

2016

# Experiences of Middle School Children With Autism Spectrum Disorders in Adapted Physical Education

Arkansas Josephine Blagrove  
*Walden University*

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# Walden University

College of Social and Behavioral Sciences

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2016

Abstract

Experiences of Middle School Children With Autism  
Spectrum Disorders in Adapted Physical Education

by

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MA, California State University, Chico 2007

BS, California State University, Chico 2005

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

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## Abstract

School-age children with autism spectrum disorders (ASDs) are rarely asked to describe their experiences within the programs that they receive and are largely missing from the narrative of their own lives. Adapted physical education (APE), a subdiscipline of physical education, is one of the services frequently accessed by this population. Current literature on the experiences of children with autism spectrum disorder (ASD) has focused on special education classrooms, sensory perceptions, and general physical education classes. However, no prior studies had addressed how school-age children with ASD perceive their APE experience. Therefore, the purpose of this qualitative study was to use interpretive phenomenology to explore how middle school children (Grades 6 to 8) ages 10 to 14 with ASD perceive their APE experience. Data were collected from 10 middle school children through observations in their APE setting, drawings, and interviews. Exploratory, linguistic, and conceptual comments were used to deconstruct the data, develop themes in individual cases, and then identify connections across cases. Themes that emerged from the participants were their positive experiences in APE, understanding of the importance of being physically active, sedentary behavior in their spare time, and desire for time in APE. This study has positive social change implications such that it includes individuals with ASD into the commentary regarding their experiences and may help APE teachers by providing insight into the experience of children with ASD in APE, which may in turn help develop improved services for this population.

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## Dedication

I would like to dedicate this dissertation to Carson and Colton, who taught me early in my career the importance of listening, even when someone isn't speaking, to hear what they are saying. I also dedicate this work to my mom and dad, who instilled in me an attitude that, with hard work, anything is possible, and to dig in when the going gets tough. Finally, I would like to dedicate this dissertation to my sons, Andrew and Fabrice. May you always have a voice.

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## Chapter 1: Introduction to the Study

### **Introduction**

Autism spectrum disorders (ASDs) are a developmental disability that affects 1 of every 68 children in the United States—a number that has increased from 1 of every 10,000 since 2000 (Centers for Disease Control and Prevention [CDC], 2015). Children with autism spectrum disorder (ASD) have deficits in their communication and social interactions and tend to demonstrate repetitive and restrictive behaviors (American Psychiatric Association, 2013). Although motor coordination concerns are not part of the ASD diagnosis, a growing body of literature has suggested that children with ASD have significant motor deficits (Accardo & Barrow, 2014; Fournier, Amano, Radonovich, Bleser, & Hass, 2014). Furthermore, these deficits could predict an ASD diagnosis at an early age (Dowd, Rinehart, & McGinley, 2010).

Adapted physical education (APE) is a physical education service offered in schools that are adapted or modified so that they are appropriate for both individuals with and without disabilities; such services are federally mandated as a direct service for individuals that are identified under the Individuals with Disabilities Education Act (IDEA, 2004) and the Adapted Physical Education National Standards (2008). Because of their impaired motor movements, children with ASD frequently receive this specialized service as part of their education in either an individual or a small-group setting.

Rarely are children with ASD interviewed about their life experiences (Bauminger, Shulamn, & Agam, 2003; Humphrey & Lewis, 2008; Preece & Jordan,

2010). Researchers have successfully studied this population, and, recently, more have interviewed individuals with ASD (Barrow & Hannah, 2012; Calder, Hill, & Pellicano, 2013; Kirby, Dickie, & Baranek, 2015). Healy, Msetfi, and Gallagher (2013) interviewed children with autism about their physical education experience. However, no research has described how children with ASD feel about their APE experience.

Recent research initiatives have asked for individuals with autism of all ages to be included as active stakeholders in the research surrounding their disability so that their voices are heard (Grinker, 2015; Robison, 2015, Solomon, 2015). The present study has implications for social change by adding to an extremely limited body of research. Specifically, the present study provides empirical data on middle school children's feelings in a setting that aims to improve an argued deficit area for their disability. Although researchers can speculate what barriers might or might not exist for middle school children with ASD in APE services, asking the participants to report on their experience is an underutilized method in studies of children with ASD. Therefore, the results of the present study should shed greater insight into the facilitators and barriers that children with ASD experience in APE. Furthermore, this study helps to inform future educators within the APE field by promoting the inclusion of children with ASD and could help guide future curriculum and instruction strategies.

Chapter 1 includes an overview of the study, starting with a general background of ASD and the need for the study. Next, I describe the study itself, covering the problem statement, purpose of the study, and research questions. I then describe the conceptual framework of the study. I follow with a description of the nature of the study and provide



definitions. Finally, I describe the assumptions, scope and delimitations, limitations, and significance of the study.

### **Background**

Scholars in the field of ASDs have historically conducted limited research on the firsthand accounts of individuals with ASD. Researchers have used blogs and webpages run by adults with ASD to understand their sensory experiences (Jones, Quigney, & Huws, 2003) as well as to describe the perceived emotional experiences of adults with ASD (Jones, Zahl, & Huws, 2001). Researchers have also conducted in-person interviews of adults with ASD to learn more about how these individuals perceive their sensory experiences (Ashburner, Bennett, Rodger, & Zivini, 2013). Within this research, children with ASD are further underrepresented (Cesaroni & Garber, 1991; O'Neill & Jones, 1997). A meta-synthesis by DePape and Lindsay (2015) found that, of the 33 qualitative studies conducted on individuals with ASD, only four studies examined perceptions of children with ASD; from those studies, only two highlighted perceptions of their experience at school, and neither of these studies were conducted in the United States.

Preece and Jordan (2010) examined how children (mean age 13 years old) with ASD perceived their daily experiences in England. Through in-person interviews with the children, the researchers found that, though there were challenges in interviewing, meaningful data could be achieved. The students in Preece and Jordan's study described an overall positive family experience and an overall negative school experience. Conner (2000) also conducted research in England and interviewed children with ASD exclusively regarding their school experience. Overall themes that emerged from the

participants were performance anxiety among peers as well the participants' struggle to occupy their spare time during lunch and a general dislike for discussing topics outside of their preferred interests (Conner, 2000).

Middle school children with ASD frequently participate in APE, and even though they are capable of communicating their experiences and helping to inform research that could lead to changes in curriculum or how teachers perceive their experiences, no previous studies have captured their perspectives regarding physical education. The IDEA (2004) mandated that children with disabilities be included to the maximum extent possible under the law in a regular education environment with their typically developed peers. Qi and Ha (2012) found that stakeholders in physical education believe in the philosophical idea of inclusion in physical education, but differ in their ideas about how this can occur. Allowing children with ASD to share their experiences in APE will increase awareness of programing issues that may arise for this population and allow educators to consider this perspective when improving curriculum to create a more inclusive environment for all students. Therefore, this study aims to fill the gap that exists in the literature regarding firsthand accounts of middle school children (Grades 6 to 8), ages 10 to 14 years old, with ASD in their APE setting. This study also addresses the need for more qualitative research in the field of physical education as well as being the first research to date to explore the experiences of middle school children with ASD in an APE setting.

### **Problem Statement**

ASD is a developmental disability characterized by deficits in social and communication areas. In addition to these deficits, individuals with ASD often have poor motor movements and low levels of engagement in physical activity (Bandini et al. 2014; Pan, 2014). Children with ASD frequently receive APE through their schools as part of their individualized education plans, but rarely do they have a voice in their education experience (Coates & Vickerman, 2010; Falkmer, Granlund, Nilholm, & Falkmer, 2012). Historically, their experience in physical education has been shared by that of the parent, care provider, and clinician perspectives. These perspectives can be “invaluable to describing and understanding these experiences, but these third-person views should not replace—nor should they be confused with— the child’s perspective” (Kirby et al., 2015, p. 317).

However, minimal research has presented the voices of children with ASD (Huws & Jones, 2013). Furthermore, only one study has included interviewing school-age children with ASD about their physical education experience, but this study did not examine APE services. Recent research has highlighted the need for studies that directly question individuals with ASD about their experiences to improve services and support for this population, and conducting research in different regions could aid in improving instruction for this population (Healy et al., 2013). Kirby (2014) stated, “First-person perspectives of children are widely absent from empirical investigations of their experiences, especially when the child has a disability” (p. 1). Research on APE is scarce

in the ASD literature, and, in general, limited qualitative research has been conducted on APE (Zitomer & Goodwin, 2014).

Qualitative research has been identified as one means of providing support for evidence-based practices in APE (Bouffard & Reid, 2012). Though qualitative research in APE is scarce, studies have cited the need for more of this type of research. Enright and O’Sullivan (2012) identified a shift in research away from students as research subjects, towards students being “engaged participants or better yet, researchers in the research process” (p. 36). By providing children with ASD the opportunity to share their experiences, this study adds to the body of literature on both ASD and APE.

Understanding the perspectives of children with ASD regarding their motor experiences may provide insight into other fields that serve this population, including general physical education, physical therapy, or occupational therapy, and help inform the way that these children are provided instruction in school and clinical settings that provide motor interventions. This insight may also help parents advocate better for their children’s education needs as well as provide feedback to parents about their child’s feeling about their experiences in this education setting. Finally, by hearing the voices of the children with ASD in APE, this research can help begin to empower this population to share their experiences as well as provide a foundation for self-advocacy for children with ASD in a physical education setting.

### **Purpose of the Study**

Interpretive phenomenological analysis (IPA) aims to understand how the participant makes sense of a given experience (Smith, Flowers, & Larkin, 2009). This

interpretive phenomenological study explored how middle school children with ASD perceived their APE experience. The phenomenon studied was middle school children with ASD's perception of their experience in APE. The perception of an experience by an individual with ASD is a new area in the field of ASD research (Ashburner et al., 2013; Healy et al., 2013; Preece & Jordan, 2010). This study adds to the body of knowledge surrounding this experience.

### **Research Questions**

The primary research question was, What are the feelings and perceptions of middle school children with ASD regarding their APE experiences from their perspective? The study also examined three subquestions:

1. How do children with ASD interpret their experience in APE?
2. What insight can be gained from these experiences that can inform how teachers and staff support middle school children with ASD in their APE experience?
3. What patterns (if any) are shared across the examined cases for children with ASD in APE?

### **Conceptual Framework**

IPA is a method of qualitative inquiry that aims to understand and explain an individual's interpretation of an experience (Smith et al., 2009). With the present study of middle school children with ASD, I aimed to interpret this population's experience in APE. The facilitators of and barriers to participation in activities for children with ASD differ from the facilitators and barriers for their typically developed peers because the

two populations process the world around them differently (Rosenblau, Kliemann, Heekeren, & Dziobek, 2014; Schaaf, Hunt, & Benevides, 2012). The socioecological model was used to guide the present study and to interpret the facilitators and barriers they experience while participating in APE.

First proposed by McLeroy, Bibeau, Steckler, and Glanz in their 1988 paper, “An Ecological Perspective on Health Promotion Programs,” the socioecological model aims to identify the internal and external forces that affect individuals in their health experiences. Building on an ecology of human development model, this aim represented a shift away from the victim-blaming mentality of the late 1980s and identified an entire system of forces that affected the individual (Bronfenbrenner, 1977). The socioecological model (McLeroy et al., 1988) was used to guide explanation of the phenomenon being investigated. This model has been described as well suited for explaining activity as well as engagement in physical activity behaviors and the multiple factors that influence those behaviors (Ding, 2004).

The socioecological model has been used in studies to examine barriers to and facilitators of afterschool activity participation in individuals with autism (Obrusnikova & Cavalier, 2011). Gyurcsik, Spink, Bray, Chad, and Kwan (2006) used this model to explain the physical activity characteristics of children with disabilities. According to the socioecological model, barriers to and facilitators of participation and activity fall into five types: (a) interpersonal barriers, which can be attitudes and behaviors of the individual; (b) institutional barriers, such as the school or organization; (c) community barriers; (d) public policy barriers, and (e) physical barriers (Gyurcsik et al., 2006, p.

705). These facilitators and barriers are described in greater detail in Chapter 2. This model helped me interpret and categorize the types of barriers to and facilitators of activity participation perceived by middle school children with ASD.

### **Nature of the Study**

The present study was interpretive and phenomenological. Phenomenology is an approach consistent with understanding the perceptions of a participant's experience (Creswell, 1998). Specifically, for the present study I used a hermeneutic approach in which the participants first tried to make sense of their experience; then, I interpreted the participants' perception of their experiences.

The aim of the study was to understand the experience of middle school children with ASDs receiving APE. Historically, this population has been perceived as unable to communicate personal feelings based on challenges to their perceived deficits surrounding their ability to assign meaning to abstract concepts (Kana, Libero, Hu, Deshpande, & Colburn, 2014; Loukusa, Mäkinen, Kuusikko-Gauffin, Ebeling, & Moilanen, 2014; Moran et al., 2011). However, growing bodies of biographical research (Fleischmann, 2012; Grandin, 2011; Higashida, 2013; Prince-Hughes, 2004; Robison, 2008; Tammet, 2007; Williams, 2007) and scientific research (Huws & Jones, 2008) have suggested this might not be the case.

Data were collected through three methods. I used two semistructured interviews with 10 participants. First, I had the child draw a picture about his or her experience in APE. The first interview addressed the child's description of the actions occurring in the picture. The second interview was conducted after I performed a descriptive observation

of the children in their APE program; this interview used a more formal format, with questions designed to build rapport with the children and allow them to give open-ended, reflective responses about their perceptions of their APE experience. These data were analyzed first as individual data sets for each participant to identify themes and then were examined as a group to search for connections across themes.

### **Definitions**

*Autism spectrum disorder (ASD):* ASD is characterized by impaired social and communication behavior and displaying of restricted and repetitive interests and behaviors (American Psychiatric Association, 2013).

*Physical education:* Physical education is the teaching of developmentally appropriate movements and sport and recreational activity skills to promote the health and overall well-being of students (Yao & Yin, 2006).

*Adapted physical education (APE):* APE is education that has been adapted or modified so that it is as appropriate for the person with a disability as it is for a person without a disability (Adapted Physical Education National Standards, 2015).

### **Assumptions**

It was assumed that the participants were able to share their experiences about being in an APE setting in a meaningful way, as well as be truthful in their sharing of their experience. Additionally, I assumed that their language ability would be sufficient to communicate their experience meaningfully. Given Healy et al.'s (2013) finding that children with autism were able to communicate their feelings about their experiences in general physical education classes, in the present study, I operated from the assumption



that children with ASD would be able to do the same in a subsetting of physical education.

Similar to Jolley, O'Kelly, Barlow, and Jarrold (2013), I worked from the assumption that children with autism would be able to emotionally show their experiences in a drawing, albeit at a less mature level, and also that the participants would be willing to draw about their experience in APE and that their motor skills would be good enough to allow them to draw with minimal stress. Finally, I assumed that the children identified as having ASD would be correctly diagnosed and that they or their families would not be falsifying this claim to be part of the study.

### **Scope and Delimitations**

This study examined how middle school children with ASD interpret their experience in APE. Limited research has focused on ASD in the physical education setting. To date, no studies have focused on firsthand accounts of children with ASD within the context of APE. Although minimal research exists that addresses ASD and physical activity within the context of physical education, the socioecological model is consistent with other studies within the physical education context.

Bölte (2014) discussed in an editorial column for *Autism* the importance and lack of qualitative work within the field of ASD. The participants in the present study were middle school children who were identified as having ASD and who were receiving APE. Qualitative studies have a small and intentional sample size that cannot be generalized to a larger population because of their focus. Because of this, the results of the present study are not transferable to all middle school children with ASD who are receiving APE.

However, findings from this study may lay the groundwork for future qualitative, quantitative, or mixed method studies.

### **Limitations**

This study took an interpretive phenomenological approach, and, as such, used a purposeful, homogenous sample. The findings from this study cannot be generalized to the ASD population, but they do provide groundwork for future research. All the participants in the study were able to speak and have a functioning level of communication as defined by their ability to reciprocate a meaningful back-and-forth conversation with me and as indicated by their score on the Test of Narrative Retell (TNR)–Second Grade (Spencer & Pearson, 2012) screening tool. As such, the voices and experiences of children with ASD in APE who are nonverbal are not presented in this dissertation. Future studies could extend this research to the nonverbal population of ASD and use assistive communication devices to understand what these students are experiencing in APE.

The interview method could also be a limitation. Few studies have interviewed children with ASD, and although high-functioning ASD adults have demonstrated an ability to articulate their experience, school-age children with ASD may be less likely to communicate their feelings when reflecting on an experience. Because limited studies exist in which a researcher interviewed children with ASD, garnering interview strategies and formats from previous researchers and their studies was not possible. As mentioned above, the limited research for children with ASD in qualitative methods that use interviews for data collection restricts the number of previously used methods to learn

from in the literature. To minimize this limitation, I conversed with researchers who had used this methodology about barriers and facilitators to interviewing children with ASD. Additionally, I conducted an extensive literature review on using this method for collecting data with this population.

The timing of the interviews in relation to the middle school children with ASD experiencing APE could also be a limitation. Studies have suggested that the ASD population suffers from memory deficits (Boucher & Mayes, 2012). In particular, researchers have found gender differences in memory ability within the ASD population, with females able to recall autobiographical memories more clearly than males (Goddard, Dritschel, & Howlin, 2014). Though researchers who have interviewed children with ASD have not previously mentioned challenges in memory recall, the research has suggested that both male and female participants with ASD can struggle with memory and it should be noted as a possible limitation. This potential limitation was minimized by having interviews in a close timeline to the child with ASD receiving APE services.

As the researcher, I also brought bias to this study. As discussed by Patton (2002), qualitative researchers must not set out to prove a perspective but should do their best to be balanced and neutral in their reporting. In my case, I have worked with children and adults with autism in a clinical setting for 10 years and am aware that my interactions with this population over the years could bias the study. I kept a journal throughout the study to log my feelings and personal reactions.

### **Significance**

This study is unique because it is the first study to address how middle school children with ASD experience APE. The knowledge generated from the study will help professionals who teach this population have a better understanding of what learning motor skills is like for this population and could help generate new ways to address teaching these skills to this population. This study might also help lay the foundation for further studies that build on this qualitative method of inquiry.

The study aligns with the mission of positive social change by helping to move individuals with ASD into the research discussion regarding their perceived needs and desires. At the International Meeting for Autism Research in the spring of 2015, the keynote speakers and leaders in the field challenged all researchers to begin to consider the voice of individuals with ASD (Robinson, 2015). The present study helps inform that body of knowledge. This study also provides information to current and future educators who work with this population and insight into how middle school children with ASD view their APE experience—this could help guide instruction or shift current curriculum models. Finally, the World Health Organization (2010) has recognized the global importance of physical well-being and health within the school system. If practitioners and policy makers can better understand the perceived facilitators of and barriers to physical activity within the APE setting, middle school children with ASD might be able to better access these services and live healthier lives.

## Summary

This interpretive phenomenological study explored how middle school children with ASD perceive their experience in APE. Limited research has examined how students perceive physical education or motor learning, and the present study is the first study to examine this phenomenon within the context of APE.

The socioecological model (McLeroy et al., 1988) was used to explain the phenomenon under investigation. Previous studies have used this model to examine perceived barriers to and facilitators of engagement in motor activities. Having middle school children with ASD share their experiences and categorize their perceptions helps educators better understand the experiences of middle school children with ASD and could help inform classroom instruction for this population.

In Chapter 2, I describe the literature on this topic and explain the gap in scholarly research related to understanding middle school children with ASD experience in APE. Additionally, I describe both the use of IPA and implications for the socioecological model within the context of the study.

