opinions on Vygotsky and Bruner's ideas of scaffolding.

Daniels (2016) describes scaffolding as:

a distinction made between support for the initial performance of tasks and subsequent performance without assistance: the distance between problem-solving abilities exhibited by a learner working alone and that learner's problem-solving abilities when assisted by or collaborating with more experienced people. (p. 59)
Daniels's depiction of scaffolding correlates with Warford's (2011) idea that conflict enriches learning by describing an atmosphere of situational learning. The Vygotskian approach to teacher development sees teacher education as situated learning, claiming that students learn better by participating in the experience (Gindis, 1995; Warford, 2011). In the research study, the conflict was two-fold; the limited knowledge of inclusion strategies for students with ASD and how to best present the needed information on APE strategies. As part of the study, teachers had the opportunity to collaborate with me and learn from the creation of real daily learning activities in my APE classes related to their specific questions of inclusion of students with ASD in their GPE classes. The GPE teachers also had a video for support to use when needed.

"Knowledge is constructed and reconstructed between participants in specific situations, using the cultural resources at their disposal as they work toward the collaborative achievement of goals that emerge in the course of their activity" (Wells, 2001, p. 180). Participants in the research study were teachers with inclusion strategy concerns for students with ASD and me, as the APE teacher serving as the cultural resource. The culture of the research study centered on special education. Based on the central idea of the Vygotskian approach to teacher education, I took the facts of APE and helped GPE teachers to apply their own meanings utilizing cultural tools and promoted "a fundamental shift in the cultural identity" (Warford, 2011, p. 256) in inclusion GPE classes.

Kress and van Leeuwen (2001) provided a theory that complements the Vygotskian approach. Multimodality focusing on social-semiotic analysis was applied to examining how GPE teachers made meaning from the strategies provided in the video.
Helping GPE teachers apply their own meaning to the facts of APE is what Kress and van Leeuwen called the semiotic process, the act of creating meaning from signs. In connection with Vygotsky's social constructivism beliefs, GPE teachers collaborated with me through various modes of communication to introduce the semiotic process to support the creation of their own understanding of APE teaching strategies. Similarly, GPE teachers were supported in closing the ZPD gap with the implementation of social opportunities for meaning-making.

Kress and Bezemer (2015) described learning as "an instance and an outcome of (inter) action and/or engagement and sign making" (p. 157). Communication and learning intersection is displayed through multimodality and a multimodal learning environment (Kress & Bezemer, 2015). Engagement opportunities in the study were enhanced by using various modes of communication and creating a multimodal learning environment. Multimodal learning also brought a specific lens to an engagement with the world, offering a different insight into the social culture of ASD. A multimodal lens allowed the culture of ASD to be viewed all-inclusively. The lens offered insight into the specific nuances of ASD and how those nuances shaped a specific social culture. Sociocultural perspectives assume that human interaction is mediated by cultural and semiotic tools (Vygotsky, 1978). According to this assumption, multimodal communication offered a more expansive examination of the ASD culture because the interaction allowed for more than simply a two-way conversation. A multimodal lens viewed the role of communication in the ASD culture more definitively and clearly. Vygotsky, Wells, and Bruner focused on dialogic communication, while Kress focused more on a holistic
conception of semiotics. Kress's theory allowed data analysis through a multimodal approach and a more general representation of communication.

**Methodology**

A case study is described as an empirical investigation of a phenomenon occurring in a natural setting (Hancock & Algozzine, 2016). The case study investigates the person or the phenomenon. In the circumstances of this case study, the phenomenon investigated was the GPE teachers looking for outside resources for information on and advice for teaching students with ASD in the inclusion setting. The GPE teachers benefited from video sample teaching strategies to be successful in adapting activities for students with ASD. The case study's natural context was the school designed for students with special needs and the individual classrooms of the GPE teachers hosting satellite self-contained classes in inclusion GPE classes. The case study allowed for a "richly descriptive" (Hancock & Algozzine, 2016, p. 16) narrative phenomenon to be investigated, research methods, and results.

The case study approach was chosen because it allowed me to understand the problem from a personal perspective based on the problem of practice and research question examined. The case study authenticated the need to provide a resource and information availability to novice and experienced teachers concerning adapting activities for students with ASD. This design allowed me to tell the story of three teachers in three authentic situations in which they reached out to me for collaborative learning to provide for the needs of students with ASD. The case study approach provided a detailed narrative of the problem and the intervention.
Data Collection

Methods of gathering data for the case study were qualitative in design and included surveys and interviews. The GPE teachers were surveyed concerning the use of the video and the implementation of the APE teaching strategies. The qualitative survey questions were broad, general, and open-ended. The benefit of the qualitative questions for the GPE teachers was the answers were words from the participants, not the researcher. Participants' responses were descriptive and analyzed the problem in a subjective and biased manner but allowed me to analyze the data in an objective and unbiased way. Qualitative methods produced non-numerical data and provided me with a way to explore trends and themes in the participants' answers throughout the case study.

A second method to collect data about the GPE teachers was by interviewing participants and asking thought-provoking questions. Interviews conducted for this qualitative case study approach provided an understanding of "the experience of other people and the meaning they make of that experience" (Merriam & Tisdell, 2016, p. 24). Interview questions were semi-structured to allow for flexibility in the interview.

Participants

Three GPE teachers were participants in the case study. Participants had specific questions concerning the inclusion of students with ASD in their GPE classes. A video sample lesson was provided by the APE teacher (and researcher) in the school designed for students with special needs, working with students with ASD similar to the students being served by participants in their inclusion GPE classes. As the researcher and practitioner, I facilitated the research and monitored the GPE teachers in the case study.
Six students with ASD also participated in the case study. Students participated in daily APE lessons taught by the APE teacher (and researcher) in the school designed for students with special needs. Students were videoed as the PE teacher (and researcher) implemented APE teaching strategies. The students range in age from 6 to 16, and each is labeled with ASD and moderate intellectual disabilities. Students' IQs are between 25 and 48 with various verbal skills. One student has a physical disability as well; cerebral palsy.

**Setting**

The case study took place in the natural setting of the APE teacher (and researcher). My classroom served as the APE setting and was in a school reserved only for students with special needs. At the time of the case study, the school had 246 students with severe and profound intellectual, physical, and/or emotional disabilities. Students ranged in age from 3 to 22. The school was equipped with adaptive equipment, therapy pool, physical therapy, occupational therapy, speech therapy, hearing impairment services, visual impairment services, nursing services, dietary planning, and other services needed for students’ disabilities and specific requirements. The APE classes took place in the school gym, sensory rooms, outdoor sensory playground, and individual classrooms. The school is located in the Upstate of SC.

My school hosts more than a dozen satellite classes throughout the county. The satellite classes are where students from my school transition when ready for self-contained classes. The satellite classes are a less restrictive extension of the school designed for students with special needs. The GPE teachers providing for students with special needs are serving students in those satellite classes in an inclusion setting. The county covered is over 800 square miles and home to over 300,000 residents. The county
is broken into seven separate school districts, each housing one or more satellite classes at various grade levels. Each school in the seven districts has a gym and provides one or more GPE teachers.

**Analysis**

The open-ended qualitative questions were analyzed using an inductive approach and narrative analysis. I coded the videos for non-verbal modes of communication and transcribed the verbal data. Analysis of coding and data was based on the theoretical principles of constructivism and multimodalities. The research question served as a guide for organizing and analyzing the data. I used text from my gathered data sources to formulate narratives provided by participant experiences. I looked for common themes when organizing the data. Feedback from GPE teachers provided information about whether or not the video strategies were helpful and could be implemented in the inclusion GPE classroom.

**Researcher Positionality**

According to Herr and Anderson (2005), the researcher needs to observe and understand their position in the action research study. I am qualified to examine this problem as a researcher and practitioner. I have an established relationship with GPE teachers across the state and have an excellent rapport with certified APE teachers who often provide resources and support. I have a Bachelor of Science degree in Physical Education from the University of South Carolina and a Master of Education degree in Curriculum and Instruction from the University of Phoenix.

As a two-time South Carolina Adapted Physical Education Teacher of the Year Award winner, I have provided numerous training sessions and presentations across the
My presentations are titled, "Hey, I've got this kid…" because that is how I am most often approached with questions concerning adaptations for specific students. I have served as the Adaptive Physical Education Chair and Chair-elect for the state PE association. I am "on-call" for GPE teachers to answer questions and concerns about students with special needs in their classes. I have prepared lesson plans ready to share and often visit schools to observe students and offer assistance in adapting activities. The title has allowed me to serve on the state association board and advocate for APE in South Carolina. Serving as my school district's District Teacher of the Year also prepared me for advocating for education in my school, district, and state. I have attended the national PE association's lobby day in Washington, D.C., on three occasions to advocate for PE and students with special needs.

My job additionally includes planning school-wide events like field day and coaching Special Olympics. Because of our student body's physical demands and the number of people it takes to conduct large events, I have established relationships within the community to help serve and provide for our students. There is an open-door policy in my classroom, meaning that any PE teacher is welcome to visit and observe at any time. I also have made myself available to visit other schools to observe and provide feedback on working with students with special needs.

The Vygotskian approach to teaching is an example of practice and action in pedagogy. Using my positionality in the research and multimodal social-semiotic analysis, I connected the theory to my practice as an educator and in advocacy. My educational background, professional experience, advocacy, and rapport with the
community all enhanced my positionality and outlook on the study of APE practices in the inclusion GPE setting.

**Summary of Findings**

The problem of practice created the need for a better way to collaborate with GPE teachers to introduce APE strategies into their inclusion GPE classrooms, specifically for engagement of students with ASD. A relationship among Vygotskian theories, Bruner's scaffolding, Kress's multimodalities, and my goal of providing for the GPE teachers' needs produced a communication platform in different modes. The study findings examined three inclusion GPE teachers' paths toward meaning-making from a multimodal video and the use of semiotic tools to engage their students with ASD. The works of Vygotsky, Bruner, and Kress produced a triangular theoretical design and are substantiated in the findings.

The concept of a video based on multimodality theory for learning provided an opportunity for collaboration with inclusion GPE teachers that could not be achieved through only written, verbal, or oral language. The participants needed more than communication through only emails or spoken word. The case study findings outlined the successful understanding and implementation of APE strategies by surpassing dialogic inquiry and employing multimodalities in semiotics. Findings also provided examples of the connections between Vygotskian constructivism theories and semiotics in multimodalities through a collaborative social setting.

According to Kress (2010), multimodalities are responsible for the participating GPE teachers' abilities to make meaning from the video and their abilities to relate the meaning to their inclusion classrooms. The findings signified the importance of
multimodal learning and connected Vygotskian theories with Kress's multimodal theory based on the idea that multiple modes are beneficial in constructing knowledge. The study elicited findings that stress the importance of multimodal learning with hints of Systemic Functional Linguistics' (SFL) significance to communication and collaborative efforts in education.

**Significance of the Study**

The research study aimed to solve the problem of practice by providing GPE teachers with strategies for engaging students with ASD in inclusion GPE classes using multimodal communication through a video. Physical education teachers are charged with providing meaningful opportunities for students with special needs (Tripp et al., 2007). The method of resolution for the problem was offering video sample lessons for GPE teachers to be used to engage students with ASD. The study addressed GPE teachers' questions using Vygotskian constructivism theories combined with Bruner's scaffolding and Kress's idea of multimodalities in an environment of social learning opportunities. The impact of cooperative multimodal learning using video examples was a viable solution to helping GPE teachers to engage students with ASD in the inclusion setting.

**Limitations of the Study**

There were limitations to the case study. Constraints and challenges arose during the study. It was impossible to predict all potential issues that could have developed, but it was important to prepare for the possibilities. Constraints included time and participation due to Covid 19 restrictions. The timing set for the study was one semester. Time constraints included the possibility of one semester not being long enough to
complete the study. The schedule and availability of participants could also have been a constraint due to Covid 19 restrictions. There was also the possibility of participants having scheduling conflicts or making decisions not to participate in the study. Covid 19 restraints also posed countless other possible limitations of the study.

**Organization of the Dissertation**

This dissertation is organized into five chapters. Chapter One is the introduction to the study. Chapter Two provides a more in-depth review of the literature and the theoretical framework of the study. Chapter Three discusses the methodology of the study. Chapter Four provides an analysis of the data collected throughout the study. Chapter Five summarizes the research and examines possible future research.

**Conclusion**

The research study's goal was to ensure that GPE teachers have the resources needed to provide students like Sara, who transition to an inclusion GPE class, with meaningful and carefully designed GPE classes using APE strategies. The study aimed to meet the goal by focusing on the research question guiding the study; How can the questions of GPE teachers in the inclusion setting be answered best with practical and worthwhile APE teaching strategies through a video format and multimodal communication so that they can engage students with ASD in inclusion GPE classes?

Using the core value of the Vygotskian approach that "learning leads to development" (Wardford, 2011, p. 254) and multimodal social-semiotic analysis, the study implemented interventions that solved the problem of practice and answered the research question.

The idea that the purpose of education is "transformation" (Wells, 2001, p. 1) is based on Vygotsky's sociocultural beliefs and Wells's dialogic inquiry beliefs. The
research study hoped to provide "transformation" of "Hey, I've got this kid" from a question of concern to an exclamation of pride and confidence through the use of a video to transcend dialogic inquiry, taking linguistic dialogue to multimodal communication. The video enhanced the efficacy of the GPE teachers' communication and construction of knowledge based on Kress's theory of multimodality.

**Definition of Terms**

The terms below are defined and are used throughout this study.

**Adapted physical education (APE)** – Individualized physical and motor skills program designed to meet individuals with disabilities' needs (Winnick & Porretta, 2016).

**Autism spectrum disorder (ASD)** - Autism spectrum disorders are characterized by social and communication difficulties and intellectual disabilities (Grandin & Panek, 2013).

**Individuals with Disabilities Education Act (IDEA)** – All children are entitled to free, appropriate public education (Mastropieri & Scruggs, 2007).

**Inclusion** – Education of students with disabilities in the general education setting (Mastropieri & Scruggs, 2007).

**Least restrictive environment (LRE)** – Students with disabilities must be educated in the setting least removed from the general education classroom (Winnick & Porretta, 2016).

**Multimodal** – broad concept examining how we communicate using means other than written or spoken language (Kress & Leeuwen, 2001).

**Scaffolding** - teaching method using collaboration with someone having more advanced skill sets to meet learning goals (Gindis, 1995).
**Self-contained** – Classroom where a special education teacher is responsible for all academic subjects' instruction (Turnbull et al., 2012).

**Social-semiotic** – Signs of learning, including transfer and integration of resources through meaning-making (Kress, 2010).

**Special needs** – Intellectual, physical, emotional, and/or behavioral learning disabilities requiring additional education services (Lewis et al., 2016).

**Transition** – The movement from one program to another, from a special school setting to a self-contained setting (Mastropieri & Scruggs, 2007).

**Zone of proximal development (ZPD)** – The distance between what a learner can do without help and what they can do with support from a knowledgeable collaborative source (Gindis, 1995).
CHAPTER 2

LITERATURE REVIEW

Physical education is essential for all students, especially those with an intellectual, physical, and/or emotional disability (Winnick & Poretta, 2016). Lang et al. (2010) reported that aerobic exercise has positive effects on students with ASD, and increased participation in physical activity can also positively affect intellectual functioning and behavior. There is no debate concerning the importance, but there is a discussion about methods for providing PE for students with disabilities. Inclusion is the method discussed most often. Again, there is no debate concerning the importance or benefits of inclusion, such as establishing patterns for overall health and individual well-being benefits. Still, there is a discussion about the best teaching strategies for inclusion, especially for students with ASD.

Physical education classes are some of the first classes to adopt an inclusion plan where students with disabilities attend PE with their same-age, typically-developing peers. This plan requires focusing on students with disabilities' individual needs (Winnick & Porretta, 2016). Students with ASD require adaptations, and GPE teachers are looking for resources to help provide meaningful PE experiences for those students. General PE teachers are not comfortable with implementing inclusion strategies for students with ASD and have difficulty meeting the needs of students in the inclusion setting without proper resources or collaboration with an APE teacher (Storm, 2006). Meeting students'
unique needs with ASD is a challenge GPE teachers face as inclusion practices continue to grow.

In a school district in the Upstate of SC, GPE teachers reached out to me with questions on inclusion strategies. Their questions pertained specifically to the inclusion of students with ASD in GPE classes with their same-age, typically developing peers. General education PE teachers looked to me as a resource as a PE teacher using APE strategies for inclusion for students with ASD. I am a PE teacher with 19 years of teaching experience in a school dedicated to students with special needs and answer email and face-to-face questions from GPE teachers regularly about implementing inclusion practices into their daily lesson plans for students with ASD. I use APE practices in my classroom, and I work with GPE teachers in my district and across the county to offer assistance. The problem is that GPE teachers have limited knowledge in APE inclusion practices and strategies for meeting the needs of students with ASD, and there is no standard best practice for providing the information to GPE teachers. General PE teachers need examples of teaching strategies in the APE setting to engage students with ASD. A video format allows GPE teachers to have the examples for reference when needed.

The purpose of the case study was to solve the problem of practice in the GPE inclusion setting. The study determined three GPE teachers in an inclusion setting could demonstratively provide APE teaching strategies for students with ASD following video provided examples. The study also answered the research question formulated based on the problem of practice. The research question, how can the questions of GPE teachers in the inclusion setting be answered best with practical and worthwhile APE teaching
strategies through a video format and multimodal communication so that they can engage
students with ASD in inclusion GPE classes, drove the case study.

**Literature Review Methodology**

This chapter focuses on literature that provided resources and a theoretical
framework for the case study. These resources guided my interest in the problem of
practice while also developing a deeper understanding of the problem and associated
topics. Literature available on the problem of practice offered a "summary and synthesis"
(Efron & Ravid, 2019, p. 17) of information pertinent to the inquiry of addressing the
needs of a student with ASD in inclusion GPE classes. The literature provided a
framework for organizing information and practical research methods for answering the
research question.

The literature reviewed for my case study uncovered a working relationship
between the problem of practice and the research question. The discovery of the
relationship between supporting sources lead to viable information for GPE teachers and
students with ASD. The following is a brief list of keywords and people used in searching
for literature; physical education, adapted physical education, special needs, inclusion
physical education, autism, autism spectrum disorder, Vygotsky, zone of proximal
development, Bruner, scaffolding, Kress, and multimodality. Discovered literature was
reviewed through a self-designed screening process to determine if it applied to my case
study. Criteria for using the literature required that it be peer-reviewed information,
relatable to my topic, and provided substance to my research question. The literature
review is organized by topic: history and the law, APE and GPE, ASD, inclusion,
theories, and conceptual framework.
History and the Law

Physical education is mandated by federal law. In 1975 President Ford ratified the Education for All Handicapped Children Act (Public Law 94-142) (United States Office of Special Education Programs, 2020). This law is now known as the Individuals with Disabilities Education Act (IDEA, 2004). "The Individuals With Disabilities Education Act" (IDEA) mandates that children and youth ages 3 to 21 with disabilities be provided a free and appropriate public school education in the least restricted environment" (Grigorenko et al., 2020, p. 38). This act opened doors for students with disabilities and provided the groundwork for ensuring equal education opportunities.

In 2004 the IDEA was reauthorized and defined PE in section 300.39 (b) (2) as the development of motor skills, aquatic skills, dance, and individual and group games and sports. Compliance with IDEA stipulates that PE is provided for all students with a disability. Physical education classes are also required to meet the needs of students with disabilities in the least restrictive environment (LRE). In Section 1412 (a) (5), the US Department of Education defines (2017) LRE as:

To the maximum extent appropriate, children with disabilities, including children in public or private institutions or other care facilities, are educated with children who are not disabled, and special classes, separate schooling, or other removal of children with disabilities from the regular educational environment occurs only when the nature or severity of the disability of a child is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily. (para. 1)
IDEA and the emphasis on LRE have led to an increase in general education access for students with disabilities. General education PE classrooms are becoming more inclusive. According to the US Department of Education (2017), it is estimated that over 6.9 million students with disabilities are served in programs designed to meet their needs, and over 62 percent of students with disabilities are in general education classes for over half of their school day. The "increase can be attributed to a rise in the percentage of students identified" (Grigorenko et al., 2020, p. 44).

General education PE teachers abiding by IDEA are required by law to provide PE for students with an ASD because the inclusive GPE classroom is the LRE. Research supports that specific approaches are needed when teaching students with ASD in the LRE and with the treatment of all students with disabilities (Grigorenko et al., 2020). One approach is the inclusion of APE strategies into the preparations and lessons for GPE classes. Winnick and Porretta (2016) suggested that planning is critical when designing lessons for inclusion in GPE classes to ensure those IDEA requirements are met. The GPE teachers need to understand APE to be able to make inclusive plans.

**Adapted Physical Education and General Physical Education**

Adapted PE is shaped by IDEA mandates (U.S. Department of Education, 2017). The Adapted Physical Education National Standards (APENS) (2018) define APE as PE modified for students with a disability. Johnson (2015) described APE as a combination of special education and PE to meet the needs of students with disabilities. Students ages 3 to 21 qualify for APE in the LRE, which can be an inclusion setting or a specialized education facility. In this case study, the GPE teachers were in an inclusion setting, and the researcher taught in a specialized education facility.
What makes APE standout from GPE are the modifications and accommodations used to address the unique needs of students with a disability. The strategies for each disability look different and are tailored to students with disabilities. The range of strategies needed can make it difficult for the GPE teacher to adapt to a wide range of skill levels without support (Johnson, 2015).

General PE is PE in the regular education setting or inclusion setting. A structured curriculum and outlined teaching practices are provided for GPE teachers with meaningful content and standards (Block, 2016). Many GPE teachers do not know how to effectively incorporate APE strategies into their teaching for students with disabilities (Jin et al., 2013). According to Tripp et al. (2007), GPE teachers raise fundamental questions regarding the most effective way to provide for students with disabilities in their classrooms. In the school district where the case study took place, the GPE teachers reached out to me for APE teaching strategy advice. The GPE teachers were finding it challenging to include students with disabilities in their inclusion GPE classes. "Practicing general education physical education teachers do not feel prepared to include students with disabilities in the general physical education class" (Block & Obrusnikova, 2007, p. 117).

Teaching students with ASD is a growing concern in GPE classes. As more students are identified as having ASD and inclusion practices continue to grow, the number of students with ASD in GPE classes will continue to grow. The concern is for the GPE teachers lacking APE strategies for meeting the needs of students with ASD. General PE teachers need more information on ASD to meet students' needs in the inclusion setting appropriately.
Autism Spectrum Disorders

"Autism spectrum disorder is a group of neurodevelopmental disorders characterized by challenges with social skills, repetitive behaviors, speech, and non-verbal communication" (Eckdahl, 2018, p. 59). The word "spectrum" suggests that there is a range of disorders associated with autism. Not only are there ranges of disorders of autism, but there is also a spectrum in the severity of the associated functional impairments (Eckdahl, 2018). There are also overlapping symptoms of ASD, explaining the common phrase, "on the spectrum". "Some individuals – perhaps as many as 75% of those with autism – also have intellectual disabilities. Individuals with Asperger's disorder, however, are often intelligent. Because of this variability, autism is often referred to as an autism spectrum disorder" (Mastropieri & Scruggs, 2007, p. 91).

