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Original Article

Initiation of Para-Badminton through the “Shuttle Time” teaching program

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ABSTRACT

Introduction: Para-Badminton (PBd) is an adapted sport for people with disabilities. One avenue to make badminton popular around the world is a badminton teaching program called “Shuttle Time”. This resource helps coaches develop skills, knowledge and confidence to plan and offer safe and fun badminton classes. **Objective:** The purposes of this report were to apply the “Shuttle Time” teaching program for persons with physical disabilities (PD), to adapt activities proposed by the program, if necessary, and describe suggestions for the adaptations. **Conclusion:** The final observations in this report refer to the adaptations of the “Shuttle Time” teaching program for persons with PD, by supplementing it with more activities can better serve children with PD, supporting badminton teaching to this population.

Keywords: Badminton. Adapted Sport. Physical Disability.

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Iniciação ao Para-Badminton através do programa de ensino "Shuttle Time" teaching program

RESUMO

Introdução: O Para-Badminton (PBd) é um esporte adaptado para pessoas com deficiência. Uma das formas de divulgação e massificação do badminton pelo mundo é o programa de ensino de badminton "Shuttle Time". Esse recurso ajuda professores a desenvolver habilidades, conhecimento e confiança para planejar e oferecer segurança e diversão nas aulas. **Objetivo:** Os objetivos deste estudo foram aplicar o "Shuttle Time" para pessoas com deficiência física (DF), adaptar as atividades propostas pelo programa, caso necessário e descrever as sugestões de adaptação. **Conclusão:** As observações finais desta pesquisa remetem a ampliação do programa de ensino "Shuttle Time" para as pessoas com DF, pois incrementá-lo com mais atividades pode atender melhor as crianças com DF, favorecendo o ensino do badminton para esta população.

Palavras-chave: Badminton. Esporte Adaptado. Deficiência Física.

Iniciación de Para-Bádminton a través del programa de enseñanza "Shuttle Time"

RESUMEN

Introducción: Para-Bádminton (PBd) es un deporte adaptado para personas con discapacidad. Una de las formas de masificación mundial es lo programa de enseñanza de bádminton "Shuttle Time". Este recurso ayuda los maestros a desarrollar habilidades, conocimiento y confianza para planificar y garantizar la seguridad y la diversión en las clases. **Objetivo:** Los objetivos de este estudio fueron aplicar el "Shuttle Time" para las personas con discapacidad física (DF), adaptar las actividades propuestas, si necesario, y describir las sugerencias de adaptación. **Conclusión:** Las observaciones finales se refieren a la ampliación del "Shuttle Time" para las personas con DF, ya que incrementarlo con más actividades puede servir mejor a los niños con DF, lo que favorece la educación del bádminton por esta población.

Palabras Clave: Bádminton. Deporte adaptado. Discapacidad física.

INTRODUCTION

Badminton is among the most popular racket sports in the world. It was first introduced as a demonstration sport in Munich (1972) and Seoul (1988) Olympic Games and the officially became an Olympic sport at the Barcelona Olympic Games in 1992 (BWF, 2015a). Badminton is very fast and dynamic. For example, overhead smashes of 493 km/h and 408 km/h have been registered in practice and competition, respectively (GUINNESS BOOK, 2013). Badminton is played indoors on a court divided by a net. Each player's objective is to hit a shuttle with a light racket aiming over the net and letting it fall on their opponent's side of the court (DUARTE, 2000; DUARTE, 2003; ALMANAQUE ABRIL, 2005; FONSECA; SILVA, 2012; BWF, 2017).

The Badminton World Federation (BWF) claims badminton as an accessible sport for all (BWF, 2012), that should be encouraged for all youth because it is: (a) safe and low impact; (b) democratic and non-gender biased; and (c) helpful for fundamental motor, cognitive, affective, and social skill development (BWF, 2013a).

One of the ways in which BWF disseminates the instruction of badminton around the world is the utilization of an instructional badminton teaching program called "*Shuttle Time*" (ST). The ST program was developed to target in-school education (e.g., physical education), but can also be applied to informal leisure sport education, such as at clubs or sport centers. The published program consists of a set of training resources, guidelines and training programs to implement badminton in schools in a systematic way (BWF, 2017a).