## Chapter 2: Literature Review

### **Introduction**

Individuals with ASD have a limited voice in research surrounding their life experiences, and, until recently, school-age children with ASD have been largely left out of the research narrative. Few researchers have attempted to interpret the experience of middle school children with ASD in a physical education setting, and to date, no researchers have interpreted this experience in APE. The purpose of the interpretive phenomenological study was to gain insight into the experiences of middle school children with ASD regarding their APE program.

As researchers have shifted their perspective of children as subjects to children as participants in their own research, the number of studies that examine the perception of children has increased (Enright & O'Sullivan, 2012). Qualitative research has been identified as a way to learn more about evidence-based practices in physical education (Qi & Ha, 2012) and research methods have begun to include the experiences of individuals with ASD more frequently (Barrow & Hannah, 2012; Kirby et al., 2015). Healy et al. (2013) expressed the need for researchers to address the experiences of children with ASD within the context of physical education settings. Additionally, in keynote addresses at international research meetings for ASD, Grinker (2015) and Robison (2015) highlighted the need for more studies that examine the perspectives of individuals with ASD. The perspective of children with ASD has appeared in limited literature as well (Huws & Jones, 2013; Kirby, 2014), and qualitative research in the field

of ASD is in its infancy (Hebron, Humphrey, & Oldfield, 2015). Similarly, scholars have called for qualitative research in the field of APE (Zitomer & Goodwin, 2014).

This chapter includes a comprehensive review of the literature relevant to the study's topic, including IPA (Smith et al., 2009) and the socioecological model (McLeroy et al., 1988). The chapter also includes definitions and research on ASD, individuals with ASD, physical education, APE, and children's drawings.

### **Literature Search Strategy**

For this literature review, I drew from Walden University's online library database and both the online database and brick-and-mortar library at California State University, Chico. The online databases included Google Scholar, PsycINFO, PsycARTICLES, SocIndex with Full Text, Academic Search Complete, and Social Sciences Citation Index. The brick-and-mortar library at California State University, Chico was used to retrieve books regarding research methods and autism resources that were not available electronically.

Terms used to search for information were *autism*, which was combined with the following terms: *motor skills, physical education, adapted physical education, gross motor, object control, movement, physical activity, children, school, interviewing, firsthand accounts, and biographical accounts*. Additional search terms included *phenomenology, interpretive phenomenological analysis, and socioeconomic model*.

### **Qualitative Tradition**

Edmund Husserl founded phenomenology in the early 19th century. Phenomenology aims to explain "the meaning, structure and essence of the lived

experience of a phenomenon for a person or group of people” (Patton, 1990, p. 104), where the phenomenon can be an “emotion, relationship, marriage, job, program, organization or culture” (p. 105). Understanding the truth of a phenomenon in the manner in which it manifests itself to the experiencer without judgment or preexisting ideas (Moran, 2001) is another key component to this tradition. In phenomenology, “perception is regarded as the primary source of knowledge and a source that can not be doubted” (Moustakas, 1994, p. 27).

The epistemology of phenomenology focuses on revealing the meaning of an experience rather than taking a position. For the present study, an interpretive (hermeneutic) approach was used in which the participants first attempted to make sense of their experience; then, I interpreted the participants’ interpretations of their experiences (Huws & Jones, 2008). The meaning of the experience is derived from actively engaging in the data, remembering powerful recollections during the interview process, and bracketing these experiences (i.e., reading and the rereading each data set before moving to the next; Smith et al., 2011). I commented in three main forms: descriptive comments (describing the context of what the participant said), linguistic comments (exploring specific language used in sharing their experience), and conceptual comments (my engagement at a conceptual level; Smith et al., 2011).

A phenomenological approach has been used within the field of autism research to study a wide range of experiences surrounding the disability of ASD. Studies examining the parental experience of having a child with ASD represent some of the more prevalent research. For example, Woodgate, Ateah, and Secco (2008) used the



phenomenological framework to guide their study of the experiences of parents of children with ASD. These researchers found that the concepts of “isolation” and “being in a separate world” overlapped all 16 families in their sample. Similar themes of negativity have continued to be prevalent in phenomenological studies of parents who have a child with ASD; these themes include “stress and marital problems” (Myers, Mackintosh, & Goin-Kochel, 2009), “relationship struggles” (Brobst, Clopton, & Hendrick, 2009), and “confusion” surrounding their child’s disability. Though this study did not involve directly examining children with ASD, it showed that the phenomenological approach has been used successfully regarding the ASD condition.

Historically, scholars have argued that individuals with autism are unable to express their thoughts and have little connection to their emotions because they lack theory of mind (Kana et al., 2014; Moran et al., 2011; Loukusa et al., 2014). As early as 2003, Zahavi and Parnas argued that the phenomenological perspective could not only add to the autism literature but also that it could help inform cognitive science. Also toward the beginning of phenomenological inquiry of ASD, Carrington and Graham (2001) argued that “more qualitative research with ASD was necessary to discover more about the lived experience on individuals with ASD from their own perspective” (p. 47).

Firsthand accounts of adults have repeatedly shown that this population is able to articulate their experiences with living with autism (Fleischmann 2012; Grandin, 2011; Higashida, 2013; Prince-Hughes, 2004; Robison, 2008; Tammet, 2007; Williams, 2007). Firsthand accounts of school-age children with ASD have also shown that these children are able to meaningfully articulate their perceptions of their experiences with a variety of

school-related topics, including the experience of being bullied (Humphrey & Symes, 2010), social challenges and supports (Müller, Schuler, & Yates, 2008), and the meaning of inclusion (Humphrey & Lewis, 2008).

In addition to autobiographical accounts, researchers have used the phenomenological framework to study various experiences of these individuals with ASD. For instance, Huws and Jones (2008) used an interpretive phenomenological approach to gain insight into how young adults with autism felt about their autism diagnosis. Their findings were different than similar studies on adults with autism in that this age group had an “absent presence” (p. 104) of the diagnosis; that is, they had experienced the diagnostic criteria for the disability but did not know that they had autism prior to the disclosure of their diagnosis.

### **Conceptual Framework**

The socioecological model examines the interplay between the individual and the environmental forces that surround them. First proposed by McLeroy et al. (1988), the socioecological model aims to identify the forces that affect an individual in their health experiences—both internal and external. The socioecological model is unique from other types of models in that it is not based on a primary construct but instead focuses on the levels of influence of many factors (Joseph et al., 2014). The key components to this model are that (a) this model has multiple levels of influence on an individual, (b) these influences interact across many levels, (c) the model is behavior specific, and (d) multilevel interventions are the most effective at changing behaviors (Sallis, Owen, & Fisher, 2008).

Building on Bronfenbrenner's (1977) ecology of human development model, this model shifted away from the victim-blaming mentality of the late 1970s and identified an entire system of forces that influenced individuals, including intrapersonal factors, interpersonal factors, institutional factors, community factors, and public policy (McLeroy et al., 1988). The socioecological model emphasizes that individuals are not solely to blame for their inactivity or nonparticipation within an environment and that an interrelational system surrounds each individual with factors that can both encourage and discourage participation (Mehtälä, Sääkslahti, Inkinen, & Poskiparta, 2014). The socioecological model recognizes that many social problems are too complex to be addressed at just one level. In this way, the model helps researchers explain behaviors contextually (Eddy, Donahue, Webster, & Bjornstad, 2002), which can be important in identifying barriers to program participation. Each of these factors is further explained below.

Prior to the development of ecological models, researchers used intrapersonal factors to assign blame, responsibility, or success to individuals regarding their participation or nonparticipation in a social problem (Bronfenbrenner, 1977). Intrapersonal factors have much to do with the characteristics of individuals and how they respond to the environment and other individuals that surround them (Bardus, Blake, Lloyd, & Suggs, 2014). A person's biochemical and psychological makeup interacts with external factors (to be discussed in the following paragraphs) and are part of an individual's intrapersonal factors.

While intrapersonal factors can influence an individual from the inside out, they are based on the interrelationships and influences of people that exist externally that have helped mold the individual's thoughts and perceptions (Eddy et al., 2002). For children specifically, teachers, family, and peers are interpersonal factors that can play a huge role in the process of making choices (Mehtälä et al., 2014). Interpersonal factors focus on the primary interactions that an individual participates in and the roles and identity that the individual holds within these exchanges (Robinson, 2008).

Institutional or organizational factors exert an additional layer of influence on an individual and create the rules, regulations, and policies that constrain or promote behaviors (Robinson, 2008). These influences are smaller than that of community and public policy factors but begin to add multiple dimensions to relationships that exist outside of intrapersonal and interpersonal interactions. Examples of organizational or institutional factors would be rules that discourage or encourage behavior within that institution, such as not allowing employees to smoke at the office or requiring volunteer service (Sallis et al., 2008).

As the level of influences continues to compound, community factors add more influence on individual behavior. Such factors include the access and proximity that individuals have to positive and negative behaviors and the community's level of neighborhood safety, physical location, design or layout, and demographics (Stokols, 1996). As the influence expands further away from the intrapersonal, the factors begin to have increased interactions with and influence on each other—pulling the level of control away from that of the individual and moving toward a larger scope of influence.

The last factor from Bronfenbrenner's (1977) original model is public policy. Public policy occurs at the city, state, and national levels. This factor is similar to institutional and organizational factors in that it focuses on laws and policies. The difference is that such policies can be much more encompassing (e.g., state or national policy) and are meant to influence or control a behavior across many types of individuals (Eddy et al., 2002). For instance, regarding smoking at the workplace, public policy would institute rules to dictate the price and accessibility of cigarettes to decrease accessibility, whereas institutional rules would implement rules about where an individual can smoke.

Gyurcsik et al. (2006) extended this ecological model of physical activity to include a sixth factor. Specifically, the physical environment in which the activity takes place or is held can be a facilitator or barrier to physical activity as well. The physical-environment factor is movement specific and has much to do with the design and accessibility of the space that a person is interacting with as well as the convenience of using that space (Giles-Corti & Donovan, 2002). A scenario of this type of factor influencing an individual would be if a person was in a wheelchair and was unable to access a building or space because it was not designed appropriately for access for all types of individuals.

Socioecological factors that are both internal (intrapersonal) and external (interpersonal factors, institutional factors, community factors, and public policy and physical environment factors) are important to consider when reflecting on programming outcomes. Identifying the barriers to or facilitators of a given experience can inform the

tailoring of interventions to help address concerns and improve experiences for individuals from all backgrounds.

The socioecological model has been used in populations with disabilities to explain physical activity factors and has been utilized recently with children with autism. Obrusnikova and Cavalier (2011) used the socioecological model to examine perceived barriers and facilitators to afterschool physical activity with children with autism (ages 8 to 14). In their study, all participants reported some form of intrapersonal barrier to such activity; the barriers ranged from lack of motivation or energy to a preference for other activities. The participants reported interpersonal and physical barriers as well, including a lack of time for support staff or family to support the activity and a lack of equipment needed for the activity. Facilitators of engagement in afterschool physical activity included support from family and friends. Conversely, the children with autism saw a lack of family support or friendships as a barrier to participation (Obrusnikova & Cavalier, 2011).

The factors listed above—interpersonal, intrapersonal, institutional, community, policy, and physical-environment factors—have been shown in previous studies to exist within the context of physical education. Research has also shown that these barriers and facilitators influence the participation and activity levels of school-age children with ASD (Obrusnikova & Cavalier, 2011). The socioecological model helped guide the current study and provided a framework for examining the possible facilitators and barriers that exist within the context of APE for middle school children with ASD. The

aim of using this model was to identify the facilitators of and barriers to participating in APE to help promote the physical activity of middle school children with ASD.

### **Introduction to the Literature Review**

Recent literature that addresses ASD within the context of physical activity has been limited because it is a new and developing area of research in this disability. After addressing a brief history of ASD and core characteristics, this literature review exhausted the current research regarding physical activity and ASD as it relates to motor skills (broken further down into gross motor, fine motor and object control skills) and activity levels and children with ASD in both physical education and APE settings. This focus provides the background for perceptions of movement experiences and movement abilities and capabilities up to this point in the literature. This literature review then shifts to literature that addresses interviewing individuals with ASD and then concludes with a review of children's drawings as a method of collecting qualitative data.

### **Autism**

Autism is a developmental disability that is generally reported as discovered by Leo Kanner in 1941. He described in great detail 11 histories of children whom he identified as having an "inability to relate themselves in the ordinary way to people and situations from the beginning of life" (p. 242). Kanner made the important distinction that this was unlike childhood schizophrenia because it was not a withdrawal from a previous parental relationship; rather, these children were described by their parents as "always self-sufficient" (p. 242). Kanner also highlighted early motor patterns that could be identifiers for this diagnosis.

Although the field has a greater understanding of autism since Kanner first identified it in 1941 and research funding continues to pour in through major national organizations, such as Autism Speaks, the disability still has no known cause or cure, and prevalence rates continue to increase. Currently, the rates for autism are 1 in every 64 births across the population. Of this ratio within the disability 1 in every 4 males and 1 in every 189 females being diagnosed—a rate up from 1 of 10,000 in 1990 (CDC, 2015).

The *Diagnostic and Statistical Manual of Mental Disorders* (5<sup>th</sup> ed.; *DSM-5*; American Psychiatric Association, 2013) has changed its labeling of the disability across editions. Previous *DSM* editions identified autism, Asperger's syndrome, and pervasive developmental disorder—not otherwise specified as separate, identifiable disabilities. The most current edition, the *DSM-5*, has collapsed all of these disabilities under the term *autism spectrum disorders*, thereby eliminating all previous delineations of the disability. The current criteria for ASD can be broadly described as having deficits in communication and social interactions and having repetitive, restrictive patterns of behavior or interest (American Psychiatric Association, 2013).

For over 10 years, autism research has examined both early and broad mechanisms for phenotypes related to the disability. Current research has shown that, although some phenotypes apply to some children with autism, the phenotype varies across the spectrum of the disability. Thomas, Knowland, and Karmiloff-Smith (2011) stated, “current issues of debate in this field are whether regression forms a distinct subtype of autism or reflects an aberrant mechanism characterizing the full disorder” (p. 638).



By using the term *broad autism phenotype*, researchers have looked to establish the idea that some characteristics of autism not only apply to the individuals affected by autism and their families but also can be found across the typical human population (Ingersoll, 2010). Some phenotypes for autism can be found as early as 6 or 8 months. Elsabbagh et al. (2009) found that children diagnosed with autism at later ages had shown problems with gazing and attention shifting at infancy.

Genetics and autism continue to be a focus of current research money and energy. Bruining et al. (2010) summarized the problem with addressing the genotype of autism: “the diversity of genetic findings in the past decade indicates that ASDs should also be considered genetically heterogeneous” (p. 1). Knowing how broadly the range of phenotypes can be for autism, it is not surprising to learn that the genotypes for this disability are hard to pinpoint. Although many genome linkage studies have been conducted, the loci cannot be replicated, and the genetic cause of autism continues to elude researchers (Matuszek & Talebizadeh, 2009).

### **Motor Skills and ASDs**

Motor functioning is needed for all individuals to participate independently in their environment. When a disability is present, the ability to perform gross motor, fine motor, or object-control skills can inhibit functioning. For children with ASD, these deficits in motor skills begin at an early age (as early as 12–33 months), and the poorer the motor skills, the greater the severity of autism (MacDonald, Lord, & Ulrich, 2014). Gross motor (large body movements such as running, hopping and skipping) and object-

control skills (such catching a ball, hitting a ball off a batting T or volleying a balloon) are the areas addressed when a child receives APE services.

Even before children with ASD have been formally diagnosed, they can show signs of motor deficits. Leonard, Elsabbagh, and Hill (2014) performed a longitudinal study that compared the motor scores of infants who were at risk for developing autism to the scores of infants who were deemed low risk. They found that infants who were at risk for developing autism showed significant gross-motor delays when compared to typically developed infants in the control group. This research supports earlier studies by Flanagan, Landa, Bhat, and Bauman (2012); Landa and Garrett-Mayer (2006); and Toth, Dawson, Meltzoff, Greenson, and Fein (2007), all of which showed significant gross-motor delays in ASD infants compared to normally developed infants.

Motor deficits can make even simple tasks challenging and can interfere with early services for the child even at the beginning of their interventions. Motor-skill interventions are currently not a priority in early interventions, but researchers have called for a greater focus in this area (e.g., Lloyd, MacDonald, & Lord, 2013). Furthermore, interventions that focus on motor skills and physical participation could positively impact children's speech acquisition (Miltenberger & Charlop, 2014); this finding reflects the interplay of a variety of influential factors that could improve development for children with ASD.

Although gross motor skills and object-control skills are not yet part of the *DSM-5's* (American Psychiatric Association, 2013) diagnostic criteria for ASD, children with ASD have deficits in these areas that can be observed from an early age and continue to

affect their quality of movement well into their teen years. Dowd et al. (2010) discussed the importance of identifying motor-functioning deficits as a way to assist in diagnosing ASD; they also posited that motor function might be a “suitable endophenotype for autism” (p. 92) given that it represents a common underlying pathology to the whole ASD population.

These endophenotypes could present as a variety of motor-skill deficits. These deficits appear early and are measurable both quantitatively and qualitatively, making their use as a diagnostic tool beneficial in early diagnosis and treatment (Esposito & Pasca, 2013). Studies have shown deficits in both gross motor and manipulation skills for children with ASD. Gross motor skills are motor skills that incorporate large muscle groups (Esposito & Vivanti, 2013, p. 1459). Manipulation skills are motor tasks that require using an object to perform a movement (Flanagan, Bowman, & Johansson, 2006). APE is a service that, like general physical education, directly targets these skills areas.

### **Gross Motor Skills**

Although gross motor skills focus on the larger movements of the body, these skills can be broken down to gain insight into the underlying components that could identify fundamental movement concerns (Cook, Blakemore, & Press, 2013). For example, Cook et al. (2013) found that, despite being able to move their arms in a simple sinusoidal (swinging horizontally) movement pattern, children with ASD produced a motion that was jerkier and less controlled in force and acceleration than their more normally developed counterparts. Similar concerns are present for other extremity movements as well—individuals with ASD, though able to walk and move through

space, have abnormal gait patterns compared to matched peers with more normal development (Accardo & Barrow, 2014; Fournier et al., 2014).

The Test for Gross Motor Development-2 (TGMD-2; PRO-ED, 2014) is a motor assessment tool that scores both object-control and gross-motor skills in young children. This test has been used to assess motor skills in children with ASD ages 3–10 and has found significant delays compared to typically developed peers. Using a sample of 21 children with ASD, Liu, Hamilton, Davis, and El Garhy (2014) found that the children either scored “poor” or “very poor” on both gross-motor and object-control subskills.

Staples and Reid (2010) examined 25 children with ASD and found similar deficits. They also noted that the children exhibited segmental movement and poor coordination. In their study, children with ASD were able to complete the motor tasks requested of them but did so with elementary or poor movement patterns. This means that these individuals spend more time and energy completing even basic tasks than their typically developed peers.

### **Object-Control Skills**

In addition to poor gross motor skills, individuals with ASD have poor object-control skills. Whyatt and Craig (2013) found that individuals with ASD might have deficits in their action and timing perception, which causes them to perform poorly in tasks that require tracking a moving object and timing a personal body movement (e.g., catching a ball). Whyatt and Craig also found a correlation between low language scores and poor manual dexterity, meaning that children who have fewer language skills have difficulty with motor tasks that involve their body extremities, such as arms and hands.