While there can be a wide variance in intelligence levels in students with ASD, the communication and social abnormalities remain the same across the spectrum. Students with ASD have social, emotional, and intellectual functioning impairments (Mastropieri & Scruggs, 2007). It is difficult to test the IQ of a student with ASD to measure the intellectual abilities because of the difficulties communicating, deficits in social interactions, and sensitivities to other stimuli. Additional testing is required to determine the level of intellectual disabilities as mild, moderate, or severe (Eckdahl, 2018). An IQ of 70 or below is considered mildly intellectually disabled, below 50 is moderately intellectually disabled, and below 30 severely and profoundly intellectually disabled (A. Lawton, personal communication, January 21, 2020). It is estimated that 23% of students with ASD are borderline intellectually disabled with an IQ between 71 and 85 (Eckdahl).
Children are not usually tested for intellectual disabilities until they are in school. However, ASD manifests in the first three years of life and can be diagnosed as early as 18-months old (Kranowitz, 2003). Autism spectrum disorder is a lifelong disability with an expected average life span, and although there are identified risk factors, there are no known causes (Maenner et al., 2020).

According to Maenner et al. (2020), in collaboration with the Centers for Disease Control and Prevention (CDC), 1 in 59 children has ASD with five times higher prevalence in boys, 1 in 42 boys, and 1 in 189 girls. Autism spectrum disorder is found in children of all races and has been shown to run in families; if one child has ASD, there is a three percent chance a second child will also have ASD (Maenner et al., 2020).

There continues to be growth in the number of students identified and labeled as having ASD increasing the number of students with ASD in inclusion classrooms. The advancement of inclusion and the number of students with ASD poses a problem for GPE teachers. General PE teachers struggle with inclusion practices for students with ASD due to their intellectual disabilities and their varying social, emotional, and behavioral functioning levels, and physical needs. Mastropieri and Scruggs (2007) described students with ASD as having different behaviors, including self-stimulating, disruptive, or self-injurious. Students with ASD may also have repetitive behaviors, including repetitive speech and communication. Echolalia is the repeating of words and is typical verbal behavior for students with ASD (Mastropieri & Scruggs, 2007).

Communication is an area of significant concern when working with students with ASD. Reinhartsen et al. (2019) described students with ASD as having an impaired development of communication. Verbal students may exhibit echolalia or scripting, while
other students may be non-verbal with no spoken words. Students with ASD also have poor eye contact and often lack facial expressions (Block, 2016). Non-verbal students may use other sounds or gestures to communicate. Another form of impaired communication is how students with ASD take in and process information. Block (2016) stated that students with ASD might also have sensory processing disorders that inhibit their abilities to understand spoken words. Block went on to say that visual supports are often needed for those with sensory processing disorders and that teachers have to find other ways of communicating with students. Teachers must learn to interpret the student's needs and implement other means of communication (Mastropieri & Scruggs, 2007).

Interpreting the needs of students with ASD is a common theme. In conjunction with the interpretation of communication needs is the need for an explanation of social needs. Students with ASD have "great difficulty commutating and interacting with and responding to other people" (Mastropieri & Scruggs, 2007, p. 91). Social skills are difficult for students with ASD. As a result, students with ASD often display unusual social interactions and lack interest in any kind of relationship with their peers (Block, 2016). It is essential to note the difficulties students have with social skills and relationships due to the nature of inclusion GPE classes. Students often work in groups. Working collaboratively in groups is difficult for students with ASD due to their impaired social responsiveness, and social partnering can bring about aggravation (Eckdahl, 2018; Block).

Emotional responsiveness is another area of impairment for students with ASD (Eckdahl, 2018). Emotional reactions from students with ASD are often inappropriate and result in disruptive behaviors. Behavior characteristics for students with ASD can
cause significant disturbances in classes or simply be a display of various mannerisms. The behaviors students with ASD have usually are the direct result of an antecedent. Another means for interpretation is the discovery of the antecedent. Behavior characteristics include but are not limited to aloofness, possessiveness, repetition, covering ears, biting, chewing, and tantrums (Block, 2016).

Behaviors can also manifest in repetitive actions like pacing and flipping objects with hands and fingers. Pacing exhibits gross motor skills, and flipping or stimming is a display of fine motor skills. A student with ASD may demonstrate simple gross and fine motor skills with repetitive behavior but struggle with participating in an inclusion GPE class learning new skills, and incorporating learned skills into activity.

"Sixty-three percent of children with ASD between the ages of two and six have motor impairments" (Block, 2016, p. 191). These Students with ASD may exhibit different posturing and body movements, requiring more remediation than their same-age peers (Reinhartsen et al., 2019). Motor characteristics for students with ASD may include toe walking, poor posturing, exaggerated body movements, lack of strength and flexibility, balance and coordination deficits, and inability to perform motor skills (Reinhartsen et al.).

Students with ASD may find the GPE inclusion classroom challenging due to their intellectual, emotional, and physical disabilities. The GPE inclusion environment can be sensory stimulating for students with ASD or bring about a change in their routine. The GPE teacher is also faced with challenges communicating with students with ASD while also meeting their emotional and physical needs and managing behaviors. Block (2016) stated, "general physical education teachers, although trying, are a bit
apprehensive and nervous about including students with disabilities into their programs" (p. 33). The GPE inclusion classroom can be challenging for students with ASD and GPE teachers. With a "30% rise since 2012" (p. 188) of students diagnosed with ASD, is it highly likely for GPE teachers to see students with ASD in their inclusion classroom.

**Inclusion**

Inclusion is the "philosophy of merging special and general education" (Block, 2016, p. 25). According to this belief, the GPE inclusion classroom is a place where all students belong. "When done right, inclusion demonstrates that students with disabilities can receive an appropriate and challenging education within the general physical education setting" (p. 20). Mastropieri and Scruggs (2007) referred to this as the best placement option. This setting is the LRE for students with ASD.

Students with ASD should learn alongside their same-age peers in a GPE environment specializing in meeting their needs. The law requires that students learn in the LRE, and the inclusion GPE class allows for equality (Mastropieri & Scruggs, 2007). There are justifications for inclusion for students with ASD other than the legal responsibilities and requirements. One rationale is that instruction for all students should be individualized. Block (2016) stated that students' needs vary regardless of disabilities, and instruction should always be tailored to the students' needs.

Meeting the individual needs of students in the GPE classroom is one of many benefits of inclusion. Students with ASD benefit from opportunities to have social interaction and improve social and communication skills (Mastropieri & Scruggs, 2007). Block (2016) provided an extensive list of benefits, including age-appropriate role
models, motivation, and friendships. Inclusion is appropriate and beneficial. Inclusion for the GPE teacher also poses challenges.

What this means for the GPE teacher is that inclusion must be approached with practicality. Meeting students' needs with ASD alongside other students requires modifications, extra resources, and increased time for planning and training (Mastropieri & Scruggs, 2007). "Only through the merger of resources, knowledge, and talents of general and special education could both children with and without disabilities received a comprehensive, appropriate education" (Block, 2016, p. 25). Collaboration and specific teaching strategies are needed to provide meaningful education and an all-encompassing environment in the GPE inclusion classroom. Teacher effectiveness and behavior management are among teaching strategies for meeting the needs of students with ASD.

The GPE teacher is critical to the success of inclusion in the GPE classroom (Block, 2016). The GPE teachers in the county where the research took place were not given adequate resources to include students with ASD in their classrooms. There is a need for more support and training for GPE teachers when it comes to inclusion practices. Supports are needed for GPE teachers to successfully provide a quality PE program to meet students' individual needs with ASD in the inclusion setting (Block).

**Vygotsky**

Research on GPE teachers in the inclusive classroom thus far has only been descriptive and atheoretical. There has been no definitive answer as to how to solve the growing problem for GPE teachers; no framework of what knowledge, skills, and experience are needed to be successful in the inclusion setting. Suppose the problem of practice is viewed through a sociocultural lens based on Vygotskian theories. In that case,
a framework can be built for support to GPE teachers providing for students with ASD in the inclusion classroom.

Vygotsky was a learning theorist with sociocultural beliefs and a focus on cognitive development. Russian born in the late 1800s, Vygotsky died at an early age, and before his works were finished (Bondorova & Leong, 1996). At the time of his death, he had already written over 270 articles and ten books, which would not be introduced to the West until the 1960s (Bondorova & Leong). Vygotsky's works were based on sociocultural context themes and social theory of development. Vygotsky worked under the umbrella of constructivism and based his theories on active participation in learning and thinking (Veer et al., 1993). The Vygotskian belief is that the goal of education is transformation (Wells, 2001). Through social interaction and cultural resources, we learn and reach transformation.

**Social Development Theory**

Social context runs throughout Vygotsky's learning theories with the implication that participating in socialization affects the learning process. The social development theory explains how socialization leads to awareness and is a sociocultural approach to cognition (Vygotsky, 1978). The social community plays a role in the process of constructing knowledge with an emphasis on sociocultural perspective. Vygotsky (1978) stated that knowledge stems from social interactions, and those interactions have cognitive effects on the development of skills and strategies.

The social development theory explains the limitations of cognitive development without social interaction. Cognitive development is restricted to a certain point within a definite range at any age (Vygotsky, 1978). With the introduction of social interaction
opportunities, learners can move beyond the restricted ranges and reach further cognitive development. Social opportunities allow for a partnership between the teacher and student so that the student can create their own meaning. Vygotsky (1978) emphasized that cognitive development is an active interface between an individual and society.

A partnership began by the GPE teachers reaching out for help meeting the needs of students with ASD. I wanted to foster that partnership by collaborating with GPE teachers and creating what Vygotsky (1978) called a social community. The social community comprised me, GPE teachers, e-mail communications, video sample lessons, interviews, the APE setting, and the satellite school GPE settings.

The GPE teachers reached the extent of their knowledge and abilities in working with students with ASD, and as Vygotsky (1978) explained, the forward movement benefits from social interaction. The case study followed the continually developing social community as socialization with GPE teachers worked towards awareness of APE strategies for teaching students with ASD. Satellite school GPE teachers needed a better understanding of APE strategies in the inclusion setting to gain awareness. This was accomplished through Vygotsky's suggestion of emphasis on the construction of knowledge through a sociocultural lens.

**Sociocultural Theory**

The social development theory places focus on the relationship among individuals, socialization, and cognitive development. The sociocultural theory focuses on what society contributes through culture. In this theory, Vygotsky (1978) also stresses the importance of interactions between learners and their culture while viewing learning as a social process. According to Shabani et al. (2010), the primary characteristic of the
theory is the "positioning of social, rather than individual, processes as primary in the development of higher mental functions" (p. 238). The theory accounts for how learning and development take place within our culture.

Vygotsky's sociocultural theory states that learning is a social process and where our intelligence in society or culture originates (Vygotsky, 1978). The framework built around the theory outlines the role that social interaction within culture plays in cognition development. Shabani et al. (2010) explained this interaction, stating learning "cannot be separated from its social and cultural contexts" (p. 238). According to Vygotsky (1978), learning first occurs through social interactions and then through individual internalization of social behaviors. "Education generates and leads development which is the result of social learning through the internalization of culture and social relationships" (Gindis, 1995, p. 78).

What society contributes through the ASD culture looks different from what GPE teachers saw in their regular education classrooms. The social behaviors and norms of students with ASD varied dramatically. The culture associated with ASD was essential for GPE teachers to be aware of as they worked towards implementing APE strategies. How learning and development occurred in the inclusive culture also differed from how these occurred in the GPE culture.

Throughout the case study, the GPE teachers were formally introduced to the APE and inclusion cultures and practices through social interactions with me. Video sample lessons from my APE classroom provided a look into the culture of ASD and how I interacted with learners. According to Vygotsky (1978), GPE teachers learned through the social process of interaction with me and the ASD and inclusion cultures.
Zone of Proximal Development

"The link between education and development is manifested in Vygotsky's idea of ZPD" (Shabani et al., 2010, p. 239). Vygotsky is credited with the creation of the zone of proximal development (ZPD). The ZPD is defined as the distance between actual development and potential development with the collaboration of peers (Fani & Ghaemin, 2011). Shabani et al. (2010) described ZPD as the current level of development and the next level attainable through tools and facilitation. Both definitions focus on the movement from one level to another with assistance. The ZPD gap closes as the level of development changes, and collaboration is imperative for that to happen.

"The idea is that individuals learn best when working together with others in collaboration, and it is through such collaborative endeavors with more skilled persons that the learner learns and internalize new concepts, psychological tools, and skills" (Shabani et al., 2010, p. 238). Vygotsky (1978) explained the collaborative process stating that peers have different ability levels, and peers with advanced abilities can help. After completing a task jointly with a peer, the learners will be able to complete the task individually.

While his work is generally applied to children, the theory of ZPD combined with scaffolding is also reasonable for practicing teachers and can be used in teacher education (Fani & Ghaemi, 2011). Warford (2011) claimed that ZPD is beneficial in teacher education because it uses cultural tools requiring teachers to use facts and create their own meaning. Shabani et al. (2010) looked at ZPD and teacher education as it applied to collaborative efforts with the end goal, still being that what learners do collaboratively today they can do independently tomorrow.
An integral part of Vygotsky's ZPD is the person with whom the learner is collaboratively working. Someone more skilled than the learner Vygotsky (1978) referred to as the more knowledgeable other (MKO). The MKO can be anyone who has a better understanding than the learner. The job of the MKO is to work cooperatively with the learner through social interaction. Vygotsky described this collaboration as direct organized learning through social interaction.

The case study project covered the GPE teachers' movement in satellite classes from one level of their ZPD to another with my assistance as the MKO. Vygotsky (1978) defined an MKO as someone more skilled than the learner, and in this case study, I had more knowledge of implementing APE teaching strategies for students with ASD than the GPE teachers. The collaborative process's goal was for the GPE teachers to move through the ZPD stages to become independent in implementing APE strategies in their inclusion classes. The video sample lessons also offered assistance and a means of collaboration for GPE teachers in my absence. The videos were used as the GPE teachers' progressed from working cooperatively to provide for the needs of students with an ASD to working independently to plan and integrate APE strategies.

Implementing the ZPD in the case study also allowed me to continue integrating the ASD and inclusion cultures in learning. The GPE teachers used the cultural facts learned to create their own understanding and meanings for implementing APE strategies for students with ASD. Using the ZPD created learning that was organized with a focus on social interaction and culture.
**Bruner**

Bruner is credited with the term scaffolding in conjunction with Vygotsky's ZPD concept. Scaffolding is an instructional technique used as a means for teachers to provide individual support to learners (Wood et al., 1976). The technique is a way to increase learners' ability to build on their prior knowledge and reach their ZPD potential level. The goal of scaffolding is to transfer responsibility from the teacher to the learner and help foster independent learners (Shabani et al., 2010). The teacher becomes a guide.

Vygotsky never used the word scaffolding, but his sociocultural theory provides the theoretical basis for the practice of scaffolding (Wood et al., 1976). Scaffolding is a way of putting the concept of Vygotsky's theory into operation. Structuring information allows for novices to work on each unit individually and successfully. Wood et al. (1976) stated that scaffolding is what teachers do already in preparation for difficulties students may have and are the activities provided to support the learner move through the ZPD.

Scaffolding provides support and extends what the learner can do, but the support is not meant to be permanent. The help scaffolding gives to students can be examined in four stages; self-assistance, teacher assistance, internalization, and recurrence (Warford, 2011). Warford (2011) suggested that the first step be self-assistance when scaffolding is used for teacher education. Self-assistance allows for teachers to be reflective on their current skill sets. Teacher assistance relies on the MKO, and internalization puts the skills learned to practice (Warford). Recurrence is the goal of scaffolding. When the learner reaches recurrence, they can put "theory into practice" (Warford, 2011, p. 255).

Scaffolding in the case study allowed me to support each GPE teacher in their respective settings. I gauged their current knowledge level from their e-mail questions
and prepared video lessons based on those questions. The videos continued to provide the support I could offer and helped the GPE teachers extend what they could do as they learned to integrate APE teaching strategies for students with ASD.

The goal was for GPE teachers to progress through scaffolding stages (Figure 2.1). The GPE teachers asked for help in e-mails. The request was the self-assistance stage, where the GPE teachers realized after reflection on inclusion that they needed assistance in meeting the needs of students with ASD. Next was the teacher assistance stage, where the GPE teachers used the video sample lessons provided by the MKO. In the internalization stage, the GPE teachers practiced the APE strategies presented in the video sample lessons. The practice continued until the GPE teachers no longer needed supports and reached the goal of scaffolding; recurrence. Recurrence meant the GPE teacher no longer needed support and could independently create the adaptations and modifications for students with ASD in the inclusion setting. Although use of the video is meant to be scaffolded, there is some permeance to the video. The video will remain the same, illustrating permanence, but the GPE teachers’ relationship with the video will change overtime illustrating scaffolding through impermanence.

Figure 2.1 Scaffolding Stages
Multimodality

Kress and van Leeuwen (2001) defined multimodality as a broad concept that examines how we communicate and interact through means other than just writing or speaking. The definitions of the concept vary according to the author, but the overarching theme is we make meaning based on many different modes of communication. Multimodality provides an account of the modes available to us for teaching and meaning-making (Kress & Bezemer, 2015).

The multimodal social-semiotic approach places focus on how meaning is made from communication and relies on signs, modes, and meaning-making (Kress & van Leeuwen, 2001). In the research study, I engaged in a process with the GPE teachers creating signs, which Kress (2010) classed as the basic unit of the semiotic process. The GPE teachers sent me an email, representing a linguistic mode, based on what they were seeing in their inclusion classrooms with students with ASD. What the GPE teachers reported seeing was based on gestural, visual, and aural modes. My response to GPE teachers was offered in an email, another example of linguistics as a mode, along with examples of visual, aural, and moving image modes in the form of a video.

Meaning was exchanged with the GPE teachers through signs in the process described above using various modes of communication. Signs provided the material means of understanding how I communicated with the GPE teachers and exchanged meaning (Kress, 2011). The social process also played a role in the exchange. According to Kress (2011), it is the social power of the exchange that allowed the interpretation of signs at each level of communication. The GPE teachers and I were constantly shaped by
social and cultural influences throughout the study, illustrating the definition of social semiotics (Kress).

The creative and innovative resources implemented in the video offered a dynamic combination of modes for a foundation of meaning-making for GPE teachers. Various communication modes were available to me for sign-making in the video that shaped GPE teachers' learning, including the aural, gestural, linguistic, spatial, and visual modes (Figure 2.2). Each mode provided learning potential and brought various lenses to the GPE teachers to enhance engagement with their environment (Kress & Bezemer, 2015). The signs presented in differing modes aimed to engage the learner. According to Burn and Parker (2003) meaning making occurred as a result of a complex series of signs.

Kress and van Leeuwen (2001) suggested the use of multi-modes to enhance the semiotic process. The semiotic approach focuses on meaning-making in all modes. The meaning is made from the modes by creating a message for the learner (Kress & Bezemer, 2015). From the message, the learner creates a new sign demonstrating their own understanding. As learners make their own signs, they translate the meaning (Kress & Bezemer). The research study's goal was for GPE teachers to transfer the signs presented in the video into their own understanding for implementation in their inclusion classrooms. The GPE teachers moved from a complex set of multimodal signs used in their classrooms to engaging in with a different set of complex multimodal signs in their asking questions concerning ASD and learning from APE strategies in the video. They moved then back into the use of their classroom signs again. The video and interactions
in sign-making are the causes of learning transformation although the transformation actually occurs after the use of the video.

**Figure 2.2 Multimodal Communication**
The social-semiotic perspective on multimodalities brings attention to learning signs, including transfer and integration of resources (Bezemer et al., 2012). Learning occurred when the GPE teachers made meaning for themselves and used signs in their own classrooms. The "social" in social-semiotic indicates meaning-making due to communication in the social setting using sociocultural resources (Bezemer et al.; Kress & Bezemer, 2015). The GPE teachers were presented with APE strategies serving as signs in the ASD culture environment. According to Dicks (2019), social-semiotics profoundly influence multimodal analysis and meaning-making from social life. Learning for GPE teachers resulted from engagement with the multimodal environment based on the culture of ASD presented in the video.

The look of social-semiotics is changing with technology, and there is movement from monomodal to multimodal pedagogy (Bezemer et al., 2012; Kress & van Leeuwen, 2001). Communication and learning barriers were crossed as Covid 19 forced multimodal growth in the form of virtual classrooms. The research study embraced Bob Dylan's lyrics, "times they are a-changin'" and adapted to the new landscape of social-semiotics demanded by Covid 19.

**Conceptual Framework**

The case study project's conceptual framework was constructed of literature used to explore the problem of practice and research question. I used supportive literature and theories to build the basis for my inquiries into how to best provide for GPE teachers' needs in satellite classes in the Upstate of SC with questions concerning the inclusion of students with ASD. The framework synthesized the literature supports and learning theories. Vygotsky's social development theory and sociocultural theory combined with
Bruner's scaffolding and Kress's learning methods using multimodality social-semiotics created the framework for the case study and provided lenses through which data was analyzed. The framework as a whole provided organization for the case study project.

**Conclusion**

Providing inclusion GPE classes for students with ASD is not only required by IDEA but proves valuable for students. Physical education in the inclusion setting is beneficial for students with ASD providing social skills, observation of appropriate behaviors by peers, opportunities, and relationship development (Tymeson, 2019). The inclusion GPE classroom is achieved through implementing APE strategies creating a "community of learners" (Tripp et al., 2007, p. 33).

Vygotsky believed in learning cooperatively. He believed that individuals should work together to solve problems to increase individual learning (Wells, 2001). Based on Vygotsky's sociocultural ideas, teachers should participate in "inquiry into their own practice, to provide optimal learning conditions for the particular student in their care" (p. 2). The social-semiotic approach to learning complements this idea with the notion that a social setting benefits meaning-making (Kress, 2010). The case study project allowed teachers to examine their current practice, work collaboratively with me, and build their inclusion GPE programs to meet students' needs with ASD.

Vygotsky also believed in societal influences. The basis of Vygotsky's theories can be summarized by how the environment affects how and what we think (Vygotsky, 1978). A multimodal learning environment strengthens the link between communication and learning (Kress & Bezemer, 2015). The case study had the opportunity to change what GPE teachers thought and how they approached the inclusion of students with ASD.
General education PE teachers needed to adapt to the culture of teaching students with ASD. The inclusion of APE strategies into the GPE classroom can use cultural tools to guide GPE teachers towards inclusion practices.

Proactive strategies are needed to move GPE teachers towards confidence and success in their abilities to include students with an ASD in their GPE classrooms. Using Vygotsky's learning theories provided a means of implementing strategies beneficial to GPE teachers and their inclusion classrooms. Vygotsky contributed a great deal to educational research through his social theories of development that, combined with the framework of a social-semiotic approach to learning, were fundamental in the case study. According to Warford (2011), teaching GPE teachers the Vygotskian way is like a three-way conversation. In the case study, the conversation was among the GPE teacher's collaboration with me, APE strategies in inclusion pedagogy, and the implementation of a host of multimodal communication interaction that centered around a video. The literature reviewed supported the conversation and provided a framework for the case study.
CHAPTER 3

METHODOLOGY

General education PE teachers in the Upstate of SC faced uncertainty in the inclusion of students with ASD in their GPE classroom settings. The GPE teachers who served as case study participants were in schools with satellite self-contained classes for students who have transitioned from a school dedicated to students with special needs. Students in these classes attend inclusion PE classes with their same-age, typically-developing peers. The GPE teachers needed support in offering APE strategies for students with ASD in the inclusion setting. The GPE teachers looked to me as a resource as a PE teacher dedicated to students with special needs. I use APE practices in my classroom and work with GPE teachers teaching students in satellite classes to incorporate APE practices and strategies into their inclusion classrooms to engage students with ASD. General PE teachers needed examples of APE teaching strategies to engage students with ASD. A video format provided GPE teachers with examples and was useful as a supplement to the provided curriculum. This case study explored an approach to support GPE teachers in developing their skills and abilities in teaching students with ASD to improve engagement in the GPE curriculum and instruction using APE strategies by video guidance.