The ST program allows children of various ages and skill levels to experience the essence of badminton through simple content (BWF, 2013a). According to BWF (2012), badminton and, more specifically the ST program, is designed so that all people, including those with different abilities, can successfully participate. Thus, we posed our question "Is the ST Program suitable for teaching badminton to people with disabilities?". In this way, we are going describe the process of adapting the ST program in order to facilitate the participation of people with PD.

The official name for badminton that is adapted for people with physical disabilities (PD) is Para-Badminton (PBd). PBd provides leisure and sport opportunities for people with PD, and was officially recognized by the International Badminton Association (IBAD) in 1996 (STRAPASSON et al, 2013). Since BWF is the ruling entity of both badminton and PBd, it is responsible for the development, regulations and management of both sports at the international level. PBd as any other adapted sport presents specific adaptations and an exclusive functional classification into sport classes.

PBd is a very recent development, and will be a new Paralympic sport at the Tokyo 2020 Paralympics Games (IPC, 2014). Thus, the lack of specific literature related to PBd and teaching methods for person with PD is not surprising. These results should lead to new research about educational actions to and for this new adapted sport. According to Souza (1994), it is up to the state, the family, and the academic special, health and professional society, to establish the necessary conditions and environment to persons with PD to access schools, hospitals and enjoy leisure activities, among others social opportunities. Therefore, we conceptualize sports education as playing an important role for persons with PD's independence as a "flag of emancipation".

METHODS: SHUTTLE TIME TEACHING PROGRAM

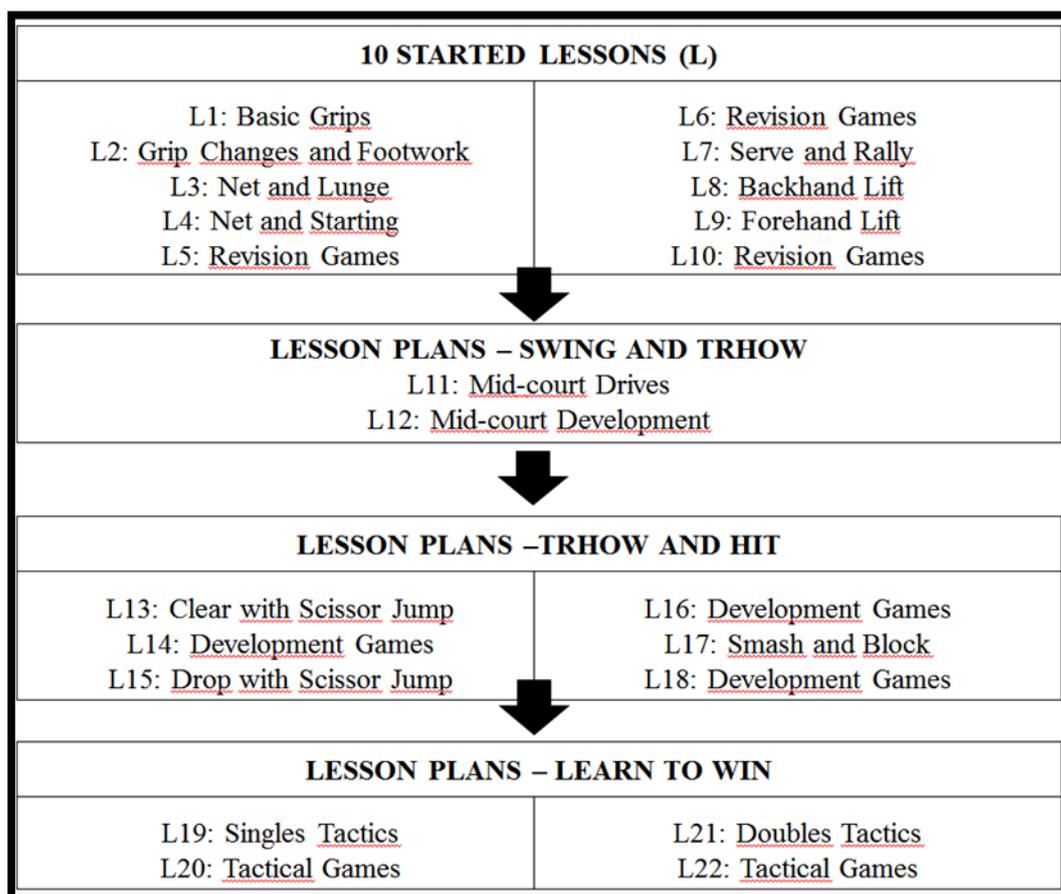
The ST teaching program is comprised of a teachers manual with 10 modules (Table 1) which includes 22 badminton lesson plans and 92 instructional videos demonstrating proposed activities (BWF, 2013a; BWF, 2015). These proposed badminton lessons are described starting at module 5 (Started Lessons) until module 8 (Learn to Win). Each lesson plan is planned for a 60 minutes class and is structured to delivery physical, tactical exercises, within fun and/or competitive activities. The lessons start with warm-up exercises, followed by physical development exercises through competitive and technical elements, ending with a review of previous and actual lesson (BWF, 2013a; BWF, 2015).

