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Adapted Sports in Physical Education: A Pedagogical Approach to Promoting Awareness of Diversity

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Abstract

Physical Education plays an important role by enabling pupils to engage directly in a wide range of learning activities (Del Val Martín et al., 2023). However, certain barriers may limit the active participation of pupils with special needs. Robertson and colleagues (2018) note that children with educational needs tend to be less active in PE classes than their peers. The growing appeal and acceptance of adapted sports makes them a valuable addition to any Physical Education program and presents them as an effective strategy for promoting inclusion by: (i) enhancing the participation of pupils with special needs; and (ii) raising awareness among peers without disabilities through direct experience of sensory and motor limitations. This study aims to analyze the importance of including adapted sports in Physical Education, identifying the associated benefits for all pupils, the challenges faced by teachers, and the strategies that can enhance more inclusive and effective pedagogical practices. The research follows a qualitative methodology, adopting a descriptive review approach, as the objective is to collect and synthesize existing knowledge on the topic. The findings suggest that the inclusion of adapted sports in Physical Education promotes social, physical, and psychological benefits for pupils both with and without disabilities. However, challenges such as a lack of teacher training and inadequate resources appear to hinder the effective implementation of these practices. The use of inclusive pedagogical strategies can help to overcome these barriers, making Physical Education more equitable and inclusive.

Keywords: Physical Education, Inclusion, Adapted Sports

Resumo

A Educação Física, desempenha uma função importante ao permitir que os alunos se envolvam diretamente numa variedade de atividades de aprendizagem (Del Val Martín et al., 2023). Contudo, poderá existir condicionantes à participação ativas dos jovens com necessidades, uma vez que Robertson e colaboradores (2018), referem que as crianças com necessidades educativas são menos ativas nas aulas de Educação Física, do que os seus colegas. A crescente atração e aceitação dos desportos adaptados, torna-os um complemento atraente para qualquer programa de Educação Física (Davis, 2011) e apresentam-se como uma estratégia eficaz para a promoção da inclusão: (i) por potencializar a inclusão dos alunos com necessidades, e (ii) sensibilizar os alunos sem necessidades para a condição dos colegas, pela “vivência” da limitação sensorial e motora. Com o desenvolvimento do trabalho

pretende-se, analisar a importância da inclusão dos desportos adaptados nas aulas de Educação Física, identificando os benefícios associados para todos os alunos, os desafios enfrentados pelos professores e as estratégias para potencializar uma prática pedagógica mais inclusiva e eficaz. A presente investigação apresenta uma natureza qualitativa, com um tipo de estudo de revisão descritiva, uma vez que o objetivo passa por recolher informações já existentes sobre um tema. Este trabalho permitiu concluir que a inclusão de desportos adaptados na Educação Física promove benefícios sociais, físicos e psicológicos, em alunos com e sem necessidades. Contudo, desafios como a falta de formação dos docentes e recursos adequados parecem condicionar a realização desta prática. O uso de estratégias pedagógicas inclusivas, podem mitigar essas barreiras e tornar a Educação Física mais equitativa e inclusiva.

Palavras-Chave: Educação Física, Inclusão, Desportos Adaptados

Introduction

This paper seeks to address the relevance and urgency of incorporating adapted sports into Physical Education lessons. As discussed throughout the text, inclusion is not merely about the presence of pupils with special needs but also encompasses those with other health conditions or lower proficiency levels. The significance of adapted sports within the Physical Education curriculum has been the subject of considerable debate, particularly in relation to inclusion and the promotion of a school environment that respects the diversity of pupils' abilities, characteristics, and needs. The inclusion of adapted sports such as Boccia, Goalball, sitting volleyball, and others can have a positive impact on pupils' physical and psychosocial development. According to Yun and Beamer (2018), it can make a substantial contribution to the health and well-being of individuals with specific needs. At the same time, it allows pupils to develop a sense of belonging and self-confidence, which helps to reduce the stigma associated with disability or varying levels of ability (Yun & Beamer, 2018). However, for Physical Education to be genuinely inclusive and supported by effective strategies and methodologies, teachers must be equipped with appropriate competencies. A study conducted by Fiorini and Manzini (2014) revealed that many teachers do not feel adequately prepared to teach in this context, owing to a lack of training during their initial education. Furthermore, many educators do not receive continuous professional development throughout their careers. It is important to highlight that adapted Physical Education extends beyond the development of physical skills. According to Taliaferro and Bulger (2020), it provides students with opportunities to cultivate interpersonal skills such as communication, collaboration, and problem-solving.