Similar conclusions have been made regarding children diagnosed with Pervasive Developmental Disorder–Not Otherwise Specified (Schurink, Hartman, Scherder, Houwen, & Visscher, 2012), which, until 2013, was part of the autism spectrum.

Similar to other movement patterns with children with ASD, these motor deficits discussed above can be seen early in development. Libertus, Sheperd, Ross, and Landa, (2014) found that infants with a family history of ASD who went on to be diagnosed with ASD had lower grasping and fine motor skills and did not fall within the developmental trajectory of typically developing peers. Studies that have looked at these deficits over time have found that, without intervention, the skills gap between these two populations increases significantly every 6 months (Lloyd et al., 2013).

#### **Activity Levels and ASDs**

Obesity is a serious health concern in the United States, for both children and adults. The CDC (2014) estimates the childhood obesity rate in the United States is approximately 17%. Children with a disability are at an even greater risk for health concerns, and obesity estimates place individuals with a developmental disability at approximately 22% of the population (Must et al., 2014) to as high as 36% (Maïano, 2011).

One way to combat obesity is through physical activity. This may be more challenging for children with ASD than for their typical peers. Bandini et al. (2014) found that, in a sample of 111 children (58 typically developed and 53 ASD), “children with ASD spent significantly less time in physical activities and participated in a narrower variety of activities than did typical developing children” (p. 51). Indeed,

getting children to participate in physical activity might prove more challenging than just creating programs for this population that reflect their sociodemographic profile, as recommended by some researchers (Memari et al., 2013).

Internal and external barriers to and facilitators of participation in physical activity exist for all children. Parents and peers can be an important facilitator for children with ASD, and these children struggle with gross motor skills, coordination, and balance (Obrusnikova & Cavalier, 2011). Obrusnikova and Cavalier (2011) argued that children with ASD need nuanced programming to target specific skills. Children with ASD have also been found to be less physically fit (particularly regarding strength) than their peers, in addition to being less physically active (Tyler, MacDonald, & Menear, 2014).

A variety of intervention models used for children with ASD are meant to target the core deficits of this disability. The Denver Early Start Model and Applied Behavior Analysis are two such early intervention services; empirical evaluations of these programs have shown that, to maximize the benefit to children with ASD, the total program length should span 20 to 40 hours (Dawson et al., 2010; Virués-Ortega, 2010). Early intervention programs take place predominantly in sedentary or restricted-movement environments (Srinivasan, Pescatello, & Bhat, 2014). The limited exposure to movement experiences within intervention services, coupled with the large amount of sedentary time for children with ASD in general, can add to or exacerbate these children's motor deficits.

Poor performance in physical education does not just limit the physical and health needs of students with ASD or other developmental disabilities, it also can negatively affect their experiences with peers. In a study of 25 elementary school children, Bejerot, Edgar, and Humble (2011) found that poor motor skills in physical education class were directly correlated with a threefold increase in the likelihood of the child being bullied.

Although students with ASD are frequently left out or self-select out of activity experiences because of the movement challenges described above, physical activity has been shown to help decrease some of the less desired behaviors of children with ASD. Studies have also found decreases in off-task behavior in the classroom after an antecedent physical activity (e.g., jogging) intervention (Nicholson, Kehle, Bray, & Heest, 2011; Todd & Reid, 2006).

Despite the small sample sizes of these studies (and, therefore, limited generalizability to larger ASD populations), a large body of evidence has shown the benefits of physical activity for children and adults with ASD in reducing their stereotypic behaviors (Burns & Ault, 2009; Foxx & Garito, 2007; Petrus et al., 2008; Powers, Thibadeau, & Rose, 1992; Rosenthal-Malek & Mitchell, 1997). Similar results were found for participants with autism in a vocational program when antecedent exercise was implemented to reduce maladaptive and stereotypic behaviors (Elliott, Dobbin, Rose, & Soper, 1994).

These studies demonstrated success in implementing short-term antecedent exercise programs, but limited research has examined the feasibility of long-term exercise programs and outcomes for this population. Pitetti, Rendoff, Grover, and Beets (2007)

examined the efficacy of a 9-month treadmill program for 10 youths with ASD in a residential treatment facility and found reductions in the participants' body mass index (BMI) and increases in caloric expenditure; they also found that a longitudinal treadmill program was feasible for teens with ASD.

General movement programs, such as walking or jogging, are not the only exercise programs that have shown meaningful outcomes for children with ASD. For instance, Bahrami, Movahedi, Marandi, and Abedi (2013) found that a karate program (Kata), when participated in for 12 weeks, reduced the participants' stereotypic behaviors by the end of the program; the reduction was still significant even 1 month after the intervention. Group swimming programs for children with ASD have also been shown to improve fitness and skill levels for this population (Fragala-Pinkham, Haley, & O'Neil, 2011; Pan, 2010; Yilmaz, Birkan, Konukman, & Erkan, 2005; Yilmaz, Yanarda, Birkan, & Bumin, 2004).

Exercise can help with less obvious symptoms in this population as well. For instance, individuals with ASD have reported high levels of anxiety (Kerns & Kendall, 2012). Hillier, Murphy, and Ferrara (2011) found that exercise and relaxation techniques were helpful in reducing cortisol levels (one of the hormones responsible for stress) in children with ASD. As stated by the researchers, "this is a cost effective and non-invasive intervention" (p. 401) that should be further examined.

### **Physical Education, APE, and Children With ASDs**

Physical education is "education that emphasizes the acquisition of movement skills and increased physical competence based on the unique developmental level of an



individual” (Gallahue & Cleland-Donnelly, 2007, p. 11). Programs designed to facilitate organized skill acquisition, when led by a quality instructor, can help children learn skills that they can use throughout their lifetime to stay active and healthy. Until recently, research has not examined the impact of physical education on individuals with ASD or how they perceive this type of educational setting.

Children with ASD vary from their peers in this setting in significant ways. During physical activity classes, students with ASD might not be able to participate at the same activity level as their peers. Pan, Tsai, and Hsieh, (2011) studied children with ASD in a physical education class and found that students with ASD took fewer steps than their peers and struggled to engage in activities that involved a group element or group game component. Similar findings were reported in previous studies showing that the content of the lesson can dramatically influence the participation level of students—both those with ASD (Chow et al., 2009) and their typically developed peers (Kulinna, Martin, Lai, Kliber, & Reed, 2003). Although Bandini et al. (2014) found that activity levels in physical education were similar between ASD and their typically developed peers, they did comment that the children with ASD were not engaged in the types of meaningful movement engaged in by their typically developed counterparts.

It is important to recognize that all studies that have examined aspects of physical education and autism have focused on how other stakeholders in the environment feel about the experience or how movement and activity levels are for this population, with one exception. Healy et al. (2013) examined how individuals with ASD experienced physical education by interviewing 12 students who were in a mainstream physical

education class. These students provided the first account of physical education from the perspective of students with ASD and highlighted concerns such as “individual challenges, peer interactions and feelings of exclusion” (Healy et al, 2013, p. 225). They concluded their study by highlighting the need for studies outside Ireland to examine the experiences of children with ASD in general physical education classes, as well as studies that allow these individuals to share their perspectives about APE experiences.

### **Interviewing People With ASDs**

Limited research has been conducted on the feelings and perceptions of individuals with ASD, and often these studies focus on the social or sensory aspects of the disability to provide professionals with a better understanding of the disability. The overwhelming majority of these studies have focused on high-functioning individuals on the spectrum. Often, it is argued that participants with disabilities are unable to express their emotions or experience them in a meaningful way. However, Wright (2008) argued, “research on pupils with multiple and complex needs can be a worthwhile task and demonstrates that such pupils can be ethically included in the research process” (p. 40). Consent and assent can be attained using communication methods that the participants are familiar with—including both verbal and visual methods—as well as by spending time with the participant before obtaining consent so that the participant does not feel afraid to say “no” to the study (Loyd, 2013).

Although engaging this population can be more challenging than engaging typically developed individuals, using visual schedules for the interview process, making initial contact with the participants with a social story, and using visual prompts can all

help gather meaningful and detailed information from participants with ASD (Harrington, Foster, Rodger, & Ashburner, 2014).

Bauminger et al. (2003) examined the social perceptions of 35 preadolescent and adolescent children with ASD. Using picture recognition of social situations, descriptive observation, emotional understanding interviews, and a self-report scale, the participants were able to communicate their experience to the researchers. The study found that participants with ASD had lower social interactions but wanted to have improved interactions with peers.

The World Wide Web has become a place for many individuals with ASD to share their experiences with their disability in a way that is meaningful to them. Jones et al. (2003) analyzed the writings of five firsthand account web pages of adults with ASD, with a particular focus on their sensory experiences. Researchers found that individuals with ASD were not only able to communicate their experiences effectively, but that these experiences were often negative and overwhelming. This similar method was employed by Jones et al. (2001) to qualitatively examine the shared experiences of adults with ASD, finding that the emotional experiences of this population were primarily negative.

Ashburner et al. (2013) used a descriptive case study to examine how three individuals with autism perceived their sensory experiences using semistructured interviews with visual cues to help prompt the participants understanding of the questions being asked. The three male participants in this study were described as having sufficient language skills and the interviews were auditory recorded, analyzed and then divided into two experiences—that of the feeling of the experience and coping with the experience.

The researchers in this study suggested that future directions for research should include more semistructured interviews augmented with visual cues to see if that method aids in the interview process.

Limited studies have examined how children with ASD view their school experience—whether it is inclusion (placements in a typical classroom) or a specialized service (such as APE). Humphrey and Lewis (2008) examined how high-functioning children with ASD in the United Kingdom viewed their inclusion experience using semistructured interviews, drawings, and journaling. Students were able to effectively communicate their experiences through these three data-collection methods, and themes of isolation, loneliness, and a feeling of difference were expressed.

Preece and Jordan (2010) studied how children and young adults with autism felt about their daily experiences and social supports in the United Kingdom. The authors used interviews that included both open- and closed-ended questions and had the children draw pictures. Of a sample of 14 participants, four themes emerged: positive family life, lack of awareness about how autism affected their family, negative school experiences, and isolation. The researchers in the study obtained meaningful data, but they cautioned that their data were not triangulated (from the parents) because of the communication difficulties of children with ASD.

### **Children’s Drawings With and Without ASD in Physical Education**

The experiences of children are often described by stakeholders—predominantly their caregivers (Elden, 2013). The field of children’s drawings has been described by researchers as “largely understudied” and having “limited transferability” due to small

sample sizes and being largely interpretive in nature (Literat, 2013). These limited studies have shown that this method, when used separately or in conjunction with other methods, can help add to the richness of a described experience and there is a “need for youth-informed conceptualization of environmental influences on physical activity” (Smith et al., 2015, p. 1).

Drawing offers participants another means of communication that is not verbal. For participants that have deficits in verbal communication this method may help add another dimension to their communication, offering a more rich description of their perceived experience. Simple prompts have been used in research studies to explore children’s feelings and perceptions regarding a range of topics from the environment (Kalvaiti & Monhardt, 2012) to living with a chronic disease (Tong, Jones, Craig, & Singh-Grewal, 2012). Limited studies have explored children’s drawings within a physical activity setting. Few studies have explored the use of children’s drawings as a voice to children with ASD.

Enright and O’Sullivan (2012) explored participatory visual methods to gather data about children’s experience in physical education. Photovoice and Timeline were the focus of this particular study. Photovoice uses pictures to illicit a narrative from participants by asking them to explain what is happening in a picture that they have taken in response to a prompt. Timeline is another visual method that has participants build a visual timeline for past experiences to help make sense of an experience. The researchers found that children were able to describe their experience more vividly using these visual

methods and that this data collection method gave the researchers a more in-depth perspective about what was happening from the perspective of the participants.

Episodic memory (memory of events with times, places and associations with who, what, when and where which are associated with emotions) has been found by researchers to be a deficit area for individuals with ASDs (Lind et al., 2014). Some researchers have had different results when incorporating drawing to illicit memory in children with ASDs. Mattison et al. (2014) examined the ability to recall a sketch of a previously viewed “witness video” of children with ASDs to typically matched peers and then to verbally recall to the researcher what had happened in the video using the drawing. The researchers found that the participants in the study (ASD  $n = 45$ ) were able to recall events through their drawings at a level similar to that of their typically developed peers.

Children’s drawings have been used in research examining children with ASDs play behavior. Peters et al. (2013) explored how children’s drawings could be used to promote social communication and prepare them for social play. Twelve children with a diagnosis of autism ranging in ages from 5 to 7 were the participants in this study. The children were prompted to draw a picture about themselves with friends playing a favorite game or activity. The children were then asked to play that game or activity after they completed their drawing. The researchers found that this drawing activity not only helped the participants to prepare for social interaction and play activity, but that they were able to depict accurately in their pictures the activities that they were about to participate in.

Though very limited research exists that has utilized children's drawings in physical activity or with research with children with ASDs there is a growing body of knowledge that suggests this is a meaningful and effective way for researchers to gather a richer dialogue from this population. Researchers in all of the studies above stated that more research is needed in the field of ASD research and children's research. Not only have children with ASDs been shown to be effective illustrators, but they have also shown a recall ability that some have historically argued did not exist, making this a topic that needs further exploration.

### **Summary**

The field of research regarding ASD has established that ASD rates are high and have been increasing steadily over the past few decades (CDC, 2015). The literature has presented substantial evidence that this population presents with motor deficits. The findings from current research point to the inclusion of motor deficits in future diagnostic criteria. Most studies on motor skills, instruction, and physical education have been quantitative, and a larger body of research is needed to provide a richer perspective that includes quantitative, qualitative, and mixed-method work. There is also a "need for 'insider' accounts" by individuals with ASD to increase understanding and drive positive change in schools" (Humphrey & Lewis, 2008, p. 42). It is also important to ensure that the experience of individuals with ASD in the school setting is driven by this population's differing needs. Knowing what is motivating to children with ASD could help influence their behavior in a physical education setting (Mohammed & Mohammad 2012).

Although there may be challenges in a phenomenological approach with the ASD population, the research needs to be more informed on how individuals with ASD experience the world around them to improve services (Zahavi & Parnas, 2003). Furthermore, as efforts at the national level continue to improve physical activity and physical fitness, individuals with ASD should not be left out of the discussion about perceived barriers and facilitators to participation in physical activity because overcoming these barriers will have not only immediate but also, potentially, lifetime improvements on their physical activity.

ASD presents a particular problem to researchers because the very nature of the disability involves communication problems. This study's qualitative design adds to the body of knowledge of research methods that could better help understand the experiences of this population. Students served in APE classes are more severe in their programming needs and are at risk for marginalization due to the nature of their disability (Jawaid et al., 2012). By using IPA and exploring the experience of these middle school children, the study was able to produce results that will promote an environment of collaboration and inclusion in all physical activity settings.

Knowing how middle school children with ASD experience their APE service can improve tailoring of curriculum and instruction to best meet their educational needs. Therefore, understanding the particular needs of this population could help to provide better instruction in a more inclusive environment. This study aimed to fill a gap in the current body of knowledge regarding the experiences of middle school children with ASD in APE classes.



Chapter 3 introduces the study and explains the rationale for the study and my role as the researcher. It then describes the methodology, issues of trustworthiness, and ethical procedures.

## Chapter 3: Research Method

### **Introduction**

The purpose of this interpretive phenomenological study was to explore how middle school children with ASD perceive their APE experience. The phenomenon studied was middle school children with ASD's perception of their experience in APE. This chapter presents the research design and rationale for the study and discusses the role of the researcher. In the next section, I present the methodology of this qualitative study and address issues of trustworthiness.

### **Research Design and Rationale**

The motivation for the study was the need to hear directly from middle school children with ASD regarding their APE experience. To this end, semistructured interviews, drawings by the participants, and descriptive observations were used to explore the following research questions:

The primary research question was, What are the feelings and perceptions of middle school children with ASD regarding their APE experiences from their perspective? The study also examined three subquestions:

1. How do children with ASD interpret their experience in APE?
2. What insight can be gained from these experiences that can inform how teachers and staff support middle school children with ASD in their APE experience?
3. What patterns (if any) are shared across the examined cases for children with ASD in APE?

The central concepts of the phenomenological study were middle school students with ASD and their perceptions of APE. I identified middle school children as those who were attending school full-time in either a special day class or a mainstream setting. A child was defined as having autism if (a) a trained professional had diagnosed him or her as such using the Autism Diagnostic Observation Scale (ADOS; 1 or 2) and (b) the student's diagnosis was confirmed by his or her parents when presented with the question "Has your son or daughter been diagnosed with ASD using the ADOS (1 or 2) by a trained professional?" during his or her intake into the study. The ADOS is an assessment tool commonly used in the United States to determine whether a child has autism or pervasive developmental disorder and is administered by a trained professional (Western Psychological Society, 2015).

For the present study, a qualitative phenomenological approach—specifically, IPA—was the most appropriate. Phenomenology aims to examine a shared experience of participants in a given phenomenon as well as the meaning that the participants' attribute to the measured experience (Hammersley, 2004). IPA looks to find the meaning in the participants' experience and then assign meaning based on the current literature (Smith et al., 2009).

Other qualitative methods did not seem appropriate for the present study. A grounded theory study was not appropriate because the intent of this type of study is to generate or discover theory related to the phenomenon being studied (Creswell, 1998). Ethnography was not appropriate for the study because it was not designed to interpret a cultural group or system (Creswell, 1998). Though there is a growing argument in the

field of ASD for the autistic community to have their own identity, similar to the deaf community, this is currently not the case. Therefore, autism is not yet identified as a cultural group that would be served by an ethnographic study. A case study was not appropriate because the aim of this research was to study a phenomenon through multiple experiences to understand its essence, not to simply study multiple cases (Creswell, 1998). To single out one case of ASD in APE when more children with ASD can be identified to examine a phenomenon through multiple experiences does not make a case study an appropriate fit. Furthermore, case studies examine all the aspects of a given case and the many stakeholders (Patton, 2002). The aim of this specific study was to examine how children with ASD interpret their experience, and I was not interviewing other stakeholders who were involved in this experience because I was aiming to identify and give voice specifically to children with ASD. Finally, a biographical study was not appropriate because the study examined a very small part of the participants' life, not their entire lifetime (Creswell, 1998). Narratives examine an individual's experience over a period of time and take on a story-like fashion (Patton, 2002). This study emphasized the perspective of the child with ASD, and, as such, I highlighted aspects of their experience; however, I was not turning it into a story, so a narrative study would not have served this study's purpose.

### **Role of the Researcher**

As the researcher for the present study, I was the instrument for collecting data, as is the tradition in phenomenological research design (Creswell, 1998). I solely sought out and interviewed the participants and then analyzed their data. Though I had previous

professional interactions and relationships with some of the participants, I had no direct personal or professional relationship with the participants within 2 years prior to or during the present study. I understand that my previous experiences might bias my perception of the participants' experiences. To minimize bias, I journaled throughout the study to log and better understand my personal experience (Creswell, 1998; Smith et al., 2009).

I did not select participants for the study with whom I was already serving in other settings. I had APE teachers identify children who were receiving their APE services and who also had an ASD diagnosis. A cover letter was sent to the parents of these children regarding my study so that they could contact me if they were interested in participating. This approach avoided biasing the sample selection based on my potential familiarity with the participants.

I did not use an environment in which I had authority (either prior to or during the study), so power differentials were not a concern. I did not provide incentives for participation in the study. The assent and consent forms provided to both the participants and their parents, respectively, clarified that they could end their participation in the study at any time and that, in doing so, they would face no repercussions in the school district or with future potential services in the region. I journaled throughout my study and examined other unforeseen ethical considerations as they arose.