The purpose of this chapter is to introduce the research methodology for the case study that attempted to solve the problem of practice for GPE teachers in the inclusion setting needing guidance for students with ASD. The study sought to determine if three
GPE teachers in an inclusion setting could demonstratively provide APE teaching strategies for students with ASD following example lessons provided in a video format. The study also attempted to answer the research question formulated based on the problem of practice. The methodology connected the problem of practice and research question, allowing for a deeper understanding of problem-solving attempts through investigation using qualitative methods.

The research approach is discussed at length in this chapter. This chapter's organization is comprised of research design, study setting, participants, procedures, analysis, bias and ethical concerns, and a summary. The research design section contains an in-depth look at the methodology of the case study built around the problem of practice and research question and is supported by the other sections of this chapter.

**Research Question**

How can the questions of GPE teachers in the inclusion setting be answered best with practical and worthwhile APE teaching strategies through a video format and multimodal communication so that they can engage students with ASD in inclusion GPE classes?

**Research Design**

The study was qualitative in design with a case study approach that attempted to correct the problem of practice through literary support and guidance of the research question. The research question guided the inquiry and aligned with the constructs of the study's focus. I chose a qualitative design and case study approach to address the constructs based on the problem of practice grounded in literacy and meaning making. I started with a research question and then conducted quality research to determine how the
GPE teachers could implement video examples of APE strategies as an attempt to construct lessons to fit their current reality of inclusion practices. Through the case study I converted the topic of knowledge transfer explored by Vygotsky and Bruner, into a study of multimodal linguistic tools investigated by Kress. The case study is grounded in theory. The methodology was how I grouped the design elements, including a qualitative and case study approach, to conduct the research (Figure 3.1).

A qualitative methodology allowed me to include the emotions and feelings of the GPE teachers as they worked towards an active inclusion classroom for students with

![Figure 3.1 Research Design](image-url)
Qualitative designed studies are based on perceptions and viewpoints. The actual words of the GPE teachers gathered from open-ended questions and interviews were supported by the relativism ontology and provided data to develop. Using open-ended questions allowed flexibility while focusing on the participants' thoughts to uncover GPE teachers' needs in inclusion settings regarding preparation for teaching students with ASD (Creswell, 2002). Using qualitative research allowed me to look for meaning and trends requiring categorizing and organizing for descriptive analysis. The methodology was also appropriate for an in-depth investigation into the possibility of GPE teachers using video instruction for problem-solving. The methodology was intentionally subjective and personal. In conjunction with a case study approach, subjectivity created an ideal environment to answer the study's research question.

The case study approach was appropriate because it allowed me to research a personal point of view through analyzing the history, development, and circumstances of the problem of practice. The case study design enabled me to tell detail the story of three GPE teachers' experiences searching for ways to engage students with ASD in the inclusion setting. It authenticated the need for a resource and information readily available to novice and experienced teachers concerning adapting activities for students with ASD. According to Yin (2009), a case study allows the researcher, "inquiry that investigates a contemporary phenomenon in depth and within its real-life context" (p. 18). This design enabled me to tell the story of three teachers in three authentic situations in which they were ill-equipped to provide for the needs of students with ASD and reached out to me for collaborative learning as an expert in APE strategies. In
cooperation with a qualitative approach, the case study approach provided a detailed and in-depth narrative of the problem and the intervention.

A case study methodology was applicable because the goal of the study project was to look comprehensively into the problem of practice. Creswell (2002) stated that a qualitative approach is appropriate when the goal is seeking and understanding. The methodology was justified because the project's intended outcome was to know how to provide for the needs of GPE teachers in the inclusion setting with students with ASD and was conducted through an in-depth study.

**Study Setting**

I examined the problem as a researcher and practitioner. A rapport was already established with area GPE teachers working in inclusion settings with students in satellite classes. A 14-year working relationship with the state PE association and leadership positions allowed me to have a platform for advocacy. As a PE teacher currently implementing APE strategies in a school dedicated to students with special needs, I was an insider working with insiders for the case study project. I worked collaboratively with GPE teachers on implementing APE strategies into their GPE classrooms to engage students with ASD.

This topic of study interested me as a PE teacher and an APE advocate. As a PE teacher teaching students with special needs, it is a personal initiative to educate GPE teachers on the strategies necessary for teaching and engaging students with ASD. Working with students with ASD requires a specific skill set and mindset. The goal was to help GPE teachers teaching students with ASD in inclusion classes to learn the skills
and strategies needed to effectively meet the needs of students and engage students with ASD through video examples of APE strategies.

Being close to the topic of interest was beneficial in my roles in the procedures and data collection and analysis. Beginning with the consent of participants, I administered and carried out procedures. I also oversaw all data collection from emails, surveys, and interviews and analyzed gathered information. My involvement in the study displayed social constructivism attributes because I was part of the world encompassing the study. I influenced the study while also being influenced upon by the study.

The study occurred in two physical settings, over which I played a significant role in carrying out procures and had influence. My school, dedicated to students with special needs, was the setting for the video recorded sample lessons. The GPE classrooms, where satellite classes are taught, were the settings for using the video lessons for integrating APE strategies for students with ASD.

**Participants**

There were two groups of participants for the study. Students diagnosed with ASD at the school dedicated to students with special needs were participants (actors) in the video recorded sample lessons. The second group of participants was the GPE teachers from schools in the same county as the school dedicated to students with special needs, hosting satellite classes and using the videos to guide the implementation of APE strategies. Both groups of participants for the study were selected by purposeful and quota sampling. All participants were chosen by purposeful sampling, "based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned" (Merriam & Tisdell,
Quota sampling is a type of purposive sampling, in which I decided how many participants with predetermined characteristics to include in the study (Robinson, 2013). Specific features are discussed in the following sections dedicated to each participant group.

Specifying a quota and participant characteristics allowed me to focus on those who were most beneficial to the research study. A typical, real-life setting sample selection is appropriate because the case study used social constructivism and a social-semiotic multimodality combination approach. A "typical sample" involves "the average person, situation, or instance of the phenomenon interest" (Merriam & Tisdell, 2015, p. 62). The students with ASD and GPE teachers were considered "typical" because the study occurred in their real-life learning and teaching setting and did not require anything extra to participate. Participants did not fall into any one particular race, ethnicity, gender, or religious background.

The first group of participants for the study was students with ASD featured in the video recordings. Defining characteristics for student participants included a diagnosed ASD, age range between 5 and 22, no or limited physical disabilities, and behaviors similar to those matching GPE teacher concerns. The concerns of the GPE teachers were determined from questions posed in emails to me regarding engaging students with ASD in inclusion GPE classes. The student sample quota was not the same as the GPE teacher quota. It was beneficial to provide the GPE teachers with numerous examples to promote the ease of integrating APE teaching strategies. Six students (actors) were used as examples in the video recordings. The students were illustrative participants in the study rather than full participants although they were the ultimate recipients of the benefits of
the semiotic tool’s efficacy. Students were secondary to the main focus of the multimodal communication that transpired for the purpose of improving instruction.

The second group of participants for the study was a group of three GPE teachers from different schools within the county where satellite classes are held. The GPE teachers and I could be equated to professional learning community (PLC) with a professional development paradigm. The GPE teachers were a mix of novice and experienced teachers, all teaching in inclusive GPE settings. These teachers had previously reached out to me and raised questions about specific students in their GPE classes who have an ASD diagnosis. The goal of the PLC was to have an impact on student engagement by improving instruction with APE strategies.

**Student with ASD Participant Rationale**

Student participant choices were difficult due to the number of students in the school dedicated to special needs diagnosed with ASD. The before-mentioned characteristics first narrowed the possible participation field. Although research shows that a child may exhibit signs of an ASD as early as 18 months, it was more beneficial only to use participants of school age who would be most similar to students GPE teachers see in their inclusion classrooms (Kranowitz, 2006). Students up to age 22 were still considered because of the associated cognitive and developmental delays. An older student could provide learning examples for GPE teachers. The field was narrowed secondly by eliminating students with severe physical disabilities. It was most beneficial to GPE teachers to showcase students with physical characteristics most like their inclusion students. Students with severe physical disabilities require more and different APE strategies than those needed for students with ASD. For this study, students without
severe physical disabilities allowed me to focus on APE strategies directly related to ASD. A third narrowing occurred through behavior characteristics by only including students with less severe behaviors and similar to students in the GPE teachers' inclusion classes.

I had access to students with matching characteristics for the study as a PE teacher in the school dedicated to students with special needs. I am responsible for writing the individualized education program (IEP) goals and objectives for students and had access to their disability diagnosis and psychological evaluations. I also had access to IEP team members and school staff to provide support matching characteristics of students to the study's needs.

GPE Teacher Participant Rationale

Choosing GPE teacher participants was not difficult because any GPE teacher raising questions about meeting the needs of a student with ASD was an eligible participant. However, the field was narrowed to three to allow for a deep dive into each case. The field was narrowed by a GPE choosing not to participate, and my selecting situations deemed most likely to benefit from a video recorded sample lesson. Participants were certified PE teachers with no formal APE training or additional certification.

I was granted access to the participants through an unwritten rule of accessibility and rapport after a GPE teacher contacted me requesting help with a student with ASD. I made direct contact with the GPE teacher and conversed with them by email or phone to understand the scope of the students' disability and any other circumstances surrounding the situation. I also discussed and proposed their participation in the case study. Efron &
Ravid (2019) suggested that the researcher contact the participants, not relying on others to provide information to begin building relationships with participants as soon as they learn about the study.

Teachers selected for the study were assigned a pseudonym to protect their anonymity. Allen & Wiles (2015) suggested letting participants chose their pseudonyms. The pseudonym had a psychological meaning to me, participants, and the content of the study. This study was personal, and having participants choose pseudonyms was another way to make it more individualized to participants and build rapport. Teachers participating in the study are referred to by their pseudonyms in Chapter 4 of the study.

**Student with an ASD Consent**

Consent for student participation was required through parental or guardian permission. Students attending the school dedicated to students with special needs were all deemed incompetent due to the nature of their disabilities, even if of legal age. Parents or guardians gave consent for their students diagnosed with ASD to participate in the study (Appendix A). The students' parents or guardians completed the agreement to be a research study participant required by the sponsoring university.

Parents and guardians were provided with a letter detailing the case study, my role as their child's teacher and the researcher, and what was expected from their child in the study (Appendix B). The letter outlined the process of videotaping their child during a PE class and who had access to the video edits and final video. Their child was only asked to participate in regular PE activities using APE strategies during their normally scheduled PE classes. Due to Covid 19 and new restrictions in the PE classroom, I worked with students individually. Confidentiality and anonymity were discussed in the letter assuring
parents or guardians their child's identity was protected as best as possible by the researcher. Pseudonyms are used, and when possible, videotaping avoided showing a child's face. However, parents and guardians were aware that it might have been necessary to show a child's facial expressions for the study's benefit.

It was made clear to parents and guardians that participation was strictly optional and had no effect on their child's PE IEP goals or objectives. There was also always the option to leave the study at any time. I was available to answer questions of parents and guardians concerning their child's participation.

**GPE Teacher Consent**

After providing the GPE teacher with information about the study and answering any questions, I asked GPE teachers to participate in the study voluntarily. Every GPE teacher interested was provided with a detailed letter outlining the research and included a consent form. The GPE teachers read the letter and signed the consent form before participating in any part of the study (Appendix C).

The letter gave the GPE teachers insight into the study's purpose, research question driving the study, their role as a participant, my role as a researcher, and expectations for participation in the study. Participant expectations included a survey, an interview, and implementing the APE strategies provided in the video recorded sample lessons.

The consent form addressed participant confidentiality and anonymity. I was the only person with access to interview notes, survey responses, and video recording before editing and disbursement to GPE participants. I used pseudonyms when referencing GPE teacher participants to protect their identity.
Pseudonyms for participating teachers were created through a collaboration among the participants and me to maintain the research case study's personal tone. Participants were given ownership in choosing their pseudonyms at Allen and Wiles's (2015) suggestion to provide psychological meaning to the names. Mrs. Move is the first teacher discussed, and her chosen name correlates with her role as a PE teacher and her desire to implement inclusive plans dedicated to movement for all students. Coach Achiever, Coach A for short, is the subject of the second study, and his name relates to promoting students as goal achievers in his inclusive classroom. Mrs. Soar, named after her school motto and eagle mascot, is presented in the last results and chose a name that reflects students reaching their potentials in her inclusion classroom.

**Procedures**

The procedures for the case study worked towards the goal of providing an intervention of meeting the needs of GPE teachers in the inclusion setting and teaching students with ASD. The study's intervention was based on the problem of practice, research question, purpose of the case study, procedures, and data analysis. Procedures were detailed and included step-by-step methods of data collection.

**Timeline**

The timeline for the case study spanned between two and nine weeks from August to October. The timeframe for the study was shortened due to Covid 19 and school attendance policies. It was anticipated that interventions would occur when GPE teachers were participating in the case study. It was also expected that other responses would not occur until after the research study was finalized.
Surveys

There is a mixed review on using a survey for qualitative research. It has been stated that researchers find surveys in qualitative research casual (Jansen, 2010). However, a less structured casual questionnaire completed by GPE teacher participants was beneficial to and appropriate for the study. Online survey giant SurveyMonkey outlined in an article how beneficial an online, open-ended survey can be to a qualitative study. The qualitative survey is defined as gaining "in-depth information about underlying reasoning and motives" (How to design a survey for an audience panel, n.d., para. 2) to develop "understanding from an individual perspective" (para. 2). Surveys completed by GPE participants were exploratory. I did not look for a specific answer but rather diversity with an underlying theme.

Jansen (2010) stated that the use of surveys in qualitative research provides diversity rather than frequency. Surveys were used to establish a starting point for interviews. Survey responses were used to investigate the variation and diversity of needs GPE teacher participants have concerning APE strategies for students with ASD. The investigation guided where the interviews went to answer the research question. The inquiry also provided a starting point as a reference for measuring the usefulness of the video sample lessons throughout the study.

Case study GPE participants were surveyed on the construct, content, and usefulness of the video of sample lessons for teaching students with ASD. Surveys were comprised of open-ended questions. A survey was given to participants following their completion of viewing the video. Surveys were sent to GPE teacher participants electronically through a survey computer program. Office 365 allowed for the creation of
surveys through Forms. The school district provided Office 365 to all staff. Forms also offered assistance in the analysis of data. Office 365 allowed using a "text box" in the survey for participants to enter their own unique answer and not a preset response because actual quotations from text box answers were a more influential statement than simple averages and percentages. Surveys were short with 13 questions that allowed GPE teacher participants to enter their answers and concentrate on the research study's constructs (Appendix D).

**Videos**

Video recorded lessons exemplifying APE strategies in teaching students with ASD were provided to GPE teachers as a resource tool. Brame (2015) stated the "meta-analysis has shown that technology can enhance learning" (para. 1). The video provided lessons were intended to guide the GPE teachers in meeting the needs of students with ASD through various APE strategies and multimodal tools.

Student participants (actors) with ASD participated in their weekly PE classes in the school dedicated to students with special needs. Adapted PE strategies were used in teaching students with ASD during classes. These strategies were not new to students but showcased effectiveness for the benefit of the GPE teacher participants. The APE strategies included in the video were based on inclusion concerns gathered from GPE teachers' emails and conversations. Strategies demonstrated addressed "Hey, I've got this kid" questions I have received in the past. Those questions, presented in Chapter One vignettes guided the strategy implementation in the video.

A recording device was set-up in the school dedicated to students with special needs. The student participants with ASD were not necessarily aware of the recording
device as it could have been a distraction. The class was conducted as usual as much as possible with the current Covid 19 restrictions in place, and I worked with the student participant individually in the range of the recording device. During their PE classes, I recorded each participant for two weeks during August and then edited the recordings for quality examples of APE strategies.

   Video editing included signaling, segmenting, and weeding methods. The editing of videos was essential to targeted learning for GPE teachers. According to Brame (2015), "video, specifically, can be a highly effective educational tool" (para.1) when directed at meeting the needs of the learner. Editing increased the focused direction of the video lessons. Signaling provided on-screen text and/or highlighted areas ensuring attention by the learner was concentrated on specific content while segmenting and weeding were both methods of editing that allowed me to emphasize particular aspects of the recorded lessons (Brame, 2015).

   Video recordings were stored on my MacBook and were password protected. I edited videos on my MacBook and deleted unused portions of videos. The video storage was backed-up on a flash drive kept in a locked drawer of my desk.

   Completed video compilations were provided to GPE teacher participants via an online forum that was also password protected through the OneDrive on Office 365. The signed consent form GPE teachers completed also addressed the restriction of sharing videos with other colleagues. The videos were given to GPE teachers in August to implement APE strategies during August and September (Appendix E).
Interviews

This case study focused on how effectively GPE teachers' needs in an inclusive setting with students with ASD could be met using video sample lessons provided by the researcher. The best way to collect data about the GPE teachers' needs was by interviewing participants and asking thought-provoking questions. I conducted interviews for this qualitative case study approach to have an understanding of "the experience of other people and the meaning they make of that experience" (Merriam & Tisdell, 2015, p. 24).

Merriam and Tisdell (2015) stated that the key to gathering useful data is good questions. Interviews can serve a wide variety of purposes and can be done in a variety of forms. The most common types of interviews are face-to-face, and can be structured, semi-structured, or unstructured, and are a "systematic activity" (Merriam & Tisdell, 2015, pg. 107). Interview questions were semi-structured and allowed me to have some flexibility in the interview. A semi-structured style allowed me to "respond to the situation at hand" (p. 113). I let the answers have some guidance for the interview.

Case study GPE teachers participated in a virtual interview about teaching students with ASD following the implementation of the strategies provided in video format. Virtual meetings were considered face-to-face during Covid 19 restrictions. Meetings were scheduled through Teams in Office 365 at times convenient for the participant and were expected to last an average of 30 minutes. Questions were open-ended, not leading, and did not include yes-no items. Interviews took place after GPE teachers had attempted to implement the APE teaching strategies for students with ASD. All participants were interviewed and recorded through Teams with the permission
granted to me in the signed consent forms by the GPE participants. Merriam and Tisdell (2015) suggested the researcher focus on one aspect of the interview during the process and rely on a recording for transcription and analysis. During the interview, I focused on my reactions to the questions in my notes and used the video recording to analyze responses after the interview. I transcribed the audio recording myself to not lose any emphasis on content because I was most familiar with the study subject area.

Interview questions were provided to participants several days in advance of their scheduled interview. Providing participants with the items allowed them to form well thought out answers and reflect on their taught lessons. However, as the researcher, I reserved the right to ask other questions based on their responses to engage them in conversation. There were five questions, and the scope of questions addressed the integration of video sample lesson plans with APE teaching strategies for students with ASD. All participants were asked three questions that are the same. The remaining two questions were specific to their survey responses and individual teaching situations (Appendix F).

Analysis

The research study's analysis aligned with the research design and included the methods and tools used to analyze the data. The analysis began when data collection began. Data "collection and analysis should be a simultaneous process in qualitative research" (Merriam & Tisdell, 2015, pg. 195). According to Merriam and Tisdell (2015), the early analysis of data makes the data collection purposeful. The organization of data began early in the collection phase for analysis purposes. Organizational tools included but were not limited to visuals, coding, shorthand, and charts for comparisons.
Two types of analysis were used and were based on the purpose of the study. Content analysis is subjective and helped in looking for themes in the gathered data. Narrative analysis was also used. Narrative analysis was beneficial in analyzing conversation and context, tying into social constructivism and multimodality. Using two analysis techniques helped me be more pragmatic in my evaluation of data. Each method also allowed me to ensure I was respectful of the data and reported honestly without bias.

According to Puppis (2019), analyzing data requires two steps; coding and interpretation. Inductive coding converts the raw qualitative data from the surveys and interviews into usable data for thematic discovery. Interpretation produces patterns and provides categories in relation to the theoretical context (Puppis, 2019).

**Surveys**

I analyzed the open-ended survey questions using content analysis that began as data was collected. The research question served as a guide for organizing and analyzing the data, and I used text from my gathered data sources to look for common themes when organizing the data. Merriam and Tisdell (2015) stated that in a qualitative methodology, the framework has a dual role; framing the questions and interpreting the results. The theoretical framework also served as a guide for analysis.

The theoretical framework and research question guided the analysis of survey responses. Inductive coding was also used for survey responses using Office 365 Forms analysis programming. The program input data gathered from online surveys and organized results. I could see results at any time during collection and exported data for comparisons. I created "rules" for viewing data, including time spent on the survey, completeness of questions, and tagging specific words to help me uncover themes.
Interviews

Morehouse and Maykut (1994) pointed out, "Words are the way that most people come to understand their situations; we create our world with words; we explain ourselves with words; we defend and hide ourselves with words" (p. 18). In qualitative data analysis, "…the task of the researcher is to find patterns within those words and to present those patterns for others to inspect while at the same time staying as close to the construction of the world as the participants originally experienced it" (p. 18). Interviews were analyzed using narrative analysis, highlighting the details of their stories. This method allowed me to analyze data and make sense of the individual stories participants shared with me.

Bias and Ethical Concerns

Creswell and Miller (2000) explained in detail the need for qualitative researchers to prove their case study's credibility. They suggested that the validity of research is constructed by two perspectives that create a framework; lens and paradigm (Creswell & Miller, 2000). The lens was the viewpoint of the researcher, participant, or reader. The paradigm assumption was worldview. Based on Creswell and Miller's work, three types of validity applied to my data analysis.

Researcher reflexivity was used to disclose any bias I had that may have affected the case study. This type of validity used the lens of the researcher, me, and the critical paradigm. I used reflection as a means to assist with my objectivity to minimize bias. Member checking was also used because it was the "most crucial technique for establishing credibility" (Creswell & Miller, 2000, p. 127) concerning participants. This type of validity required taking the information back to the GPE teacher participant for
their review for accuracy and using the participant lens and systematic paradigm. Finally, a thick, rich description focused on detail. "Thick, rich descriptions are deep, dense, detailed accounts" (p. 128) and allows the reader to feel as if they are part of the study. A narrative account used the lens of the reader and a constructivist paradigm.

The university addressed ethical concerns for the case study using a required institutional review board (IRB) application, consent, and assent forms. The IRB was completed and filed before beginning the research study (Appendix G). The consent forms were created based on the university IRB guidelines. They were issued to ensure the research study was ethical and the rights of participants were protected. Letters of explanations of the study were provided to students with an ASD and GPE teachers also help diminish ethical concerns.

Summary

This chapter began with an introduction to the purpose of the study and the methods used for research. The chapter's content provided details of the research design, including a relativism ontology and social constructivism epistemology, highlighting the necessary components of the research setting and participants. Attention was paid to detail as the chapter illustrated qualitative procedures used to carry out the case study and how data was analyzed. This chapter ends with a summation of how bias was avoided, and how the ethical treatment of study participants was maintained. Focus was placed on how the social constructivism theory was used as the methodology for the qualitative case study. The primary participants in the study were three GPE teachers whose inclusion students with ASD constituted the purpose of the study. Through a chain reaction, the multimodal teaching method affected the teachers' abilities to engage
students. Chapter 4 provides study results and demonstrates that the methodology described in this chapter was accurately followed.
This chapter contains the findings of the case study conducted to answer the research question:

How can the questions of GPE teachers in the inclusion setting be answered best with practical and worthwhile APE teaching strategies through a video format and multimodal communication so that they can engage students with ASD in inclusion GPE classes?