The Significance of Inclusion within the Context of Adapted Sport

The definition of inclusion has been extensively debated and examined across various fields of knowledge. Over time, the concept has evolved, as it represents a dynamic process subject to multiple interpretations and applications. In the first instance, inclusion does not merely involve placing pupils in classrooms; rather, it entails ensuring that they are provided with the tools necessary for effective learning (Daniels, 2000). Polat (2011) further asserts that inclusion in education should be understood as a means of building a more

equitable and just society, ensuring that all pupils have equal access to education. However, for inclusion to be implemented effectively, it must involve a continuous process that includes curriculum adaptation, pedagogical change, and even transformation of the school culture—enabling teachers to meet the individual needs of each pupil (Bossaert et al., 2013). Furthermore, inclusion should be understood across several dimensions: (i) *Physical dimension* – the presence of pupils in the classroom; (ii) *Social dimension* – meaningful participation and acceptance by peers and teachers; (iii) *Academic dimension* – ensuring access to knowledge through inclusive and adapted methodologies; and (iv) *Psychological dimension* – pupils feeling that they are an integral part of the school community (Qvortrup & Qvortrup, 2017). Finally, Krischler et al. (2019) argues that how inclusion is defined and understood significantly influences the attitudes of both teachers and pupils toward diversity. In relation to adapted sport, it refers to sports that have been modified or created to meet the specific needs of individuals (Winnick & Porretta, 2016). Some sports, such as Goalball and Boccia, are designed exclusively for pupils with disabilities, whereas others—such as wheelchair basketball or sitting volleyball—are adaptations of conventional sports. Including such activities in Physical Education programs enables pupils to develop additional skills, while also conveying an important message about the experience of being an athlete with a disability (Grenier & Kearns, 2012). Adapted Physical Education is, in its fundamentals, similar to conventional Physical Education (Steadward et al., 2003). In both cases, the educational process is structured to address motor and psychological development (Andika et al., 2024), and it is capable of tailoring activities and objectives to suit individual pupil needs. When effectively integrated into Physical Education programs, adapted sports offer and enhance a range of benefits. According to Isidoro-Cabanas et al. (2023), these sports contribute substantially to pupils' motor and physical development, promoting improvements in strength, endurance, flexibility, and coordination skills. Moreover, the inclusion of adapted sports fosters a culture of respect and acceptance among peers, helping to reduce stigma and prejudice towards pupils with limitations (Grenier & Kearns, 2012). Such an inclusive environment also reinforces pupils' confidence, leading to greater self-esteem and a stronger capacity to cope with life's challenges (Horvat et al., 2019).

Barriers to Inclusion

The inclusion of pupils with educational needs in Physical Education classes reflects a global trend towards creating learning environments that foster equitable participation and support, enabling all pupils to achieve alongside their peers (Operti & Belalcázar, 2008). To promote an environment that ensures equal opportunities, it is essential to understand the factors that may hinder or even prevent the full participation of all pupils in Physical Education lessons (Shields et al., 2012). Block et al. (2013) identified the following barriers: (i) environmental constraints, such as lack of accessibility or transport; (ii) absence of appropriate programs; (iii) insufficient or inadequate equipment; and (iv) lack of awareness among pupils of the benefits of physical activity. Additionally, in a study conducted by Fiorini and Manzini (2014), Physical Education teachers identified further challenges in the inclusion process, including: (i) *Lack of training* – many teachers do not receive specific instruction on inclusive education during their initial training, and ongoing professional development

opportunities are also limited, restricting the acquisition of new strategies;

