

The Effect of Adapted Physical Activities on an Individual with Special Need's Turn-Taking Skills

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Abstract

This study adopts a qualitative approach and uses a case study design to examine the potential benefits of Adapted Physical Activities (APA) in improving turn-taking skills in children diagnosed with Autism Spectrum Disorder (ASD). A 12-year-old female participant with moderate intellectual disability participated in a 12-week APA training program. Researchers conducted one-hour interviews with his family and three teachers to gain in-depth information about his experiences and perceptions. Interview data transcribed with participants' consent showed that APA contributed to a potential improvement in skills vital to social and academic abilities, including turn-taking and waiting. As a result, the findings obtained from this study showed that APA positively contributes to taking turns and waiting, which are of great importance in interpersonal interaction, especially in terms of communication rhythms and mutual exchanges. In this context, educators can enhance the quality of life for individuals with special needs in educational settings through UFA.

Keywords: Adaptive physical activity, Turn-taking skills, Autism spectrum disorder

INTRODUCTION

Social skills are determinative in fostering positive interpersonal relationships, allowing individuals to establish effective social interactions and avoid unacceptable behaviours. Examples of Social Skills include helping, initiating relationships, requesting help, giving compliments, and using expressions like “please” or “thank you”. The acquisition of these skills usually occurs through observing others, trial and error, and guidance from experienced individuals and requires a continual learning process (Gresham & Elliot, 1990).

Social skills denote a series of verbal and non-verbal abilities used for interpersonal interaction and communication. These skills are crucial for establishing and maintaining positive relationships and adjusting to the environment. Acquiring social skills is generally shaped by experiences gained from interactions with parents, family members, teachers, friends, and the general community. Exhibiting acceptable social behaviours aids an individual's acceptance within society. Furthermore, having well-developed social skills supports individuals with special needs to establish healthy and positive peer relationships, succeed in school, and explore adult roles (such as worker, coworker, family member, and community member).

Typically, children exhibiting typical developmental patterns acquire social skills during their maturation, whereas children with exceptional needs tend to exhibit comparatively slower advancement in this domain. Social skills deficiency in children with special needs often results from cognitive impairments and a lack of opportunities and education. Teachers, parents, and family members should support these children in practising and enhancing social skills, providing opportunities for their application. This support and practice will increase children's social interactions and participation, aiding them to become active community members. Social skills training is a significant need for individuals with complex special needs (Liber et al., 2008; Zanolli et al., 1996).

Students with special needs may struggle to interact with their peers, showing normal development. These students are generally at risk of social skills deficiency (Greenspan & Granfield, 1992; Harrell & Kamps, 1997; Monchy et al., 2004; Scheepstra et al., 1999). This often results from a lack of capacity to learn the necessary social skills or the exhibition of adverse behaviours that hinder relationship building. Social skills lead to difficulties establishing social relationships, resulting in students with less or lower-quality social experiences needing more social skills (King et al., 1997; Spence et al., 1999).

For instance, many children have been found to struggle with waiting, sharing, and turn-taking skills (Vygotsky, 1978). It has been observed that children with autism struggle with taking turns and do not understand the importance of turn-taking in games or rule-based activities (Razhiyah, 2008). This is also true for children with Attention Deficit Hyperactivity Disorder (ADHD), who may act impulsively without thinking, causing them to transition from one activity to another and

unable to wait for their turn (Barkley, 2015). Teaching and appropriately applying this skill allows children to meet their basic human needs and actively participate in classroom and community activities (DeLuzio & Girolametto, 2011). In this context, children with learning difficulties need help not only with immediate attention but also understanding, responding, and taking turns during a conversation (Brown et al., 2008).

Turn-taking is essential to social skills and plays a significant role in children's communication development. As children acquire the skill of turn-taking, they understand the basic rhythm of communication and mutual exchanges among people. Turn-taking is an essential skill that children need to develop to participate in effective social communication. Children who lack this skill may interrupt the speaker or fail to listen effectively. Children who struggle with taking turns in social settings may also struggle to form friendships in the classroom. In this context, this study aims to examine the changes in the turn-taking skill of a 12-year-old individual diagnosed with "Autism Spectrum Disorder (ASD)" through adapted physical activities (APA).