An analysis of findings from the case study connected to the research question is included in this chapter. Additionally, this chapter contains the process used to analyze transcripts from surveys and individual interviews to uncover themes. A triad of theories was used to create a framework for examining findings (Figure 4.1). The framework is comprised of Vygotsky's social constructivism theories, Bruner's scaffolding, and Kress's multimodality in semiotics. The three-sided theoretical design aligns with my views on constructing knowledge, supporting learning, and communication. The interplay of concepts from each theory shaped my approach to analyzing data. Vygotsky's constructivism theories served as an umbrella for the research, while the multimodal approach provided the lens for analyzing the data. Survey responses and interview answers were analyzed by content analysis and inductive coding (Elo & Kyngäs, 2008), in which participants' responses were examined through a multimodal lens (Kress, 1976).
This chapter's findings tell the detailed stories of three GPE teachers' reactions to a multimodal communication in which a video was used to provide APE strategies. The multimodality of the video provided the foundational groundwork for meaning making and included the linguistic, visual, aural, gestural, and spatial modes. The linguistic mode was evident throughout the study with the use of email communication and specifically in the video in combination with the visual mode in the use of text presented in bold font and color. The visual mode was represented by more than text in the use of still and moving images. Examples of the aural mode include verbal directions given as well as the tone of voice used. Gestural examples were provided by physical prompting and sign language use for communication while the spatial mode was represented by posturing of the researcher and practitioner during instruction.
It is important to note how results were affected by a global pandemic, which provided an even larger need to be mindful of meaningful ways to communicate due to decreased face-to-face interactions in schools. It is also essential to call attention to the evolution of my thinking as the study progressed. The study's original intent was to convey useful information through a video format to include students with ASD in GPE classes. What occurred in actuality was examining the video through Kress's multimodal semiotics lens. My thinking took on a new direction toward the discovery of choices and design in language and communication.

Three GPE teachers served as research participants in the case study and were chosen based on their self-disclosed deficiencies in the GPE inclusion classroom. The participants were selected from a pool of GPE teachers who had contacted me for help to provide for the needs of students with ASD in their inclusion GPE classes. Participating GPE teachers frequently asked me questions because of my exclusive work with students with special needs and my history of success with students with ASD. They accepted the terms of being research participants and agreed to complete a survey and interview after viewing a video I created in response to a need for a beneficial way to share APE strategies with GPE teachers in the inclusion setting. The video presented APE strategies for students with ASD in the inclusion GPE setting using multimodalities for communication (Figure 4.2). When the chosen GPE teachers agreed to be participants in the study, neither they nor I knew they would participate during Covid 19 with additional pedagogic hurdles and new, alternative teaching formats. The need for communication mindful of different modes (linguistic, visual, audio, gestural, and spatial) during the global pandemic is consistent with Kress's theory of multimodalities. According to Kress
Mrs. Move, Coach A, and Mrs. Soar approached the school year with an added amount of anticipation and uncertainty in the wake of a Covid 19 Return-to-Learning (R2L) plan that began with virtual learning in their GPE classrooms in the Upstate of South Carolina. Two elementary school GPE teachers, Mrs. Move and Coach A, and one middle school GPE teacher, Mrs. Soar, were among district-wide staff responsible for teaching students virtually. At the same time, they also prepared for a staggered face-to-face (F2F) return to school. The case study provided learning opportunities for participants and me as we collaboratively navigated new teaching and learning formats.

Figure 4.2 Multimodal APE Strategies

(2009c), all modes have specific meanings that can merge to make a more extensive, more impactful communication.
Mrs. Move

Mrs. Move wrote to me, "Hey, I've got this kid who is autistic and will not participate in class." John is an elementary school student in a satellite self-contained class. He was in the second grade when Mrs. Move first contacted me, and John attended Mrs. Move's PE class with his second-grade peers. Related Arts classes at his elementary school are inclusive. John is autistic. He struggles with communication and is behind his same-age peers in his gross motor skills development. John is obese, and Mrs. Move has difficulty engaging John in physical activity. He is now in the third grade and exhibits the same problems in his GPE inclusion class. Mrs. Move was increasingly concerned with his lack of movement in class.

Mrs. Move is a GPE teacher with eight years of elementary GPE experience. She is a mom to a two-year-old and also coaches a girls' varsity sport for the high school. Her life experiences outside of the classroom have not offered exposure to children with developmental delays in gross motor skills. Mrs. Move has served at two schools in the same district and co-teaches with a male GPE teacher with twice her years of experience. She has been teaching inclusion PE classes for her career duration. She has frequently reached out to me with questions in the past exemplifying Vygotskian theories of learning as she inquired into her practice (Vygotsky, 1978). Vygotsky suggested inquiry leads to clarity and defining of commitment to teaching. Van Huizen et al. (2005) explained Vygotsky's inquiry-based approach claiming, "professional repertoires are not established once and for all and are not given from outside a practice, but have to be continually reappraised, reaffirmed, or modified by questioning experiences" (p. 270). The authors expanded on the Vygotskian theories of learning, adding a social component
to the reflective inquiry. "The interplay between exploration and development of public and personal meaning is another example of the two-sided character of the neo-Vygotskian perspective" (van Huizen et al., 2005, p. 272). Knowledge results from the process of constructing answers to questions about which learners are genuinely curious and have some investment. Mrs. Move was excited to collaborate with me as a participant in the research study, further exemplifying Vygotsky's social constructivism theory.

Collaborative work in a social setting is a common characteristic outlined by Vygotsky's (1978) theory. Vygotsky (1979) argued, "The social dimension of consciousness is primary" and "the individual dimension of consciousness is derivative and secondary" (p. 30). Mrs. Move hoped to find teaching methods to increase her comfort level in preparing gross motor skills lessons inclusive of her students with ASD like John.

Mrs. Move viewed the nine-minute video on APE strategies for the first time on August 21. She accessed the video through a secure link in Office 365 by signing into her OneDrive. The survey was made available in Forms in Office 365 and was password protected. She spent 20:28 minutes on the 13 survey questions on August 28 after one week of implementing strategies in her classes. The survey questions were related to the content of the provided APE strategies in the video. Survey results showed how Mrs. Move was able to gain knowledge from the video. She referenced strategies demonstrated in the video in her answers, illustrating her engagement with the video (Appendix H). Several studies conducted by Kress (2010) indicate a focus of multimodalities is in aligning the message with the audience's needs to elicit engagement. Mrs. Move's answers demonstrated engagement and were directly related to planning with a secondary focus on communication in her specific situation with John. In two answers, she stated
that she used the video for guidance in lesson planning and new communication
techniques for John. In correlation with Vygotskian constructivism theories (1978) and
Kress's (2010) argument that meaning is made through various modes, Mrs. Move used
information provided in the video to articulate new resources into her classroom. Survey
question ten asked, "What effect(s) does the video, and teaching strategies have on your
abilities to provide an inclusive physical education program"? Mrs. Move responded,
"The video helps me give multiple ways to communicate to reach students to give them
the best learning environment possible." Mrs. Move recognized the various modes
presented in the video and provided a learning environment by identifying multimodal
communication leads to transformation (Kress, 2009c). Survey question 11 asked Mrs.
Move, "Please share one positive reflection from your participation in the research
study." Mrs. Move responded, "I reflected on my current strategies and realized I need to
use more visual aids in lesson planning." Mrs. Move explained she implemented picture
symbols as a semiotic tool for John based on those used in the video (Figure 4.3). Her
implementation of a new tool in the classroom emphasizes Kress's (2010) description of a
new concept's internalization through a semiotic tool as Mrs. Move responded to a modal
resource used for meaning-making in her specific social context.

Figure 4.3 Picture Symbols
Analysis of Mrs. Move's survey answers resulted in the thematic takeaways of planning and communication. I analyzed Mrs. Move's survey through content analysis and inductive coding through Forms in Office 365. Using content analysis, I found themes by coding text to review her answers resulting in the multiple appearances of the terms "planning" and "communicate" (Figure 4.4). Inductive coding through Forms analyzed the text and interpreted the raw textual data to uncover the themes. In Forms, I was able to view data by Mrs. Move's answers and then by individual questions on a spreadsheet, making coding and finding themes easier.

I analyzed the data as I gathered it during the research. "Qualitative data collection and analysis usually proceed simultaneously; ongoing findings affect what types of data are collected and how they are collected" (Suter, 2011, p. 346). Therefore, I

![Word Cloud of Mrs. Move's Survey Themes](image)

**Figure 4.4 Mrs. Move's Survey Themes**
was able to see Mrs. Move's connections to planning and communication and begin the process of creating interview questions tailored to her specific situation with John. The link impacted ongoing analysis, and I continued to look for the two themes in data gathered from Mrs. Move. Over the next six weeks, she viewed the video eight times, searching for planning and communication techniques applicable to her inclusion GPE classroom. Mrs. Move was able to find APE strategies based on communication in the video based on Kress's (2010) suggestion that social-semiotics is created to construct meaning and culture with the modes presented, based on specific circumstances. According to Kress (2009a), "learning is what happens in specific environments; environments of learning make available specific semiotic/conceptual resources in particular configurations" (p. 20). The video was configured with John's communication struggles in mind and presented with semiotic resources in the ASD culture.

Mrs. Move worked to implement APE strategies for John in her inclusion GPE classroom using the video as a resource. Research by van Leeuwen (2005) stated the combination of actions and artifacts could be used as an instrument for communication. "Semiotic resources are the actions, materials, and artifacts we use for communicative purposes" (van Leeuwen, 2005, p. 285). The video served as an enhanced means of communication of APE strategies through a collaboration of modes to improve communication. Providing examples of APE strategies through visual, aural, and gestural modes helped demonstrate the strategies and their use in teaching students with ASD. For example, visual supports provided were used as a strategy for communication. Figure 4.5 illustrates me as the practitioner and researcher instructing a student using a visual schedule to reinforce communication. Reviewing the video frequently assisted in Mrs.
Move's construction of new knowledge on APE strategies as they apply in her classroom.

During the six-week implementation phase, Mrs. Move did not contact me but kept personal notes on John's progress (Appendix I). Mrs. Move's organizational skills are a direct result of her busy professional and personal life and her way of managing time (Mrs. Move, personal communication, October 5, 2020). The notes were useful later in the interview phase of the research. The Vygotskian perspective suggests continuity between the development of personal and professional identity. Vygotsky said we are shaped, and, in turn, we shape our living conditions (Vygotsky, 1979).

I used the takeaway themes from the survey described above to create the interview questions for Mrs. Move. There was a progression: I used the survey and gathered main ideas or themes, and the interview questions were used to break down and further investigate the themes that eventually produced my findings. Five questions were asked of Mrs. Move. Three items were the same for all three participants and focused on the video's content, and two questions were designed to be specific to Mrs. Move's case.

Figure 4.5 Visual Schedule
with John. Creating questions dedicated to Mrs. Move's work with John is an illustration of Bruner's scaffolding. Mrs. Move's two specific questions directly reflected her survey response analysis and were dedicated to planning and communication. The data gathered from Mrs. Move provided insight into her experiences as she prepared inclusion lesson plans on gross motor skills for John.

Daly (2007) warned during the interview, questions could be interpreted differently, affecting the participant's response. I gave the interview questions to Mrs. Move two days before our scheduled meeting because I was naturally concerned about the monomodal text's limitations and the questions' interpretation. Kress and van Leeuwen (2001) stated that multimodal communication is a more natural means of communication than monomodal. Per the plan outlined in Chapter Three, I wanted Mrs. Move to have time to craft thoughtful responses to the questions. Misinterpretation was not the case for the interview questions with Mrs. Move, but I did question her answer to survey question six. Collaboration with Mrs. Move led to the discovery that my wording in the survey question was not precise and elicited a different response than I expected. Survey question six read, "Describe how teaching strategies were implemented. If not, please explain why." I intended the question to inquire how participants implemented teaching strategies. Mrs. Move answered how she saw me implement teaching strategies. According to Kress (2011), misinterpretation could have been avoided by implementing other communication modes to ensure the intended meaning was constructed. An oral explanation could have accompanied the survey questions. The intonation of my voice could have provided a better explanation of the intent of the question.
Microsoft Teams' employment, a program allowing video meetings, reduced the risk of misinterpretation during the interview. Interviews could not be conducted face-to-face due to Covid 19 restrictions. Rather than relying solely on the interpretation of questions via email, I virtually conducted Mrs. Move's interview. The caution taken during interviews to avoid misinterpretation highlights Kress's (2010) theory of multimodalities using visual and auditory semiotic modes. On October 5 at 3:30 pm, I interviewed Mrs. Move on Office 365 Teams. The interview was recorded with her permission and lasted a total of 34.56 minutes. The recorded interview allowed me to focus on Mrs. Move's responses rather than transcribing as we talked. I transcribed the interview immediately afterward while still focused on the responses. Mrs. Move provided the most detailed answers to three interview questions; one general question and the two questions dedicated to her survey answers and her specific situation with John (Appendix J). When asked a general question concerning which APE strategies she felt most connected to in her teaching, she responded by saying:

The first time I watched the video, I was drawn to the visual aids you used in the lessons. I watched for what you called 'visual supports' with each student to see how they worked in different scenarios. I had never thought of using a visual other than just me modeling for my students. I thought other things might just get in the way and overwhelm the students. The other strategy I liked was a schedule for students. John doesn't want to participate in activities that use gross motor skills. When I was watching the video clips using the schedule, I immediately thought about adding a schedule for him into my lesson plans. I thought the visual
support (Figure 4.6) and schedule (Figure 4.7) would keep him on track and maybe motivate him to move if he got a reward, too.

Mrs. Move's responses indicated the video gave her insight into APE strategies to implement into her classroom. She realized speaking and body movement were not sufficient to reach John in her reference to visual supports. Kress and Bezemer (2015) emphasized the power of communication and the benefits of multimodalities, especially when the modes are socially shaped. The tool became the foundation for Mrs. Move's

![Figure 4.6 Visual Supports](image)

**Figure 4.6 Visual Supports**

![Figure 4.7 Schedule](image)

**Figure 4.7 Schedule**
meaning-making because it presented multimodal communication in the socio-cultural setting. Bezemer et al. (2012) stated different modes affect different areas of representation and communication. Kress (2010) suggested modes have limits, and the combination creates more learning opportunities.

I interjected a correction to Mrs. Move's choice of the wording after her answer. It was important for her to understand the terminology of the strategy she implemented with John. The schedule she was referring to provided reinforcement for the student, not a reward. I further explained that the end goal was to reinforce the behavior wanted from John. Mrs. Move was very receptive and thanked me for the explanation adding it would help her further explain the visual schedule to her co-teacher. Mrs. Move demonstrated new knowledge through the multimodal theory by creating a new sign with significant meaning for her social setting by connecting an oral explanation accompanied by facial expressions and body gestures (Kress, 2011). Vygotsky’s (1979) social development theory states collaboration can increase individual learning. The new sign also allowed Mrs. Move to demonstrate her understanding to her co-teacher.

I followed up by asking Mrs. Move a question crafted for her explicitly based on implementing the visual supports in her GPE inclusion classroom with John. I asked, "How did you approach visual supports with John?" Mrs. Move responded:

I wanted to show John what I wanted from him. I tried the schedule first. I put a picture of jogging and then a picture of a physioball because bouncing on the ball is his favorite thing to do. Now I know that is the reinforcement. I wanted him to jog first, and then he could have the physioball. I made a visual schedule like yours from the video. The First/Then schedule (Figure 4.8). I put the paper
schedule in my lesson plans and gave the schedule to him after I gave instructions to the rest of the class. He seemed to really like having something to hold and look at. I thought it might be too much for him, but he liked it. I made sure to make a note of that for the next week's lesson plan – John likes to have something to hold. That first day was not as successful as I wanted it to be. I thought the schedule would be a miracle cure (laughing). But, I had to work more with John to understand what the schedule meant. It turns out he didn't understand what I wanted from him. He only wanted the physioball to bounce on.

The schedule is an example of a semiotic tool used to communicate (Kress, 2010). Mrs. Move transformed her initial plan to include multimodal tools as she recognized John did not understand what she wanted, illustrating the implication of Kress's (2010) multimodal theory. She also demonstrated engagement in the social setting and recognition of John's ASD culture when she realized John prefers to have something to hold. Jewitt (2009) emphasized the need for multimodal resources to make meaning in a specific context. Further studies by Bezemer et al. (2012) found the application of multimodalities as a

Figure 4.8 First/Then Schedule
more significant influence when there is a demonstration of concern with meaning's social and cultural construction. The video was created with an intentional display of an ASD cultural environment to present the APE strategies. As a result, Mrs. Move was able to illustrate concern for the cultural construction of meaning.

Mrs. Move's response opened up the opportunity to ask the second individualized question I created for her communication with John. I asked, "Now that you have had a chance to view the video multiple times and attempted to implement strategies into your inclusion classroom, what strategy is most important for you to focus on moving forward with John?" Mrs. Move responded without hesitation:

Communication with John! I can plan until the cows come home, but if he doesn't understand what I am asking of him to do, it doesn't matter. Every time I looked at my notes, I saw something about John not doing what I asked. And then it clicked. He doesn't know what I am asking. Once I showed him the schedule and used one-step directions like you explain in the video with me modeling, he knew what I wanted from him. I helped him understand that first, he jogs, and then he gets the physioball. I had to get some stickers to use as markers for him so he could move it from jog to physioball like you use the clips in the video. It's like it finally clicked for both of us. We had to find our own way to communicate (laughing). I want to continue to communicate with John that way. I want to use more visual supports and schedules for him. I think it is going to really make a difference for him this year. An example of simple, one-step directions in the video can be seen at http://bit.ly/onestepdirections.
Mrs. Move transferred information from the APE strategies in the video into her inclusion plight. She connected John's difficulties in her inclusion GPE class to her inability to communicate with him effectively. Mrs. Move demonstrated Vygotsky's (1978) constructivism theories as she worked to resolve the problem of understanding and took cognitive strides towards continued closure of her ZPD gap by constructing new knowledge. Through her notetaking, reflection on her lesson planning, and collaboration through the study, she had an "ah-ha" moment. Mrs. Move referenced specific strategies presented in the video that indicate her connection to the modes offered. Narrative analysis of Mrs. Move's interview responses produced a compelling story highlighting social aspects and relevance to the research study supporting the video that ultimately resulted in meaning-making, as Kress's (2010) multimodal theory suggested.

"Recognizing the dominate features of the social world fully is the essential pre-requisite for a social-semiotic multimodal theory of communication" (Kress, 2009b, p. 26). Mrs. Move's declaration that she wanted to continue communicating with John using visual supports indicated Kress's theory's benefits and successful implementation. Her dedication to continued use of visual supports is an example of the social in multimodality. Mrs. Move recognized the social world and how it connected to communication with John.

Mrs. Move's growth illustrated examples of Vygotsky's (1978) social development and socio-cultural theories. She was initially limited in her cognitive development of communication skills with students with ASD due to a lack of social interaction with others concerning APE strategies (Vygotsky, 1978). The video provided meaning-making opportunities for communication skills by integrating multimodal
teaching to present APE strategies. Mrs. Move transferred meaning from my created signs. Kress (Professor Gunther Kress on The Materiality of Signs, 2017) adamantly stated we do not use signs; we make them. Sign is the key term Kress (2011) uses for an individual's combination of form and meaning. The video's signs functioned as the basis for the multimodality approach to teaching, serving as metaphors combining the form's literal denotation with associated connotations and offering clarity between two ideas (Kress, 2011).

According to Kress (Professor Gunther Kress on The Materiality of Signs, 2017), signs also have a specific meaning in a community, addressing the community members' concerns, who have certain understandings. Kress explained that sign-makers make signs based on their interests, and life experiences create their interests. Mrs. Move demonstratively integrated self-created signs into her classroom. For example, the verbal explanation for John to jog, then bounce on the physioball was not enough. Mrs. Move used the pictures of jogging and the physioball to illustrate meaning. The pictures had a specific meaning in Mrs. Move's classroom community with John. Kress and Bezemer (2015) described the transfer of information from the initial sign to producing a new inner-sign as meaning-making. Analyzed data from content and discourse analysis shows that Mrs. Move made meaning from signs presented in the video.

Mrs. Move used the video on APE strategies and collaboration throughout the study to build a social community focusing on a culture dedicated to communication with students with ASD. Her construction illustrates Vygotskian theories with a focus on Kress's multimodal theory. Mrs. Move recognized her learning came from engagement with the ASD culture and used the video's cultural facts to better communicate with John.
Mrs. Move had to be engaged with the ASD culture to make meaning and then create her own understanding and meanings for implementing APE strategies for students with ASD. Her meaning-making is significant to Kress's (2010) multimodal theory as she demonstrates the benefits of a video that presents information in various modes.

Scaffolding is also evident in the analysis of data from Mrs. Move's participation in the research study. The individual supports for Mrs. Move were strategies demonstrated in the video tailored to her initial email concern for John and his motor skills development. The goal of scaffolding is to transfer knowledge, producing an independent learner (Wood et al., 1976). Mrs. Move demonstrated the transfer of information through meaning-making and showed signs of becoming an independent learner as she integrated APE strategies into her inclusion GPE classes. Her success is illustrated through the four stages Warford (2011) used to describe Bruner's scaffolding. Mrs. Move reflected upon her current skills in working with students with ASD and then reached out to me via email for guidance. I relied on my knowledge of APE strategies to serve as the MKO and created the video to provide the support. The MKO is an integral part of Vygotsky's ZPD, serving as someone with a better understanding of APE strategies than the participants (Vygotsky, 1978). Mrs. Move practiced the APE strategies with John in her inclusion GPE classroom until eventually no longer needing the video as support. Mrs. Move independently created adaptations and modifications for John through engagement with the video illustrating Vygotskian theory through multimodal practice.

Although my role as a PE teacher using APE strategies allowed me to serve as the MKO in the study, I was not exempt from benefiting from the Vygotskian and Kress
theories. The collaborative efforts throughout the study with Mrs. Move repeatedly demonstrated the value of community and communication. Working with Mrs. Move helped guide my thinking of communication constraints towards how choices of modes can lead to more meaning-making opportunities. Just as I was offering suggestions for communication techniques with John, she provided me opportunities to practice multimodal designs for clarity and the role multiple modes play in preventing miscommunication.

**Coach A**

Coach A wrote to me, "Hey, I've got this kid with autism who just will not follow directions." Joey is a fourth-grade student in an inclusion GPE class. The class is a satellite self-contained class in an elementary school in the same county as the school dedicated to students with special needs. Joey was diagnosed with autism and a processing disorder. The grade level GPE class has 38 students, plus Joey. Coach A has difficulty giving directions to the class that Joey can follow. He often acts like he does not understand directions and does not stay on task. This year Joey is a fifth-grader and academically behind his peers. Coach A reached out for help in communicating with Joey and keeping him on task in his inclusion GPE class.

Coach A is a male GPE teacher with 12 years of PE experience. He is not married, has no children, and coaches two boys' middle school sports. Coach A has been in the district for eight years and has been in elementary and middle schools during his tenure. He has been in his current role in a new elementary school for three years and is new to teaching elementary inclusion GPE classes. Coach A co-teaches with a female GPE teacher. He was open to gaining new strategies for the inclusion of APE students
after reflecting on students with ASD's lack of participation and self-admission in an email of relying on his co-teacher for leading the inclusion classes (Coach A, personal communication, August 21, 2020). Warford (2011) explored the Vygotskian perspective on reflection into one's own practice in scaffolding stages. Coach A’s ask for help was the self-assistance stage, where he realized after reflection, he needed assistance in meeting the needs of students with ASD (Warford, 2011).