- (ii) *Administrative issues* – large class sizes hinder individualized attention, and excessive bureaucracy when requesting resources or specialized support can undermine the effectiveness of teaching;
- (iii) *Pupils' individual characteristics* – teachers face challenges related to the diversity of limitations and varying levels of need among pupils;
- (iv) *Misdiagnosis* – in some schools, the diagnosis of pupils with educational needs may be inaccurate or outdated, compromising the implementation of appropriate strategies;
- (v) *Family involvement* – active family participation is essential for the pupil's holistic development and for ensuring continuity of learning beyond the school context;
- (vi) *Teaching strategies* – often there is no consensus or clarity regarding the most effective methodologies, given the wide range of pupils' individual characteristics. The potentially discriminatory nature of Physical Education is also worth noting, particularly in situations where, as Kirk (2010) suggests, teachers are resistant to change and unwilling to adapt or rethink the nature of activities to ensure broader access to their lessons. For instance, as described by Petrie et al. (2018), teachers often value success in activities built around competition. Pupils who do not conform to this model are frequently excluded, limited, or discouraged from participating (Haegele & Zhu, 2017). Furthermore, teachers must pay close attention to how they communicate information regarding a pupil's disabilities, as this can lead to bullying and social isolation (Healy et al., 2013).

Inclusive Pedagogical Strategies

Well-designed Physical Education programs foster a unique environment in which pupils with and without special educational needs can become physically competent individuals (Block & Obrusnikova, 2015).

According to Rodrigues and Gomes (2013), there are several strategies that can make lessons more inclusive. Firstly, there are organizational adaptations, which include: (i) *Grouping of pupils* – the way the class organized can influence active participation. For example, during cooperative exercises, the teacher might pair a pupil with special needs with a highly proficient peer. This can promote social interaction, cooperative learning, and a more inclusive environment; (ii) *Didactic organization of lessons* – the structure of each lesson must be carefully planned to meet pupils' individual needs, incorporating diverse activities that cater to different ability levels; (iii) *Time management* – during activities, teachers should consider the learning pace of each pupil, incorporating breaks or rest periods to avoid fatigue and ensure ongoing engagement.

In addition, there are content-related adaptations, including: (i) *Prioritisation of essential content* – rather than attempting to cover an extensive curriculum, teachers should focus on the most relevant content for the pupil's holistic development; (ii) *Development of remedial content* – it is essential to provide reinforcement and support strategies that allow pupils to progress in line with their individual capabilities and needs; (iii) *Sequencing of content* – content should be organized from the simplest to the most complex. It may also be beneficial to begin with individual activities, allowing pupils to develop skills at their own pace before integrating them into group tasks.

With respect to assessment adaptations, Rodrigues and Gomes (2013) highlight the importance of selecting appropriate techniques and tools to evaluate pupils. Assessment should be fair and tailored to the pupils' limitations, strengths, potential, and needs. In 2024, the Directorate-General for Education published a guidance document (*Guide for Implementing Adaptations in the Administration of Tests and Examinations*) to support teachers in adjusting assessment methods. This document proposes the following solutions (Romano et al., 2025): (i) additional time for completing tasks; (ii) individualized support from a teacher; (iii) guided reading of instructions to facilitate understanding; (iv) the option to dictate responses to a teacher, ensuring that writing difficulties do not compromise knowledge assessment; and (v) transcription of answers, allowing pupils' ideas recorded more accurately.

Finally, Rodrigues and Gomes (2013) refer to didactic adaptations, including:

(i) *Modification of teaching methods* – traditional methods may not effectively address pupils' diverse needs; (ii) *Selection and adaptation of materials* – choosing appropriate resources can facilitate movement execution, enhance understanding of activities, and create a safer, more accessible environment. Examples include the use of balls of varying sizes and weights, tactile materials for pupils with visual impairments, mobility aids, and adapted games.

Methodology

This research adopts a qualitative methodology, employing descriptive review study design. The primary aim is to gather existing information on the subject to formulate an intervention proposal based on the knowledge acquired throughout the research process.

In the initial phase, data collected to better understand how to include all pupils in Physical Education lessons and to identify the challenges and limitations faced by teachers when collaborating with pupils with special educational needs, as well as the most effective strategies for overcoming these difficulties. The entire review conducted using recognized academic databases, including Google Scholar, PubMed, Web of Science, Scopus, and ERIC. Texts selected based on their relevance to the objectives of this study. The following keywords guided the search: *adapted sports, inclusion, physical education, challenges and limitations of inclusion, and inclusion strategies*.

Based on the results obtained during the literature review phase, an intervention proposal developed to apply the theoretical knowledge in practice. This proposal designed to address existing gaps and to enhance the best practices observed in literature, drawing on the most effective theoretical models and guidelines available.

Presentation and Discussion of Results

In the first part of this section, adapted sports will be introduced and described to facilitate understanding of their role as a means of promoting inclusion in the school context.