## **Methodology**

### **Participant Selection Logic**

The population for the study was purposefully selected by first identifying children with ASD in APE who wanted to participate in the study and, from that participant pool, identifying children with ASD in APE who further fit the study's criteria. This method is common in qualitative research to identify shared experiences among a homogenous sample of participants (Patton, 2007). This method addressed the described phenomenon by following an IPA approach (Smith et al., 2009). Families of participants who were interested in participating contacted me after receiving a flier describing the purpose of the research from their child's APE teacher. The participants in the study were middle school children, ages 10 to 14 years old, with ASD, who were receiving APE services within one school district located in Northern California. Permission was granted by the school district to conduct the study (see Appendix A).

The selection criteria for the study included (a) a current diagnosis of ASD by a qualified professional, (b) current attendance at a middle school in the selected school district, (c) ability to communicate verbally, (d) current receipt of APE service, and (e) verification of the ASD diagnosis by the child's parents. The child's ability to communicate verbally was determined during my preliminary meeting with the participants and their parents to explain the study. After the participant and parent assented and consented to the study, and before beginning data collection with the drawing prompt, I asked the child to take the TNR–Second Grade (Spencer & Pearson, 2012). The TNR is a screening tool that can be used to assess a child's narrative retell

abilities, and the tool is freely available for reuse (see Appendix B). I followed the screening protocol and accepted a narrative retell score of “no additional language support” or “supplemental language support” as evidence of narrative ability at a level sufficient for this study. I have worked with a wide range of individuals with ASD for over 13 years in both clinical and natural settings and have experience in waiting for communication to be reciprocated, re-asking questions, and talking with children in a way that makes them feel comfortable. Current grade level and attendance in APE services were established via verbal confirmation from both the parent and the child.

Qualitative research yields data that are rich in content, so sample sizes that are too large make data analysis challenging. Smith et al. (2009) recommended that IPA studies for “Ph.D. student researchers have between four and ten interviews, not participants” (p. 52). In a meta-synthesis of 33 qualitative studies for individuals with ASD’s lived experiences and perspectives by DePape and Lindsay (2015), four focused on children with ASD, with sample sizes ranging from seven to 14 participants. The present study had a sample size of 10 participants. The rationale for this sample size was that it fell within the range of samples in similar studies and would provide data sufficient to generalize across participants.

I created fliers (see Appendix C) outlining the study and delivered them to no fewer than six APE teachers in the school district. These teachers then sent the fliers home with students with ASD who were receiving APE services. Fliers that are sent home to parents are a common means of communicating information in this district. In this flier, I briefly highlighted the purpose of the study, provided a brief biography about

myself, and described the inclusion criteria for this study. I provided my phone number and asked interested parents to contact me about participating in the study.

When interested parents phoned me regarding the study, I provided them with an in-depth overview of the study, including a timeline for the study, and reconfirmed the inclusion criteria. Based on the information provided in the phone conversation, I notified the child's parents if they were eligible or ineligible to participate in the study. Once the eligible prospective participants were identified, an appointment was made to meet with the child and his or her parents at their home. Home is frequently a place where service providers meet to provide services to children with ASD (Leutz, Warfield, Timberlake, & Chiri, 2015). Meeting at the family's home provided a sense of comfort to the participants because they met someone new; the home visit also provided anonymity to the child with ASD because other people could not overhear the conversation and attach a stigma, such as might happen in school or another public place. At this time, parents and child were provided with both the consent and assent forms (see Appendices D and E, respectively). I reviewed the interview format, which was outlined on the consent and assent forms, with the child and parent, making sure to address any and all concerns and questions they had regarding the study. The parents and child were provided with the time they needed to read through the forms and then, if they were willing to participate, they were asked to sign the forms.

Each participant received two interviews—in the first interview, the child narrated the picture they drew about their APE experience. The second interview was an in-depth semistructured interview with open-ended questions about their experiences and feelings



regarding APE, creating 20 interviews total. I expected each interview to last 25 to 50 minutes depending on the needs of the child and the depth of the responses. This time expectation was based on methods used by Kirby et al. (2015). In addition to these interviews, all participants provided a drawing to illustrate their APE experience during their second interview, and I took descriptive observation notes during the participants' APE class.

A study must ensure that enough subjects participate to ensure that the research purpose is fully addressed. Saturation occurs when a researcher “finds information to add until no more information can be found” (Creswell, 1998, p. 56) or when data across interviews reveal the same patterns. If a sample is too small, then patterns do not develop; if a sample is too large, there can be too much data to manage. Although this study's sample was small, it reflected the topic being studied, and the homogenous and purposeful sampling approach helped create a saturated set of data.

### **Instrumentation**

I used three methods of data collection. First, the participants illustrated their experience in APE using the prompt “draw me what your adapted physical education class is like.” I then asked the child to describe his or her picture to me. This data collection method added a nonverbal interpretation of the child's APE experience and provided a format that allowed the children with ASD to describe their APE experience in another way.

Second, I observed the participants in their APE class and took descriptive notes. Rather than allowing the participants to narrate their experiences without a direct

observation of the child in APE, collecting data in this way provided a context in which the participants were sharing their stories. This allowed me to triangulate their interviews and drawing by checking if how they described their experience in APE was in alignment with what was taking place in APE. I positioned myself in the classroom or outside space in a manner that was not intrusive or distracting. I used a pen and paper to collect these data so as not to distract the children with a computer or typing. The data sheet included a column for information about motor activities as well as a second column for behaviors and subjective observations. Each column was broken down into 1-minute increments and data were collected for the duration of their time during the APE observation.

Finally, I employed semistructured, in-person interviews with participants. The interview questions (described in the following pages and listed in Appendix F) were created to address the research questions that were used for this study. Because these interviews were conducted using interview questions created by me, the questions were sent to three researchers in the field of physical education and ASD to establish their content validity. All three researchers had experience in interviewing individuals with ASD as well as motor research as established by their publications on both topics in peer-reviewed journals. I conducted the interviews to limit variability in interviewing strategies between participants, and each participant was asked the questions in the same order, further limiting variability. All interviews were audio recorded.

Each of these data collection methods helped address the second research subquestion: What insight can be gained from these experiences that can inform how teachers and staff support middle school children with ASD in their APE experience?

These three data collection methods allowed me to gain insight from these experiences (Research Subquestion 2) and determine if there is a shared experience of middle school children in APE (Research Subquestion 3). Children are able to recall and describe events in interviews with consistency when these events are reoccurring (Brubacher, Powell, & Roberts, 2014) and this form of data collection in conjunction with drawing their experience was selected to allow for the participants' creative reflection. Each of the methods described above were reflective and allowed multiple modalities of sharing the child's experience. The study did not use any legal or historical documents.

**Drawings.** Drawing offers another medium for participants to express their feelings and perceptions on a topic or situation. Darbyshire, MacDougall, and Schiller (2005) stated that "various approaches complement rather than duplicate and enable the expression of different aspects of the children's experiences" (p. 430) when using multiple modes of data collection that are different than what a researcher would use with adults. Drawings have been used successfully with nondisabled children to express their perception of the environment regarding movement opportunities at home and school (Hume, Salmon, & Ball, 2005). In the present study, a prompted drawing by the participants was added to the data to offer a richer description of the participants' perceptions of their APE experience and to complement the interview and observation data.

**Observation sheet.** Observation of activity by the researcher is a means of collecting data on what a participant is doing within a setting. For this study, I was an observer. This is described by Pitney and Parker (2009) as nonparticipatory in nature and

ensures there is enough time during the observation to document activities of the participant as they occur. This observation sheet was divided into 1-minute increments and had categories for both direct observation of what was physically occurring as well as a second (“other”) category for me to make notes of behavior or other subjective remarks (see Appendix G).

**Interview protocol.** I developed the semistructured interview questions based on current autism research and established best practices. The semistructured interview questions consisted of four initial rapport-building questions that were straightforward and that the participants could answer confidently, followed by 14 open-ended questions that were specific to their experiences within the APE setting. These questions were reviewed by experts in the field to determine content validity, and I was the only person who conducted the interviews to limit variability in the interview process. Rapport-building questions are typical in the phenomenological interview process to create an atmosphere that is relaxing for the participant and builds trust between the researcher and the participant (Brown, 2015; Moustakas, 1994). An example rapport-building question is, “what did you do today?” or “what is that you are playing with?” The open-ended questions were descriptive, narrative, evaluative, and comparative and included follow-up prompts and probes as is necessary with phenomenological interview questions (Smith et al., 2009). An example open-ended question is, “what is your adapted physical education class with teacher like?” These research questions were reviewed by three professionals who had experience using qualitative researcher methods, interviewing individuals with

disabilities, and working with children with ASD for both content validity and credibility of the interview questions in answering the research questions.

### **Procedures for Recruitment, Participation, and Data Collection**

After fliers regarding information about the study were sent home to the prospective participants and their families, parents contacted me if they were interested in learning more about the study. During a phone conversation with the parents of the child to discuss the study, the prospective participant's parents were notified if their child was eligible to participate in the study. I met eligible children at their home to provide assent and consent forms and to answer any questions that they have. If they agreed to participate in the study, I worked with the family to set a schedule, during which, over the course of a 2-week period, the student was asked to draw their experiences, be observed in their APE class, and then be interviewed. The first data collection (drawing with prompt and explanation) occurred after the child was screened using the TNR and took place in the child's home immediately following the signing of the consent and assent forms. I then observed the children in their APE setting at school. The third and final data collection point (semistructured interview) occurred in the child's home after the drawing and observation occurred. The interviews were not held during school hours. Both the drawing description and interview were audio recorded and occurred within a 2-week period. Each lasted approximately 30 minutes, totaling an hour—the recommended time frame for semistructured interviews (Smith et al., 2009).

The drawing prompt was “Draw what your adapted physical education class is like for you.” I asked the child to explain their drawing, pointing out components of their

picture if the child is not discussing all the parts that they drew. I audio recorded the interviews and then transcribed them with a word-processing program. Individuals diagnosed with autism have been shown to have problems with memory (Goddard et al., 2014; Seese, Maske, Lynch, & Gall, 2014), but they have also demonstrated that they can draw coherently and contextually (Happé & Frith, 2006). Individuals with ASD have also shown the ability to express emotions, such as happiness or sadness, in their drawings similar to those of their peers (Jolley et al., 2013).

The interview focused on building rapport with the participant as well as gaining general information about their recalled APE experience. Rapport-building questions focused on making the children comfortable and building a level of trust with me so that they were more willing to share their experiences. These questions centered on things that the child liked or felt comfortable discussing, as demonstrated by their willingness to share them voluntarily with me. These questions were direct in nature and sought concrete answers, such as “what did you eat for breakfast today?” or “what is your dog’s name?” Open-ended questions required the child to describe his or her experience in more detail and involved prompts such as “What is it like for you to participate in APE?” Participants were asked about their general feelings and experiences regarding learning motor skills within this context. The interview reflected the descriptive observation I recorded during the participant’s APE class following the first interview because participant observations should be followed by a discussion of the experience (Smith et al., 2009).

For each participant, between the first drawing prompt and final interview, I attended and took observation notes during one of his or her APE classes. The observations were done in a manner so as to not disrupt or draw attention to the student while participating in the service. This observation took place from the time the participant arrived for the APE service until the time he or she returned to the classroom placement. This descriptive observation was broken into one minute increments for the duration of the time the child is in APE and had two categories for each minute—one that describes the activity that the child was participating in and a second category that is subjective and documents behaviors or other occurrences that I thought should be noted.

I debriefed the participants and their parents in person after their completion of the study. The participants were shown a copy of their transcript, picture, and a transcript of the descriptive observation. Copies were provided to the participant and his or her family when requested. I used this debriefing time to answer any questions that the participants or their parents might have had.

### **Data Analysis Plan**

Semistructured interviews, children's prompted drawings, and descriptive observation were used to collect data to answer the research questions. Following the coding procedures described by Smith et al. (2009) and Saldana (2013), I began with one participant's data and read through the transcription of his or her interviews, my observation of his or her participation in APE class, and notes that I took throughout the data collection process; I also looked at the participant's drawing multiple times. Each interview transcript was read as a single data set and was treated with a multiple-step

process for identifying themes and concepts. The steps in this process are described below. These steps were repeated for each data set and then reviewed for overlying themes and concepts.

In the first step, I read and reread the child's interview transcript. This was done to ensure my familiarity with the participant and to slow down and better become acquainted with the participant's expressed thoughts. Smith et al. (2009) described this process as "entering the participant's world and beginning a phase of active engagement" (p. 82). During this process, I identified preliminary tones that are expressed by the participant in an attempt to begin to understand their experience.

In Step 2, I began with reviewing my preliminary notes regarding the transcript at an exploratory level. During this stage I kept an open mind and let the connections within the transcript and my notes regarding the transcripts evolve in a way that captured the participant's experience. By looking at the participant's words and identifying abstract concepts, I began to extrapolate larger, overarching connections among the participants. Descriptive, linguistic, and conceptual comments were all used in this phase of the data analysis. Descriptive comments highlighted my exploratory thoughts on the overall content of the child's experience. Examples of linguistic comments allowed me to explore not just what the participant's said, but also their pauses, hesitations, and laughter. Conceptual comments are a more personal reflection of the perceptions of the researcher on all of the data as a whole and "can move away from the actual text of the data to look at the interpretation arising from the data" (Smith et al., 2009, p. 90).



In Step 3 I developed the emerging themes. These themes began to materialize from my journal notes and comments of the transcript in addition to the original interview transcripts. My analysis looked at all of the data from the participant across the interview transcripts, descriptive observation, and picture of their APE experience. Although my views and concepts as the researcher were focused on the child, I expanded my interpretation of the data to potentially reflect my perspective, as often occurs in interpretive phenomenological studies (Smith et al., 2009).

In Step 4 I searched for connections across the emergent themes within the interview transcripts. Abstraction is a way of identifying patterns between themes by putting “like with like” and grouping under larger titles or “super-ordinate themes” (Smith et al., 2009, p. 96). Looking at polarizing concepts (oppositional relationships in the transcripts), contextualizing the data (organizing the data within a time frame or temporal concept), and numerating the data (frequency of a piece of data), and the functions of the data (what the function of the theme is within the transcript) all occurred in this stage as well (Smith et al., 2009).

In Step 5, I repeated Steps 1 through 4 for each of the participants using the methods described above. I also reflected on the previous data sets as I worked through the next, allowing new themes to emerge but also keeping in mind repeating thoughts or concepts.

In my final step, Step 6, I worked through the participants’ data sets and looked at the patterns across cases. I made a master theme table from the data and highlighted lines from the transcripts that fit each theme. After repeatedly visiting the data and ensuring

that all the themes were addressed, I began interpreting the data. Congruent with interpretive phenomenological research, I interpreted the data at the micro level and then for the sample size as a whole; I made another table, in which I identified participants and whether they presented with or without the identified superordinate themes that manifested during the course of analysis (Smith et al., 2009, pp. 101–107). Discrepant cases were also included in the final analysis of the present study.

The participants' drawings were analyzed using the methods described by Kalvaitis and Monhardt (2012). I first created a coding taxonomy by noting all the items within the picture, continually noting all the items in the picture until the list is exhaustive. I then examined the narrative of the picture that was given by the child next to the picture and the taxonomy of the items in the picture. I then offered my interpretation of the items in the drawings, categorizing the picture's items as one of three categories: negative, positive, or neutral. Negative items were identified as items that were (a) described by the child as such in their interview transcripts or (b) show an obvious cultural identification of negativity such as a sad face or crossed out image. Positive items were identified as items that were (a) described by the child as such in their interview transcripts or (b) showed an obvious cultural identification of positivity such as a smiley face. Items designated as neutral (a) were not mentioned by the child in their interview transcript and (b) did not have culturally identifying information that might place them into a positive or negative category. The categorization of these items by both the participant and me helped to add insight to the overall perception of the child's APE experience.

My analysis of the descriptive observation of the participants in their APE setting focused on two categories: motor skills the participants performed and my perceptions of participants' demeanor during their APE class. The data sheet was broken down into 1-minute increments. For each increment of the child's time in APE, I described the gross motor skill and object control skills that were occurring. In addition to this objective category, I had a second, subjective-description section where I noted the child's behavior. I compared my analysis to the participants' own perceptions of their APE experience, as described in their interviews and drawings. I compared my observations in the APE setting to my observations of the other participants to explore shared experiences and behaviors.

### **Issues of Trustworthiness**

In qualitative studies, credibility, transferability, dependability, and conformability are used ensure validity and reliability. I verified credibility by triangulating the data between the modes of data collection (interview, observation, and drawings). I also triangulated the data between the participants by reading each participant's data set individually and then comparing it against the data set of other participants (Smith et al., 2009). Interviews were carried out until saturation of the questions is achieved. Member checks were also used to ensure validity by having participants examine the transcripts of their interviews and my interpretation of the themes presented. Member checking has been used as a successful method of ensuring validity in studies that have children (Thomas & Magilvy, 2011). This method ensures

collaborative coding as well as “provides ownership to the stakeholders and investment in the subsequent recommendations for social change” (Saldana, 2013, p. 34).

Trustworthiness was achieved by verbatim transcription of the interviews, including pauses in the participant’s language and filler words, such as *uh* or *um*. This method was drawn from a study by Powel et al. (2015) who stated, “[the] participant’s verbatim words ensure that the participant’s voice has not been lost” (p. 6). Participants were also asked to review their transcript to ensure that it accurately reflects what they were trying to say.

Transferability was achieved by using thick descriptions of the participants in their own words and in addition to my analysis so that the reader could judge my findings. These descriptions are included in Chapter 4.

Dependability was achieved first by ensuring that the research questions in this study are addressed by the data that were collected. Furthermore, organizing my data for coherence from the themes identified in the original transcription through the final write-up ensured that, if there was an audit, the data could be checked through my paper trail of raw data, notes, and final analysis.

To demonstrate conformability in the study, I kept detailed notes, raw data, drafts, and journals. The logs also allowed others to examine the study’s original material to assess its trustworthiness.

### **Ethical Procedures**

I obtained Walden University IRB approval (04-29-16-0318510) for the study. The participants were not coerced into participating, and I had no professional

relationship with the participants 2 years prior to this study and when the study was occurring. I identified three APE teachers who sent out fliers to children with ASD who are receiving services in APE. On the flier, I briefly described the purpose of and the inclusion criteria for the study, as well as my contact information. Parents were responsible for contacting me to elect to participate in the study. Children and parents were told that they could terminate their participation, they were allowed to, and I offered them a debriefing session to discuss any questions they might have regarding the study.

Participants and their families were in control of setting the time of the interviews in their home as well as coordinating the date for the observation within the APE setting. As a result, this helped attain a level of privacy and comfort for the participants and their families. Participants were separated from their nondisabled peers during their participation in APE services, so my presence as an observer did not add any stigma or harm to the participants. I did not serve the sample children professionally in any manner during the time of the study, and there was no connection between me and the child outside the context of this study.

Only I knew the identity of the participants, and every effort was made to protect their identities. This dissertation does not mention the names of any particular schools, classes, teachers, or other features that would make the participants identifiable. Only the assent and consent forms contained identifying information; all other documentation used unique ID numbers assigned to the participants at the start of the study. Assent and consent forms were securely stored separately from participants' data.

All transcripts of the interviews and qualitative observations were stored on an external hard drive and kept in a locked safe in my office at home when not in use. The data on the hard drive will be kept for 5 years after the conclusion of the study; at that point, the hard drive will be erased, destroying all electronic data that was collected. Any paper transcripts, notes, and forms (e.g., consent, assent) as well as the children's drawings will be stored in a locked drawer in my office at home when not being used. All documents related to the study will be kept for 5 years, at which point they will be shredded and discarded.