Coach A viewed the video on August 24 and completed the survey on August 28, spending 22:14 minutes answering the 13 questions. He accessed the video through a secure link in Office 365 OneDrive and completed the Forms survey. The video and survey were password protected. Coach A's answers to survey questions were analyzed using content analysis through Forms programming. Survey responses were organized in Forms by Coach A's responses and then coded by reoccurring terms.

Coach A's survey responses were related to his aspirations to maintain Joey's attention in class and increase his participation (Appendix K). His answers were short and to the point and stated directly that a student with ASD did not pay attention in his class. He used the video to teach students with ASD like Joey with processing disorders resulting in short attention spans. The video employed social-semiotics to create meaning in the ASD culture for Coach A (Kress, 2010). Coach A used the video because the resources presented were engaging and based on his desire to communicate with students like Joey.

Content analysis and inductive coding in Forms showed a recurrence of terms in Coach A’s answers and pointed to his desire to support students with ASD in his inclusion classroom to be successful. While he responded to several survey questions
referencing redirection, reinforcement, and affirmations the key terms from analysis and coding were "support" and "communication" (Figure 4.9). Multimodalities used in the video enhanced Coach A's ability to learn the new strategy terms and understand the meaning and use of the strategy. Jewitt (2008) drew upon Kress's theory of multimodalities stating that knowledge is representational and meaning is made through representative modes. Coach A made meaning from the available modes in the video.

The answers referencing the strategies learned through multimodalities were highlighted in my content analysis, noting the specific use of strategy names. Survey question four asked, "How did you use the videos in your instruction (Planning, teaching, reflecting, etc.)?" Coach A answered, "Making a note of how to redirect students. Reflected on lack of use of affirmations currently. Help ASD kid pay attention." Coach A's answers to question four are examples of Kress's (2010) suggestion that when

![Figure 4.9 Coach A's Survey Themes](image-url)
communication is multimodal, it provides specific examples. The video provided Coach A with specific demonstrations of the ASD strategies. Question seven asked, "What was the overall effectiveness of the teaching strategies" to which Coach A responded, "Gave me ideas for teaching using redirection properly." Coach A's answer to question seven is a further example of Kress's (2010) suggestion for using multimodalities, with attention also given to the social setting of provided communication. Multimodal communication provides illustrations in a social setting where modes are socially shaped (Kress, 2010). Question eight asked, "How did students with an autism spectrum disorder (ASD) react to the teaching strategies?" Coach A stated, "Redirection helped with attention. They like positive affirmations." Coach A's answer demonstrated his ability to transfer information from the video into his inclusion GPE classroom. He made meaning from communication through various modes presented. The video extended the social interpretation of the modes (Kress).

After analyzing Coach A's data through content analysis and inductive coding, I continued to look for the thematic markers as I reviewed his previous emails and prepared his interview questions. Coach A referenced the video three more times in the following six weeks as he implemented APE strategies in his inclusion GPE classes. He focused on the redirection APE strategy and stated he "skipped through the video" (Coach A, personal communication, October 8, 2020) to find segments implementing that strategy. An example of redirecting verbally in the video can be viewed at http://bit.ly/redirectverbally. The video provided access to multimodal communication's actions and artifacts without being present to address Coach A's questions.
Coach A implemented redirection strategies for Joey using the video for support. Figure 4.10 illustrates redirection using gesturing from the video. The video was designed with modes being demonstrated in the ASD culture to enhance transfer into the inclusion setting (Kress, 2010). "Modes can have different values and meanings, subjective to different cultures. Thus, their semiotic reach is always specific and partial to any one culture" (Kress, 2009c, p. 55). According to Kress (2010), Coach A could make meaning from the video concerning his specific needs for Joey because it represented the ASD culture.

Coach A also emailed me with a question regarding the number of times it was appropriate to redirect a student in a class period (Coach A, personal communication, September 24, 2020). Coach A's question is indicative of his attempt to extend his knowledge base of redirection. The question illustrates the Vygotskian (1979) idea of constructivism as Coach A created his own meaning of redirection for Joey. I replied to

**Figure 4.10** *Redirect with Gesturing*
Coach A's question, "As many times as it takes, and then that many times more." The communication with research study participants was consistently candid. The participants responded to my candor with humor as well.

According to Halliday's (1973) Systemic Functional Linguistics (SFL) theory, there are multiple layers of meaning-making in language. We have a choice in the meaning-making of language, and the social system the language is in used plays a role, making SFL important to social-semiotics (Halliday, 2013; Kress, 1976). What I learned from my interactions with the participants, Coach A particularly, was that language choice is unique because it allows us to express meanings explicitly created for an individual social system (Halliday, 1973). An examination of SFL explains candor and humor were meaningful because the social experience was expressed in the language used between me and Coach A.

Analysis of Coach A's survey answers provided insight into his experiences redirecting Joey and how he sought to find better ways to communicate with Joey. Coach A exemplifies Kress's (2010) idea what when communication becomes multimodal, meaning-making occurs. Inductive coding in Forms and printed spreadsheets helped organize data and formulate individual interview questions for Coach A. Five questions were asked of Coach A in the interview. Three questions were the same as other participants' questions, and two questions were designed to be specific to Coach A's work with Joey. Coach A's two specific questions were dedicated to redirection and communication. The creation of specific questions is an example of Bruner's scaffolding as they are tailored to the specifics of Coach A's needs in teaching Joey.
I gave the interview questions to Coach A three days before our scheduled meeting. As outlined in Chapter Three, I wanted Coach A to have time to craft thoughtful responses to the questions. I provided the interview questions on October 5, and on October 8 at 2:45, I interviewed Coach A. Coach A's interview was virtual due to Covid 19 restrictions and was conducted through Office 365 Teams. The interview was recorded with his permission and lasted 42:18 minutes. Recording the interview allowed me to focus on and respond to Coach A's answers instead of transcription. I transcribed the recording after the interview while the information was still fresh in my mind. Coach A was candid in his responses and gave the most detailed accounts of his attempts to implement APE strategies to answer the two interview questions dedicated to his survey answers (Appendix L).

I asked Coach A, "How did you approach implementing the strategy of redirection with Joey?" His response was:

I started by watching to see when he got off task. It was pretty often. I tried to yell directions to him from wherever I was in the gym to get him back on track, but he seemed to just ignore me. Then I started staying close to him so I could get his attention. If I could get him to look at me, I could get him back to work. I guess I just introduced it to him with a look. The aggravating thing is Joey can do all the skills if I can just keep his attention. We just have to have our own way to communicate.

The face-to-face interview with Coach A through Teams allowed me to read his facial expressions and body language as he spoke and avoid misinterpretation of his answers. Coach A's gesturing and facial expressions supplied what speech alone could
not. He demonstrated to me what he was trying in class with Joey. Coach A practiced various forms of communicating with Joey due to the multimodal communication examples presented in the video. Coach A translated illustrations from the video into his classroom (Kress 2010). I followed up by asking Coach A, "Redirection is an important strategy, especially for students with ASD and a processing disorder. How has your communication with Joey changed since realizing the importance of redirection?" Coach A responded:

Like I said, we have to have our own way to communicate. It's like our own language. I give a direction, and then I know at some point I am going to have to make eye contact with Joey to redirect him. I tried some of the visuals you suggested – like a picture of the skill. Joey didn't pay attention to that, either. He needs to see my eyes—Joey and I communicate through looks. Sometimes I have to model the skill for him again, but usually, it is just a look. Giving him more directions seems to only confuse him. I guess that's the processing disorder. I have found it's easier to give our looks (laughing).

An example of non-verbal redirection from the video can be viewed by visiting http://bit.ly/redirectnonverbal. Coach A recognized dialogic learning was not a successful approach to communicate with Joey. Coach A illustrates his understanding that oral text is not the only mode present in the dialogue. Through demonstrations in the video, Coach A was able to see Kress's (2010) suggestion of a more holistic approach to communication. Coach A's responses led to a further discussion on how redirection and communication are connected. I deduced Coach A's success in implementing strategies from the video into his classroom from further conversation. The video provided real-
world examples in the ASD culture for Coach A. Social-semiotics influenced his meaning-making based on the presentation of strategies in social context and engagement with a multimodal environment, leading to his successful communication with Joey (Kress, 2010).

Analyzing survey responses and interview transcripts from Coach A showed a transfer of information from the APE strategies' multimodal presentation into his classroom. Coach A integrated strategies into his own resources by taking signs presented in the video and using them in his classroom. Bezemer et al. (2012) called this transfer a sign of learning. Kress (2010) described Coach A's ability to augment my sign into a communication method with Joey as learning, equating implementation of signs to learning. I aligned data gathered by narrative analysis of Coach A's interview with the study's theoretical framework to produce findings indicative of successful learning when communication is multimodal. Coach A implemented APE strategies into his classroom from the video that could not be executed from just the written language in an email. The linguistic dialogue was not enough to promote learning, and a video with multimodalities was used. Specifically, Coach A demonstrated acknowledgment that oral communication without the inclusion of other modes was not effective in meaning-making.

Coach A's advancement in the redirection APE strategy illustrated an example of meaning-making based on his creation of signs for personal meaning into his resources. According to Kress (2010), the focus on learning is meaning, and meaning-making occurs through multimodal communication through signs. Coach A made choices about how to best communicate information to Joey based on Kress's idea that signs presented in the video can be put into relative context for Joey. The multimodality theory
recognizes Coach A's communication with Joey as evidence of understanding and meaning-making (Kress & Jewitt, 2010). Based on the ideas of Vygotsky's (1978) constructivism theories, Coach A lacked the resources needed to create a culturally relevant social setting for students with ASD in his inclusion classroom. Socially shaped modes presented as communication resources were provided in the video through visuals, verbal instructions, gesturing, sign language, posturing, and spatial arrangement. Figure 4.11 provides still images from the video of sign language, gesturing, and body posturing in each. Coach A used the varied modes to enhance learning in his inclusion GPE classroom. Kress and van Leeuwen (2001) explored modes in the semiotic process and stated that multimodal inclusion benefits learning and motivation. The video served as motivation for Coach A to demonstratively engage in the ASD culture through communication.

![Figure 4.11 Sign Language, Gesturing and Posturing](image)

*Note:* The first image is sign language, and the second is gesturing and posturing.
Coach A successfully progressed through Warford's (2011) four stages to examine Bruner's (Wood et al., 1966) scaffolding. I used Coach A's email to design lessons with personalized APE strategies beneficial to him and his situation with Joey. Coach A used the video and my advice as the MKO on APE strategies and met the needs of students with ASD. He progressed through the teacher-assistance stage to the internalization stage to practice APE strategies with Joey. Coach A implemented redirection and communication strategies and continued working to communicate with Joey until the video was no longer needed as a support. Coach A could also use the resources through explicit scaffolding to continually develop skills to close his ZPD gap (Vygotsky, 1978).

According to Bruner (Wood et al., 1966), Coach A needed support to learn new APE teaching strategies. At the beginning of the research study, Coach A depended on his co-teacher and the video to support communication skills. As the study progressed and he practiced the APE strategies, Coach A became more independent. The more a mode is used, the more fully articulated into the inclusion GPE classroom it will become (Kress, 2010). Coach A reduced his dependency on the video for support and demonstrated the transfer of knowledge by finding ways to communicate with Joey. The mode became more integrated into his practice. Coach A benefited from Kress's (2010) holistic approach to communication through the video's multimodal examples.

Coach A viewed the same video Mrs. Move viewed, but different meaning-making came from Coach A's engagement with the ASD community. Kress (2010) stressed the outcome of a social-semiotic approach comes from a focus on meaning-making from signs and modes in the real-world setting. In alignment with Vygotsky's
situated cognition theory, Kress suggested we learn by doing. Coach A learned from the video in his specific socio-cultural setting. Kress and Bezemer (2015) explained learners make their own signs relative to their individual needs. Coach A did not have the same inclusion experience as the other participants coming into the study. Through participation in the research study and exposure to multimodality, he recognized that engagement with the social world shapes learning (Kress & Bezemer, 2015). Kress encouraged multimodality in semiotics because it reflects the standard constructs of communication. Coach A demonstrated the multimodal theory's value through his meaning-making based on the social-semiotic approach to communication as he created a way to communicate with Joey.

Coach A also provided opportunities for me for reciprocal learning. Through conversations with Coach A, I realized the explored theories were only the beginning of my understanding of the importance of language choice and communication design. The first opportunity presented itself in the use of sarcasm with Coach A in my response to his question about the number of times to redirect Joey. What allowed me to use sarcasm and humor in communication with Coach A? The second opportunity for learning from Coach A came from his display of facial expressions in our interview. What he was trying to convey to me would not have been as meaningful without the accompanying expressions. The same is true for his laughter during the interview.

Mrs. Soar

Mrs. Soar wrote to me, "Hey, I've got this kid with autism, and he cannot motor plan. He cannot sequence skills together during activity." James is a sixth-grade student. He is in a satellite self-contained class but attends GPE with other sixth grade boys.
James is behind his same-age peers in sports-related skills. He is very clumsy when performing skills. Mrs. Soar did not know how to help James be more successful. Now in the seventh grade, James continued to perform poorly in his inclusion GPE class. Mrs. Soar reached out to me for ways to help James with motor planning to refine his sports skills. Creating a social community with Mrs. Soar illustrated Vygotsky's (1978) socio-constructivist views reflecting the idea that cognitive development is an interplay of collaboration, social interaction, and authentic social and cultural context.

Mrs. Soar is a middle school GPE teacher with over 30 years of experience and a master's degree in PE. She is married with two grown children who are also educators. Mrs. Soar has been in the district for her entire career. She has been the constant in the middle school program and has had a host of counterparts over the past 30 years. Mrs. Soar is strong in her pedagogy skills but admittedly lacks confidence in incorporating new APE strategies into her teaching for students like James with ASD. She expressed concerns about James's social implications due to his inability to perform skills like his seventh-grade male peers (Mrs. Soar, personal communication, August 21, 2020).

Mrs. Soar viewed the APE strategies video on August 26. She completed the survey on August 31 and spent 26:54 minutes completing the 13 questions. Mrs. Soar accessed the video and survey on Office 365 OneDrive and Forms through secure links. The links were password protected. Mrs. Soar provided detailed answers to the survey questions on the content of the APE strategies presented in the video, demonstrating her dedication to skill development and social skills for students like James with ASD. Her answers focused on providing prompts for students, and a secondary focus was placed on the social needs of students with ASD (Appendix M). Vygotsky (1978) determined that
increased cognition occurs through active participation in learning and thinking. Mrs. Soar took an active role in learning while providing the same for her students.

Survey question four asked, "How did you use the video in your instruction? (planning, teaching, reflection, etc.)." Mrs. Soar provided a detailed response stating:

I constantly gave my students positive feedback during instruction to make sure they felt validated in their attempts. I incorporated the affirmations into my planning, where students would have to give a compliment to a friend during an activity. I added prompts to my lesson plans so I would remember to give James the extra help he needed for skills. I broke down skills into smaller pieces and wrote specific prompts for James, where he needed help. Sometimes I used verbal prompts, but for some skills, he will need physical prompts.

Mrs. Soar referenced APE strategies in her response, including affirmations, verbal prompts, and physical prompts Figure 4.12 depicts examples of an affirmation in a high-five and physical prompting from the video. According to Kress (2010), she could re-

![Figure 4.12 Affirmation and Physical Prompting](image)
state specific strategies through the video presentation of multimodalities in the ASD culture.

Mrs. Soar provided an equally descriptive answer to survey question six when asked to describe how she implemented the APE teaching strategies. She answered:

I implemented supports and prompts, and affirmations. I used different supports like posters I already had in my classroom. I already used affirmations, too, but I made a point to give each student an affirmation and have them practice giving affirmations to their friends. I made sure James got an affirmation. I mostly worked on using the prompts because that was new to me, and I thought it would help James more. I used verbal prompts for him most because physical prompts were hard to implement because of Covid restrictions. But, the prompts are good for James to work on skills right now because there are Covid restrictions on the equipment I can use right now, too.

Mrs. Soar demonstrated Vygotskian and Bruner theories as she built on her prior knowledge of prompts and affirmations. She was also attentive to the social and cultural settings suggested by Vygotsky and Kress (2010) by making necessary changes for Covid 19 restrictions for her students in the inclusion setting.

Mrs. Soar provided detail in each answer on the survey. Creswell (2002) explained participant selection for qualitative studies by suggesting choosing participants who can best provide information on the research question and enrich understanding of the phenomenon being studied. Gathering and analyzing data during research for Mrs. Soar was made easy by her detailed accounts. I addressed the particulars of her answers in her specific interview questions. I analyzed Mrs. Soar's survey answers using content
analysis to look for themes subjectively. Vygotskian (1979) constructivism states knowledge is socially situated. Mrs. Soar illustrated her understanding of the importance of the social setting by being cognizant of her classroom community. The individual thematic results for Mrs. Soar were "prompts" and "social skills" for students with ASD and can be seen in Figure 4.13.

Mrs. Soar viewed the video weekly during the next six weeks and emailed me twice with questions. The video's availability provided Mrs. Soar with access to information when she could not contact me. Kress (2010) implied that a video's multimodalities offer a viable resource and limitless learning opportunities when combined with a social community. Mrs. Soar’s emails during the implementation concerned social skills for students with ASD. This was a nod back to her initial concern

Figure 4.13 Mrs. Soar's Survey Themes
for James in the inclusion GPE class of seventh-grade males. James did not display the same matured social skills as his same-age peers in class (Mrs. Soar, personal communication, August 21, 2020). Through the video's support and the social community built through our collaboration, Mrs. Soar implemented prompting and social skills APE strategies into her inclusion GPE classroom. Supporting Kress's (2010) theory of multimodalities, the video enhanced Mrs. Soar's level of understanding of APE strategies, as demonstrated in her applying them in her classroom.

I designed interview questions for Mrs. Soar using her detailed survey answers and emails for theme reoccurrence. Mrs. Soar was asked five questions, two of which were specially designed for her based on themes discovered from gathered data and analysis reflecting Bruner's scaffolding notion. The two individualized questions were focused on prompts and social skills. I gave Mrs. Soar the interview questions on October 8 for her review and interviewed her on October 12. The interview was conducted virtually due to Covid 19 via Teams through Office 365 and recorded, with Mrs. Soar's permission, to make transcription easy. I focused on her answers and responded accordingly because I did not have to transcribe as we were talking. We began the interview at 2:30 pm and concluded 47 minutes later. I transcribed the interview immediately while I could remember the conversation clearly. Mrs. Soar provided detailed answers with the most pertinent answers to three interview questions; one general question asked of all three participants and two specific questions dedicated to her (Appendix N).
The question asked of all three participants was, "How do you measure the success of a strategy implemented in your inclusion GPE classroom?" Mrs. Soar responded:

I knew I was helping build social skills when James gave an affirmation to a friend. We finished a lesson on pacing, and he gave a classmate a compliment. I had been stressing the importance of emotional well-being as part of the social-emotional goals for Covid and how we could build up our friends. I gave an example of positive affirmations for a job well done in class or complementing effort. James repeated my exact words, but he still spoke to a classmate and gave the affirmation.

Mrs. Soar illustrated the APE strategy of modeling in her response. According to Vygotsky (1979), modeling advocates for knowledge construction when presented within the socio-cultural frame. The video showed modeling through a communication mode in the ASD culture, which contributed to Mrs. Soar's construction of meaning (Kress, 2010). An example of verbal prompting and modeling from the video can be viewed at http://bit.ly/verbalprompting.

I followed up with a specific question for Mrs. Soar, asking, "In your survey response, you stated you were reminded of the importance of relationship-building for students. How does this relate to the APE teaching strategies for an inclusion GPE class?"

She responded:

I was thinking about the connection between the strategies and the opportunities for the students to learn from each other. I had mapped out a long-term plan that would use the affirmations and the prompts you use in the video. The plan was to
have students work together and give each other prompts. This way, I could implement two strategies; affirmations and prompts. We have been working on social-emotional goals per the state for Covid, so I've been trying to find ways to add that piece into my lessons. When I saw your examples of positive affirmations in the videos, it kind of came together. Affirmations meet the social-emotional piece, and the prompts can lead to a successful skill, which gives the students a reason to offer an affirmation.

An example of affirmations from the video can be viewed by visiting the website http://bit.ly/studentaffirmation. Mrs. Soar illustrated her understanding of the social setting's importance as she addressed cooperative learning in her inclusion GPE classroom. The idea of collaboration was introduced by using a video to maintain a working relationship with the GPE teachers, illustrating Kress's (2010) belief that social interactions and cultural resources lead to transformation. I learned from Mrs. Soar that Kress's ideas could be transferred from a collaboration with her peers to collaborative social interaction between students in her classroom.

Mrs. Soar's references to examples in the video of affirmations and prompting students demonstrated her ability to make meaning and emphasized the multimodal learning success. She specifically mentioned noting the positive uses of affirmations with students and the beneficial outcomes of physically prompting students in skills. Kress and Vygotsky (1978) agreed learning occurs through societal influences and working cooperatively, while Vygotsky also stressed the importance of extending practice through social interactions to close Mrs. Soar's ZPD gap.
The second specific question asked of Mrs. Soar was also related to a survey question response. I asked, "In your survey, you mentioned difficulty implementing new APE strategies due to Covid 19 restrictions. How have you been able to implement physical prompting during Covid 19 restrictions?"

(Laughing) When I saw you physically prompting students in the video, I knew that was exactly what James needed, but I also knew I couldn't do that right now. If I have learned anything in my 30 years of teaching, it's that creativity is necessary. So, in the past few weeks trying to help James with skills and motor planning, I went through several brainstorming sessions. I wanted to give him more than verbal prompts. Ok, so we were working on locomotor skills and building upon those basic skills for combination patterns. He was having trouble with hopping on one foot. I could almost see the wheels turning in his head. He wanted to stand on one foot but just couldn't figure out how to get there. I so desperately wanted to help him bend one leg up, but I couldn't just reach out and touch him. I didn't want to wear gloves, so I got one of those finger-pointers teachers use on their Promethean Boards. I touched his knee and told him to bend. I had to play around with where to touch, but we eventually figured it out. I only use it with James, so I don't have to worry about it touching other students. I've had to watch your videos and how and where you physically prompt and then make it work for me.


Galhano-Rodrigues et al. (2019) describe physical prompting an example of gesture as a mode. Gesturing contributes to communication in a society when interwoven with speech.
to go beyond what can be communicated with just speech alone. Gestures are “shaped by culture” (Galhan-Rodrigues et al., 2019, p. 3) and “they are generally performed to avoid a breakdown in communication” (p. 4). Mrs. Soar transferred information from the video's APE strategies and modified them to meet James's specific needs in the ASD culture. The video allowed me to demonstrate APE strategies for easy translation into Mrs. Soar's inclusion GPE classroom. According to Kress (2010), dialogic communication is not enough to convey ideas, and multimodalities should be employed to enhance expressions. "Different modes offer different potentials for meaning-making" (Kress, 2010, p. 79). Mrs. Soar modified the strategies to adhere to Covid 19 restrictions according to Vygotsky's (1978) argument that abstract and creative learning takes learners to the upper limits of their ZPD. The video created a participatory learning environment for Mrs. Soar to engage in and make meaning from to apply to her specific inclusion GPE classroom situation (Kress, 2010).