METHODS

Research Model

Turn-taking is essential to social skills and plays a significant role in children's communication. This qualitative study adopts a case study design to understand and elucidate individuals' perceptions, experiences, and perspectives by implementing a detailed and in-depth data collection process (Patton, 2023). The most distinctive feature of a case study is that it performs a thorough analysis by focusing on a particular phenomenon, case, individual, or group (Yin, 2014). The research focuses on determining the changes in the Turn-taking skills of a girl with ASD who participated in adaptive physical activity training for 12 weeks, with two sessions per week, each lasting 60 minutes.

The research process used qualitative methodology and a semi-structured interview technique. This technique, which allows participants to express their experiences and meanings, has been preferred for a more in-depth understanding (Braun & Clarke, 2013). The interviews focused on the participation of individuals with ASD in APA activities (e.g., sports, physical games, and exercises) and the impact of these activities on their Turn-taking skills.

Research Group

This study aims to test the thesis that physical activity may help improve the Turn-taking skills of individuals with ASD (Bremer et al., 2015). Participants' thoughts on the effects of APA on the Turn-taking skills of these activities were also collected. A mother, a father, and three different teachers and interviews were involved in the study. Each interview was conducted in an

environment comfortable for the participant and lasted about an hour. Interviews were recorded with the participant's consent and were later transcribed.

The child participating in the research is a 12-year-old child selected using a purposive sampling method diagnosed with ASD. The collected data were analyzed using the thematic analysis method (Liamputtong, 2009). This process starts with identified themes and continues with identifying new themes (Merriam, 2015). The participating child attended a 12-week adaptive physical activity program with two sessions per week, each lasting 60 minutes.

Table 1. Demographic information and characteristics of a child diagnosed with ASD

Information	Details
Age	12
Gender	Girl
Disability Percentage	50%
Disability Type	Autism Spectrum Disorder
Behavioural Characteristics	Difficulty in social interaction, repetitive behaviours, focus and attention problems
Communication Skills	Advanced vocabulary but struggles in reciprocal conversations
Physical Skills	Delay in motor skills, balance problems
Turn-taking skills	Difficulty in taking a turn

Table 1 provides demographic information and characteristics of a 12-year-old child diagnosed with ASD. Among the child's behavioural features are difficulties in social interaction, repetitive behaviours, and problems with focus and attention. These are characteristic traits associated with ASD, often impacting education, social interaction, and life skills. The child's communication skills have also been highlighted: Despite having an advanced vocabulary, the child struggles with reciprocal conversations. This suggests that while the child faces various difficulties in language and communication skills, there are also areas of strength.

In the context of physical skills, it has been noted that the child experiences a delay in motor skills and has balance problems. These observations indicate potential challenges the child might face regarding physical activities and applying specific skills. Lastly, it is noted that the child experiences difficulty with taking turn skills. This aligns with the everyday struggle individuals with ASD face in learning social skills and rules of social interaction. Taking turns requires discipline, patience, and social interaction skills, suggesting this child needs support.

Table 2. Demographic characteristics and years of experience of participants

Participant's Role	Age	Relationship with Child	Years of Experience (for Teachers)
Mother	43	Mother	-
Father	45	Father	-
Physical Education Teacher	30	Teacher	8 years
Special Education Teacher	35	Teacher	13 years
Art Teacher	32	Teacher	10 years

Table 2 presents the study participants' demographic characteristics and years of experience. The study involved a mother, a father, and three different teachers. The ages of the mother and father are 43 and 45, respectively. The Physical Education Teacher is 30 years old and has eight years of teaching experience. The Special Education Teacher is 35 years old with 13 years of teaching experience, while the Art Teacher is 32 years old with 10 years of teaching experience.

The participants' years of experience and ages may influence the quality and accuracy of their observations and assessments. In particular, the teachers' years of experience can significantly affect their ability to evaluate the impact of adapted physical activities. The teachers' experiences can enhance their ability to interpret and evaluate practices. Furthermore, the participation of the mother and father also provides an assessment from a family perspective. Compared to the teachers' views, this offers a more comprehensive and diversified perspective on the effects of adapted physical activities. On the other hand, this table also displays each teacher's relationship with the child, another factor affecting their observations and interpretations. Because of their direct interactions with students, educators may be best positioned to observe changes in a student's behaviours and skills.

Ethical Approval

All subjects gave informed consent for inclusion before participating in the study. The Declaration of Helsinki conducted the study, and the protocol was approved by the Ethics Committee of Istanbul Aydın University no. 2022/22 from 22.08.2022

Data Collection Tools

During the research process, the child and participants' demographic information and parent views on the impact of APA on the child were collected through a qualitative interview. This interview uses open-ended questions to identify experiences, knowledge, attitudes, and emotions (Fraenkel et al., 2012; Hatch, 2002; Patton, 2023).