### **Summary**

Through this IPA I explored how middle school children with ASD perceived their APE experience. I studied the phenomenon of the perceptions of APE experiences of middle school children with ASD. I used semistructured interviews, drawings, and descriptive observations to collect data on each participant. I first examined the data at the individual-subject level and then analyzed for themes across all the participants. I addressed issues of trustworthiness in a manner that led to meaningful data procedures that can be replicated. In Chapter 4 I discuss the results of my study. First, I describe the setting of the study and the demographics of the participants. This is followed by a detailed description of my data collection and analysis. Finally, I discuss evidence of trustworthiness and the results.

## Chapter 4: Results

### Introduction

Children with ASD have motor-skill deficits (Cook et al., 2013; Liu et al., 2014; Staples & Reid, 2010) and receive APE services to improve those deficits (Adapted Physical Education National Standards, 2015). Although various professionals and care providers have described the ASD experience in physical education (Njelesani, Leckie, Drummond, & Cameron, 2015; Obrusnikova & Miccinello, 2012), individuals with ASD have demonstrated an ability to share their perspective in a research setting (Ashburner et al., 2013; Jones et al., 2003; Jones et al., 2001). To date, no study has attempted to capture the APE experiences of these individuals firsthand. To that end, the purpose of this IPA study was to explore how middle school children with ASD perceived their APE experience with the phenomenon being the middle school children with ASD's perception of their experience in APE. The primary research question was, What are the feelings and perceptions of middle school children with ASD regarding their APE experiences from their perspective? The study also examined three subquestions:

1. How do children with ASD interpret their experience in APE?
2. What insight can be gained from these experiences that can inform how teachers and staff support middle school children with ASD in their APE experience?
3. What patterns (if any) are shared across the examined cases for children with ASD in APE?

In the following chapter, I present the findings of the current study, which share the firsthand accounts of children with ASD in APE. First, I discuss the setting in which this study took place, followed by the demographics of the participants and summaries of each. Interview, drawing, and observation were used in the data collection process; below, I detail the process for analyzing those materials. Following that, I discuss the data analysis that took place based on the three types of data collection conducted. I then provide evidence of the trustworthiness of my data and conclude the chapter with the results and summary of this study.

### **Setting**

This study occurred in a rural town in northern California in both the participant's APE school setting (observation) and in the participant's home (drawing and semi-structured interview). Participants' APE services for this study were classified in two ways: (a) direct service and (b) consult service. Children who received direct service worked in a setting with only an APE teacher and a paraprofessional to receive physical education instruction. Children who received consult participated in an environment that more closely mirrored a general education setting, with the general physical education teacher, APE teacher, and paraprofessionals supporting the child in a way that best matched the child's needs. The participants in the study whose APE services were "consult" ( $n = 3$ ) did not report being distracted during the observations. Participants who were receiving direct APE services ( $n = 7$ ) did not report being distracted during the observations. Protocols described in the Chapter 3 were followed as specified. All participants reported being happy to be in the study, and participants who entered the



study stayed until the end. As described in the Methods section, children were interviewed in their homes, and observations of their APE took place in the school setting. The participants did not report experiencing trauma or discomfort during the study. Additionally, the participants and APE teacher did not report my presence observing at the school sites to be distracting.

The ten participants who enrolled in the study demonstrated narrative abilities of at least second-grade level, as indicated on their results of the TNR (i.e., “no additional language support” or “supplemental language support” needed). As mentioned in previous chapters, although language and social interactions can be difficult for individuals with ASD, participants in this study did not exhibit deficits that I perceived took meaning away from their descriptions of their experience in APE.

The parent of one of the participants was listening from another room and provided a reminder prompt for their child when he initially responded that he did not use the skills from APE with his friends. The parent asked, “Don’t you use some of those skills with [child’s name]?” The participant quickly responded “Oh, yes.” and then proceeded to answer the question in depth. This case is discussed later in this chapter. All parents were present in the home throughout the interviews and varied in their ability to overhear the conversations occurring, but the participants did not look to their parents or ask them for input or help throughout the processes.

### **Demographics**

Participants ranged from 10 to 14 years old. Nine participants were male and one was female. With the rate of ASD diagnosis affecting males differently than females (4:1;

CDC, 2015), the high number of males in this purposeful sample reflects how this disability affects genders differently. Within this sample, the lone female participant was the only female with ASD receiving APE services. All 10 participants had narrative capabilities, as defined in Chapter 3. Table 1 lists the participant demographics.

Of the 10 participants, three received APE through consult, and seven received APE through direct service. Participants who received direct services worked with an APE teacher and/or a paraprofessional to receive physical education. Participants who received APE on consult worked with the APE teacher and their paraprofessional adjacent to the general physical education class and attended services daily. One of the participants interacted with typical peers during his warm up and then came to the APE teacher for additional instruction. Two participants receiving consult worked with an APE teacher without peers during their observations. All three participants on consult were at the same junior high school. The other seven participants received direct services in one-on-one instruction at the five elementary schools they attended throughout the district. Eight participants were Caucasian and two were Hispanic.

### **Data Collection**

Data were collected over a period of 4 weeks from 10 middle school age students receiving APE services through one school district in Northern California. These students were recruited through a flier sent home to the parents through the school district APE teachers. The parents of potential participants notified me by either phone call or text of their interest to have their child in the study. An initial phone call took place to discuss the basic criteria for the study, and a meeting was scheduled at the participant's home.

Table 1

*Participant Demographics*

Participant	Gender	Age	TNR Range	APE Service
1	Male	12	No additional language support	Direct service
2	Male	14	No additional language support	Consult service
3	Male	10	No additional language support	Direct service
4	Female	14	No additional language support	Consult service
5	Male	11	Supplemental language support	Direct service
6	Male	11	Supplemental language support	Direct service
7	Male	11	No additional language support	Direct service
8	Male	14	No additional language support	Consult service
9	Male	12	No additional language support	Direct service
10	Male	10	Supplemental language support	Direct service

*Note.* TNR = Test of Narrative Retell; APE = adapted physical education.

After consent and assent forms were signed, the TNR was administered to screen the child for narrative retell capabilities. All of children who volunteered for the study passed this 10-minute screening test with either “no additional support needed” or “supplemental language support needed.” Data collection consisted of a child’s drawing and short 15- to 20-minute interview about the drawing, a 20-minute descriptive observation by me in the child’s APE setting, and a final, 30-minute semistructured interview about the child’s perceptions of his or her APE experience.

Data were collected throughout May 2016 in the manner described in Chapter 3. One drawing was collected from each participant, and the same variety of markers and crayons were provided to each participant, with a wide range of colors and grip sizes. All interviews (both picture and semistructured) for each participant were audio recorded and face-to-face in a common living space in the child’s home (eight at the kitchen table, two on a couch in the family living room, one outside in the backyard). Distractions were minimal and did not appear to affect the interview process.

All observations of participants in APE occurred in the school setting where the child typically receives services. The data from these interviews were transferred from the recording device to my personal computer and transcribed into a Word-processing document. Once transcribed, all digital copies were erased.

### **Data Analysis**

The interview data were hand coded. First, I read each transcript multiple times to become familiar with the whole interview. Using Creswell’s (1998) emergent strategy as described by Creswell (1998), I let the data guide me as general themes emerged from

each participant's experience. Data analysis was coded in a first-cycle coding method, during which I looked for elemental, affective, and exploratory subcategories as described by Saldana (2013). Second-level coding was then conducted. Because my question was rooted in the participants' lived experience, I used in vivo coding and theming of the data for the second level (Saldana, 2013). From these concepts, I looked for themes within each participant's experience and then for connections between the participants' APE experiences. Finally, I examined these themes to find an overall interpretation of the participants' experiences.

Observations were coded for type of activity as well as the participants' behavior during their time in APE. Codes for type of activity were first described as specific movements (listed in Table 2) and then generalized into broader movement categories: object control skills, gross motor skills, physical fitness, and game play. Behavior activities were coded for on or off task and for observable comments about their demeanor while in APE. The data were reviewed to determine whether the participants' reports of their actions in class were accurate and whether their feelings about their experience seemed represented in the observation. An example discrepancy would be if a child described being happy in APE but did not want to participate when observed. The only discrepancy the data yielded was that, due to the changing nature of the APE setting, my observations of the children's activities in APE and their interview reports of the activities they participated in did not always align. Throughout the year, children work on various skills, and they may have commented on their feelings about activities, but are no longer participating in them.

Table 2

*Drawings of and Observations and Reported Activities in APE*

Participant	Images in drawing	Observed Activities in APE	Reported activities in APE by APE teacher
P1	Stick figure smiling Basketball Basketball hoop with pole Arrow from basketball into the net Uneven ground surface  Colors: black and orange	Fitness warm-up <ul style="list-style-type: none"> <li>• Sprints</li> <li>• Jumping jacks</li> <li>• Backpedal</li> <li>• Windmill stretch</li> <li>• Sliding</li> <li>• Gallop</li> </ul> Modified bowling <ul style="list-style-type: none"> <li>• Overhand throw</li> <li>• Underhand throw</li> <li>• Rolling balls</li> </ul>	Offense and defense in game play Jump rope Fitness basketball Baseball Ultimate Frisbee Frisbee golf
P2	Basketball Road Lines behind the ball indicating movement  Color: Red	Badminton <ul style="list-style-type: none"> <li>• Serving shuttlecock</li> <li>• Volleying shuttlecock</li> </ul>	Fitness Basketball Badminton Lacrosse Dance Frisbee Pickle ball Soccer Track and field
P3	Smiling sun Neutral face moon Person carrying weights smiling Person dribbling basketball smiling face Person with hands against a wall, mouth as a circle Stick figure with hands up smiling Hand weights Basketball  Colors: none, self-selected pencil drawing	Fitness warm-up <ul style="list-style-type: none"> <li>• Butt kickers</li> <li>• High knees</li> <li>• Windmill stretch</li> <li>• Sliding</li> </ul> Modified baseball game <ul style="list-style-type: none"> <li>• Throwing with oversized ball</li> <li>• Hitting with oversized bat</li> <li>• Running</li> </ul>	Fitness Basketball Throwing and catching games Baseball Frisbee

*(table continues)*

Participant	Images in drawing	Observed Activities in APE	Reported activities in APE by APE teacher
P4	<p>One side of paper:</p> <ul style="list-style-type: none"> <li>Stick figure with a dress on, smiling shooting basketball into hoop</li> <li>Stick figure with pants and shirt on, smiling reaching for the ball</li> <li>Basketball court</li> <li>Basketball hoop and pole</li> <li>“BASKETBALL”</li> </ul> <p>One side of paper:</p> <ul style="list-style-type: none"> <li>Stick figure in swimsuit smiling</li> <li>Blue pool</li> <li>Lighter blue waves</li> <li>Dark and Light blue ladder</li> <li>“SWIMMING”</li> </ul> <p>Colors: Green, blue, red, orange, yellow, green blue, brown, skin tone</p>	<p>Badminton</p> <ul style="list-style-type: none"> <li>Serving shuttlecock</li> <li>Volleying shuttlecock</li> </ul>	<p>Fitness Basketball Badminton Lacrosse Dance Frisbee Pickle ball Soccer Track and field</p>
P5	<p>Oval Inside oval a circle Cross running through oval and circle</p> <p>*described as baseball diamond</p> <p>Color: pink</p>	<p>Fitness Warmup</p> <p>Basketball skills</p> <ul style="list-style-type: none"> <li>Bounce pass</li> <li>Dribbling stationary</li> <li>Dribbling while moving</li> <li>Shooting ball</li> <li>Dribbling and shooting</li> </ul>	<p>Baseball Basketball Throwing Catching Fitness Soccer</p>
P6	<p>Background</p> <ul style="list-style-type: none"> <li>building</li> <li>Two red stick figures</li> <li>Hoop</li> </ul> <p>Foreground</p> <ul style="list-style-type: none"> <li>One figure holding a circle and smiling</li> <li>One figure looking at other figure smiling with hands out</li> </ul> <p>Colors: Red, Black, Yellow</p>	<p>Fitness Warmup</p> <p>Modified bowling</p> <ul style="list-style-type: none"> <li>Overhand throw</li> <li>Underhand throw</li> <li>Rolling balls</li> </ul>	<p>Dribbling Throwing Catching Bounce passes Locomotor skills Fitness Balloon striking Kicking ball</p>

(table continues)

Participant	Images in drawing	Observed Activities in APE	Reported activities in APE by APE teacher
P7	<p>4 standing stick figures with big hair No mouths Names of participant and teachers over the figures</p> <p>Color: Red</p>	<p>Tetherball Four Square</p>	<p>Playground games Tether ball Four Square Basketball Fitness</p>
P8	<ul style="list-style-type: none"> <li>• One figure with blue eyes, holding badminton racquet smiling</li> <li>• One figure with green eyes, holding badminton racquet smiling and hitting shuttlecock</li> <li>• Shuttlecock flying over the net</li> <li>• Green ground</li> <li>• Net</li> <li>• Badminton court</li> <li>• Yellow Sun</li> </ul> <p>Colors: Grey, Yellow, blue, Green</p>	<p>Badminton</p> <ul style="list-style-type: none"> <li>• Serving shuttlecock</li> <li>• Volleying shuttlecock</li> </ul>	<p>Fitness Basketball Badminton Lacrosse Dance Frisbee Pickle ball Soccer Track and field</p>
P9	<ul style="list-style-type: none"> <li>• Smiling orange stick figure</li> <li>• Smiling red stick figure</li> <li>• Red line dividing page</li> <li>• Orange carrot</li> <li>• Red apple</li> <li>• Green broccoli</li> <li>• Yellow corn</li> </ul> <p>Colors: Blue, Yellow, Green, Red, Orange</p>	<p>Fitness warm-up</p> <ul style="list-style-type: none"> <li>• Jog</li> <li>• Gallop</li> <li>• Skip</li> <li>• “power “jumps (broad jumps)</li> <li>• Hopping</li> </ul> <p>Basketball</p> <ul style="list-style-type: none"> <li>• Shooting ball with two hands</li> <li>• Dribbling while moving</li> <li>• Defending</li> <li>• Running</li> <li>• Walking</li> </ul>	<p>Group &amp; Team Games Throwing Catching Soccer Baseball Basketball</p>

(table continues)



Participant	Images in drawing	Observed Activities in APE	Reported activities in APE by APE teacher
P10	Stick figure wearing a shirt, smiling Arms out, holding a ball and a bat like implement Feet wide apart Two bowling pins	Fitness warm-up <ul style="list-style-type: none"> <li>• Sprints</li> <li>• Jumping jacks</li> <li>• Backpedal</li> <li>• Windmill stretch</li> <li>• Sliding</li> <li>• Gallop</li> </ul> Modified bowling <ul style="list-style-type: none"> <li>• Overhand throw</li> <li>• Underhand throw</li> <li>• Rolling balls</li> </ul> Colors: Green	Throwing Catching Kicking Striking Dribbling Catching Baseball Fitness

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*Note.* APE = adapted physical education.

Finally, the pictures were coded for actions that took place within the image. Codes for picture activities were categorized into activities, subjects, objects, colors, and any words written. These are shown in greater detail in Table 2. These codes were then triangulated back to both the interviews and the drawing to verify uniformity in the child's interpretation of their experience. All 10 participants were able to draw pictures of physical activity when prompted, "Draw me what your adapted physical education class looks like." These participants were able to accurately draw how they participated in class, as told by themselves in their semistructured interviews, noted in my observations, and reported by their APE teachers. A more detailed description of the drawings is included in Table 2. Participant 7 was the only subject who did not draw any activity or representation of physical activity in his picture. He did depict his APE teacher and his paraprofessionals in his drawing.

I initially treated each piece of data for each participant as an individual data set. I first highlighted larger segments of information through each of the transcripts in response to the semistructured interview questions because I thought that they offered the most insight into participants' experiences in APE. Some questions (5–18) lent themselves to more in-depth responses from the participants, whereas others (1–4) elicited shorter responses. I then looked for categories of information within these blocks. I then examined the drawings and the transcriptions of the drawing descriptions. I coded for type of activity, subjects, and objects in the picture, as well as any narrative that the participant portrayed to me that might have been meaningful. Finally, I examined the notes from the observations and coded for activities and behaviors that occurred.

After examining each type of data separately, I began to look at all the data for each participant. From the themes of these three data sets for each participant (the drawing, observation, and semistructured interview), I then looked for themes that occurred between participants to identify overarching themes in their shared experiences. Categories and themes began to emerge from the data. Themes identified as the shared experience of individuals with ASD in APE were as follows (and are described in greater detail later in this chapter): positive experiences of ASD in APE, importance of being physically active, sedentary in spare time, and desire for time in APE.

### **Evidence of Trustworthiness**

The children were referred to the study by trained professionals within the school system who were working with them. The professionals sent a flier home to the children's parents, who, then knowing the criteria of the study, were able to evaluate whether their child would be a good candidate. Parents interested in having their child participate then called the researcher. Children were screened for their ability to recall events with language using the TNR, adding further credibility to the participants' ability to communicate at a level necessary for the study. All measures to provide credibility (internal validity), transferability (external validity), dependability (the qualitative version of reliability), and confirmability (the qualitative version of objectivity) as described in Chapter 3 were followed. To ensure credibility of this study, data were triangulated between the three modes of collection (drawing, observation, and interview) and member checking by the participants occurred after the interviews were transcribed. Although it is unclear how much the participants were able to recall their exact wording, each

participant agreed by saying that what was written was accurately describing their feelings or thoughts and this allowed them to be stakeholders in the research process (Saldana, 2013). . Participants came from a variety of school sites within one school district in Northern California and had different APE teachers. This diversity in settings and instructors also ensured credibility to these findings because the participants' backgrounds, locations, and teachers varied.

Although transferability cannot be claimed in this qualitative study because of the small and specific sample, a detailed description of the participants' experience is shared so that the reader can judge the study findings. Dependability was demonstrated by aligning the interview questions with the research questions to ensure that all research questions were addressed. Additionally, all methods of data collection (drawing, observation, and semistructured interview) aligned with the research questions. The data for the study were organized in a coherent manner, and a clear path was taken from the raw data to the notes to the final analysis. Confirmability was also demonstrated in the same manner.

## **Results**

Participants were coded by number in the order in which they entered the study and are presented in that order in this section. To present the research data for this study, I first discuss each participant individually, before discussing overall themes. I start with a general description of and overall experience with each participant, followed by a description of the drawing interviews and what themes arose from the participants in that medium. I then give an overview of the observations of the participants in their APE

settings. Finally, I provide an overall presentation of my interpretation of the themes discovered between the participants regarding their experience in APE. I address each of the research questions and conclude with perceived barriers and facilitators regarding this population and APE.

## **Participant Overviews**

### **Participant 1**

Participant 1 (P1) was a 12-year-old male who was taking a bath to relax after school when I arrived for the first interview. When I asked him if he would like me to go over the assent form, he informed me that I “did not need to read the assent form, I reading currently at an eleventh-grade level.” P1 drew on his experience in APE without hesitation. P1 was observed in his typical APE setting outside, on the blacktop, and he and the teacher participated in a modified game of throwing at targets. P1’s mother was present in their apartment throughout both interviews. Although she was not part of the interviews, she did interject from the other room during the semistructured interview at one point, when P1 responded that he did not use the skills he learned in APE while playing with his friends or family. Specifically, she prompted him with “what about when you play with [friend’s name]?” P1 then said, “oh yeah” and proceeded to tell me about how he used his skills from APE to play basketball with his friends. P1 spoke easily (and very quickly) about his experiences, and the conversation flowed between us throughout the picture interview and the semistructured interview.