Narrative analysis of Mrs. Soar's interview responses produced a clear connection between her commitment to her students' social skills and Vygotsky's social development and socio-cultural theories. She recognized that her students were limited socially. Mrs. Soar explained in the interview how socially awkward James was in class. She provided examples of how he struggles with social interaction with peers and how difficult it is for peers to interact with James. The affirmations she implemented in her inclusion GPE classes displayed her ability to make meaning from the video's signs that portrayed social skills. The multimodal theory and semiotics focus on meaning-making from signs presented in the video through different modes (Kress, 2010). The video provided an example of a learning environment adapted to meet students' needs with ASD for Mrs.
Soar and helped her form a relationship between the sign and APE strategy meanings. She demonstratively implemented verbal and physical prompting with James through directions and creative use of a pointer. Mrs. Soar also modified the video's information to meet the specific needs for Covid19 restrictions and further demonstrated meaning-making from multimodal signs. She translated signs into her own social setting. Bezemer et al. (2012) stated meanings are made in social-semiotics through communication in different modes. Mrs. Soar's translated modes were socially shaped.

Mrs. Soar built a social community in her classroom with her students, focusing on their social-emotional health as a nod to suggested Covid 19 additions to the curriculum. The social community signified her ASD culture engagement as she demonstrated the Vygotskian social constructionist views through seeking to understand in terms of social-cultural development (Vygotsky, 1978). Mrs. Soar's ZPD gap between knowing APE strategies and applying them in her classroom was closed by combining her desire to meet students' social and physical needs and meaning-making from signs in the video. Mrs. Soar drew on the modal resources presented in the video to make meaning in her inclusion GPE classroom (Kress, 2010).

Mrs. Soar also encouraged my continued exploration into choices and design for language and communication. Through our collaborative work in the study, I learned more about the role of multimodal communication in socially situated learning. Mrs. Soar took an active role in learning as she modeled and set examples for her students. She also set an example for me to further research how social and cultural settings rely on language choice and communication design.
Conclusion

The problem of practice created the need for a better way to communicate with GPE teachers to introduce APE strategies into their inclusion GPE classrooms. Reflections on the relationship between multimodal theory and the GPE teachers' needs produced a platform that allowed me to communicate in different modes. According to Mills (2010), multimodal platforms have been underutilized in practice. The study findings explicate how Mrs. Move, Coach A, and Mrs. Soar constructed meaning from a video and implemented APE strategies for students with ASD into their inclusion GPE classes. Figure 4.14 is an illustration of a comparison chart used to assess all survey results. The chart, along with coding of the interviews was used to support the conclusion that the participants constructed meaning from multimodal semiotics.

The works of Kress and Vygotsky also substantiate these findings. The findings illustrate a three-sided theoretical design, including Vygotsky's ZPD and socioconstructivism, Bruner's scaffolding, and Kress's multimodalities. Vygotsky's (1978) social-constructivism theories outlined societal influences on learning, while the use of Kress's (2010) multimodal theory helped increase the societal impacts of the video on GPE teachers' practices.

The problem of practice resulted in a need to bridge the ZPD gaps between what GPE teachers in the inclusion setting knew about APE strategies and their class's potential to include students with ASD. A concept based on multimodality theory for learning was created and used to connect with GPE teachers and illustrate APE strategies in various modes that could not be successfully addressed through pedagogical terms. The case study findings helped me unpack the experiences of Mrs. Move, Coach A, and
<table>
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<tr>
<th>Survey Questions</th>
<th>Mrs. Move</th>
<th>Coach A</th>
<th>Mrs. Soar</th>
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<td>Ease or difficulty in viewing.</td>
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<td>easy to download and watch</td>
<td>The video was easy to watch</td>
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<td>How did you view?</td>
<td>Macbook</td>
<td>Macbook</td>
<td>Macbook</td>
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<td>Describe the quality of the videos.</td>
<td>high quality, hear and see perfectly</td>
<td>set up was perfect</td>
<td>clear video and audio</td>
</tr>
<tr>
<td>How did you use the video?</td>
<td>reflect on teaching, planning</td>
<td>notes, reflect, pay attention</td>
<td>feedback, social skills, prompts</td>
</tr>
<tr>
<td>Describe the strategies obtained.</td>
<td>redirect, visual aids, color code</td>
<td>Support, communicate, reinforce</td>
<td>&quot;all&quot; obtained</td>
</tr>
<tr>
<td>Describe implementation.</td>
<td>(miscommunication)</td>
<td>Support, communication</td>
<td>Social skills, prompts, affirmation</td>
</tr>
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<td>Overall effectiveness?</td>
<td>highly effective</td>
<td>gave me ideas for communication</td>
<td>very effective</td>
</tr>
<tr>
<td>Students with ASD reaction?</td>
<td>on task, engaged</td>
<td>redirected, support</td>
<td>positive reactions, social skills</td>
</tr>
<tr>
<td>Students without ASD reaction?</td>
<td>helpful for all</td>
<td>felt successful, supported</td>
<td>apply to the entire class, social skills</td>
</tr>
<tr>
<td>Effect(s) on inclusion?</td>
<td>Planning, communication</td>
<td>learning from another teacher</td>
<td>building student social skills</td>
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<td>One positive reflection.</td>
<td>I need to communicate better</td>
<td>positivity and character lessons</td>
<td>positive reinforcement</td>
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<tr>
<td>One negative reflection.</td>
<td>show me how to adapt equipment</td>
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**Figure 4.14** Participant Survey Responses
Mrs. Soar through multimodalities in semiotics towards their understanding and implementation of APE strategies and reap the benefits of reciprocal learning from the participants.

The case study findings indicated a connection between Vygotskian constructivism and semiotics in multimodalities. A synthesis formed between Vygotsky’s (1978) definition of constructivism as knowledge obtained through experiences, and Kress’s (2011) explanation of semiotic multimodalities as knowledge mediated by signs. Mrs. Move, Coach A, and Mrs. Soar demonstrated Vygotskian ideals through the theory of multimodality. They were the representatives of constructing knowledge through action. Specifically, the GPE teachers were actively participating in sign making through multimodal interaction centered around a video. Firmansyah (2018) defined constructivism as related to Vygotsky's theories as learning in a relevant context, social experiences, and intent to construct meaning. The theory of multimodality aligns with Vygotskian constructivism as it strengthens communication, broadens cultural understanding, and enhances the contextual understanding, all in a social reality (Kress, 2010). Kim (2017) backed this claim stating the multimodal theory supports Vygotsky's social constructivist views because it focuses on learning through a socio-cultural means. The GPE teachers used the video scenarios and made modifications for their social settings. According to Kress (2010), multimodalities fostered the GPE teachers' abilities to make meaning from the video and relate to their inclusion classrooms.

The video was more effective than if I had met with each teacher to tell them what to do because of the multimodality theory. Kress (2010) stated meaning is the main issue, and meaning is made from modes. Mrs. Move, Coach A, and Mrs. Soar needed more than
a lecture or email to effectively implement APE strategies in their inclusion classrooms. Wells (2000) defined the relationship between an individual and society and acquiring knowledge through communication as dialogic inquiry. The video surpassed dialogic inquiry to include multimodal learning and offered the GPE teachers an alternative means to view signs through different modes for optimal success. According to Mills (2010), multimodality and semiotics are fundamental to communication. The theory of multimodalities was applied to connect the GPE inclusion classroom's learning spaces and the APE classroom. As illustrated in Mrs. Move's, Coach A's, and Mrs. Soar's narratives, they were able to gain knowledge from the video emphasizing the idea that the multimodality theory works because it is engaging, maintains attention, and addresses individual needs (Mills; Kim, 2017; Kress & Jewitt, 2010).

Case study findings indicated the importance of multimodal learning, drawing upon the constructivism learning perspective through Vygotskian and Kress theory connections. According to Vygotskian constructivism, learning is most relevant in context (Vygotsky, 1978). The social setting presented in the video promoted meaning-making for the GPE teachers (Kress, 2010). Vygotsky and Kress shared the idea that knowledge is constructed through modes. Findings from Mrs. Move, Coach A, and Mrs. Soar illustrated the theory of multimodalities used to construct meaning.

Findings also indicated the importance of the social community in learning. Wells (1999) compared learning to a dance explaining that dance is a cultural activity with patterns remaining the same from generation to generation. When someone new joins, they are also joining the community, and the community supports them until they "get the feel" (Wells, 1999, p. 323) begin to participate, and "create new variations taken up by
others" (p. 323). Wells's analogy can be applied to learning that occurred throughout the study. While the GPE participants were learning APE strategies from me, I was also learning from them. The participants joined the community of APE, and as they begin to "get the feel" (p. 323), and created "new variations" (p. 323) and they extended my learning. By engaging in cultural activities with participants, my communication knowledge was extended, and I wanted to discover more. I learned to modify communication modes further and appreciate each mode's importance and its role in clarifying miscommunications, "seeing" a conversation, and deliberate choice and design of the language. Chapter Five explores more personal gains from the study and hopes and plans for future studies.

Physical education needed a space for multimodal learning. In collaboration with participants, a space was created using Vygotskian perspectives with a video in a cooperative learning environment based on multimodalities theory. Study of the imposed video's contributions implied the designed space for multimodal learning benefited the GPE teachers by offering mentorship, support for APE strategies, and confidence in communication with students with ASD. The video allowed examination of the connection between multimodalities theory and my communication with the GPE teachers. The video using multimodal communication changed the learning landscape for Mrs. Move, Coach A, and Mrs. Soar by pushing beyond dialogic inquiry and taking linguistic dialogue to a new level.
CHAPTER 5

IMPLICATIONS

The purpose of the qualitative case study was to explore what happens when communication concerning APE strategies for students with ASD becomes multimodal and is presented in a video format for GPE teachers. The study investigated how a new level of semiotics impacted GPE teachers' transformation in the inclusion setting as they worked to engage students with ASD. A transformation in education was experienced during the research study as Covid19 necessitated changes. Education and educators have been changed. My research reflects the change. The implications of research like mine that deconstructs text (video) are that multimodality theories are needed if we are to understand what constitutes communication in this Covid19 changed climate of education.

This chapter outlines the implications and importance of semiotics in inclusion GPE classes and recommendations for future research. Also included is a discussion of significant findings related to the literature and discussion on connections between this study and Vygotsky's social constructivism theories and ZPD, Bruner's scaffolding, and Kress's multimodality. The chapter concludes with an examination of the study's limitations.

Interpretation of the Findings

Chapter 4 detailed the findings through a narrative account of three GPE teachers' participation in the research study. The analyzed data from Mrs. Move, Coach
A, and Mrs. Soar produced thematic illustrations. The themes were used to describe how the GPE teachers grew in their instructional skills by moving from not knowing how to provide inclusion instruction for students with ASD to successfully implementing APE strategies presented through multimodal learning in a video. Mrs. Move, Coach A, and Mrs. Soar effectively transferred APE strategies presented in the video into their inclusion classrooms to engage their students with ASD.

The research study's significant finding was the successful use of a video employing multiple modes used for GPE teachers' meaning-making to engage students with ASD. The GPE teachers were able to absorb information and make meaning from the video's multimodalities and transfer the information into their inclusion classrooms to meet the specific needs of students with ASD. The evidence from the research study revealed the multimodal learning offered in the video to be a viable source of sharing and demonstrating APE strategies used in inclusion GPE classes. The GPE teachers were able to close their ZPD gaps between searching for inclusion methods to successfully implementing APE strategies for students with ASD through social-semiotics and scaffolding. The video provided the vehicle for meaning-making and transformation of pedagogical skills in inclusion classes specifically for engaging students with ASD.

The video focused on providing Mrs. Move, Coach A, and Mrs. Soar with APE strategies for encouraging participation and communication in a social setting with students with ASD. Mastropieri and Scruggs (2007) claimed that social interaction opportunities combined with modifications and accommodations for students with ASD benefit communication. Mrs. Soar focused on James’s social setting while Mrs. Move and Coach A concentrated on John and Joey’s communication. The findings in Mrs.
Soar's narrative illustrated that James became more socially interactive, giving classmates affirmations when strategies from the video were implemented. The modifications and accommodations presented in the video also benefited Mrs. Move and Coach A in their attempts to address John and Joey's impaired communication and speech deficits. John and Joey's deficiencies were explained by the intellectual disabilities often associated with ASD. Up to 23% of students with ASD also have diagnosed intellectual disabilities leading to communication struggles and auditory processing delays (Reinhartsen et al., 2019; Eckdahl, 2018). Johnson (2015) stated that communication modifications are necessary accommodations in a range of GPE teachers' strategies to include students with ASD. Mrs. Move and Coach A specifically focused on accommodations in communication while also addressing the processing disorders as they implemented new methods of giving instructions for students with ASD (Block, 2016).

Study findings indicated Mrs. Move, Coach A, and Mrs. Soar improved their lesson planning to include communication and participation strategies based on the APE strategy supports illustrated in the video. Winnick and Poretta (2016) stressed the importance of planning critically and methodically to include students with ASD, while Mastropieri and Scruggs (2007) addressed time for planning. Including tailored instruction for students with ASD is challenging and GPE teachers are often not prepared for individualized planning (Block, 2016; Block & Obrusnikova, 2007). Mrs. Move, Coach A, and Mrs. Soar met the challenge using the video to prepare lessons inclusive of students with ASD through communication accommodations and visual and physical supports. According to Jin et al. (2013), GPE teachers lack the know-how to provide the necessary plans and supports to meet students' needs with ASD. The study findings
challenge the authors' claim showing the GPE teachers gained the knowledge needed to provide successful inclusion lesson plans and supports for students with ASD with the video. The issue of time was addressed by making the video available for use at the GPE teachers' convenience.

The research study's findings answered the research question framing the study through Mrs. Move, Coach A, and Mrs. Soar's narratives. Each participating GPE teacher made meaning and created their own signs from strategies presented through the multimodalities in the video. The video offered the GPE teachers illustrations and demonstrations of APE strategies through multimodalities. Mrs. Move, Coach A, and Mrs. Soar made meaning from the video and transformed the new knowledge they gained into workable lesson plans to meet students' individual needs with ASD in their inclusion GPE classes. The APE strategies presented in the video provided supports for Mrs. Move, Coach A, and Mrs. Soar to practice and implement into their lessons. The video's multimodal components impacted how knowledge was transformed by providing the GPE teachers with examples of APE teaching strategies made available to them to use at their convenience. Mrs. Move, Coach A, and Mrs. Soar's depictive narratives answered the research question through a progression. The participants went from not knowing how to meet students' needs with ASD to demonstratively implementing APE strategies with the assistance of multimodalities presented in a video.

**Implications for Theory and Research**

The case study's findings outline implications for theories used to create the framework for the case study. Results are connected to the triad of theories of Vygotsky's constructivism concepts of social development and sociocultural theories and ZPD,
Bruner's scaffolding, and Kress's multimodality theory. Case study findings presented in the narratives of Mrs. Move, Coach A, and Mrs. Soar exemplify the use of Vygotskian beliefs demonstrated through social-semiotic tools.

Vygotskian beliefs fall under the umbrella of constructivism with theories based on active participation in learning (Veer et al., 1993). Sociocultural ideas and a focus on cognitive development are evident in the case study findings as Mrs. Move, Coach A, and Mrs. Soar were active members of a social community working towards transforming knowledge. Wells (2001) stated that the Vygotskian goal of education is transformation, and transformation is reached through social interaction and cultural resources. Mrs. Move, Coach A, and Mrs. Soar demonstrated transformation by participating in a social community created to include students with ASD and implemented cultural resources provided by social-semiotic tools into their lesson plans for their inclusion GPE classes. The social community was created through communication with the GPE teachers and multimodalities presented in a video.

The social community suggested by Vygotsky's social development theory played a role in constructing knowledge for Mrs. Move, Coach A, and Mrs. Soar by emphasizing the sociocultural perspective of inclusion GPE (Vygotsky, 1978). The social community allowed collaboration among the case study participants and the researcher, and findings indicate the social interaction resulted in the transformation of pedagogy skills for the inclusion of students with ASD for Mrs. Move, Coach A, and Mrs. Soar. According to Vygotsky (1978), socialization leads to awareness. Vygotsky's assertion was illustrated as Mrs. Move, Coach A, and Mrs. Soar benefited from social interaction and constructed
knowledge of inclusion through a sociocultural lens. As a result of the social community and the video, they moved forward to create an inclusive classroom.

Vygotsky's sociocultural theory stresses the importance of interaction between the learner and culture (Vygotsky, 1978). Findings represent a better understanding of the ASD culture and the needs of students with ASD through positive interactions among Mrs. Move, Coach A, Mrs. Soar, and the ASD culture. The GPE teachers recognized the need for APE supports for communication as they engaged in social interactions with the researcher about the ASD culture. Mrs. Move, Coach A, and Mrs. Soar learned through the social process of collaboration. Findings indicate learning through the illustration of implementing APE communication strategies in the participants' lesson plans.

Social interaction and collaboration are also imperative to closing the ZPD gap. Fani and Ghaemin (2011) described ZPD as the distance between actual development and potential development through collaboration. Mrs. Move, Coach A, and Mrs. Soar closed their respective ZPD gaps using the constructs of Vygotsky's social theories and implementing a collaborative process provided by the video. The case study findings display a movement of the GPE teachers' having reached the extent of their knowledge of inclusion for students with ASD towards the next attainable level of their ZPD. Shabani et al. (2010) described the benefits of using ZPD in teacher education to focus on cultural tools requiring teachers to take facts and make their meaning. The ASD culture was presented in the video and required the GPE teachers to take the information and make their own meaning. Findings indicate through the narratives that Mrs. Move, Coach A, and Mrs. Soar were able to close their ZPD gaps; they made meaning from the signs in the video and transformed their inclusion classrooms to represent the ASD culture.
Scaffolding also supports closing the ZPD gap. According to Bruner, the GPE teachers closed their ZPD gap through scaffolding as they moved from developing APE strategies to mastery (Wood et al., 1976). I provided support to Mrs. Move, Coach A, and Mrs. Soar through collaborative social interactions and multimodalities in the video. The collaborations and APE strategies and lessons presented in the video were individualized for the GPE teachers' needs of providing inclusion for students with ASD. The individualized support that increases the ability to close the ZPD is what Bruner defined as scaffolding (Wood et al.). Findings from the case study outline movement by Mrs. Move, Coach A, and Mrs. Soar from reliance on collaboration with me and the video to actively providing for the needs of students with ASD in their inclusion classrooms on their own. Warford (2011) described this end-stage of scaffolding as reoccurrence, while Vygotsky (1978) called it transformation. Mrs. Move, Coach A, and Mrs. Soar transformed from supporting scaffolding to independence in providing for students with ASD in their inclusion classrooms through collaboration with me and using the video. Participants provided examples of scaffolding in their interview responses. Mrs. Move discovered John’s affinity for and success with visual supports, and implemented supports into her plans and classes. Coach A determined eye gaze worked with maintaining attention with Joey and used spatial planning to ensure a line-of-sight. Mrs. Soar applied gesturing through physical prompting with James to improve his motor planning in hopping.

According to Kress (2011), transformation or transduction of meaning across modes is the crux of multimodality. Kress (2010) defined modes as resources where we make meaning. The combination of resources gives richer meaning to the information
presented. In the video, I used Kress's theory of multimodalities to illustrate APE strategies to enhance learning. The modes were arranged to be easily interpreted by the GPE teachers and memorable for inclusion in lesson plans. I used Kress's (2011) idea that dividing the APE strategies for GPE teachers into different modes made the information easily digestible and able to be reproduced.

Kress (2010) used a combination of social theories, semiotics, and linguistics to create social-semiotics. Bezemer et al. (2012) described social-semiotics as the use of modes, other than language, to socially interpret meaning. Kress's (2010) social-semiotics were also employed in the video, creating a text to use semiotic tools and multimodalities to communicate information on APE strategies to the GPE teachers. A social-semiotic approach to the video extended the APE strategies' social interpretation to include visual, aural, gestural, and spatial modes in the ASD culture. The modes served as channels of communication in the video for conveying socially and culturally shaped APE strategies for GPE teachers in the inclusion setting.

Vygotskian beliefs combined with Bruner's scaffolding and Kress's multimodalities led to Mrs. Move’s, Coach A’s, and Mrs. Soar's success in the inclusion classroom. Vygotsky's social constructivism theories and a social-semiotic approach with multimodality tools created a conducive environment for scaffolding information and promoting meaning-making for the GPE teachers. According to Bezemer et al. (2012), the social-semiotic approach results in transfer and integration when attention is paid to signs for learning. Findings indicate Mrs. Move, Coach A, and Mrs. Soar were attentive to signs and made meaning, as demonstrated in their lesson plans' addition of APE strategies. Mrs. Move, Coach A, and Mrs. Soar were able to make their own signs as they
translated knowledge from the video. Each teacher implemented APE strategies to meet students' individual needs with ASD in their inclusion classrooms using the created video based on Vygotsky’s, Bruner’s, and Kress's works.

**Implications for Practice**

The narrative of findings from Mrs. Move, Coach A, and Mrs. Soar imply the use of multimodalities and a social-semiotic approach to collaborating with GPE teachers can be used to provide teaching supports that offer students with ASD a better learning outcome and experience in inclusion GPE classes. The case study conducted in the real-world setting of three GPE teachers seeking help for engaging students with ASD told a personal story of the plight inclusion teachers face, and findings from the study strongly contributed to the practice of inclusion GPE. Results indicated that GPE teachers can successfully meet the challenge of inclusion with collaborative support and resources, and multimodalities presented in a video can be used to transfer knowledge.

The case study described the difficulties GPE teachers face and presented the positive outcomes from using multimodalities in a video for learning to include and engage students with ASD in GPE inclusion classes. The case study findings demonstrate that GPE teachers can acquire APE strategy knowledge through various modes and create meaning from signs. The implication for GPE inclusion classes is three-fold; a social-semiotic approach to expanding the pedagogy skills of GPE teachers is beneficial, GPE teachers can transfer knowledge of APE strategies from a video, and students with ASD benefit from the APE strategies GPE teachers gain from multimodal learning.

The findings from the case study provide evidence for GPE teachers in the inclusion setting that the needs of students with ASD are met with the implementation of
APE strategies. Results also suggest that GPE teachers can obtain APE strategies through multimodal learning. The video was successful because GPE teachers were presented with visual, aural, gestural, and spatial demonstrations of the APE strategies. The outcome of the findings benefited GPE teachers in their classrooms as they provided an inclusive setting for students with ASD. Multimodal learning through a video offered a learning method to incorporate APE strategies that were flexible and respectful of their time. The video allowed GPE teachers to use the resource at their convenience. The case study findings indicate a social-semiotic approach is beneficial. This suggested the video offered modes of communication for GPE teachers was advantageous to their needs and schedules. The approach worked because I used multimodalities in the video to illustrate the social meanings of signs shaped by the inclusion and ASD cultures in a PLC collaborative effort.

Case study findings are essential to inclusion PE practices. Inclusion practices in the GPE setting require differentiated instruction and accommodations for students with ASD. Findings presented in the narratives of Mrs. Move, Coach A, and Mrs. Soar depict how APE strategies meet students' needs with ASD and benefit inclusion practices. Findings are also crucial to policies surrounding inclusion. Federal guidelines require the inclusion of students with special needs in GPE classes. Findings from the case study provide a means for GPE teachers to be compliant with IDEA (U.S Department of Education, 2017), presenting a social-semiotic approach to learning and implementing APE strategies for inclusion.