Collection of Data

Data for this study was collected through semi-structured interviews with each participant. Each interview session ranged in duration between 45 minutes and 1 hour. This allowed ample time to delve into the experiences and perceptions of the participants, ensuring a comprehensive understanding of their interactions with APA and the subsequent influence on their turn-taking abilities. The extended duration of the interviews also allowed participants to articulate their thoughts, feelings, and experiences in detail, offering richer insights for the study.

Analysis of Data

In this qualitative research study, semi-structured interviews were employed to explore the experiences of individuals with ASD as they engaged in APA. The primary objective was to discern how these activities influenced their turn-taking abilities. Following data collection, the

thematic analysis approach was adopted for interpretation, as delineated by Braun & Clarke (2006). The initial step involved transcribing each interview verbatim, after which the transcriptions were reviewed multiple times to grasp the narratives' depth and nuances.

The analysis began by generating initial codes highlighting salient features across the dataset. These preliminary codes served as indicators of emerging patterns, subsequently grouped to form potential themes. An exhaustive cross-reference of these tentative themes against the entire dataset ensured their authenticity and relevance. Specific themes were merged, bifurcated, or discarded throughout this iterative process to align more closely with the data's narrative. Upon finalization of the themes, each was further refined to ensure precision and clarity in its representation. In the resulting report, findings were meticulously tied back to the foundational research question, grounding them within existing literature and the study's theoretical framework. Direct quotes from participants were integrated to bolster and illustrate the identified themes.

RESULTS

Table 3. APA program, observations of the educator providing APA training, and the child's progress

Week	Activity 1 - Observations and Progress	Activity 2 - Observations and Progress	Behavioural Problems and Situations
1	Running and Stretching: The student needed help understanding the new program and activities on the first day. However, this did not dampen their energy and enthusiasm.	Ball Dribbling: On the second day, we observed some progress in our dribbling activity.	The child was observed to have difficulty adhering to classroom rules.
2	Jumping and Bouncing: The student's natural energy and enthusiasm came to the forefront with jumping and bouncing activities.	Team Games: It took a little time for them to adapt to team games. However, with time and patient work, they understood the importance of cooperation and progressed in this area.	They also needed help participating in team tasks and group activities.
3	Balanced Walking: The balanced walking activity enhanced the student's attention and concentration skills.	Ball Throwing: We achieved impressive success in our work on the ball-throwing activity.	Weaknesses in their attention, concentration and focus on a particular topic became apparent.
4	Rope Skipping: Rope skipping was challenging for the student initially. However, they did not give up and made significant progress over time.	Ball Dribbling: We continued to work on ball dribbling activity and further developed their skills in this area.	They faced challenges learning new skills.
5	Fun Course: The student participated in the fun course activity with great joy and energy.	Team Games: Progress in team games and the ability to cooperate also improved their interactions with other participants and developed their social skills.	They struggled in situations that required a particular order and discipline in the classroom, especially lining up and waiting their turn.

Table 3 (Continued). APA program, observations of the educator providing APA training, and the child's progress

Week	Activity 1 - Observations and Progress	Activity 2 - Observations and Progress	Behavioural Problems and Situations
6	Running and Stretching: The student efficiently carried out stretching and running activities.	Jumping and Bouncing: Our work on the jumping and bouncing activity improved their physical skills.	Their short attention span and easy boredom negatively affected their efficiency in activities.
7	Ball Throwing: The student's skill and abilities in ball-throwing activity developed over time.	Balanced Walking: We focused on improving attention and focus skills in the balanced walking activity.	They continued to struggle with waiting their turn.
8	Rope Skipping: The student's rope-skipping ability improved further with continuous practice.	Fun Course: They exhibited an energetic and joyful performance in the fun course.	They still had difficulties acquiring new skills and developing these skills.
9	Ball Dribbling: Ball dribbling was another area where the student consistently improved.	Running and Stretching: We achieved significant success in our work on stretching and running activities.	They lost emotional control during activities where their energy was high.
10	Team Games: Team games provided another opportunity to develop the student's cooperation skills.	Jumping and Bouncing: The progress in the jumping and bouncing activity helped improve their physical abilities and coordination.	-
11	Balanced Walking: Work continued to improve the student's attention and concentration skills in balanced walking activity.	Rope Skipping: In our work on the rope skipping skill, we further improved their coordination and attention skills.	-
12	Fun Course: Lastly, the student exhibited an energetic and enjoyable performance in the fun course.	Ball Throwing and Team Games: Their progress in ball throwing and team games was quite noticeable throughout the last week.	-

Throughout the 12-week APA program, we can observe significant overall progress made by the child. The initial weeks were marked by difficulties understanding new activities and adapting to teamwork. However, this did not curtail the child's energy and enthusiasm. The child has demonstrated marked enthusiasm and skill in energetic activities, such as jumping and hopping. In addition, the child has made significant strides over time in activities that require focus and coordination, such as balance walking and skipping rope.