## **Participant 2**

Participant 2 (P2) was a 14-year-old male who exhibited a range of typical ASD behaviors throughout his interviews, including rocking and hand stimulation. I had had a previous relationship with the participant when he was much younger, in a clinical setting, and had seen him throughout the years in other, nonclinical settings. He smiled, laughed, and commented on more than one occasion that he was excited to talk to me. He asked me to read the assent form to him, and then stated, “Hmm. Let me think about this.” After pausing for several seconds, he laughed and inquired, “Did I make you nervous? Let’s do this!” P2 immediately drew the picture of his APE setting. P2 received APE services on consult and was supported by a paraprofessional in a setting adjacent to his typically developed peers. During the observation, P2 played badminton with his paraprofessional, exhibiting an overall positive demeanor, as demonstrated by his smiles and laughs. P2 frequently exhibited hand movements typical of individuals with ASD when he was laughing and smiling (e.g., holding his hands and fingers in atypical positions or rubbing his hands or fingers together). These hand movements typically occurred when his paraprofessional was retrieving the shuttlecock. P2 volleyed the shuttlecock well when stationary but was not as successful at returning the object when it was not hit directly at him and he had to move. During his semistructured interview, P2 smiled frequently when talking about his APE experiences. He shared that he would really enjoyed it “if it didn’t make him so sweaty.”

**Participant 3**

Participant 3 (P3) was a 10-year-old male. I had minimal previous experience with him in a nonclinical setting, and no experience with in a professional setting. When I arrived for the first meeting, P3 greeted me at the door and was excited to show me his YouTube channel, which had four followers and the newest song he had recorded. When I asked if he wanted me to read his assent form, P3 stated that “he wasn’t an idiot” and then shifted his body away from me so that he could read it. During P3’s observation, he seemed out of breath throughout the experience but frequently joked and teased with the APE teacher while playing a modified baseball game for two. Three minutes into his observation, a fire drill interrupted 5 minutes of his time in APE. For the semistructured interview, P3 wanted to be outside again. He commented frequently during this interview about some of the more negative aspects of his experience, such as “feeling out of breath,” “having an asthma attack,” or “having a heart attack.” Although he had negative aspects to report, he also repeatedly said that APE was good and “makes me exhausted but happy.”

**Participant 4**

Participant 4 (P4) was a 14-year-old female who exhibited a range of typical ASD behaviors, including rocking, hand stimulation, and a need for sensory input and discussion throughout her interview. I had a previous relationship with P4, but had not worked with her in a clinical setting in over 3 years. P4 was “so excited” to draw her APE class; on the reverse side of the paper, she wanted to draw what she wanted to happen. During my observation of her in APE (consult), she played badminton (with a

tennis racquet) with her paraprofessional on a court separate from her peers. I did not observe her interact with any of her peers during her transition from the classroom to the gym, in the gym, or her transition back to class. P4 demonstrated sensory behaviors such as bouncing, rubbing spit between her fingers, and rocking during the breaks in play throughout the 20 minutes, but these behaviors did not occur much during the game or seem to interfere with her playing. P4 laughed and seemed happy throughout her experience as evident by her smiles and comments about being happy during my observation. Many times during our semistructured interviews, she would go off topic briefly to discuss the color of the bag she saw on the counter, to report the noises she heard, or to ask if she could take her pants off (to which her mother replied that she had to wait until I was gone). P4 talked extensively about her love of swimming and how APE was “really hot and sweaty.”

### **Participant 5**

Participant 5 (P5) was an 11-year-old male with whom I had previous experience working and seemed disinterested in the drawing and interview activities. P5 had a very flat affect and did not volunteer any information that was not specifically requested from him. For both interviews, he needed to be asked questions repeatedly. When he did answer, he had meaningful experiences to share. His drawing was quick but did represent his favorite activity (baseball), which he talked about during his interview. P5 was smiling and laughing throughout my observation of him in his APE setting and, though he struggled to perform the skills correctly, he tried repeatedly to perform the task in the manner in which he was asked. He got off task when he was required to combine skills—



such as dribbling and walking—something that was hard for him to do. During his interview, P5 had the distraction of a major thunder and lightning storm. He frequently stared outside, needed questions repeated, and often paused 15 to 20 seconds before responding. When I asked P5 if I could return to retry the interview, he politely said, “No, thank you.” His parents asked him again at a later time and received the same response.

### **Participant 6**

Participant 6 (P6) is an 11-year-old male. He had a previous relationship with me and ran up and gave me a hug when we met. He proclaimed, “I’m so glad to play with you again!” When I explained that it would not be in the type of play that he was used to, he asked if I was going to make him work; when I explained the study as we reviewed the assent form, he said, “This isn’t so bad.” P6 initially was stuck on what type of pen or crayon he wanted to use, but when he started, he settled on red and black markers, because they are his “favorite colors.” P6 smiled and appeared happy as demonstrated by these smiles and laughter throughout his time in APE. His teacher had him do physical fitness to work on “his skills in junior high next year and the fitness test.” Throughout his semistructured interview, P6 struggled to talk loudly enough to be heard. I have experienced this with him in the past; for no self-described reason, P6 would go from talking in a normal tone to whispering and, then, when told to talk louder, would yell. Although parts of his interview were hard to hear, meaningful experiences were still garnered from his data.

**Participant 7**

Participant 7 (P7) is an 11-year-old male who had no previous relationship with me but opened the door (after a prompt I overheard from his mother) and welcomed me into the living room without hesitation. P7 read the assent form while his mother read the consent form and asked, “So you’re going to have me draw, watch me, and then ask me questions?” I replied that that was correct, and he signed the form. During his drawing description, P7 talked mostly about the hair of his APE teacher and paraprofessionals and did not want to add them doing anything or discuss what they could be doing. During his observation, P7 was happy, as evident by his smiles and laughter while playing tetherball and four square. Though he got hot and had to take a break, he smiled, laughed, and had an overall positive demeanor. P7 was extremely talkative and volunteered a lot of information throughout his semistructured interview, hardly pausing for breath in-between sentences or thoughts—occasionally, P7 needed to have a question repeated because he got off topic. At the end of the interview, P7 listed, for over 4 minutes, positives and negatives about his experience and seemed very excited to share his thoughts. As I was leaving, he told me that it was “really great to just get to talk to someone about what he does during the day.”

**Participant 8**

Participant 8 (P8) is a 14-year-old male with whom I had had no previous contact. P8 seemed initially unsure about talking with me; for the first 5 minutes, he had his face down, with his eyes looking upward. After reading the assent form and then talking to me about it, he seemed to relax, and his body became less tense. P8 was happy to draw a

picture about his experience and commented that he “loved drawing.” During the observation, P8 began APE warming up with his peers far away from where his direct instruction would take place. Although I could not hear what was being said during this time (I was located discretely and out of earshot), P8 laughed, pushed his male peers jokingly, and volleyed the shuttlecock with ease with his partner, who was in general physical education. After the warm up, P8 came to receive more direct instruction from his APE teacher. P8, the paraprofessional, and the APE teacher played badminton, and it was boys versus girls (paraprofessional and P8 on one team, APE teacher on the other). P8 became frustrated when his team was losing (swinging his racquet hard in the air and frowning) and taunted the APE teacher when he was winning. He gave high fives unprompted to his teammate, and, although he did not volley well when he had to move from a stationary position, he frequently was an active part of rallies across the net. P8 frequently smiled and laughed throughout his experience. During the semistructured interview, P8 had described his experience as “fun” and laughed frequently during his interview but also commented on “how fat he was” and how “he needed to lose weight.”

### **Participant 9**

Participant 9 (P9) is a 12-year-old male. I had no previous contact with him before the study. His mother greeted me at our first meeting and let me in the home. P9 stood back hesitantly but then shook my hand. P9 initially was embarrassed to draw his APE experience even though he described himself as a good artist. I told him that we did not have to do the drawing if he did not want to; after talking about a variety of other subjects related to drawing (the different markers and activities that he does in APE that

he could draw), he volunteered to draw if I promised not to look while he worked. During his observation, P9 played basketball with his APE teacher and a paraprofessional. He was smiling for most of the class but became frustrated (shouting and clenching his fists) when he could not make a shot. The teacher and paraprofessional did not adapt the game, and P9 never made a shot during the game. P9 smiled frequently while discussing APE and curled up next to me on the couch while sharing his experiences.

### **Participant 10**

Participant 10 (P10) is a 10-year-old male with whom I had had no previous contact. P10 was excited and smiled the first time we met, holding my hand and leading me to the couch. He wanted to draw “Bat Kid” when I provided him the drawing prompt. I told him that he could draw Bat Kid after he drew what I needed, and I provided him with an extra sheet of paper. He obliged. Throughout P10’s observation, he participated with a smile on his face, even though he was unsuccessful with or struggled to complete the tasks without verbal or physical prompts. He took water breaks frequently. P10 needed questions repeated during his interview and needed me to hold the Batman watch that he was playing with. I also had to turn the interview recorder over so that he would not perseverate while counting numbers during the interview.

### **Drawings and Observations**

All 10 participants drew a picture of their experience in APE. Some participants were more willing than others to engage quickly in the drawing, and some needed time to talk with me about their likes or interests before feeling comfortable enough to proceed. One participant (P10) described drawing as “embarrassing,” but, after I agreed to not

watch, drew a picture of himself in APE. The prompt was, “Draw me what your APE class looks like.” The participants were able to share their experience in APE through this medium. Of the participants who drew pictures that included figures, none drew sad faces or symbols that would indicate a negative experience, and these children did not describe the pictures as negative, either. Participants 1, 3, 4, 6, 8, 9, and 10 all drew figures in their pictures that were smiling.

All of the participants were observed in their typical APE setting on their typical day, except P3, who had to finish his APE session after it was interrupted by a fire drill. Three participants were on consult, and seven were observed while receiving direct service. With the exception of P3, all participants and their APE teachers described their observation day as typical or better.

During the observations, all participants were happy most of their observation period. This was evident in the smiles and high fives they gave their APE teacher when they arrived to take them to APE, their smiles throughout their time in APE, and the positive comments that I heard during their observations such as “I love basketball” (P5) or “this is really great” (P6). P10 became frustrated during his basketball game because he could not make a shot. Although he said he was hot and wanted to stop, he did not leave the court during his water break and continued attempting to make a basket. He had his hands clenched in frustration and said how mad he was for a 5-minute period of his 20 minutes in APE. P9 and P7 participated in their APE time willingly, but also complained about being too hot and needed water breaks. The activities that I observed varied between the participants, although some were similar. As shown in Table 2, I

observed fitness and modified games or games with a component of object control for all the participants.

The observations and drawings were used as two different data triangulations for the semistructured interview. To determine accuracy, the drawings were compared with the participants' descriptions of their experience in APE and to the APE teachers' reports of the activities done throughout the school year. Table 2 summarizes this information.

As indicated above, all of the participants were able to recall what had occurred throughout the school year in their APE setting either in their drawing or during the interview. The drawings were clear without participants' narrative explanations, except for P5's drawing—he had quickly drawn what he described as a baseball diamond. Most participants, except P2 and P5, drew people (either stick figures or more detailed illustrations) participating in the activities that they described as their favorite. P7 was the outlier, as he was the only participant to not show any activity in his picture. The pictures for the participants can be seen in Figures 1 and 2.

### **Narrative of Themes**

For a theme to be considered overarching in this study, it had to repeat throughout the individual narratives and be a narrative shared among the participants (Smith et al., 2009). Four overarching themes came from the participants' experiences in APE through observation, drawing analysis, and semistructured interviews. These themes were positive experiences of ASD in APE, importance of being physically active, sedentary in spare time, and desire for time in APE time (see Table 3).



Figure 1. Drawing by P1.

BASKETBALL



Figure 2. Drawing by P4.

Table 3

*Narrative Themes and Codes*

Theme	Code	Participant quote
Positive Experience in APE	Excited, feels good, good	<p>“I’m excited for days...I mean I wish I could do it two days” (P1)</p> <p>“It makes me feel good to get exercise” (P1)</p> <p>“Pretty fun” (P1)</p> <p>“Makes me feel glad” (P1)</p> <p>“Good in general” (P1)</p> <p>“Teacher L is a good teacher” (P1)</p>
	Good, Favorite time	<p>“My favorite time is PE” (P2)</p> <p>“Well it felt good” (P2)</p>
	Happy, Fun	<p>“It makes me exhausted but happy” (P3)</p> <p>“It’s fun” (P3)</p>
	Like	<p>“I like the way the basketball feels” (P4)</p>
	Good, Like, Happy	<p>“It makes me feel heavy. Heavy is a good feeling” (P5)</p> <p>“It makes me feel good” (P5)</p> <p>“I do like APE” (P5)</p> <p>“Happy” (P5)</p>
	Happy, Like	<p>“Happy” (P6)</p> <p>“All of them (the activities in APE) make me happy” (P6)</p> <p>“I like dribbling” (P6)</p>
	Fun, fun stuff	<p>“Games can be pretty fun”(P7)</p> <p>“One good thing I could say is that sometimes the games can be pretty fun. Because like, you know you can really do some fun stuff.” (P7)</p>
	Fun	<p>Something good about it – makes you have a lot of fun. That’s it. (P8)</p> <p>“Makes me feel like I’m loosing weight” (P8)</p>
	Like	<p>“I like it” (P9)</p>
	Good, like, love	<p>“Good” (P10)</p> <p>“I like it” (P10)</p> <p>“I love to play bowling” (P10)</p>

*(table continues)*



Theme	Code	Participant quote
Importance of Being Physically Active	Yes, too much screen time if not active	<p>“Yes it’s important” (P1)</p> <p>Because when I’m not active I’m on my screen all day. Like on a weekend literally, my friends have pools to learn to swim. I also have one of those big trampolines at my dad’s house. And that keeps you really active and when I’m not active I’m staring at a screen all day. Just crouching under a blanket in my room and just getting up to eat snacks (laughter). (P1)</p>
	Yes, good, Positive for health	<p>“Yes it is” (P2)</p> <p>“Because it’s good for my health” (P2)</p>
	Good for health, Weight loss	<p>“Well before I had APE it would look like I had a my stomach twice the size it is now. So yeah, it is important for my health” (P3)</p> <p>“I used to look like Santa Clause” (P3)</p>
	Good for health, live longer	<p>“Yes, my dad says it’s important to like, live longer.” (P4)</p> <p>“I need to do a little bit of it every day” (P4)</p>
	Yes	<p>“Yes” (P6)</p>
	Good for health Just need to	<p>“Because if you don’t you could probably die” (P7)</p> <p>“There’s just some things you need to do” (P7)</p>
	Good for weight loss	<p>Yeah. I wanna lose some weight. I’m friggin fat right now! I can also pick up people ... kinda. One day I picked up my friend like this, I lifted him up like this. (P8)</p> <p>“Something good about it is it makes you have a lot of fun” (P8)</p>
	Yes	<p>“I just think it is” (P9)</p>
	Yes	<p>“Yes” (P10)</p>
	Sedentary in Spare Time	Sitting, screen time
Screen time, video games		<p>“We just basically sit around and talk” (P1)</p> <p>“Computer time of course. I like to play on the WiiU a lot” (P2)</p> <p>“I play video games” (P2)</p> <p>“I play them when I’m home” (P2)</p>

*(table continues)*

Theme	Code	Participant quote
	Screen time, videos	“At home I use the computer and be lazy because I have two whole fans on YouTube and that’s priceless” (P3) “I like to make videos on YouTube (P3)
	Screen time, videos	“I like to go on computers, watch TV and play with my iPad. I watch a lot of videos.” (P4)
	Screen time	“I go on the computer” (P5)
	Screen time	“iPad” (P6)
	Sitting, TV, Screen time	“I ususally sit down and relax. Sometimes I watch TV.” (P7) “I usually play on my tablet” (P7)
	Screen time, video games	“Watch video games and play a lot of violent games” (P8)
	Sitting	“I like to read and write” (P9)
	Screen time	“Computers” (P10)
	More time	“Three or four times a week” (P1)
Desire for Time in APE		“2 ½ hours!” (P1)
	Every day (Same amount as currently attending)	“I’d go every day” (P2) Well, I’d go after I changed my clothes” (P2)
	Same amount	“I’d go the same amount I go” (P3)
	Same amount	“I would go a little bit, you know, like I go now” (P4)
	Every day (same amount as currently attending)	“I’d go every day” (P4)
	Same amount	“I’d go on Tuesdays” (P5)
	Same amount	“The same amount as I go now” (P6)
	More, as much as possible	“I’d go as much as possible!” (P7)

Most of the time	“Well I’d go most of the time because I want to lose weight” (P8)
Every day (more than currently going)	“I’d like to go Monday to Friday” (P9)
Same Amount	“I’d go the same amount as I go now” (P10)

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**Theme 1: Positive Experiences of ASD in APE**

Individuals with ASD are frequently reported as having motor difficulties, which include gross motor (Accardo & Barrow, 2014; Cook et al. 2013; Fournier et al., 2014; Liu et al., 2014) and object control skills (Lloyd et al., 2013; Schurink et al., 2012; Whyatt & Craig, 2013). These skills are two areas of focus for individuals receiving APE services. As reported by both the participants and the APE teachers, the participants explored and developed various gross motor and object control skills throughout the school year. Although these skills can be challenging, all participants reported their APE experiences positively during the semistructured interview. A statement by P3 summarized the experiences both expressed and observed by all the participants and echoed similar findings from Healy et al. (2013):

Me: When you go to adapted physical education how does it make you feel?

P3: Exhausted and happy.

During my observations, all participants demonstrated positive affect—relaxed body posture, smiling, laughing, and making positive comments to their teacher in the APE setting. Even participants who became frustrated during APE (P8, P9) still laughed, smiled, and talked positively to their teacher before and after the frustrating event. Overall, all participants expressed a shared enjoyment of their time in APE (Table 4).

**Theme 2: Importance of Being Physically Active**

In addition to having positive feelings about their APE experience, 9 of the 10 participants believed in the importance of being physically active and how it is good for a person's health. These responses varied from short responses to longer narratives (Table

Table 4

*Theme 1: Positive Experiences in APE*

Quotes	
Me:	When you go to APE with teacher [name omitted] how does it make you feel?
P1:	I'm excited for the days ... I mean I wish we could just do it two days!
P1:	It's just good in general.
Me:	What do you feel when you play basketball – does it make you feel good or stressed? Is it easy or hard?
P2:	It's so easy.
Me:	What's the easiest part about basketball?
P2:	Making shots.
Me:	What's the hardest part about basketball?
P2:	Missing!
Me:	So how did you feel when you were playing Frisbee?
P2:	Well I felt good.
Me:	When you go to adapted physical education how does it make you feel?
P3:	Exhausted and happy.
P3:	So first I would make us run laps because I like running laps it's the one thing I like!
P4:	I like the way the basketball feels. It's the same for lacrosse now that I think about it.
Me:	When you go to adapted physical education, how does it make you feel?
P5:	Happy.
Me:	When you go to APE with teacher Lindsey how does it make you feel?
P6:	Happy.
Me:	What else do you want to tell me, good or bad about your APE class?
P6:	I like dribbling.
P7:	One good thing I could say is that sometimes the games can be pretty fun. Because like, you know you can really do some fun stuff.
P8:	Something good about it – makes you have a lot of fun. That's it.
P9:	I like it.
P10:	Good.
Me:	What feels good about it?
P10:	It's great.
P10:	I wanna do ... I love to play bowling with [name omitted] and [I want to] bring my brothers too.