The case study findings presented through the narratives of Mrs. Move, Coach A, and Mrs. Soar provide evidentiary support of the use of multimodal learning to assist in
providing support and resources for GPE teachers in the inclusion setting. Findings answer the research question through examples of Mrs. Move, Coach A, and Mrs. Soar using the video and effectively implementing APE strategies into their lesson plans for students with ASD. Findings from the case study suggest that GPE teachers in the inclusion setting can learn strategies to meet students' needs with ASD successfully with proper support and resources.

The video used in the case study was a text created to communicate signs through multimodalities and semiotic tools. According to Kress (2010), semiotics is about meaning. The GPE teachers made meaning from the signs in the video. The implication for practicing GPE teachers is the movement beyond monomodal communication to multimodal communication through a video to meet students' needs with ASD in the inclusion classroom.

**Action Plan**

Findings from the case study also provide implications for my personal practice. Reflection into my own practice reveals a continued need for collaborative work with the PLC and use of multimodalities in my classroom. Keeping students engaged in GPE and APE classes will require maintaining the rapport with GPE teachers through the PLC. The GPE teachers were not only participants but also my partners in the study. I learned from their narratives as results of the study but also from their individual pedagogical expertise. The GPE teacher participants were not participants because their teaching had a deficit. The GPE teachers were participants because they cared enough about the engagement of students with ASD to ask for help. My personal practice will continue to
benefit from collaboration with the PLC as we work together to ensure students with ASD are engaged in GPE and APE classes.

Multimodalities will also continue to be a focus in my practice. The APE strategies presented in the study are commonplace in my classroom. The persistent implementation of visual, aural, linguistic, gestural, and spatial modes to present those strategies will ensure progress towards the goal of engaging students with disabilities in PE. Multimodalities will strengthen my practice as a teacher and a teacher leader.

**Recommendations for Future Research**

The case study implications signify the impact of the findings, and the recommendations create the next-steps proposed by the research. The case study copiously explored the problem of practice and answered the research question concerning three GPE teachers and their journey towards providing inclusive plans for students with ASD. In answering the research question, the case study findings uncovered areas of importance for continued, future study.

The case study addressed a monomodal semiotic system's problem by implementing multimodal communication and examining the personal construction of meaning by participants. The research focused on meaning-making across modes and impacted my views on language, meaning, and communication. Recommendations for future studies include the continued exploration of multimodalities focusing on language choice and communication design through SFL using the triad of theories, multisensory inclusion based on the Orton-Gillingham approach, and examining a live coding system.

A recommendation for future research, including SFL, would allow for an in-depth look at language's function in the social context. According to Halliday (1973),
SFL is vital to social-semiotics, enabling the study of the relationship between language and its function in the social setting. Halliday (2013) further outlined the role of social context in meaning-making and examined the influence of societal context on language meaning. Systemic functional linguistics is illustrated in the study, specifically in interactions with Coach A where sarcasm and humor were used in communications. Future studies focused on the value of language's function would provide insight into how language choices using sarcasm and humor allow a description of how the social reality is encoded in our language use and meaning (Trask & Stockwell, 2007). Applying Halliday's emphasis on the choice in the meaning of language through an examination of the social context of language could further understand the multiple layers of meaning-making in SFL.

In cooperation with the further examination of language is the consideration of multisensory integration for meaning-making. Dr. Samuel T. Orton is referred to as the "father of multisensory instruction" (Campbell et al., 2008, p. 269) based on his collaborative efforts with Anna Gillingham to establish the Orton-Gillingham Approach. The approach was created to address students' needs with dyslexia but produces communication strategies that are beneficial to the further exploration of language. The approach states that learning should be individualized, occur through scaffolding, and encompass multisensory principles, emphasizing the triad of theories outlined in the current study (Ahearn, 2019). Multisensory principles are language-driven and outline meaning-making opportunities with visual, auditory, and kinesthetic communication (Fritts, 2016).
Orton and Gillingham focused on links between the visual, auditory, and kinesthetic senses to produce engaging and effective communication (Gillingham & Stillman, 1997). According to Rink and Hall (2008), communication is critical in PE and begins with cognition. Engaging in multisensory communication can strengthen cognitive efforts and translate well into the study of multimodalities by enhancing the availability of meaning-making. Morgan (2019) supports multisensory communication based on a recent study showing that the highest stimulation of senses produces the best results. A multisensory methodology in further research requires implementing additional communication adaptations to stimulate the visual, auditory, and kinesthetic senses. In collaboration with Kress's multimodalities theory, a video employing a multisensory approach could include more attention to detail of lighting, sound (music), camera angles, and use of space to elicit meaning-making.

Another means of examining the value of the function of language is through a specific method of data coding. A recommendation for analyzing data in future studies includes what Parameswaran et al. (2020) have termed live coding. "Live coding directly codes non-text data while still maintaining integrity of coding process" (Parameswaran et al., p. 634). Live coding is done without the transcription and allows a glimpse of the "social life" (p. 633) present in the data. The live coding data will enhance future transcription data.

The case study provided an example of a misinterpretation of the text in a survey question. According to Parameswaran et al. (2020), misinterpreting text is common in qualitative research because the data is all text. Live coding would focus on tone, gesturing, gaze, posturing, and other non-text communication nuances. Live coding
recognizes the function of language presented in different modes and allows the researcher to focus on the language's intent, context, and meaning in the results.

Recommendations for further research also include the continuation of the theoretical triad study in how the GPE teachers created multimodal classrooms for themselves as an example of the study’s implications. Case study findings supported the use of a video to provide APE strategies for GPE teachers, and presented opportunities for GPE teachers to construct multimodal classroom environments as they applied APE strategies. Examining the implementation of multimodal constructs in GPE classrooms would allow for the exploration of how the participants continued the implications of the triad of theories.

Another recommendation includes the further study of the theoretical triad through future multimodal videos. The current study presented new choices for future videos that were not known to me in the creation of the video for the study. Future video creations could address the levels of choices that go into the design of communicative text. Design of future videos could also include an increased focus on Halliday's SLF ideas combined with Vygotskian theories, Bruner's scaffolding, and Kress's multimodality theory to provide a useful framework. Halliday's SFL partners well with Kress's multimodality theory to create a video that affects meaning-making through multiple construct layers. A video with SFL focus on modalities associated with voice inflection combined with socially shaped signs for virtual learning could be created using Vygotsky's (1978) ideas of constructivism based on active participation in social interaction.
According to Kalantzis and Cope (2016), there are varied ways of communicating and various methods of designing communication modes. Kalantzis and Cope describe designing as a way of rebuilding text from available designs in the world around us. Using the idea of designing combined with SFL would allow further research to use available semiotic resources in the APE culture. Cope (2016) explained further that a redesign would elicit new ideas. A redesign is not replication but rather an opportunity for meaning-making and a way to rethink teaching and learn virtually (Cope, 2016). A future video designed for the inclusion of GPE classes would make meaning based on how language choice allows for continued manipulation and integration of modes.

The future research goal is the continuation of change in the landscape of multimodal learning through social-semiotics. Taking what was learned from the case study and applying it to creating new videos will catapult the study of semiotics and the effectiveness of using videos using multimodalities for learning. Employing the triad of theories plus further SFL studies will enhance the format of video creation. The future research goal is attainable using the learning theories as a guide and framework and exploring live coding as an additional data analysis process.

**Limitations of the Study**

In addition to exploring recommendations for a further study, there is also a need for exploring the study's limitations. While the case study implies positive results, the research is subject to several limitations that impacted and influenced the findings. The first is the sample of the participating students in the video. The second limitation concerns the environmental and societal difficulties presented during the study. The third
area of discussion is the case study's unexpected results and is included in this section because the results were outside the study's intended frame.

The sample of students with ASD can be seen as a limitation; all students were of the same sex. The six student participants in the case study were male. However, according to Maenner et al. (2020), 1 in 42 boys has an ASD diagnosis, five times higher than girls' diagnoses. General PE teachers will likely have more male students with ASD than females.

Including a larger sample size is a limitation that can be addressed in future studies. The environmental and societal difficulties that imposed limitations would not be addressed as easily. Covid 19 created a variety of constraints throughout the case study. In the Spring of 2020, schools across the nation were closed due to the impending virus. The school dedicated to students with special needs closed on March 13, 2020, and did not reopen until August 2020. Schools in the district where Mrs. Move, Coach A, and Mrs. Soar taught followed the same shutdown timeline. School shutdowns and remote learning placed time constraints on the case study as a whole. Although the study was thoroughly conducted, the proposed timeline was significantly altered by reducing the amount of time available to create the video shared with GPE teachers.

Schools reopened in August 2020 with different R2L plans. The school dedicated to students with special needs, and the elementary schools where Mrs. Move and Coach A taught returned on a hybrid schedule. Students were divided into two groups, A and B, and attended school for face-to-face instruction two days a week. Group A attended on Mondays and Wednesdays, and Group B attended on Tuesdays and Thursdays. Groups A and B received virtual lessons on Fridays for remote learning. Schools followed this plan
until October 2020, when students returned to five days a week face-to-face learning. The middle school where Mrs. Soar taught remained on a hybrid A/B schedule until Thanksgiving in November 2020.

Additional limitations were placed on PE teachers at all schools due to Covid 19. We were not teaching in our PE classrooms, and we were not using all equipment due to Covid 19 restrictions. The video was created in outdoor spaces and classrooms as I traveled throughout the school building rather than recording lessons as planned in the gymnasium. The video also only showcased one student at a time rather than in a class social setting.

Other Covid 19 restrictions also limited my face-to-face contact with Mrs. Move, Coach A, and Mrs. Soar. Social face-to-face interactions with participants were prohibited, and all conversations had to occur through phone calls, emails, or virtual meetings. Interviews that were planned to be face-to-face had to be conducted virtually through Microsoft Teams.

While Covid 19 caused worldwide stress, the virus's limitations on the case study did not result in all adverse outcomes. The alterations in plans also produced unexpected positive results in the case study. The case study grew from focusing on Mrs. Move, Coach A, and Mrs. Soar and their narratives to include a deep dive into examining multimodalities and the video as significant elements of the case study and teaching during the Covid 19 pandemic. With the inclusion of the video also came the exploration of multimodal learning and new theories. The limitations of Covid 19 produced unexpected growth of the case study to expand beyond its original intent.
The expansion of the study also elicited the development of new skills in teaching virtually. Covid 19 moved educators into remote learning overnight. Multimodal learning was necessary to continue meeting the needs of GPE teachers and students with ASD. The video proved beneficial for the online teaching format and had constructive implications for virtual teaching and remote learning for GPE teachers.

Limitations of the case study are not to be viewed negatively. The limitations discovered provide an insight into the case study process while also examining other avenues and approaches to enhance the study in correlation with previous recommendations. Limitations offer an understanding of the study's constraints and provide a lens to view the findings objectively.

**Conclusion**

The case study addressed a viable solution to problem of practice outlining GPE teachers' struggles in the inclusion classroom for meeting the needs of students with ASD. The theories applied and the methodology used to offer a pathway and guidance towards the goal when they are adopted. The case study's key finding is the beneficial use of multimodalities in a video for providing APE strategies.

Kress and Jewitt (2010) explored the connection between multimodality and a researcher's position on theory and methodology, stating it is difficult to discuss one without the other. My views on language, meaning, and communication as the researcher shaped my approach to utilizing multimodalities in a video to communicate with GPE teachers. The case study focused on the transfer and transduction of information and meaning-making across modes to meet the goal of providing and communicating APE
strategies. The study focus aligns with the triad of theories and methodology used to carry out the study and my stance on education and communication.

Research conducted in the case study led to my semiotics expertise and allowed me to take Vygotskian theories to a new level. The data gathered from the three participants illustrate the theory of multimodality in the construct of meaning. The approach makes sense of the ways we make meaning from semiotic communication. Inclusion GPE teachers needed Vygotskian constructivism through multimodalities, and the video created a channel for effective communication. The purpose of the case study was to provide APE strategies for inclusion GPE teachers to meet the needs of students with ASD. The theories framing the study offer a pathway and proper guidance towards providing for GPE teachers in the inclusion setting when they are adopted. The outcome of the study was an ideal way to communicate with GPE teachers across modes.
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APPENDIX A

UNIVERSITY OF SOUTH CAROLINA CONSENT TO BE A RESEARCH SUBJECT

UNIVERSITY OF SOUTH CAROLINA

CONSENT TO BE A RESEARCH SUBJECT

"Hey, I've got this kid...": A case study of three physical education teachers and their pursuit to provide for the needs of students with an autism spectrum disorder in the inclusion classroom.

KEY INFORMATION ABOUT THIS RESEARCH STUDY:
Your student is invited to volunteer for a research study conducted by Nancy Morrow Crowe. I am a doctoral candidate in the Department of Education at the University of South Carolina. The University of South Carolina, Department of Education is sponsoring this research study.

The purpose of this study is to determine if general education physical education (GPE) teachers are able to make a transformation from not knowing how to include a student with an autism spectrum disorder (ASD), or implementing incorrect strategies, to demonstratively promoting the participation of students with ASD in the inclusion setting.

Your student is being asked to participate in this study because they are diagnosed with an autism spectrum disorder. This study is being done at McCarthy Teszler School and will involve approximately five volunteers.

The following is a short summary of this study to help you decide whether to allow your student to be a part of this study. More detailed information is listed later in this form.

Nancy Morrow Crowe is conducting a study to determine the effectiveness of providing adapted physical education (APE) teaching strategies by video to general physical education (GPE) teachers. Many GPE teachers have questions concerning the inclusion of students in an autism spectrum disorder (ASD) into a GPE class. Answers to specific questions will be accompanied by a video of the researcher (Nancy Morrow Crowe) implementing APE teaching strategies for students with an ASD.

Students will be videoed during their regular physical education classes at McCarthy Teszler School. Nancy Morrow Crowe will teach the physical education classes as usual implementing APE strategies benefiting students with an ASD. Students will be videoed in two physical education classes in the months of August and September.

There is the risk of a breach of confidentiality, despite the steps that will be taken to protect your identity. Specific safeguards to protect confidentiality are described in a separate section of this document. Taking part in this study is not likely to benefit you personally. However, this research may help researchers understand how to
provide needed support to general physical education teachers for meeting the needs of students with an ASD in inclusive physical education classes.

PROCEDURES:
If you agree to your student participating in this study, you/your student will do the following:

1. Give permission for the researcher (Nancy Morrow Crowe) to review my student’s IEP for diagnosis and educational supports.
2. Be videoed during physical education classes. Your student will not have a choice over being videoed or not during their physical education classes. The treatment your student receives will be no different than during any other physical education class.
3. Have your video shared with a GPE teacher in Spartanburg Co. District 7.

DURATION:
Participation in the study involves two physical education classes over a period of two months. Each study visit will last about 35 minutes.

COSTS:
There will be no costs to you for participating in this study.

PAYMENT TO PARTICIPANTS:
You will not be paid for participating in this study.

COLLECTION OF IDENTIFIABLE PRIVATE INFORMATION OR IDENTIFIABLE BIOSPECIMENS:
Your information collected as part of the research study will not be used or distributed for future research studies.

RETURN OF CLINICALLY RELEVANT RESEARCH RESULTS:
Video content of your participant only will be disclosed to you if you wish to view it. The content may not be used for your personal use and will be the property of the researcher, Nancy Morrow Crowe. Research results may be disclosed to you if you wish after the defense of the dissertation.

CONFIDENTIALITY OF RECORDS:
Information obtained about you during this research study will remain confidential and released only with your written permission. Study information will be securely stored in locked files and on password-protected computers. Results of this research study may be published or presented at seminars; however, the report(s) or presentation(s) will not include your name or other identifying information about you.

CONFIDENTIALITY CERTIFICATE:
To help us protect your privacy, we have obtained a Certificate of Confidentiality from the National Institutes of Health. The researchers can use this Certificate to legally refuse to disclose information that may identify you in any federal, state, or
local civil, criminal, administrative, legislative, or other proceedings, for example, if there is a court subpoena. The researchers will use the Certificate to resist any demands for information that would identify you.

VOLUNTARY PARTICIPATION:
Participation in this research study is voluntary. You are free not to participate, or to stop participating at any time, for any reason without negative consequences. In the event that you do withdraw from this study, the information you have already provided will be kept in a confidential manner. If you wish to withdraw from the study, please call or email the principal investigator listed on this form.

I have been given a chance to ask questions about this research study. These questions have been answered to my satisfaction. If I have any more questions about my participation in this study, or a study related injury, I am to contact Nancy Crowe at 864-596-8491 or email nmcrowe@spart7.org.

Concerns about your rights as a research subject are to be directed to, Lisa Johnson, Assistant Director, Office of Research Compliance, University of South Carolina, 1600 Hampton Street, Suite 414D, Columbia, SC 29208, phone: (803) 777-6670 or email: LisaJ@mailbox.sc.edu.

I agree to participate in this study. I have been given a copy of this form for my own records.

If you wish for your student to participate, you should sign below.

Signature of Subject / Participant

Date

Signature of Qualified Person Obtaining Consent

Date

Page 3 of 3

For IRB Staff Use Only
University of South Carolina
IRB Number: Pro00089263
Date Approved: 05/26/2020
APPENDIX B

PARENT/GUARDIAN LETTER

Dear McCarthy Teszler School Parent,

My name is Nancy Morrow Crowe. I am your student’s physical education teacher and a doctoral candidate in the Education Department at the University of South Carolina. I am conducting a research study as part of the requirements of my doctoral degree in Curriculum and Instruction and I would like to invite your student to participate.

I am studying the effectiveness of providing adapted physical education (APE) teaching strategies by video to general physical education (GPE) teachers. If you decide to allow your student to participate, they will be asked to participate in PE class as usual, while being videoed.

In particular, your student will be videoed during two PE classes in the months of August and September. Videos will be done in regularly scheduled PE classes at McCarthy Teszler and should last about 35 minutes each class. The videos will only be reviewed by members of the research team and deleted upon completion of the study.

Participation is confidential and optional. Study information will be kept in a secure location. The results of the study may be published or presented at professional meetings, but your identity, nor your student’s identity will be revealed.

We will be happy to answer any questions you have about the study. You may contact me at 864-804-9194 and nmcrowe@spart7.org or my faculty advisor, Dr. Todd Lilly at LillyT98@mailbox.sc.edu.

Thank you for your consideration. If you would like for your student to participate, please complete the attached permission form. When you are done, please return the forms to me at McCarthy Teszler School in the folder provided, or contact me at the number listed below to discuss participating.

With kind regards,

Nancy Morrow Crowe
McCarthy Teszler School
175 Burdette Street
Spartanburg, SC 29307
864-804-9194
nmcrowe@spart7.org

“Soaring to New Heights”
APPENDIX C

GPE CONSENT

Hello, fellow physical educators. I hope you had a great summer and are looking forward to a new (and very different) school year. I am working on my doctoral degree and would love to have some help from you for my research. I understand the demands for this year and this is strictly voluntary. I would greatly appreciate your help and know that each of you can offer something unique for my research.

You are receiving this letter because you have reached out to me in the past for help in providing for your students with special needs in your Inclusion PE classes. In my research study I am looking at how I can best provide information general education PE (GPE) teachers like you with adapted physical education (APE) strategies for students with autism spectrum disorder (ASD) in the Inclusion PE setting. I am working to answer the research question, How does the use of multimodal communication through a video with semiotic tools-affect meaning-making for GPE teachers in the inclusion setting, providing for students with ASD’s special needs?

I am videoing my lessons at McCarthy Teszler School working with students with ASD, and offering them you for support and feedback. Lessons are based on questions you have presented to me in the based concerning meeting the special needs of students in your inclusion classes. Participating in the study only requires that view APE lessons, and complete a survey and interview related to videos that I send you on teaching students with autism spectrum disorder, and your implementation of the strategies presented in the video. Pseudonyms will be used in my dissertation to protect your anonymity. Your survey and interview answers will also be kept confidential, and will only be reviewed and analyzed by me.
The video and survey will be provided to you through a link for Office 365 by signing into your OneDrive. The video is nine minutes long and with sound as well as text on the screen to easily indicate supports in place. The survey has 13 questions and will be located in Forms in your OneDrive. I am asking you view the video and post survey responses should be by September 1.

Following viewing the video and posting survey responses, you will have six weeks to implement the strategies presented in the video before participating in a face-to-face interview with me. The interview questions will provide me with information to continue to perfect the best methods of sharing adapted physical education strategies with you. Interviews will be conducted in October.

Thank you for your consideration in helping me with my research. Please contact me by phone or email with any questions concerning the research or timeline. If you are willing, please express your consent by signing the next page and returning to me. I look forward to your responses.

Thank you in advance,

Nancy Crowe

Nancy Crowe, MEd.
Physical Education
McCarthy Tetzler School
Office: 864-641-2793
School: 864-596-8491
Fax: 864-596-8495
ncrowe@apart7.org

“Soaring to New Heights”
I agree to participate in this study. By signing below I express my consent and understanding of my role as a participant.

______________________________________________
Signature of Participant

______________________________________________
Date
APPENDIX D

SURVEY QUESTIONS

Please answer the following questions based on the adapted physical education (APE) teaching strategies presented in the videos. Please be as descriptive as possible.

1. Please describe the ease or difficulty in viewing the video.

2. How did you view the video? (MacBook, iPad, iPhone, etc.)

3. Please describe the quality of the videos. (Clear audio? Clear visuals?)

4. How did you use the videos in your instruction? (Planning, teaching, reflecting)

5. Describe the teaching strategies you were/were not able to obtain from the videos.

6. Describe how teaching strategies were implemented. If not, please explain why.

7. What was the overall effectiveness of the teaching strategies?

8. How did students with an autism spectrum disorder (ASD) react to the teaching strategies?

9. How did students without an ASD react to the teaching strategies?

10. What effect(s) does the video and teaching strategies have on your abilities to provide an inclusive physical education program?

11. Please share one positive reflection from your participation in the research study.

12. Please share one negative reflection from your participation in the research study.

13. Please provide any additional comments you have on the videos and/or supports for students with ASD.
APPENDIX E

VIDEO DETAILS

The created video is intentionally nine minutes long to keep the attention of the participants. Video was recorded on my iPhone, air dropped to my MacBook, and edited in iMovie. The district uses Apple products and Office 365 supports. Editing in iMovie is limited in some accounts.

Plans for the video were to demonstrate two APE strategies for students with ASD. However, my students’ behaviors during lessons allowed me to showcase multiple strategies and supports in each lesson, and this benefits the GPE teachers showing them how the strategies and supports work in various scenarios.

The video begins with a title, Supports for Students With ASD, and my name as the creator. Following is a running list of fourteen APE strategies and supports presented in the video. There is no sound in the opening title or list of supports.

The first illustration of supports is with Student 1. Student 1 is a six year old African American male student with a primary diagnosis of autism and an emotional disability as a secondary diagnosis. He is below grade level, has verbal skills, and requires speech therapy. The video shows me working with Student 1 one-on-one in his classroom. Covid 19 restricted the use of the school gym.

Student 1 is using a visual schedule as a visual support. The schedule illustrates the order students will participate in the lesson and when Student 1 will have his turn. The schedule reads 1, 2, 3, then ME. The participation schedule is reinforced visually for
Student 1 so he has an understanding of when he will have a turn. The schedule helps control the student’s anxiety about upcoming events and prevents him from asking about his turn. A high five is given to Student 1 as an affirmation when he states his understanding of when he will have a turn.