Boccia

Boccia is an adapted sport played by athletes with motor impairments, including cerebral palsy, spinal cord injuries, or neuromuscular disorders. Athletes are categorized into four classes based on the type and degree of

functional limitation: (i) **BC1** – athletes with cerebral palsy who may be assisted by an aide; (ii) **BC2** – athletes with cerebral palsy who are more autonomous; (iii) **BC3** – athletes with severe impairments who use a ramp and are supported by an assistant; (iv) **BC4** – athletes with other significant motor disabilities, such as muscular dystrophy.

Boccia has been part of the Paralympic Games program since 1984. The game may play individually, in pairs, or in teams of three players. It takes place on a court measuring 12.5 meters in length and 6 meters in width, with marked zones for each athlete. In school Physical Education lessons, these court boundaries can be easily set using masking tape.

The aim of the game is to throw blue and red balls as close as possible to a white target ball, known as the *jack*. Each team has six balls, one team uses blue balls, the other red. The game begins with a player throwing the *jack*, followed by one ball of their own color. The opposing team then plays one of their balls. Thereafter, the team whose ball is furthest from the *jack* continues playing until they place a ball closer or exhaust their set. If a ball thrown out of bounds, it is placed in a designated area. Scoring is determined by the number of balls of the same color that are closer to the *jack* than any of the opponent's balls.

Boccia is a valuable sport for developing pupils' social, physical, and psychological skills. According to Barak et al. (2016), Boccia fosters social interaction between pupils with and without disabilities. It also promotes greater acceptance of differences, enhances empathy, and improves coordination. By playing together, pupils develop collaboration and mutual respect—key characteristics for effective teamwork (Ferreira et al., 2022).

In terms of physical skills, Pérez-Torrallba and Reina (2019) note that Boccia demands fine, precise motor movements to throw the balls, thereby enhancing motor coordination. Finally, Boccia plays a significant role in pupils' psychological development, as it boosts confidence and self-esteem. Through structured competition and overcoming challenges, it cultivates a growth mindset and resilience (Barak et al., 2016).

Goalball

The practice of Goalball characterized by its emphasis on auditory perception and spatial orientation. The game played on a rectangular court measuring 18 meters in length and 9 meters in width—the same dimensions as a volleyball court. It involves two teams of three players each, with up to three substitutes allowed per team. The objective is to throw the ball with both hands towards the opponent's goal to score.

Although all players are visually impaired, required to wear eye shades to ensure equal visual conditions. The ball contains internal bells, enabling players to track its movement by sound. Additionally, the court equipped with tactile markings in relief to assist with spatial orientation.

The game lasts for 24 minutes, divided into two halves of 12 minutes. The ball weighs approximately 1.25 kilograms and must contact the floor before crossing the center line when thrown.

Incorporating Goalball into the Physical Education curriculum can effectively support motor development, cultural awareness, and provide an inclusive opportunity for pupils with and without disabilities to engage in appropriate physical activity (Laughlin & Happel, 2016).

The practice of Goalball in PE lessons contributes significantly to pupils' physical fitness. According to Krzak et al. (2015), pupils develop various motor abilities, including strength, agility, coordination, and cardiovascular endurance.

Psychologically, playing Goalball promotes emotional well-being, self-confidence, and motivation. As noted by Fines and Block (2020), pupils enhance their self-esteem and develop a sense of belonging. Finally, this sport plays a key role in inclusive education, as it fosters respect for diversity and encourages cooperative interaction (Laughlin & Happel, 2016). Fines and Block (2020) also highlight that the practice of Goalball enhances group cohesion, as it demands continuous communication and mutual trust among teammates.

Sitting Volleyball

Sitting volleyball is an adapted sport practiced by athletes with motor impairments, particularly affecting the lower limbs. The sport introduced to the Paralympic Games in 1980 and has since established itself as an inclusive and competitive discipline that promotes social integration and sporting activity for individuals with reduced mobility.

Unlike traditional volleyball, the game played with athletes seated on the floor, with their buttocks remaining in constant contact with the ground. It is important to note that this adaptation makes the sport more accessible without reducing its physical demands, as it requires elevated levels of technical skill, upper-body strength, quick reflexes, and teamwork.