However, we also observed various behavioural challenges the child experienced throughout the program. These include adhering to rules within the classroom, dealing with situations requiring a particular order and discipline, difficulties concentrating and focusing on a particular topic, challenges in learning new skills and losing emotional control during high-energy activities. These behavioural challenges could have influenced the child's overall progress in the program. Toward the end of the program, we can observe the child attaining more excellent skills and experience in various areas. Notably, progress in activities such as team games and ball throwing has contributed to developing the child's social and physical abilities.

In conclusion, this program has generally enhanced the child's physical and social skills, proving beneficial for the child's education and overall development. However, the behavioural challenges experienced throughout the program should be considered for future programs and training. Overcoming such challenges and fostering the child's development in this area may necessitate additional support and interventions.

Table 4. Evaluation of APA's turn-taking skills of the individual with ASD from changes in the child's turn-taking skills, causes of the changes, and impact of APA

Participant's Name and Position	Changes in The Child's Turn-taking skills	Causes of the Changes	Impact of Adapted Physical Activities
Physical Education Teacher	"The student's Turn-taking skills have noticeably improved. The student, who previously had difficulty understanding and implementing this process, can now take their turn in a more disciplined and orderly manner. This has increased student interaction with their environment and overall sense of discipline."	This change is a direct result of the APA we implemented. These activities improved the student's physical coordination and perceptual abilities and increased their ability to adhere to a particular order and discipline."	"The APA had a very positive impact on the student. It increased the student's self-confidence and improved their ability to act disciplined. In addition, such activities improved the student's overall physical health and endurance."
Special Education Teacher	"The student's ability to queue has shown significant progress. The student, who previously struggled to wait their turn and participate in activities, can now wait their turn and join the activity more successfully and harmoniously."	"These changes are seen as a direct result of the APA implemented. These activities provided a suitable environment for the student to learn how to queue and wait."	"The APA noticeably improved the student's Taking Turns skill. Moreover, these activities strengthened students' self-control and increased their self-confidence."
Art Teacher	"There is a noticeable improvement in the student's Turn-taking skills. The student, who previously exhibited a hasty and careless attitude, has become more conscious. They can patiently wait their turn and interact better with other students during this period."	"I attribute this positive change in my student to the APA we implemented. These activities improved my student Turn-taking skills and increased their social interaction abilities."	"Physical activities significantly enhanced the student's self-control and social interaction abilities. These activities helped students improve their Turn-taking skills and become more careful and patient."
Father	"My daughter can now wait her turn more patiently and organized. She used to be a child who quickly got bored and lost focus, but now she has become more patient and orderly."	"I attribute this positive change in my daughter to the adapted physical activities we implemented. These activities improved my son's Turn-taking skills and helped him act more orderly and organized."	"Physical activities significantly increased my daughter's patience and organizational skills. These activities helped my son improve his Turn-taking skills and become more patient and organized."
Mother	"I noticed a significant improvement in my child's Turn-taking skills. They previously needed help understanding and practising taking turns and waiting. However, now they can wait their turn, and I see they understand this situation better."	"I associate this improvement in my child with the adapted physical activities we implemented. Through these activities, my child improved their taking turns skill and increased their understanding."	"APA had a positive impact on my child. They improved their Turn-taking skills and increased their understanding ability. In addition, these activities positively affected my child's overall physical development."