Table 5

*Theme 2: The Importance of Being Physically Active*

Quotes	
Me:	So the reason you're in APE class is so you can be more physically fit for like the rest of your life do you think it's important for your body
P1:	Yes it is.
Me:	Why do you think that?
P1:	Because when I'm not active I'm on my screen all day. Like on a weekend literally, my friends have pools to learn to swim. I also have one of those big trampolines at my dad's house. And that keeps you really active and when I'm not active I'm staring at a screen all day. Just crouching under a blanket in my room and just getting up to eat snacks (laughter).
Me:	So the reason you're in adapted physical education is so that you can be more physically active for the rest of your life – do you think that's important?
P2:	Yes, it is.
Me:	Do you think it's important for your body?
P2:	Yes it is.
Me:	Why do you think that?
P2:	Because it's good for your health.
Me:	Ok. So the reason you're in adapted physical education is so that you can be more physically active for the rest of your life. Do you think this is important for your body?
P3:	Well, actually before I had APE it would look like I had my stomach was twice the size that it is now. So yeah, it is important to my health.
Me:	That's awesome. Ok, so the reason you're in APE class is so that you can be more physically active for the rest of your life. Do you think this is important for your body?
P4:	Yes, my dad says it's important to like, live longer.
Me:	And why do you think that?
P4:	Well, cos I have to do it at least a little bit every day.
Me:	So the reason you're in APE class is so that you can be more physically active for the rest of your life. Do you think this is important for your body?
P6:	Yes.
P7:	Because if you don't you could possibly die
Me:	So the reason you're in APE is so that you can be more physically active for the rest of your life, do you think that's important for your body?
P8:	Yeah. I wanna lose some weight. I'm friggin fat right now! I can also pick up people ... kinda. One day I picked up my friend like this, I lifted him up like this.
Me:	What do you think about physical activity is good for your body?
P9:	I just think it is.
Me:	So the reason you're in APE is so that you can be more physically active for the rest of your life, do you think that's important for your body?
P10:	Yes.

4). Participant 5 was the only participant who did not believe that being physically active was important, though he would not elaborate why he felt this way.

Though none of the participants were able to articulate what happens in the body physiologically during exercise, most participants agreed that physical activity was important for general health reasons. Parents' belief (interpersonal) in the importance of physical activity as well as the participants' beliefs about how fun APE was or their sensory experiences within that context (intrapersonal) are seen here as facilitators to a positive belief in the importance of physical activity. Participant 5 was the only outlier to this question. His response to the question "The reason you are in APE is so that you can be more active for the rest of your life, do you think that is important for your body" was "no". Regardless of additional prompts and attempts to garner a more meaningful response, he would not elaborate.

### **Theme 3: Sedentary in Spare Time**

Although all the participants understood the importance of being physically active, only two participants reported being physically active in their spare time (P1 and P4). All participants reported a sedentary lifestyle, with their preferred activities involving electronics and video games, as well as sitting with friends and drawing (Table 6). Research mentioned above discussed the challenging nature of physical activity for those with ASD. Furthermore, research has shown that individuals with disabilities have obesity rates of anywhere from 22% (Must et al., 2014) to 36% (Maïano, 2011). Although participants might enjoy physical activity in the APE setting, in the present sample, this enjoyment did not carry into their personal lives, except for two participants.

Table 6

*Theme 3: Sedentary in Spare Time*

Quotes	
P1:	I just like to hang out a little with a couple of friends.
Me:	What do you guys do when you hang out?
P1:	We just basically sit around and talk.
P2:	Computer time of course. And I like to play on the WiiU lot. I know you have a Wii at home. Fortunately you don't have a WiiU yet.
P3:	I like to make videos on YouTube
P4:	I like to go on computers, watch TV, and play with my iPad. I watch a lot of videos.
P5:	Go on the computer.
P6:	IPad
P7:	I usually like to sit down and relax. Sometimes watch T V. I hardly get to do much on my free time. But T V, sometimes reading so I can get...that's the main stuff I do now. I used to be able to play on my tablet but that was now reduced to the weekends.
Me:	What kinds of things do you like to do on your free time?
P8:	IPad.
Me:	What do you like to do on your iPad?
P8:	Watch videos and play a lot of violent games (laughter).
Me:	What kinds of things do you like to do on your free time?
P9:	Reading and Writing.
Me:	What kinds of things do you like to do on your free time?
P10:	Computers.



P1 shared, after his mother prompted him from an adjoining room, that he played basketball sometimes with a friend. P4 reported a love of swimming and frequently swimming at home or with her father.

Obrusnikova and Cavalier (2011) found that parents and friends can be an important facilitator to physical activity for individuals with ASD; conversely, they can be a barrier. The participants in the present study reported both parents and friends as reasons for participating (or not participating) in physical activity in their spare time. Participant 3 shared that he has no friends, and because of this, he does not use any of the skills that he has learned in APE; instead he spends most of his spare time at home alone engaged in sedentary activities.

#### **Theme 4: Desire for Time in APE**

A final theme was somewhat surprising considering the extant literature's negative finding regarding motor skills for children with ASD and the participants' reported preference for sedentary behaviors. Specifically, none of participants in this study wished for less time in APE. Of the 10 participants in the study, 6 said that they would go to APE more or as much as possible, and 4 shared that they would want to continue with the same amount of APE (Table 7).

Eversol et al. (2016) studied the preferred activities of individuals with ASD and found that individuals who are typically developed enjoy formal and physical activities significantly more than those with ASD. Knowing this, the theme that children with ASD would elect for the same amount or more time in APE (a structured setting involving physical activity) is different from other findings.

Table 7

*Theme 4: Desire for Time in APE*

Quotes
P1: I probably ... three or four days a week.
Me: How long would you go?
P1: 2 ½ hours!
Me: If you could go to physical education as much or as little as you wanted how often would you go?
P2: Pretty often of course.
P2: Well I'd go every day.
P3: The same amount I go.
P4: I'd go every day.
P5: I'd go only on Tuesday. (same amount he was currently attending)
P6: All the...
Me: Talk a little bit louder I can't hear you.
P6: Go now.
Me: You'd want to go now? So would you want to go every day, the same amount as you go...
P6: The same amount as I go now!
P7: I'd go as much as possible.
P8: Well most of the time because I wanna lose weight.
P9: I would like go for like Monday to Friday.
Me: So like all the school days of the week?
P9: Yeah.
P 10: Same amount as I go now.

### **Barriers and Facilitators**

The socioecological model (McLeory et al., 1988) helps to identify barriers and facilitators to participation in a variety of settings, including physical education. This model has been used in the past with children with ASD and individuals with disabilities in studies that examined afterschool participation (Obrusnikova & Cavalier, 2011) and physical activity characteristics (Gyurcsik et al., 2006). This study utilized this model as well. Throughout the analysis of the participants' data, I identified barriers and facilitators to participation in APE. Some of the participants described using the skills they learned in APE in other settings with peers or family members. The barriers and facilitators to participation in APE and/or the use of the skills gained in APE in other settings can be classified as internal (intrapersonal, or personal beliefs about physical activity) and external (interpersonal; i.e., between friends, family members, and peers). The physical environment was another external factor that was sometimes a barrier and sometimes a facilitator to the participant's experience in APE.

#### **Intrapersonal**

As discussed in Chapter 2, intrapersonal factors have to do with the characteristics of the individual and how they respond to the environment and individuals around them (Bardus et al., 2014). Intrapersonal barriers and facilitators reflect an individual's internal beliefs. This factor was seen in the participants' perceptions of the APE activities they participated in and how they viewed the importance of physical activity. These perceptions could be barriers as well as facilitators.

Most participants shared positive sentiments of both their APE experience and physical activity, and all participants reported some positive aspect of their time in APE, even if they had a partially negative experience. Most participants drew pictures in which the people in them were smiling while participating in a physically active experience. In some pictures, it was evident in the picture that physical activity was occurring, such as in the drawing by P1 (see Figure 1).

Participants shared that, during APE, they feel too hot, sweat too much, and wish to be cooler. Conversely, some participants shared positive aspects of APE. P6 reported that it fulfills a sensory need by making him feel heavy (he described this as a positive feeling). P1 viewed APE as a break from the florescent lights. It could also be argued that the participants' sensory perceptions of their APE experiences are intrapersonal in nature, as each individual with ASD has his or her unique sensory perceptions. Intrapersonal factors were also demonstrated by the participants in their self-perceptions of body image. Participant 3 commented on his body size without physical activity as "Santa Clause" and Participant 8 described himself as being "friggin fat".

### **Interpersonal**

Interpersonal barriers and facilitators are brought on by interactions with people who have key roles in the individual's life. Obrusnikova and Cavalier (2011) identified peers and family members as major influences on after-school activities for individuals with ASD. The present study found similar influences for the participants' use of skills learned in APE in other settings, both in school (recess) and after school. Participants in this study varied their influences but shared through their semistructured interviews that

parents, siblings, and peers all influenced their participation regarding use of skills learned in APE in other environments.

Family members were seen as an influence in a variety of ways. Participant 4 was very excited to swim in her pool with her family and said that her dad said physical activity was “important because it helps you live longer.” Participant 6 practiced dribbling skills at home with his parents and brother and said that it “was really fun”. Participant 7 shared that though he had a basketball and basketball hoop at home, they “hadn’t touched it in years.” Participant 10 had both a basketball hoop and tetherball at his house and shared that he played both with his family.

Peers were seen as both a positive influence and a negative influence. Recess was an area most expressed by participants as having a positive and negative impact on using the motor skills that they had learned in APE in other settings. Participant 2 shared that he played basketball with his friend at recess. Participant 3 shared that he had “no friends” and “was forever alone” at recess and that is why he doesn’t use any of the skills he has learned in APE at recess. Participant 7 said he played both basketball and four square at recess “a little bit”.

Participant 1 was the only participant to comment on participating in physical activity outside of the school setting with a peer. When asked if he ever played activities he learned in APE with friends, he first responded no, but when his mom (who was listening in the other room) interjected “what about basketball?” he said, “oh yeah, I’ve been playing basketball with ‘A’.”

All participants spoke positively about their APE teachers and the paraprofessionals who were helping facilitate interactions with the participants who were receiving consult for their APE services. APE teachers are a clear interpersonal barrier or facilitator to the APE experience; in particular, research has identified teachers as having a direct role in student learning and outcomes, specifically within the socioecological model (Ebbeck, 2015). The APE teachers in the present study all knew the participants well and commented on both personal and school-related information about them. The teachers frequently joked and shared ideas and thoughts with the children, and the children reciprocated in kind.

### **Physical Environment**

Gyurcsik et al. (2006) added the physical environment as a sixth barrier or facilitator in the socioecological model, especially physical activity. Within the context of the present study, participants directly discussed this factor or were indirectly observed as having been influenced by this factor. Throughout the observation process, participants experienced many distractions due to the open nature of the classes. Of the 10 participants, 6 had their APE held outside, on a blacktop, where I observed the following distractions: air temperature (too hot); animals (birds, squirrels, and bugs); uneven ground surfaces; noise from passing cars and from teachers, students, friends, and peers walking through and around the space without regard for the instruction that was occurring. Although most people would consider these distractions to be small, individuals with ASD can become easily distracted and struggle with set shifting, or the ability to shift their attention from one task to the next (Yerys et al., 2015).

In addition to my observations of the barriers in the APE environment, participants also commented frequently that the environment was hot and bright and that they needed breaks to drink water, sit, and cool down. These stops affect the amount of time that individuals with ASD receive their APE service. In a meta-analysis of interventions designed to increase moderate to vigorous activity levels in physical education, Lonsdale et al. (2013) found that students needed to increase their time spent at this activity level to increase health benefits. Having too many distractions or sensory concerns causes breaks in engagement in physical activity. As APE is a subdiscipline of physical education, having fewer distractors and higher levels of engagement in physical activity is as important for individuals with disabilities as it is for their typically developed peers.

Conversely, one participant also described his environment in APE positively:

P1: Makes me feel good to get some exercise. Sometimes my eyes hurting . . .  
just when my eyes are not hurting to get some exercise.

Me: Do your eyes hurt when you're doing APE or when you're in the classroom?

P1: No they don't. I think it's from fluorescent lights. Some days I come home  
and take an aspirin!

One other participant commented on "liking the feeling of the basketball" (P4). The rest of the participants in this study did not comment unprompted on their sensory experiences or other barriers or facilitators in APE, and because sensory experiences were not the focus of the study, it was hard to gain a larger picture of the sensory concerns of individuals with ASD in APE. Overall, the participants' direct reports

through their drawings and semistructured interviews and my observations of the participants in their APE settings indicated that interpersonal, intrapersonal, and environmental barriers and facilitators influenced the experience children with ASD had in the APE setting.

### **Research Question Analysis**

The main research question for this study was, what are the feelings and perceptions of middle school children with ASD regarding their APE experiences from their perspective? These experiences can be summarized by reporting the results for the following subquestions.

#### **Subquestion 1: How Do Children With ASD Interpret Their Experience in APE?**

The participants in this study interpreted their experiences as mostly positive. All 10 participants indicated positive feelings of most, if not all of their experiences in the APE setting through their drawings, observed activity, and interviews. These experiences were described as feelings of happiness regarding the activities they were participating in, laughter and smiles during their time in APE, willingness to participate during their observed experience, and positive picture descriptions and images in response to their drawing prompts. Participants also had positive feelings toward all their teachers and paraprofessionals associated with their APE experience. This was observed throughout the participants' sessions in their smiles when the APE teacher arrived to take them to APE, the high fives and laughter that happened throughout the instruction, their level of engagement in physical education, and time spent on the tasks that were asked of them.



In addition to the direct observations and positive verbal reporting of their experiences, when prompted to “draw what your APE class is like for you”, 7 of the 10 participants depicted people smiling while participating in some form of physical activity. The other three participants had either neutral faces (P10) or did not depict people in their picture (P2 and P5).

Additionally, sensory perceptions of these participants arose in both the semistructured interview and my direct observations. P4 described liking the feel of the basketball when sharing why she liked playing that activity in APE. Participants 3, 4, 6, and 7 described negative experiences in some aspect of their APE setting, having a more negative association with parts of their experiences than the rest of the participants. These negative experiences were related to being too hot or too tired. The participants needed multiple water breaks, and I overheard participants complaining about the temperature during my observations.

**Subquestion 2: What Insight Can Be Gained From These Experiences That Can Inform How Teachers and Staff Support Middle School Children With ASD in Their APE Experience?**

Understanding what participants with ASD experience in their education services is an important and missing piece of ASD research. This gap in the literature has been called into focus at the international level (Robinson, 2015). Although all individuals in the present study classified different parts of their experience as positive, they all shared an overall enjoyment of their experience in APE.

More important than APE being a positive experience for individuals with ASD is the knowledge that, in this study, participants were able to accurately recall and articulate their experiences, likes, and dislikes. They were also able to project ideas about what they would want to do if they were the teacher. This was evident in the triangulation of data between the participant drawings, observations, feedback from the APE teachers about the APE activities, and the semistructured interview. This knowledge should help current and future APE teachers program for their ASD students by realizing that students with ASD understand and have opinions about their classroom activities and services that are being provided to them.

Additionally, understanding the internal and external factors that can affect a child with ASD in APE could help educators provide better services and improve the attitude and performance of these students in their class by being made aware of the barriers and facilitators that can affect this population. In this study, interpersonal, intrapersonal, and environmental factors played roles in facilitating participation in and providing barriers to participation in physical activity in APE and in more generalized settings such as recess or at home.

### **Subquestion 3: What Patterns (If Any) Are Shared Across the Examined Cases for Children With ASD in APE?**

For this study, patterns across the participants included positive experiences of ASD in APE (Theme 1), importance of being physically active (Theme 2), sedentary in spare time (Theme 3), and desire for time in APE time (Theme 4). These patterns are shown in Table 8.

Table 8  
*Themes by Participant*

Theme	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10
Positive Experience in APE	×	×	×	×	×	×	×	×	×	×
Importance of Being Physically Active	×	×	×	×		×	×	×	×	×
Sedentary in Spare Time	×	×	×	×	×	×	×	×	×	×
Desire for Time in APE	×	×	×	×	×	×	×	×	×	×

As stated earlier in the chapter, for a thought to be classified as a theme, it had to occur repeatedly in multiple participants' dialogue. All participants reported that they had positive experiences in APE and all of the participants believed that it was important to be physically active with the exception of P5 who did not think it was important to be physically active, but was not willing to express why he felt that way. All participants reported spending their spare or free time engaged in sedentary activities, though two did report active engagement as well. All of the participants expressed a desire for time in APE and no participant expressed a desire to go to APE less than they already go.

### Summary

In summary, I identified four themes for children with ASD in APE in this study: positive experiences of ASD in APE, importance of being physically active, sedentary in spare time, and desire time in APE. The socioecological model has been used as a

framework for studies examining after-school participation in children with ASD (Obrusnikova & Cavalier, 2011) and to explain physical activity characteristics of children with disabilities (Gyurcsik et al., 2006). Using this model as the conceptual framework for the study, internal factors (intrapersonal barriers and facilitators) and external factors (interpersonal and environmental barriers and facilitators) were found as barriers and facilitators to children with ASD in APE across the participants.

In Chapter 5, I summarize the current study. I address the current literature on the topic of ASD in an APE setting, provide an interpretation of my findings, and address how I think this study falls within that scope. I address limitations to the current study, which were mentioned previously in Chapter 1, as well as provide recommendations for future research in this field of study. Additionally, I discuss this study's implications for social change, how this study could influence direct service in the field of ASD and APE, as well as implications for data collection methods used for this population. Chapter 5 ends with a conclusion of this study.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

The purpose of this study was to understand how children with ASD interpret their experience in APE. Because attempting to understand the experiences of individuals with ASD is a relatively new field of study (Ashburner et al., 2013; Healy et al., 2013; Preece & Jordan, 2010), the aim of this study was to add to the body of knowledge surrounding experiences of these individuals.

This study found that children with ASD were able to share their experiences in a meaningful way through drawing, observations, and semistructured interviews. Key themes that emerged from the experience of the participants were positive experiences of ASD in APE, importance of being physically active, sedentary in spare time, and desire for time in APE time. Barriers and facilitators to the experiences of children with ASD in APE included intrapersonal, interpersonal, and environmental factors.

### **Interpretation of Findings**

Children with ASD have significant motor deficits (Leonard et al., 2014) and struggle with gross motor (Cook et al., 2013) and object control skills (Whyatt & Craig, 2013), two areas that are targeted in APE services. Individuals with ASD have been perceived in previous research to struggle with communicating personal experiences (Kana et al., 2014; Loukusa et al., 2014; Moran et al., 2011). This study has shown that, for this sample, children with ASD have the ability to interpret and share their feelings in a meaningful way. These findings are similar to studies by researchers (Barrow & Hannah, 2012; Healy et al., 2013; Humphrey & Lewis, 2008; Kirby et al., 2015; Preece

& Jordan, 2010) who have been able to successfully interview children with ASD within the context of a study. This study extends the knowledge of this use of method for this population and identifies semistructured interviews as a way to gather information from children with ASD regarding their experiences.

This study has shown that there are barriers and facilitators to APE participation among children with ASD. Similar to Obrusnikova and Cavalier's (2011) study, the present analysis used the socioecological model and found peers and family to be strong influences regarding physical activity, particularly the use of APE skills both in an out of that setting. These barriers and facilitators include both internal factors (intrapersonal) and external factors (interpersonal and environmental). Within the population of this study, intrapersonal factors included the participants' belief in the importance of physical activity as well as their individualized sensory needs. Interpersonal factors included the support or lack of support from family and friends to use the skills learned in APE in other contexts. Finally, environmental factors included distractors that were present in the various APE service locations, which ranged from outside to cafeteria space.