Each team consists of six players and up to six substitutes. The court measures 10 meters in length and 6 meters in width. The attack zone extends 2 meters from the net (compared to 3 meters in traditional volleyball). The net is also lower: 1.15 meters for men and 1.05 meters for women.

Matches played as best-of-five sets, with each set played to 25 points (requiring a minimum lead of 2 points). If a fifth set needed, it played to 15 points.

Introducing sitting volleyball into the Physical Education curriculum supports various components of physical fitness. Leung et al. (2021), in a study involving adults with physical disabilities, observed significant improvements in cardiovascular endurance, body composition, and muscular strength. Pupils may also improve shoulder flexibility (Wong & Leung, 2020).

Research indicates that pupils report elevated levels of satisfaction, driven by a sense of competence and the overcoming of motor challenges. Leung et al. (2020) identified positive effects on self-esteem, autonomy, and enjoyment of the activity.

Finally, Protic (2012) highlights that the team-based nature of sitting volleyball requires collaborative decision-making and cooperation, thereby enhancing interpersonal relationships throughout the game.

Trail Orienteering

Trail Orienteering (also known as precision orienteering) is a distinct form of sport, differing from traditional orienteering in that it typically takes place in more compact areas such as urban parks or gardens. The objective is to accurately identify control points within a pre-set time.

The main challenge lies in the elevated level of concentration and precision required for accurate map reading. Although the distances covered are short, the control points often share similar characteristics, making visual orientation and the ability to distinguish subtle details essential skills.

This discipline is particularly effective for inclusive practice, as it does not require significant physical exertion. This makes it especially accessible to pupils with mobility limitations.

Trail Orienteering includes two main formats:

- **PreO**, where the primary stages of the course not timed, although select control points involve timed decision-making.
- **TempO**, in which all control points timed, place emphasis on speed and accuracy in decision-making.

The maps used in Trail Orienteering are highly specific, with enhanced detail and accuracy. Scales commonly range from 1:3000 to 1:5000.

Trail Orienteering offers significant pedagogical and developmental potential. It supports the development of physical, cognitive, and social skills, while also encouraging pupils to broaden their awareness of environmental preservation and to engage meaningfully with their surroundings—fostering participation on equal terms (Carvalho, 2020).

Through orienteering, teachers can promote both individual and group activities that cultivate qualities such as self-esteem, resilience, quick decision-making, and problem-solving (Luz & Oliveira, 2021).

Conclusion

The inclusion of adapted sports in Physical Education represents not only a response to the needs of pupils with physical or cognitive limitations, but also a commitment to building a more equitable and accessible educational environment.

This study, through its exploration of the integration of these disciplines into the school curriculum, highlights a wide range of benefits—both physical and psychological. The experience of participating in adapted sports enables pupils to improve not only their motor skills but also their social abilities.

However, as emphasized throughout this work, the effective implementation of such practices faces challenges, including a lack of specialized training, limited resources, and resistance to change.

The inclusion of adapted sports should not regard as a temporary or isolated adjustment, but rather as an integrated pedagogical practice. By doing so, we promote not only the physical development of pupils but also equip them with essential skills to be part of a more inclusive society, one in which diversity celebrated and respected.

References

- Andika, I. M. B., Nita, P., Fahritsani, H., & Sugarwanto, S. (2024). Adaptive Sports Learning in Physical Education: Theory and Practice for Physical Education (PE) Students. *Musamus Journal of Physical Education and Sport (MJ PES)*, 6(2), 274-280. <https://doi.org/10.35724/mjpes.v6i2.6098>
- Barak, S., Laiz, N., Fuentes, M., Rubiera, M. & Hutzler, Y. (2016). Psychosocial effects of competitive Boccia program in persons with severe chronic disability. *The Journal of Rehabilitation Research and Development*, 53(6), 973-988. <http://dx.doi.org/10.1682/JRRD.2015.08.0156>
- Block, M. E. (2015). *A Teacher's Guide to Adapted Physical Education: Including Students with Disabilities in Sports and Recreation*. (4^a ed.). Brookes Publishing. <https://books.google.pt/books?id=3AYvrgEACAAJ>