Table 5. Evaluation of APA's turn-taking skills of the individual with ASD from social and academic impacts, continuation of APA and suggestions or additions

Participant's Name and Position	Social and Academic Impacts	Continuation of Adapted Physical Activities	Suggestions or Additions
Physical Education Teacher	"Physical activities improved students' ability to wait in line and overall social skills. The student became successful by improving their attention span and focus. Their ability to communicate and work with other students also increased."	"Given the positive impact of these activities on the student, it is important that such practices continue. Regular and continuous activities will reinforce the skills the student has acquired and assist in gaining new ones."	"It is recommended further to investigate the impact of APA on different skill groups. We need more information on how these activities can improve social and academic skills. Also, more training and resources should be provided for implementing and assessing these activities."
Special Education Teacher	"As a result of APA, the student's social skills also improved. In addition, there was an increase in the attention span and learning efficiency, which positively affected academic success."	"Considering these observed positive effects, it is thought that APA should continue."	"To further improve the student's ability to wait in line, it is suggested that more activities requiring waiting in line be included in the program. Thus, the student can better learn to wait and share the line with others."
Art Teacher	"The impact of these activities on social skills is significant. I observed an increase in my student's attention span, and generally, they showed better social interaction."	"Considering the positive impact of the physical activities implemented on my student, I support continuing such activities. They should be regularly implemented to reinforce the skills my student has acquired and gain new skills."	"I suggest expanding the implemented APA so that more students can benefit. This provides an opportunity to assess the impact of these activities on a wider student population and for more students to experience these benefits."
Father	"The impact of these activities on social and academic skills is significant. My daughter's social skills showed noticeable progress, improving her academic performance. Being more patient and regular helped her focus on a topic for extended periods."	"Considering the positive impact of the physical activities implemented on my son, I support continuing such activities. They should be regularly implemented to reinforce the skills my daughter has acquired and gain new skills."	"I do not have any specific suggestions for now, but providing all the necessary support and resources for my son to benefit from these activities is important."
Mother	"I see that adapted physical activities not only improved line-up skills but also social skills. My child can interact more socially, and I see improved academic performance."	"Considering the positive impacts of the adapted physical activities on my child, I support continuing such activities. These activities will continuously contribute to my child's development."	"I do not have any additional suggestions for now. However, I am open to any developments and innovations that could further enhance the effects of these adapted physical activities and improve our children's development."

In Tables (5, 6) above, we can observe the variations in the participants' turn-taking skills, the influence of adapted physical activities, social and academic impacts, the continuation of APA, and their suggestions. The perspectives and responses of each participant are presented in the same table.

According to the information presented in various charts, it has been observed that the APA program has a significant and positive impact on a student. The student has shown marked improvements in Turn-taking skills, discipline, social interaction, and overall academic performance. These effects were corroborated by the student's educators (Physical Education and Sports Teacher, Special Education Teacher, and Art Teacher) and family (father and mother).

Both educators and families attributed these developments directly to the APA program. The APA enhanced the student's physical coordination and perception abilities and increased their skills in adhering to a particular order and discipline. Furthermore, it was noted that this program positively influenced the student's social skills and academic performance. However, the educators and the student's family agreed that such activities should continue. It was expressed that continuity would reinforce the skills the student has acquired and assist in gaining new ones. In the suggestions and additions section, proposals emerged, such as implementing the APA on a broader student population and incorporating more activities into the program to enhance social skills, especially Taking Turns and sharing the queue with others.

In light of these findings, it is evident that the APA has a significant and positive impact, particularly on social skills and disciplined behaviour. Expanding and continuing such practices can aid students in developing these skills. Nevertheless, it was noted that more research is needed to evaluate the effectiveness and application of such programs. There was also a consensus that more training and resources must be provided for these programs to be effectively implemented.

DISCUSSION AND CONCLUSION

Firstly, upon examining the existing literature regarding APA, there is a consensus that these activities significantly influence children's physical and cognitive abilities. Particularly for children requiring special education, these activities have been reported to impact overall child development and self-confidence positively (Bremer & Lloyd, 2016).

Upon comparing the impact of APA on turn-taking skills with existing literature, it is discernible that these observations are congruent with prevailing findings. APA has been shown to promote the development of disciplined behaviour among students. This coincides with the observations of the Physical Education and Sports Teacher and other teachers. Additionally, ample evidence is found in the literature that APA enhances students' social skills (Breslin & Rudisill, 2011;

Pellegrini & Smith, 1998), aligning with the Art Teacher's observations, who reported improved interaction of the student with others.

Specifically looking at the case of students requiring special education, numerous studies indicate that APA is an effective tool for enhancing these students' abilities (Block & Obrusnikova, 2007; Murphy & Carbone, 2008). This is consistent with the observations of the father and mother, who reported noticeable improvements in their children's turn-taking abilities. In summarizing the discourse, the insights from the participants resonate with existing scholarly works, thereby suggesting that the application of APA enhances students' proficiency in the exchange of conversational turns. This strongly supports that APA can be an effective tool for improving students' social and academic skills.