Furthermore, this study has shown that a sample of children with ASD had shared experiences in APE. Specifically, at least half of the participants had a positive experience in their APE setting, a sedentary lifestyle in their leisure time, an understanding of the importance of physical activity for a healthy lifestyle, and a desire to spend time in their APE settings. This shared experience of individuals with ASD in APE has never been examined and, as such, adds to the body of knowledge in this newly developing area of research.

### **Limitations of the Study**

This study used an interpretive phenomenological approach and, therefore, a purposeful, homogenous sample. Because of this, findings from this study cannot be generalized to the ASD population as a whole. Participants in this study had narrative retell capabilities of at least a second-grade level; the experiences of children with ASD receiving APE who have lower language capabilities or who are nonverbal were not addressed.

While conducting this study, I frequently thought of additional follow-up questions and probes that would have been beneficial in gathering more information from the participants. To add to the validity of the study, I followed the questions in the order that they were written. However, because of the individuality and the spectrum of individuals who have ASD, at times, I thought that more probes or a different question order would have gathered more information. Whereas typically developed children may have shared more information in the semistructured interviews, the participants in this study, who had ASD, would sometimes only provide direct and concise answers to questions. Although the interview questions were detailed and had been reviewed by experts in the field for content, they were limited in the information that they were able to capture.

Few researchers have interviewed children with ASD, and though high-functioning adults with ASD have shown capabilities, this limited body of research made it challenging to build on previous interview strategies. I utilized the expertise of researchers who have conducted studies on children with ASD in a movement setting and

who have qualitative research experience, but there is still a great need for methodologies in this area. Because of this, my methods may have only been successful for this sample population.

As with any qualitative study, the researcher brings bias to the research setting. I work in the field of APE and work exclusively with individuals with ASD. I journaled and took notes throughout the research process to help alleviate bias, but it still might have been present. Finally, although I had not worked with any of the participants in this study in over a year, I had worked clinically with four of the participants (P2, P4, P5, and P6), which might have positively biased their responses to me or helped me to understand what they were communicating more effectively than a stranger might have understood.

### **Recommendations**

This study was unique in that it was the first study, either quantitative or qualitative, to offer insight into the experiences of individuals with ASD in an APE setting. The participants in this small sample exhibited the ability share their experiences through drawing and semistructured interview in a meaningful way. First, I recommend that more studies examine the use of APE by children with ASD, as well as their relationships with one another in this setting. Additionally, more research using firsthand accounts of individuals with ASD is needed to better inform the field of how they perceive their learning settings. Finally, more qualitative research is needed to build a foundation for larger, quantitative studies.



### **Further Exploration of ASD in APE**

This study was the first to explore ASD in the context of APE. To date, no studies have examined any aspect of ASD within the APE setting. Few studies have examined how children perceive their experiences in physical education. Healy et al. (2013) examined how high-functioning children with ASD perceived their physical education experiences in the United Kingdom. Other studies have examined methods to improve services within the physical education setting, such as using social stories (Sandt, 2008) or other visual supports (Fittipaldi-Wert & Mowling, 2009). The findings of the present study showed that, although this sample of children with ASD understood the importance of physical activity and enjoyed participating in APE services, these behaviors and thoughts did not, for most participants, translate into physical activity outside of that controlled setting. Studies that examine how to translate this belief into action could be an important way to promote positive health outcomes in this population.

Because children with ASD have motor deficits, as described in depth in previous chapters, and given that obesity is a greater health concern for individuals with disabilities than it is for typically developed individuals, understanding how children perceive the APE environment and finding better methods of serving this population could be important to improving the health outcomes of children with ASD. Regardless of the motor impairments described in the literature and the sedentary lifestyle choices prevalent among this population, this small sample showed not only a knowledge of the importance of physical activity but a desire to participate in this service at the same level or more than they currently attended. More research should be done to establish if this

sentiment is shared by a larger population with this disability and if spending more time in APE is beneficial in improving health outcomes.

### **Use of Firsthand Accounts**

Firsthand accounts of individuals with ASD have historically focused on their much discussed sensory needs (Jones et al., 2003). Firsthand accounts of experiences for individuals with ASD have begun branching into other areas of research, with studies on the emotional experiences of ASD (Jones et al., 2001), movement and sensory differences (Robledo, Donnellan, & Strandt-Conroy, 2015), and the experiences of individuals with ASD in college (Gelbar, Smith, & Reichow, 2014). Still, limited studies have asked children with ASD to share their experiences. Children have been identified as stakeholders in their physical education experience (Klakk, Chinapaw, Heidemann, Andersen, & Wedderkopp, 2013); as stakeholders, and as part of a frequently occurring disability (Centers for Disease Control, 2016), children with ASD should have a voice in their education process.

The combination of semistructured interviews and drawings to explain a phenomenon has been underutilized in the research with individuals with ASD. Researchers have used interviews paired with photovoice (Enright & O'Sullivan, 2012), and some have used interviews (Healy et al., 2013; Muller et al., 2008) to elicit firsthand accounts from children with ASD. To date, however, this is the only study to use both interviews and drawings together to explain the experiences in physical activity among children with ASD.

Although gaining access to these students can be more challenging because of their protected and vulnerable nature, it does not mean that they do not have valuable dialogue to add to the body of knowledge about them. As Wright (2008) argued, there is value in researching pupils with complex needs if it can be done ethically. In the present study, not only were all the participants able to share their experiences, but also their experiences were corroborated by their APE teachers as accurate. Their data were triangulated for accuracy, and all the participants in this study understood what was happening to them in APE, knew why they were in APE, and had opinions about their experiences in APE. Knowing that these individuals have these qualities should encourage researchers to ask them more questions about what their experiences. This information would help professionals and family members better understand children's experiences and would inform services to the ASD population.

### **More Qualitative Research in Physical Education**

Finally, this study shows that meaningful, rich descriptive data can be gathered from a small population of children with ASD. Previous researchers have encouraged the use of qualitative research to examine phenomena in physical education. Although quantitative knowledge provides greater confidence in the results of a given, often specific relationship of variables, qualitative research is still important because it informs the development of theoretical and analytic frameworks (Locke, 1989). Particularly, qualitative research can be a tool to understand levels of participation (Allender, Cowburn, & Foster, 2006).

Within the context of this study, individuals reported intrapersonal, interpersonal, and environmental barriers to and facilitators of participation in APE. This information might not have been reported through other means of inquiry, particularly quantitative approaches, because the researcher would have come into the study with preconceived notions and ideas instead of letting all of the information that the participants shared unfold over time and through in-depth analysis. The level of detail that the qualitative data provided on these individuals' environmental concerns adds to the field's knowledge of APE participation levels for the ASD population.

### **Implications for Positive Social Change**

As the first study to examine how children with ASD interpret their experience in APE, this research coincides with Walden University's mission to facilitate positive social change by moving individuals with disabilities into the discussion of the services that they are receiving. Leaders in the field of ASD research have requested this movement (Robinson, 2015), and the nature of the present qualitative study adds to the body of knowledge for this area of study.

The World Health Organization (2010) has recognized the importance of physical activity for all individuals in an educational setting. Knowing that children with disabilities are more likely than their typically developed peers to be obese (Must et al., 2014), any understanding or insight of their experience can help inform future directions of research. This study's examination of a disability population in a subdiscipline of physical education could help build the foundation for future, larger studies of the ASD population in physical education.

This study used the socioecological model to examine the experiences of children with ASD in APE. Barriers and facilitators described by participants in this study included intrapersonal, interpersonal, and environmental factors as reasons for describing their APE experiences favorably or negatively and for using these skills in other settings. By understanding what these perceived facilitators and barriers could be in an APE setting for this population, school administration, current and future educators, paraprofessionals, and families of children with ASD may begin to better understand ways that children with ASD could be better served in the APE setting. When this occurs, children with ASD might be able to access better services, gain more skills, and live healthier lives by using these skills across their lifespan.

Finally, current and future APE teachers can use the participants' perspectives from this study to inform their own research. The findings might also inspire these educators to ask children with ASD from their own caseloads how their services can be better improved if they are not already taking this approach.

### **Conclusion**

I would like to conclude this study with a comment from one of the participants. At the conclusion of the interview, Participant 7 stated, "You know, it is really nice to have someone ask me what I thought." Many of the children showed signs of disbelief and excitement during every aspect of this study, beginning with being asked their permission and their opinion in the signing of the assent forms, through to the end of the study, when I asked them to member check their interviews.

Learning the barriers and facilitators to any individual's participation in a positive behavior is important. For this study, the themes I identified were having positive experiences in their APE setting, being sedentary in their spare time, understanding the positive effects of physical activity, and wanting time in APE. Barriers and facilitators for these participants included internal (intrapersonal) and external (interpersonal and environmental) factors.

It is important in all settings to better identify these factors for populations that, historically, have been thought of as incapable of sharing their experiences. This study focused on a small sample of children with ASD and explored their experiences in APE. Although this study's outcomes cannot be generalized to the ASD population as a whole, it is my hope that this study will help lay the groundwork for future studies with larger samples that, in turn, can help facilitate improved learning outcomes for individuals with ASD in the APE setting.

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## Appendix A: Permission to Conduct the Study in the School District

Administrative Offices

Letter of Cooperation from a Research Partner

Department of Special Education  
Principal

January 14, 2016

Dear Arkansas Josephine,

Based on my review of your research proposal, I give permission for you to conduct the study entitled Experiences of Middle School Children with Autism Spectrum Disorders in Adapted Physical Education within the School District. As part of this study, I authorize you to observe the participants with autism spectrum disorders in adapted physical education class. Your previous work in our district has been professional and previous studies have been conducted well. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities are only to provide you access to the participants who have signed or given verbal assent and parents/guardians have signed consent forms in your study. We will not need to see these in order to protect participant privacy, we will only need your participant's parents to give permission for you to observe the child in their APE program. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,

## Appendix B: Permission to use the Test of Narrative Retell–Second Grade

**Blagrove, Arkansas**

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**From:** LDG Information <info@languagedynamicsgroup.com>  
**Sent:** Friday, February 26, 2016 6:58 PM  
**To:** Blagrove, Arkansas  
**Subject:** Re: Research screening permission  
**Attachments:** Petersen et al., 2014.pdf

Ms. Blagrove,  
I have confirmed with one of our authors regarding your request to use the TNR on your study on how children with autism spectrum disorders perceive their adapted physical education experience.

Dr. Spencer replied, "She doesn't need permission to use the TNR for research. It is stated in the manual that we invite others to use our tools for research"

She asked me to forward an article of interest.

We would be interested in hearing about the results of your study.

Let me know if I can further assist you.

*Doris Snoozy*  
*Language Dynamics Group*  
Office: (307) 761-2494  
Fax (Toll Free): (855) 688-9021  
[www.LanguageDynamicsGroup.com](http://www.LanguageDynamicsGroup.com)

On Wed, Feb 24, 2016, at 05:58 PM, Blagrove, Arkansas wrote:

To Whom it May Concern,

I am conducting a study on how children with autism spectrum disorders perceive their adapted physical education experience. I am hoping to use the test of narrative retell as a screening tool for language/narrative retell capabilities and I am wondering if you could give me permission via email to do this or if you could direct me to an open source link if you have one available (I have downloaded the test already, I just need the permissions written formally for IRB).

Thank you so much for your consideration,

Josie Blagrove, ABD





## Appendix D: Parent Consent Form for Research

Your child is invited to take part in a research study about the experiences of middle school children with autism spectrum disorders in adapted physical education. The researcher is inviting school-aged children in grades 6 through 8 who are verbal with autism spectrum disorder (ASD) and who receive adapted physical education (APE) in [REDACTED] School District to be in this study. This form is part of a process called "informed consent" to allow you to learn about this study before choosing if you want your child to take part.

A researcher named Josephine Blagrove who is a doctoral student at Walden University is doing this study. You may already know her as the director of the [REDACTED], but this study is different from that role.

### **Background Information:**

The purpose of this study is to learn how children with ASD see their experience in APE services. This study is separate from California State University, Chico, and being in or not being in this study will have no affect on any activities you may participate in there.

### **Procedures:**

If you decide to have your child to be in this study, your child will be asked to:

- Draw a picture about what his or her adapted physical education class is like and have him or her tell me about the picture (30 minutes)
- Be watched during 1 adapted physical education class at school (20-30 minutes)
- Be interviewed for about 30 minutes about what it is like to be in adapted physical education
- Meet with me a final time to make sure that what I wrote down from my interviews are correct (20-30 minutes)

### Here are some sample questions:

- If you could go to adapted physical education as much or as little as you wanted, how often would you go?
- If you could do any activity all the time in adapted physical education, what would you choose?
- Do you play any activities that you learn in adapted physical education at recess?

### **Voluntary Nature of the Study:**

This study is voluntary. Everyone will respect your choice of whether or not you want your child to be in the study. Of course, your child's choice is also important. After getting parent consent, the researcher will explain the study and let your child decide if they wish to be in the study. No one at [REDACTED] School District will treat you or your child differently if you or your child decides to not be in the study. Again, this study is completely separate from Chico State. If you decide to consent now, you or your child can still change your mind later. Any children who feel stressed during the study may stop at any time.

### **Risks and Benefits of Being in the Study:**

Being in this type of study involves some risk of the minor discomforts that your child might have in daily life, such as talking about something at school that they may have trouble remembering. There a minor risk that staff at the school your child attends find out about

your child participating in the study when I sign in to do the school observation. Being in this study would not pose risk to your child's safety or wellbeing.

This study will help provide a better understanding of how children with ASD perceive their APE experience, which could help teach adapted physical educators how to give better services to your child.

**Payment:**

There will be no payment or gift given to you or your child for participating in this study.

**Privacy:**

Any information your child provides will be kept confidential. I will not use your child's information for any purposes outside of this study. Also, I will not include your child's name or anything else that could identify your child in any reports of the study, including the school they are at. The only time the researcher would need to share your child's name or information would be if the researcher learns about possible harm to your child or someone else. Data will be kept secure by deleting digital files of the interviews as soon as they are transcribed. Transcribed interviews and pictures will be stored in a locked drawer in the researcher's office for 5 years at which point the transcribed interviews and picture will be destroyed. Data will be kept for a period of 5 years, as required by the university.

**Contacts and Questions:**

You may ask any questions you have now. Or if you have questions later, you may contact the researcher via [REDACTED] or [REDACTED]. If you want to talk privately about your child's rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University staff member who can discuss this with you. Her phone number is [REDACTED]. [REDACTED] Walden University's approval number for this study is **IRB will enter approval number here** and it expires on **IRB will enter expiration date**.

The researcher will provide a copy of this form for you to keep.

**Statement of Consent:**

If you feel you understand the study well enough to make a decision about it, please indicate your consent by signing below.

Printed Name of Parent

Printed Name of Child

Date of consent

Parent's Signature

Researcher's Signature

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## Appendix E: Participant Assent Form

Hi, my name is Josephine Blgrave and I am doing a study to learn how kids like you feel about being in adapted physical education. I am inviting you to join my study. I am inviting kids like you who are in grades 6 through 8 and receive adapted physical education services to be in this study. I am going to read this form with you. I want you to learn about the study before you decide if you want to be in it.

### **WHO I AM:**

I am a student at Walden University. I am working on my doctoral degree. You might know me as the person who works at the [REDACTED] but this study has nothing to do with that. If you don't participate in this study, it will not affect anything at that clinic.

### **ABOUT THE PROJECT:**

If you agree to be in this project, you will be asked to:

- Draw me a picture about what your adapted physical education class is like and tell me about your drawing (30 minutes)
- Let me observe you during 1 adapted physical education class at your school (20-30 minutes)
- Let me interview you for about 30 minutes about what it is like for you to be in adapted physical education
- Meet with me a second time to read or have me read what you said during our first time together to see if you agree with it (20-30 minutes)

### Here are some sample questions:

- If you could go to adapted physical education as much or as little as you wanted, how often would you go?
- If you could do any activity all the time in adapted physical education, what would you choose? And Why?
- Do you play any activities that you learn in adapted physical education at recess?

### **IT'S YOUR CHOICE:**

You do not have to be in this study if you don't want to. If you decide now that you want to join the study, you can still change your mind later. If you want to stop, you can.

Being in this study might make you tired or stressed, just like when you talk about things that you did at school with your family. But I am hoping this study might help others by helping adults learn what it is like for kids like you to be in adapted physical education.

You will not be paid or given a gift to be in this research.

### **PRIVACY:**

Everything you tell me during this project will be kept private. That means that no one else will know your name or what answers you gave. The only time I have to tell someone is if I learn about something that could hurt you or someone else.

### **ASKING QUESTIONS:**

You can ask me any questions you want now. If you think of a question later, you or your parents can reach me at [REDACTED] or [REDACTED]. If you or your parents would like to ask my school a question, you can call Dr. Leilani Endicott. Her phone number is [REDACTED].

I will give you a copy of this form.

Please sign your name below if you want to join this project.

Name of Child

Child Signature

Date

Researcher Signature

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## Appendix F: Semistructured Interview Questions

*I'm going to ask you different questions. I'll start with questions about you so that we can get to know each other better, and you can ask me questions if you want too. Then, I'm going to ask you questions about your adapted physical education class.*

### Rapport Building Questions

- Q1. Where do you go to school?
- Q2. What kinds of things do you like to do in your free time?
- Q3. When you are at school, what is your favorite class?
- Q4. Why is this your favorite class?

### Open Ended Questions Specific to APE

- Q5. How often do you go to adapted physical education with *(teacher name here)*?
- Q6. When you go to adapted physical education, how does it make you feel?
- Q7. What kinds of activities do you do in adapted physical education?
- Q8. How do you feel when you do each of those activities? For example, does it make your body feel good or stressed? Is it easy or hard?
- Q9. Your APE teacher gave me a list of activities that you do in in adapted physical education. Please listen to the list as I read it to you. Tell me how you feel about each of these activities? *(Read the child the list)*
- Q10. If you could go to adapted physical education as much or as little as you wanted, how often would you go?

If no answer or unsure, provide prompt: For example, would you never go, sometimes go, go the same amount you currently go now, or go every day?

- Q11. If you could do any activity all the time in adapted physical education, what activity would you choose? Why did you chose this activity?

Q12. Do you play any activities that you learn in adapted physical education at recess?

If answer is Yes: Can you please tell me more—who do you play with? What do you like about it?

If answer is No: Why do you not play activities that you learn in adapted physical education at recess?

Q13. Do you play any activities that you learn in adapted physical education at home with family or friends?

If answer is Yes: Can you please tell me more—who do you play with? What do you like about it?

If answer is No: Why do you not play activities that you learn in adapted physical education at home with family or friends?

Q14. Are there any activities you wish you could learn in adapted physical education that you haven't yet?

Q15. If you could change anything about your adapted physical education class, what would you change and why?

Q 16. If you could be the adapted physical education teacher, what would you do with your student?

Q17. The reason you are in adapted physical education classes is so that you can be more physically active for the rest of your life. Do you think this is important for your body? Why do you think that?

Q18. Is there anything else good or bad that you want to share with me about what being in adapted physical education is like for you?

*That is all the questions I have for you, thank you so much for taking this time to answer questions. Are there any questions you have for me or any comments you would like to share?*

## Appendix G: Observation Sheet

Minute	Motor Activity Occurring	Other (Behavior and Subjective Observations)
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