- Block, M.E., Taliaferro, A.R., & Moran, T. (2013). Physical activity and youth with disabilities: barriers and supports. *The prevention researcher*, 20(2), 18-21. <https://doi.org/10.1037/e558392013-006>
- Bossaert, G., Colpin, H., Pijl, S. J., & Petry, K. (2011). Truly included? A literature study focusing on the social dimension of inclusion in education. *International Journal of Inclusive Education*, 17(1), 60–79. <https://doi.org/10.1080/13603116.2011.580464>
- Carvalho, J. C. (2020). *Jogos De Corrida De Orientação Para As Escolas*. Clube de Autores. <https://books.google.pt/books?id=XOT0DwAAQBAJ>
- Daniels, H. (2000). *Special Education Re-formed: Beyond Rhetoric?* Falmer Press. <https://books.google.pt/books?id=xWVXAAAAYAAJ>
- Davis, R. W. (2011). *Teaching Disability Sport: A Guide for Physical Educators*. Human Kinetics. <https://books.google.pt/books?id=dJ6K6D50hSwC>
- Del Val Martín, P., Ramírez, F., Figueroa, G., López, V. & Lazo, S. (2023). Scientific production in Chilean Physical Education during the period 2018-2022: A Systematic Review. *Retos*, 49, 459-467. <http://dx.doi.org/10.47197/retos.v49.98635>
- Ferreira, C., Gamonales, J., Santos, F., Espada, M. & Muñoz-Jiménez, J., (2022). Bocha en los juegos paralímpico: La evolución de 1984 a 2016 y perspectivas futuras. *Cuadernos de Psicología del Deporte*, 22(1), 205-214. <https://doi.org/10.6018/cpd.492031>
- Fines, A., & Block, M. (2020). Building collegiate adapted sports: goalball case study. *Sport, Education and Society*, 26(3), 326–338. <https://doi.org/10.1080/13573322.2020.1729113>
- Fiorini, M., & Manzini, E. (2014). Inclusão de alunos com deficiência na aula de educação física: Identificando dificuldades, ações e conteúdos para prover a formação do professor. *Revista Brasileira de Educação Especial*, 20(3), 387-404. <http://dx.doi.org/10.1590/S1413-65382014000300006>
- Grenier, M., & Kearns, C., (2012) The Benefits of Implementing Disability Sports in Physical Education, *Journal of Physical Education, Recreation & Dance*, 83(4), 23-27. <https://doi.org/10.1080/07303084.2012.10598758>
- Haegele, J. A., & Zhu, X. (2017). Experiences of Individuals With Visual Impairments in Integrated Physical Education: A Retrospective Study. *Research quarterly for exercise and sport*, 88(4), 425–435. <https://doi.org/10.1080/02701367.2017.1346781>
- Healy, S., Msetfi, R. & Gallagher, S. (2013). ‘Happy and a bit Nervous’: the experiences of children with autism in physical education. *British Journal of Learning Disabilities*, 41(3) 222-228. <https://doi.org/10.1111/bld.12053>
- Horvat, M., Croce, R., Pesce, C., & Fallaize, A. E. (2019). *Developmental and Adapted Physical Education: Making Ability Count*. Taylor & Francis. <https://books.google.pt/books?id=1EmMDwAAQBAJ>
- Isidoro-Cabañas, E., Soto-Rodríguez, F. J., Morales-Rodríguez, F. M., & Pérez-Mármol, J. M. (2023). Benefits of Adaptive Sport on Physical and Mental Quality of Life in People with Physical Disabilities: A Meta-Analysis. *Healthcare*, 11(18), 2480. <https://doi.org/10.3390/healthcare11182480>
- Kirk, D. (2010). *Physical Education Futures*. Taylor & Francis. <https://books.google.pt/books?id=8tCLAgAAQBAJ>
- Krischler, M., Powell, J. J. W., & Pit-Ten Cate, I. M. (2019). What is meant by inclusion? On the effects of different definitions on attitudes toward inclusive