In the following scene it is Student 1’s turn and he is choosing the next activity from the Promethean Board. I give Student 1 two choices although there are a total of eight activities. Minimal choices reduce confusion and processing time. I also gesture choices with my hands as a visual reinforcement. Student 1 then makes his choice.

Redirection and reinforcement are depicted in the next scenes. Student 1 is seen distracted from the activity. I redirect him and reinforce the positive behavior with equipment in his favorite color. Student 1 is then seen back on task in a red hula hoop defining his personal space. Red is his favorite color.

Redirection is seen again as Student 1 sits rather than participating in the activity. He is given minimal choices again allowing him to make an easy decision and have ownership in his activities. Student 1 stated he needed a break. Past experiences have proven that he often needs to step away from an activity, calm himself with self-soothing techniques, and then return to the activity. I allowed him to make the choice to rest before he had to participate in the next activity. Student 1 is then seen following the first/then directive; first rest, then pick.

Student 1 is seen sitting again and is given another redirection and choice. Minimal choices and gesturing make the decision easier for Student 1. He can sit but must use his arms. Student 1 is given an affirmation for participation.
The scenes with Student 1 conclude with a review of the First/Then visual schedule used during activity. The schedule was used anytime a decision had to be made in which end result was something he wanted. The schedule shows a running tab of First/Then choices made during class including: first “choose”, then “dance”; first “rest”, then “dance”; first “dance”, then “rest”; first “sit”, then “dance”; and first “dance”, then “favorite color hula hoop”. Each choice was different depending on what motivated Student 1.

The next scenes in the video show Student 2. Student 2 is a 10 year old African American male with a primary diagnosis of autism. He is below grade level and is non-verbal but has receptive language. I also work with Student 2 in his classroom due to Covid 19 restrictions.

The lesson begins by showing Student 2 expectations using a visual schedule for visual support and a reinforcer. The schedule used has “first” on one side with a picture symbol of PE and “then” on the other side with a picture of an iPad. The expectation is for Student 2 to participate in PE first, then he gets the reinforcement. Reinforcers are different for each student. This student will work for time on the iPad.

In the next scene sign language and gesturing along with physical support are used to provide instruction and reinforcement for the student. I want the student to look at the Promethean Board. I sign “look” and he signs back “eat”. I use physical support to redirect his attention to the board. The lesson on the board is on healthy habits and illustrates proper handwashing. I model the skill for Student 2 and offer affirmations when he participates.
The next scene portrays an attempt to get the student to stand. I use spoken words and signs again to give directions. When the student does not comply I offer help with physical support.

The lesson concludes the way it began, by showing Student 2 expectations for class. We reviewed the First/Then schedule with the picture of his reinforcement. I asked him if he wanted the iPad and he indicated yes by touching the picture. I gave him the iPad as I showed him the picture of the iPad again so he could make the connection. He worked in his individual space.

Student 3 is featured in the next scenes. Student 3 is a 15 year old Caucasian male student with downs syndrome and autism. He is below grade level with limited verbal skills, using a speech device for communication.

I was able to work with Student 3 in an outdoor space using a visual support for walking laps. Verbal instructions were reinforced with the visual support and sign language for “walk”. A sensory integration was also included in the visual support. Student 3 removed the number for each lap walked to indicate the lap was complete. The routine continued through the completion of four laps. At the conclusion of lap four I congratulated Student 3 with an affirmation. Student 3 verbalized “thank you, Coach” back to me.

I was also able to work with Student 4 in separate outdoor space. Student 4 is a 12 year old bi-racial male with a primary diagnosis of autism. He is below grade level and has echolalia with receptive language skills.

Student 4 is shown a visual schedule as a visual support offer further explanation for expectations from the lesson. The lesson involves stations and Student 4 is working at
the green station. The visual support requires him to remove the green cone and move it to indicate the station where he is working.

The green station also has a visual schedule for support with picture symbols indicating activities to be done at the station. I verbalize the direction while pointing to the picture symbol and asking the student to repeat. The schedule shows a tennis ball, tennis racket, and playing tennis. Student 4 repeats.

The first activity is to hit. We remove the picture for hit to indicate we are doing the activity. I start Student 4 with an adapted racket and ball. I verbalize directions and provide physical support for Student 4 to hit the ball on the racket. Scaffolding is implemented as I gradually decrease my physical support and increase difficulty with the addition of less adaptive equipment.

Student 4 uses three various rackets and two different balls. I provide physical support and then scaffolding towards independence. The lesson concludes with affirmations.

Student 5 participates in a lesson in an outdoor space with stations. Student 5 is a 16 year old African American male with a primary diagnosis of autism. He is verbal with excellent receptive language but is below grade level.

Student 5 is given a visual schedule for visual support with sensory integration. The lesson begins at the green station. He moves the picture of the green cone on the visual schedule to indicate the station where he is working. Student 5 verbally reads the green station visual schedule; tennis ball, tennis racket, play tennis.

Student 5 removes the picture for hit to indicate doing the activity. Student 5 has participated in Special Olympics tennis skills in the past. I started with a tennis racket and
adapted tennis ball due to his prior knowledge of tennis. Scaffolding is illustrated as Student 5 progresses from requiring physical support to hitting independently. I give Student 5 affirmations and we move to the next station.

The next station is the red station. Student 5 matches the color of the cone to the color on the visual schedule and moves red to indicate the station where we are working. We verbally and visual read the visual schedule together and remove the picture for the activity we are going to do. The first skill is throw and the second skill is catch.

Student 5 is instructed to pick up the red ball verbally and with gestures, and is reminded that everything for the red station is red. The student is instructed to throw and catch using a combination of verbal directions and gestures. Scaffolding is implemented resulting in Student 5 throwing and catching without prompts.

Student 5 reads the schedule for the next activity; dribble ball. I model dribbling and then give the ball to the student. Student 5 dribbles the ball successfully and I provide an affirmation.

Student 6 is the final lesson and is in an outdoor space. Student 6 is a 20 year old African American male with autism as a primary diagnosis. He is below grade level, non-verbal, and has very limited receptive language skills.

Student 6 uses a visual schedule for visual support. He is working at the red station and moves the picture of the red cone to indicate work at that station. Student 6 requires physical support to move the picture.

I verbalize the skills as I show the pictures on the schedule to Student 6. Modeling and physical support are used to implement the skills. Scaffolding is used to move from verbal prompts to physical prompts and gesturing to no prompts. Student 6 had to be
redirected during instruction. He is distracted and I redirect by stepping into his line of sight and repeating the direction.

Student 6 reviews the visual schedule with me and we move to dribbling. I provide physical support through hand-over-hand instruction. Scaffolding occurs through movement from physical support to independent dribbling and the lesson concludes with an affirmation.

Throughout the video directions are given in simple, one-step phrases. Verbal prompts are always given in short one to two word phrases. Verbal prompting is evident in direction giving with each student.

Throughout the video the occurring strategies and supports used are printed on the screen. Sound is also clear in the scenes with students along with well-defined visuals and framing of subjects in the videos. The combination of the different modes increases the likelihood of transfer of the strategies and supports to the GPE teachers.
APPENDIX F

GENERAL INTERVIEW QUESTIONS

1. Which strategy(s) do you feel most connected to in your teaching?

2. How do you measure the success of a strategy in your classroom?

3. What is a rewarding aspect of inclusion with students with ASD?
APPENDIX G

IRB APPROVAL

INSTITUTIONAL REVIEW BOARD FOR HUMAN RESEARCH
DECLARATION of NOT RESEARCH

Nancy Morrow
715 Wyrborne Lane
Moore, SC 29369

Re: Pro00098573

Dear Ms. Nancy Morrow:

This is to certify that research study entitled “Hey, I’ve got this kid...” A case study of three physical education teachers and their pursuit to provide for the needs of students with an autism spectrum disorder in the inclusion classroom, was reviewed on 5/28/2020 by the Office of Research Compliance, which is an administrative office that supports the University of South Carolina Institutional Review Board (USC IRB). The Office of Research Compliance, on behalf of the Institutional Review Board, has determined that the referenced research study is not subject to the Protection of Human Subject Regulations in accordance with the Code of Federal Regulations 45 CFR 46 et. seq.

No further oversight by the USC IRB is required. However, the investigator should inform the Office of Research Compliance prior to making any substantive changes in the research methods, as this may alter the status of the project and require another review.

If you have questions, contact Lisa M. Johnson at lissi@mailbox.sc.edu or (803) 777-6670.

Sincerely,

Lisa M. Johnson
ORC Assistant Director and IRB Manager
APPENDIX H

MRS. MOVE SURVEY RESPONSES

1. Please describe the ease or difficulty in viewing the video.
   
   *The video was very easy to view. I clicked on it and it popped right up.*

2. How did you view the video? (MacBook, iPad, iPhone, etc.)
   
   *MacBook*

3. Please describe the quality of the videos. (Clear audio? Clear visuals?)
   
   *The videos were of high quality. I could hear and see them perfectly.*

4. How did you use the videos in your instruction? (Planning, teaching, reflecting, etc.)
   
   *I will use these videos by reflecting on my own teaching and will plan to use some of the strategies in my classroom.*

5. Describe the teaching strategies you were/were not able to obtain from the videos.
   
   *I saw several teaching strategies such as redirecting, visual aids, simple directions, color coding, physical support, modeling and adapted equipment.*

6. Describe how teaching strategies were implemented. If not, please explain why.
   
   *Redirecting- basketball player starting dribbling and the teacher said the simple direction toss visual aids- laminated papers with velcro attachments simple directions- one to two word commands color coding- cones with visual aids*
adapted equipment – different size tennis racket

physical support- hand over hand to help

modeling- participated with students and showed exactly what to do

7. What was the overall effectiveness of the teaching strategies?

Highly effective and engaging

8. How did students with an autism spectrum disorder (ASD) react to the teaching strategies?

Students staying on task and participating. They were engaged as well.

9. How did students without an ASD react to the teaching strategies?

I say these strategies are helpful for all students

10. What effect(s) does the video and teaching strategies have on your abilities to provide an inclusive physical education program?

The video helps me give multiple ways to communicate to reach students to give them the best learning environment possible

11. Please share one positive reflection from your participation in the research study.

I reflected on my current strategies. I need to use visual aids in lesson planning

12. Please share one negative reflection from your participation in the research study.

There really wasn't a negative from participating in this study. If I had to change anything I would probably be to show how I can adapt my equipment more. For example, I don't have some of the specialized tennis balls. I might have a balloons.

13. Please provide any additional comments you have on the videos and/or supports for students with ASD.

I enjoyed the video. The teacher does an excellent job with her students.
Figure I.1 Mrs. Move’s Sample Personal Notes
I asked, “Which APE strategies do you feel most connected to in your teaching?”

Mrs. Move responded: The first time I watched the video, I was drawn to the visual aids you used in the lessons. I watched for what you called 'visual supports' with each student to see how they worked in different scenarios. I had never thought of using a visual other than just me modeling for my students. I thought other things might just get in the way and overwhelm the students. The other strategy I liked was a schedule for students. John doesn't want to participate in activities that use gross motor skills. When I was watching the video clips using the schedule, I immediately thought about adding a schedule for him into my lesson plans. I thought the schedule would keep him on track and maybe motivate him to move if he got a reward, too.

I asked, “How do you measure the success of a strategy implemented in your inclusion GPE classroom?”

Mrs. Move responded: I measure the success of a strategy like I measure the success of anything in my classroom; if it works and if it benefits the students. If I am measuring the success of the visual aids and schedules I’d say they were successful. They worked. They helped John. And, they benefited a student; they benefited John in my class. I’d say both were successful implementations in my class.
I asked, “What is a rewarding aspect of inclusion with students with ASD?”

Mrs. Move responded: My goal is to get students moving and keep them active in PE. I want to teach them skills and games they can use at home to be moving and active, too. Being able to get students with ASD, like John, moving is a huge reward for me. It makes my heart happy to see him participating and being part of the class.

I asked, “How did you approach visual supports with John?”

Mrs. Move responded: I made a visual schedule like yours from the video. The First/Then schedule. I wanted to show John what I wanted from him. I tried the schedule first. I put a picture of jogging and then a picture of a physioball because bouncing on the ball is his favorite thing to do. Now I know that is the reinforcement. I wanted him to jog first, and then he could have the physioball. I put the paper schedule in my lesson plans and gave the schedule to him after I gave instructions to the rest of the class. He seemed to really like having something to hold and look at. I thought it might be too much for him, but he liked it. I made sure to make a note of that for the next week's lesson plan – John likes to have something to hold. That first day was not as successful as I wanted it to be. I thought the schedule would be a miracle cure (laughing). But, I had to work more with John to understand what the schedule meant. It turns out he didn't understand what I wanted from him. He only wanted the physioball to bounce on.

I asked, “Now that you have had a chance to view the video multiple times and attempted to implement strategies into your inclusion classroom, what strategy is most important for you to focus on moving forward with John?”
Mrs. Move responded: Communication with John! I can plan until the cows come home, but if he doesn't understand what I am asking of him to do, it doesn't matter. Every time I looked at my notes, I saw something about John not doing what I asked. And then it clicked. He doesn't know what I am asking. Once I showed him the schedule and used one-step directions like you explain in the video with me modeling, he knew what I wanted from him. I helped him understand that first, he jogs, and then he gets the physioball. I had to get some stickers to use as markers for him so he could move it from jog to physioball like you use the clips in the video. It's like it finally clicked for both of us. We had to find our own way to communicate (laughing). I want to continue to communicate with John that way. I want to use more visual supports and schedules for him. I think it is going to really make a difference for him this year.
APPENDIX K

COACH A’S SURVEY RESPONSES

1. Please describe the ease or difficulty in viewing the video.
   
   The video was easy to download and to watch from the MacBook.

2. How did you view the video? (MacBook, iPad, iPhone, etc.)
   
   From my MacBook

3. Please describe the quality of the videos. (Clear audio? Clear visuals?)
   
   *Camera work was the perfect distance; sounds, teaching cues, responses, feedback were heard *The pivotal captions at the bottom of the screen were very helpful for the viewer to easily follow the progression *The lesson organization was spot on

4. How did you use the videos in your instruction? (Planning, teaching, reflecting, etc.)
   
   Making a note of how to redirect students. Reflected on lack of use of affirmations currently. Helping ASD kid pay attention.

5. Describe the teaching strategies you were/were not able to obtain from the videos.
   
   *Visual cues and hands on learning *The live modeling or teacher demonstrations were top quality *The positive reinforcement from teacher to the student *The color combinations of equipment being used. *Using the outdoor area effectively

6. Describe how teaching strategies were implemented. If not, please explain why.
   
   *Visual aids *Straight on approach -teacher modeling for success *Student modeling for success *Redirect for ASD kid to pay attention
7. What was the overall effectiveness of the teaching strategies?

*Gave me ideas for teaching using redirection properly.*

8. How did students with an autism spectrum disorder (ASD) react to the teaching strategies?

*Redirection helped with attention. They like positive affirmations.*

9. How did students without an ASD react to the teaching strategies?

*I got the vibe they really felt successful after discovery - they felt more confident in their approach of performing the skill. The positive reinforcement amplified their confidence to 'work' at it.*

10. What effect(s) does the video and teaching strategies have on your abilities to provide an inclusive physical education program?

*It’s always helpful to learn from another teacher who specializes working with students of disabilities.*

11. Please share one positive reflection from your participation in the research study.

*I loved the positive interaction and the patience for student responses. The character lessons within the lessons -saying 'thank you'*

12. Please share one negative reflection from your participation in the research study.

13. Please provide any additional comments you have on the videos and/or supports for students with ASD.

*Before a segment with each child, let the teacher quickly describe the setup or the lesson being taught. Overall - the video was excellent in my opinion*
I asked, “Which APE strategies do you feel most connected to in your teaching?”

Coach A responded: I connected with redirection because that was what I needed to work on most. That and keeping students’ attention. I paid most attention to those examples in the video because that was where the need was in my classroom with Joey.

I asked, “How do you measure the success of a strategy implemented in your inclusion GPE classroom?”

Coach A responded: Student outcomes measure the success. For example, the strategy worked if the student outcome indicates redirection. The redirection strategy worked for Joey, so I would consider that strategy a success. Joey’s outcome was positive; the strategy was a success.

I asked, “What is a rewarding aspect of inclusion with students with ASD?”

Coach A responded: Full class participation always makes me feel good. When the whole class is participating, it’s very rewarding. Having students with ASD participating in class just adds to the enjoyment.

I asked, “How did you approach implementing the strategy of redirection with Joey?”
Coach A responded: I started by watching to see when he got off task. It was pretty often. I tried to yell directions to him from wherever I was in the gym to get him back on track, but he seemed to just ignore me. Then I started staying close to him so I could get his attention. If I could get him to look at me, I could get him back to work. I guess I just introduced it to him with a look. The aggravating thing is Joey can do all the skills if I can just keep his attention. We just have to have our own way to communicate.

I asked, “Redirection is an important strategy, especially for students with ASD and a processing disorder. How has your communication with Joey changed since realizing the importance of redirection?”

Coach A responded: Like I said, we have to have our own way to communicate. It's like our own language. I give a direction, and then I know at some point I am going to have to make eye contact with Joey to redirect him. I tried some of the visuals you suggested – like a picture of the skill. Joey didn't pay attention to that, either. He needs to see my eyes—Joey and I communicate through looks. Sometimes I have to model the skill for him again, but usually, it is just a look. Giving him more directions seems to only confuse him. I guess that's the processing disorder. I have found it's easier to give our looks (laughing).
APPENDIX M

MRS. SOAR’S SURVEY RESPONSES

1. Please describe the ease or difficulty in viewing the video.

The quality of the video was very good. The video was easy to watch. Cues for working with students were label and demonstrated so they could easily be tried in class.

2. How did you view the video? (MacBook, iPad, iPhone, etc.)

MacBook

3. Please describe the quality of the videos. (Clear audio? Clear visuals?)

The video was clear. The scenery/background was clear and of high quality. The video was of good quality. The audio was clear and teaching strategies were clearly visible. The prompts that were used to assist students were clearly visible and easy to read.

4. How did you use the videos in your instruction? (Planning, teaching, reflecting, etc.)

I constantly gave my students positive feedback during instruction to make sure they felt validated in their attempts. I incorporated the affirmations into my planning where students would have to give a complement to a friend during an activity. I added prompts to my lesson plans so I would remember to give James the extra help he needed for skills. I broke down skills into smaller pieces and wrote specific prompts for James, where he needed help. Sometimes I use verbal prompts, but for some skills, he will need physical prompts.
5. Describe the teaching strategies you were/were not able to obtain from the videos.

All information was obtained

6. Describe how teaching strategies were implemented. If not, please explain why.

I implemented supports and prompts and affirmations. I used different supports like posters I already had in my classroom. I already used affirmations, too, but I made a point to give each student an affirmation and have them practice giving affirmations to their friends. I made sure everyone got an affirmation. I mostly worked on using the prompts because that was new to me, and I thought it would help. I used verbal prompts most because physical prompts were hard to implement because of Covid restrictions. But, the prompts are good to work on skills right now because there are Covid restrictions on the equipment I can use right now, too.

7. What was the overall effectiveness of the teaching strategies?

Teaching strategies were very effective. All activities were modeled first, visuals were posted all over the classroom and differentiated learning and materials was implemented to ensure success of all students. The effectiveness of these teaching strategies will help within my classroom. The sign language and physical support was helpful to see and realize how beneficial it can be for nonverbal students

8. How did students with an autism spectrum disorder (ASD) react to the teaching strategies?

They reacted in a positive matter to lesson because instruction was calm and positive. They were willing to participate. The clear expectations helped then know what was expected and effectively participate in the activity. Students behavior management was in line with expectations, classroom management was at ease.
9. How did students without an ASD react to the teaching strategies?

*I was amazed at how these strategies applied to the entire classroom. I never realized how anxious students can be. Especially those who are not as confident in PE. The clear and simple expectations seemed to ease everyone.*

10. What effect(s) does the video and teaching strategies have on your abilities to provide an inclusive physical education program?

*The teaching strategies reminds me of the importance of students building relationships with students from other classes. The strategies used would provide opportunities for the students to learn from each other. The video offered new ideas on how to provide an inclusive PE program. Some of the strategies that were used, I was not familiar with and will now look for ways to use that strategy in my PE class.*

11. Please share one positive reflection from your participation in the research study.

*Constant positive reinforcement to students. This was an easy video to watch and very informative. There were many ideas that I could use to help students with ASD in my classroom. I plan on implementing these strategies in my lessons.*

12. Please share one negative reflection from your participation the research study.

*N/A*

13. Please provide any additional comments you have on the videos and/or supports for students with ASD.

*The lesson was good. Anytime students with ASD have the opportunity to interact with students from other classes is good. Peer role models provide a great opportunity for all students to achieve success.*
APPENDIX N

MRS. SOAR’S INTERVIEW TRANSCRIPT

I asked, “Which APE strategies do you feel most connected to in your teaching?”

Mrs. Soar responded: I feel most connected to affirmations and prompting, but I think you already know that (laughing). Those two strategies were needed in my classroom and they were important during a stressful time for my students, too. I needed the strategies as much at the students needed them.

I asked, “How do you measure the success of a strategy implemented in your inclusion GPE classroom?”

Mrs. Soar responded: I knew I was helping build social skills when James gave an affirmation to a friend. We finished a lesson on pacing, and he gave a classmate a compliment. I had been stressing the importance of emotional well-being as part of the social-emotional goals for Covid and how we could build up our friends. I gave an example of positive affirmations for a job well done in class or complementing effort. James repeated my exact words, but he still spoke to a classmate and gave the affirmation.

I asked, “What is a rewarding aspect of inclusion with students with ASD?”

Mrs. Soar responded: Inclusion is rewarding to me as a whole. It is exciting to me to include students with various special needs in my classes. I like learning about disabilities and how to provide for them. This video was right up my alley.
I asked, “In your survey response, you stated you were reminded of the importance of relationship-building for students. How does this relate to the APE teaching strategies for an inclusion GPE class?”

Mrs. Soar responded: I was thinking about the connection between the strategies and the opportunities for the students to learn from each other. I had mapped out a long-term plan that would use the affirmations and the prompts you use in the video. The plan was to have students work together and give each other prompts. This way, I could implement two strategies; affirmations and prompts. We have been working on social-emotional goals per the state for Covid, so I've been trying to find ways to add that piece into my lessons. When I saw your examples of positive affirmations in the videos, it kind of came together. Affirmations meet the social-emotional piece, and the prompts can lead to a successful skill, which gives the students a reason to offer an affirmation.

I asked, “In your survey, you mentioned difficulty implementing new APE strategies due to Covid 19 restrictions. How have you been able to implement physical prompting during Covid 19 restrictions?”

Mrs. Soar responded: (Laughing) When I saw you physically prompting students in the video, I knew that was exactly what James needed, but I also knew I couldn't do that right now. If I have learned anything in my 30 years of teaching it's that creativity is necessary. So, in the past few weeks trying to help James with skills and motor planning, I went through several brainstorming sessions. I wanted to give him more than verbal prompts. Ok, so we were working on locomotor skills and building upon those basic skills for combination patterns. He was having trouble with hopping on one foot. I could almost see the wheels turning in his head. He wanted to stand on one foot but just couldn't figure
out how to get there. I so desperately wanted to help him bend one leg up, but I couldn't just reach out and touch him. I didn't want to wear gloves, so I got one of those finger-pointers teachers use on their Promethean Boards. I touched his knee and told him to bend. I had to play around with where to touch, but we eventually figured it out. I only use it with James, so I don't have to worry about it touching other students. I've had to watch your videos and how and where you physically prompt and then make it work for me.