The current literature on APA supports that these activities can enhance the various skills of students. In particular, these skills include significant abilities such as physical coordination, perception abilities, and adherence to a particular order (Block, 2007; Wilson, 2014). This research supports the results mentioned in the reports of teachers and parents: the implemented APA has helped the students develop these skills. There are research studies on the impact of APA on social interaction abilities. It has been found to play a significant role in developing social skills and improving the student's overall academic performance (Murphy & Carbone, 2008). These findings support the reports of teachers and parents that APA is an essential tool for improving students' social interaction skills and enhancing academic performance.

Mainly focusing on social skills like taking turns and waiting, many studies support that APA effectively improves these skills (Lang et al., 2010). Teachers and parents report that students have become more disciplined and orderly through these activities, improved their turn-taking skills, and increased their comprehension abilities. As stated in the literature (Stodden et al., 2008), such activities can enhance children's general physical health and resilience. This is important for directing children towards a healthier lifestyle and developing physical activity habits. The existing literature shows that APA positively impacts individuals requiring special education (McNamara & Haegele, 2021). For example, the experiences mentioned above indicate that students' social skills, discipline and self-control abilities, turn-taking and comprehension abilities have improved thanks to APA. These skills significantly improve the student's academic success and general quality of life (Must, 2002). Regarding boosting the student's self-confidence, the literature states that adapted physical activities are essential (Goodway & Branta, 2003). Seeing the student develop their skills during physical activities and thereby increase their self-confidence supports this idea.

Additionally, developing the student's ability to act disciplined is consistent with the potential of adapted physical activities to teach order and discipline. Physical activities, especially team sports, can teach students social and individual skills such as turn-taking, patience, and cooperation (Block & Obrusnikova, 2007). The observations that APA has improved the child's overall physical health

and resilience align with the current literature. Physical activity can significantly affect overall health and physical fitness (Strong et al., 2005). Improvements in the physical health of an individual with special needs can positively affect academic performance and overall quality of life. As expressed by the participants, the positive effects of APA on children have been widely accepted in the literature. APA effectively enhances students' fundamental skills, such as turn-taking, waiting their turn, and social interaction (Block, 1994; Obrusnikova & Cavalier, 2011). Regularly implementing these activities can help students reinforce these skills and acquire new ones (Sherrill, 2004).

The unanimous agreement among the participants that APA should continue illustrates the importance of these activities in child development. Various studies also support this. For instance, works by Bailey (2006) and Ketcheson et al., (2017) demonstrate that APA enhances children's social, physical, and cognitive skills and improves their overall quality of life. This makes the demand for the continuity of APA understandable. However, access to the resources and specialists necessary for these activities' regular and continuous implementation can sometimes be a barrier. Therefore, governments and educational institutions should support and expand these programs and provide the training and resources necessary to implement these activities (Goodway & Branta, 2003).

In conclusion, the role of Adapted Physical Activities (APA) in improving children's social and academic skills is indisputable. The continuity of these activities is fundamental for students to reinforce these skills and acquire new ones. Maintaining APA is the common point of literature and participant opinions in this context. Feedback from parents and teachers about the impact of APA on students is significant and valuable. The development of turn-taking and waiting skills provides essential insights into the potential of APA to enhance children's social and academic skills.

As stated in the first recommendation, the need for further investigation of the impact of APA on different skill groups is widely expressed in the literature (Block, 2007; Bremer & Lloyd, 2016). The question of how different APAs target different skill groups and how these skill groups can be developed requires extensive and detailed research. Similarly, it has been noted that more information is needed on developing social and academic skills. While literature generally focuses on the impact of APAs on physical skills, recent studies have also increased the effect on social and academic skills (Goodway & Branta, 2003; Ulrich, 2000). However, it is noted that more in-depth and comprehensive research is needed on this issue. In addition to the suggestions, there is a recommendation to include more activities to improve turn-taking and waiting skills in the programs. Studies in this area show that turn-taking and waiting skills can enhance group social interaction and cooperation skills (Bulotsky-Shearer et al., 2012). Therefore, incorporating activities that develop such skills into programs can allow students to practice more in this area. Lastly, the need to reach more students with APAs has been highlighted. Literature also indicates that implementing APAs on a broad student audience will help students and educators better

understand the effects of these activities (Block & Obrusnikova, 2007). In short, these recommendations underscore the need to examine APAs from a broader perspective and implement them to benefit more students. More research and practice in this area can help students and educators gain greater awareness and knowledge.

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Ethical Approval

Name of Board: Ethics Committee of Istanbul Aydin University

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