Table 1 - The 10 Modules of Shuttle Time Teachers' Manual

Modules	Sessions
1	Getting Started
2	Teaching Material and Content
3	Managing Groups when Teaching Badminton
4	Physical Development Exercises
5	Started Lessons: Hit and Move – Grips, Ready Position, Front Court Play (10 lesson plan)
6	Swing and Throw – Mid-court Play (2 lesson plan)
7	Throw and Hit – Rear-court Play (6 lesson plan)
8	Learn to Win – Tactics and Competition (4 lesson plan)
9	How to Organize Competitions
10	Simplified Rules of Badminton

Source: BWF (2012b, 2013a).

These modules aim to help the teacher to: (a) better understand badminton; (b) plan badminton lessons; (c) deliver fun, safe and enjoyable badminton lessons with groups of children; and (d) deliver a positive image and experience of badminton (BWF, 2012b, 2013a). The content of the lessons is expressed in Picture 1:



Picture 1 - Structure of Shuttle Time Classes.
Source: BWF (2013a), adapted by researchers.

For this report, the PBd classes were held on two official badminton courts with official equipment, in Campinas – São Paulo - Brazil. The 22 ST lessons were implemented from March to June of 2015, twice a week, one hour and 30 minutes each class, for four participants with PD. This study was approved by the Public University Research Ethics Committee under CAEE number ocultado pela revista. The Badminton classes made use of standard badminton materials (e.g., net poles, shuttle, and racquets) as well as alternative implements such as balloons, cones, hoops, soft balls, baskets, ropes and chinks.

RESULTS AND DISCUSSION: SHUTTLE TIME ADAPTING PROCESS

Attention to diversity has been a major challenge of physical education teaching. According to Paes (2002), sports can no longer be limited to an elite and exclusive vision, where only high performance athletes are capable of enjoying them. Rather, sport must reflect society and accept the many skill and ability levels of potential performers. According to Jordán *et al.* (2007), attention

to these differences can lead to teaching/learning activities modifications, either on structural components, methodology or organization. Therefore, ideal activities are those that pay attention to differences and distinct levels of competence, and are adapted to the distinct individual performers' goals and motivations. Badminton is the same game when played for people with or without disabilities. The way it is taught should be based on the individual's capabilities and skills, rather than on their disabilities (YOUNG, 2007).

Following, we are going to describe only the activities related to lessons of the BWF ST program (module 5 to 8) which required adaptations, along with the respective adaptations suggestions. The classes were longer than the estimated time predicted by the ST program. Typically, the extra time was spent conceptualizing adaptations needed to individualize suggested ST activities for participants. All original BWF ST program activities are available (including video support) from the BWF ST website (<http://bwfshuttletime.com/>) (BWF, 2017).

10 START LESSONS

Among the 10 lessons of module 5, 46 activities were implemented. From them, 12 required adaptations or modifications. We observed that the first 10 lessons were easily adapted to people with disabilities (Picture 2).



Picture 2 - Lesson 1, to keep the balloon in the air with the racket.

The main adaptations were on lesson 2: activities 1 and 2 related to mirroring a partner (i.e., moving accordingly to the right and to the left). Instead of moving left and right, the movements were changed to forward and backward, due to the limitations of wheelchair movement.

The BWF states that after the first 10 lessons, pupils will be able to (1) play rallies using the basic grips, (2) hit from near the net to the back of the court, and (3) serve to start a rally (BWF, 2013a). In this report, pupils achieved these goals but with limited performance. Therefore, for persons with PD there is a need to extend the activities of the first modules or increase the number of repetitions aiming to increase/develop the motor repertoire. This would allow those with PD to play longer rallies with better performance. One way to improve basic and specific motor skills is through playful and pre-sports games. According to Paes (2002), these fun games can increase children's motivation and the efficiency of the learning process.

