



## Inclusive physical education learning strategies for students with special needs in senior high schools: A literature review

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**Abstract:** Inclusive physical education supports all students' social, emotional, and physical development, including those with special needs. With growing awareness of the importance of inclusivity in education, effective learning strategies to support the participation of students with special needs are becoming increasingly relevant, especially in senior secondary schools. This study aimed to explore and analyze various inclusive physical education learning strategies, focusing on how these approaches can improve the participation and learning outcomes of students with special needs. The methodology used was a systematic literature review, allowing for the comprehensive identification and analysis of strategies implemented and evaluated in inclusive physical education. Following PRISMA guidelines, the study selection process involved a structured literature search across multiple electronic databases, quality evaluation, and synthesis of findings from the selected studies. The literature review showed that inclusive approaches in physical education, including the use of assistive technology, adaptation of activities, and professional training for teachers, increase the engagement and participation of students with special needs and strengthen understanding and respect for diversity among all students. However, the study also identified challenges in implementing these strategies, such as lack of resources and inadequate teacher training. Inclusive approaches in physical education increase the engagement and participation of students with special needs and promote understanding and respect for diversity among all students. Successful inclusive learning strategies include applying assistive technology, modification of activities, professional training for teachers, and multidisciplinary collaboration. However, challenges in implementing these strategies were also identified, including a lack of resources, inadequate teacher training, and the need for more individualized curriculum adaptations. This research offers practical recommendations for educators and policymakers in developing more inclusive physical education practices, emphasizing the importance of student-centered approaches and close collaboration between schools, families, and communities to support students with special needs.

**Keywords:** Inclusive Physical Education, Special Needs Students, Learning Strategies, Literature Review

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## INTRODUCTION

Physical education is essential to the general education curriculum to support students' physical, social, and emotional development. Amidst the increasing awareness of the importance of inclusivity in education, inclusive physical education learning strategies for students with special needs in senior secondary schools are becoming increasingly relevant. The background of this research is based on the principle that every student, regardless of physical ability or special needs, deserves equal access to quality education, including physical education (Mikel & Yakovlev, 2023). Therefore, it is essential to develop adaptive physical education learning strategies that suit the individual needs of students with special needs so that they can fully participate and gain optimal benefits. However, students with special needs often need help fully participating in physical education activities due to a lack of adaptations or appropriate learning strategies. (Umar et al., 2022).

Previous study (Widyawan & Sina, 2021) highlights that students with special needs face various barriers in physical education, including social exclusion and lack of individualized support. This suggests an urgent need to develop a more inclusive and accepting approach to physical education that

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can accommodate student diversity in senior secondary schools. (Blavt, 2022), an inclusive approach in physical education increases the engagement of students with special needs and promotes understanding and respect among all students toward diversity and inclusion.

Inclusive education is an approach that focuses on adapting the education system and learning environment to meet the needs of all students, regardless of their abilities or special needs. This approach is rooted in equality, fairness, and human rights, emphasizing the importance of a supportive learning environment where students can participate and learn to their full potential. (Bombardelli, 2020) Inclusive education prioritizes customizing the education system for all students based on the principles of equality and human rights, creating a supportive learning environment for the full participation of each individual.

Inclusive education is defined as an education system designed to accommodate students' differences and individual learning needs, eliminating barriers to learning and participation in formal education settings (Schuelka et al., 2020). This means all children learn together, regardless of their individual needs, with appropriate support to maximize their learning potential. The main principles of inclusive education include equality of access, full participation, recognition of diversity, and environmental adaptation (Muñoz-Oyarce et al., 2023). These principles form the basis for teachers and educators to design and implement inclusive learning strategies that cater to students' different needs and abilities.

Research in inclusive physical education has paved the way for developing more effective and inclusive practices, offering valuable insights into strategies and approaches that support the participation of all students. For example, a study by (Diana et al., 2022) explored the use of game modifications to enhance the inclusion of students with special needs in physical education, showing that simple adaptations can significantly impact student engagement and satisfaction. These findings confirm the importance of flexibility in activity design and the need for a customized approach to meet students' individual needs.