- education. *European Journal of Special Needs Education*, 34(5), 632–648. <https://doi.org/10.1080/08856257.2019.1580837>
- Krzak, J., Ślężyńska, M., & Ślężyński, J. (2015). Goalball as an effective means of physical improvement for blind and visually impaired players. *Medycyna Ogólna Nauki Zdrowiu*, 21(4), 383–387. <https://doi.org/10.5604/20834543.1186910>.
- Laughlin, M. K., & Happel, K. (2016). Developing an Appropriate Goalball Unit for Secondary Physical Education. *Strategies*, 29(1), 16–23. <https://doi.org/10.1080/08924562.2015.1111784>
- Leung, K., Chung, K., & Chu, W. (2020). Evaluation of a sitting light volleyball intervention to adults with physical impairments: qualitative study using social–ecological model. *BMC Sports Science Medicine Rehabilitation*, 12(41), 2–10. <https://doi.org/10.1186/s13102-020-00187-8>
- Luz, D. C., & Oliveira, A. A. B. (2021). Orientação: um tesouro pedagógico das práticas corporais de aventura. *Caderno De Educação Física E Esporte*, 19(3), 227–231. <https://doi.org/10.36453/cefe.2021.n3.27476>
- Opertti, R., & Belalcázar, C. (2008). Trends in inclusive education at regional and interregional levels: issues and challenges. *Prospects*, 38, 113–135. <https://doi.org/10.1007/s11125-008-9062-1>
- Pérez-Torralba, A., Reina, R., Pastor-Vicedo, J. C., & González-Víllora, S. (2018). Education intervention using para-sports for athletes with high support needs to improve attitudes towards students with disabilities in Physical Education. *European Journal of Special Needs Education*, 34(4), 455–468. <https://doi.org/10.1080/08856257.2018.1542226>
- Petrie, K., Devcich, J., & Fitzgerald, H. (2018). Working towards inclusive physical education in a primary school: ‘some days I just don’t get it right.’ *Physical Education and Sport Pedagogy*, 23(4), 345–357. <https://doi.org/10.1080/17408989.2018.1441391>
- Protic, M. & Válková, H. (2011). Psychosocial aspects of player's engagement to the sitting volleyball. *Acta Kinesiologica*, 5(2), 12–16.
- Qvortrup, A., & Qvortrup, L. (2017). Inclusion: Dimensions of inclusion in education. *International Journal of Inclusive Education*, 22(7), 803–817. <https://doi.org/10.1080/13603116.2017.1412506>
- Robertson, J., Emerson, E., Baines, S., & Hatton, C. (2018). Self-reported participation in sport/exercise among adolescents and young adults with and without mild to moderate intellectual disability. *Journal of Physical Activity & Health*, 15(4), 247–254. <https://doi.org/10.1123/jpah.2017-0035>
- Rodrigues, A., & Gomes, S. (2013). Escola de referência para surdos – um exemplo no domínio da Educação Física. In A., Mendonça. (2013). *O Futuro da Escola Pública*. (1º ed.) Centro de Investigação em Educação – CIE-Uma. <http://hdl.handle.net/10400.13/2658>
- Romano, C., Dionísio, R., & Patrão, R. (2025). *Guia para aplicação de adaptações na realização de provas e exames – JNE*. Direção-Geral da Educação – Júri Nacional de Exames. [guia_das_adaptacoes_2025_3mar.pdf](https://www.dgexames.gov.pt/guia_das_adaptacoes_2025_3mar.pdf)
- Shields, N., Synnot, A. J., & Barr, M. (2012). Perceived barriers and facilitators to physical activity for children with disability: a systematic review. *British journal of sports medicine*, 46(14), 989–997. <https://doi.org/10.1136/bjsports-2011-090236>

- Steadward, R. D., Watkinson, E. J., & Wheeler, G. D. (2003). *Adapted Physical Activity*. University of Alberta Press. <https://books.google.pt/books?id=DoR4CAAQBAJ>
- Taliaferro, A. R., & Bulger, S. M. (2020). A Delphi Study of Effective Adapted Physical Education Practicum Experiences. *Adapted Physical Activity Quarterly*, 37(1), 20-40. <https://doi.org/10.1123/apaq.2018-0199>
- Winnick, J. P., & Porretta, D. L. (2016). *Adapted Physical Education and Sport*. Human Kinetics. <https://books.google.pt/books?id=XvR6DwAAQBAJ>
- Wong, M., & Leung, K. (2020). Effects of Sitting Light Volleyball Intervention on Physical Fitness Among Hong Kong Students with Physical Disabilities: A Pilot Quasi-Experimental Study. *Asian Journal of Sports Medicine*, 11(1), e98225. <https://doi.org/10.5812/asjms.98225>.
- Yun, J., & Beamer, J. (2018). Promoting Physical Activity in Adapted Physical Education. *Journal of Physical Education, Recreation & Dance*, 89, 13 - 7. <https://doi.org/10.1080/07303084.2018.1430628>.