SWING AND THROW

The eight proposed activities of "Swing and Throw" module did not need any adaptation when applied to our sample of children with PD. However, BWF's assertion that the pupils would be able of play faster at the middle court and demonstrate the correct toss technique by the end of the module was not achieved (BWF, 2013b). In order to reach the learning level predicted by the BWF, our PD sample would require more time with these activities.



Picture 3 - Lesson 12, "How many shuttles for minute?".

THROW AND HIT

The "Throw and Hit" module has 24 proposed activities. Ten of them required adaptations. The increase in the number of adaptations for persons with PD was related to the module goals: the development of jumping and falling and

balance activities. The adaptations referred to workouts designed to strengthen the core and improve body balance. Therefore, the exercises were done without jumping for individuals using wheelchairs, and changes were done to exercises that require:

- passing the rackets between legs or behind the body,
- sitting and standing up to change rackets from one hand to another,
- spinning around its own axis.

The suggested adaptations to the module for participants using wheelchairs were: jumps were replaced by raising both arms and sitting down was replaced by touching both hands on the floor. We used space boundaries with cones and chalk marks to make help the pupils understand the exercises.

At the end of the module, the pupils were able to play games with overhead hitting but were still not able to move fast enough around the court. This reinforced our hypothesis that more activities needed to be provided to help overall development or refinement of motor skills. For example, lesson 16 activities did not require any adaptation but required 4 repetitions before the pupils were able to accomplish them due to the lack of mastering the use of the wheelchair to move around and hit the shuttle overhead.

We noticed the importance of correctly assessing the pupils' progression to avoid frustration. We agree with Greco and Benda (1998) when adopting entertaining, joyful and playful games to make the learning process of motor skill acquisition easier as well as actions for inclusive education as cited by Paes (2002).



Picture 4 - The service.

LEARN TO WIN

Module 8 has 14 proposed activities, from them 08 required adaptations for wheelchair users. The main modifications were:

- ladder exercises were replaced by zig-zag exercises using cones;
- court space limitations to ease the understanding of the proposed ST games.

We emphasized that many persons with PD can have motor disabilities associated with other disabilities. It was the case of our sample, where both pupils had mild intellectual disabilities which made it difficult for them to complete all exercises related to tactics or game strategies. Because of that, we strongly suggest the use of space limitations and step-by step demonstrations and guidance for PD.

At the end of session 4, the ST teaching program states that pupils will be able to accomplish a game strategy; demonstrate basic single and double match positioning as well as play a full badminton game (BWF, 2013a). In our study, four sessions were not enough to provide tactical independence and decision making for a full badminton match. The pupils understood the importance of the central positioning at the court (marked with an X), and that they should use the corners to place the shuttles at the opponent's court. However, double match synchronized movements, defense and attack tactics were not assimilated, confirming our hypothesis of needing more lessons with specific teaching methodologies for persons with PD.

As suggested by Quirós e Villanueva [s.a.], in general, teachers should be aware of special requirements related to difficulties imposed by disabilities, using creativity and adaptations as those required in our study. From our study we conclude that the ST proposal for school badminton can also be used for teaching badminton to youth with PD. However, there clearly must be adaptations as well as more time at activities and lessons aimed at preparing and developing pupils with PD. Our suggested adaptations as well as others to come can improve the efficiency of the ST teaching program and expand its scope to a larger number of individuals with diverse needs.



Picture 5 - Finishing a lesson.

FINALS CONSIDERATIONS

A PBd education program can provide new experiences related to rehabilitation, social inclusion or sports performance for persons with PD. For the children using wheelchairs, from the 92 proposed activities of the ST teaching program, 30 and 21 of them required adaptations, modifications or small adjustments. It was also noticeable that the ST program needed to be extended to increase the number of activities or repetitions aiming at enhance or develop motor and coordination skills, master the use of wheelchair and faster the coverage of the court allowing the pupils to play longer rallies and improve their shot efficiency.

As final observation of our study, extending the ST teaching program for persons with PD will help more children by providing badminton introduction to this specific population. Thus, we believe that our study acts as a tool to improve and extend badminton education by providing new pedagogical perspectives for educators and sport professionals.

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