Inclusive Physical education requires educators to implement a student-centered approach, where teaching is tailored to support the individual needs of each student (Rapp & Corral-Granados, 2021). This may involve using assistive technology, differential learning strategies, and inclusive assessments designed to ensure that students with special needs can participate fully in all aspects of school life. Collaboration between teachers, parents, and specialists is essential to creating a learning environment that supports and understands inclusion (Khairuddin et al., 2016). This cooperation is essential to identify and meet students' individual learning needs and to promote positive attitudes and understanding of inclusion within the school community. While inclusive education offers many benefits, its implementation faces various challenges. These include a lack of resources, inadequate teacher training, lack of administrative support, and negative attitudes toward inclusion (Villeneuve et al., 2013).

On the other hand, there are also intellectual needs, where students may face challenges in understanding game rules or strategies, requiring more detailed or simplified instructions (Damayanti & Irniasari, 2020). Sensory needs, such as visual or hearing impairments, also demand certain modifications in teaching and communicating during physical education sessions. According to (Moradi et al., 2018), using assistive technology and non-verbal communication strategies can significantly enhance the learning experience of students with sensory impairments in physical education. Emotional or behavioral needs, such as ADHD or autism spectrum, demand a supportive and understanding learning environment with a focus on structure, routines, and positive reinforcement (Sahin et al., 2018).

Physical education for students with special needs requires a comprehensive and adaptive approach, adapting to individual needs to ensure inclusive and effective participation. This supports students' physical development and their contribution to social and emotional development, underlining the importance of inclusive physical education as an integral part of holistic education. In physical education, adaptation is crucial in creating inclusive and meaningful learning experiences for students with special needs. Adaptations refer to adjustments made to activities, equipment, or learning environments to ensure accessibility and full participation of all students. This involves physical modifications and pedagogical approaches that suit students' individual needs (Ronksley-Pavia, 2024).

Strategic adaptations allow all students to benefit from physical education lessons, including improved physical health, motor skills, and emotional and social well-being. For example, using adaptive equipment, such as balls with unique textures or equipment designed for easy grip, can help students with motor impairments participate more actively in physical activities (Blanchet & Assaiane,

2022). Additionally, adaptations of in-game rules or activity formats can ensure that students with different types of special needs can engage in the same activities as their peers, supporting the principles of inclusion and equality (Dalgaard et al., 2021).

Research shows that practical adaptations in physical education can increase the motivation and confidence of students with special needs, encouraging them to participate more actively and enjoy the benefits of physical activity (Hakiman et al., 2021). Thus, the importance of adaptations lies not only in increasing accessibility and participation but also in their positive influence on students' self-perception and social relationships in the school environment (Coelho et al., 2021). One of the critical aspects of the effectiveness of inclusive physical education is the design and implementation of an adaptive curriculum. A flexibly designed curriculum can cater to students' different needs and promote active participation. Research conducted by (Prajalani et al., 2021) found that adaptive curriculum in schools implementing inclusive physical education successfully increased the participation of students with special needs in physical and social activities.

Adaptations in physical education are not only essential to meet the physical and emotional needs of students with special needs. Still, they are also the foundation for building an inclusive and supportive learning environment. Through appropriate and reflective adaptations, physical education can be a powerful tool for health promotion, inclusion, and equity in schools. Differentiated teaching strategies in physical education is an approach that considers each student's unique needs, especially those with special needs. It recognizes that students come with various backgrounds, abilities, and challenges and require tailored teaching to maximize their learning potential. In the context of physical education, these strategies may include modifying activities, using specialized equipment, and adjusting the pace of learning to suit individual students' abilities (Trad et al., 2021). Differentiated teaching allows all students to participate in physical activities and helps them feel more engaged and motivated in lessons (Wilson et al., 2012).

Differentiated teaching strategies also play an essential role in supporting the success of inclusive physical education. Teachers who use this approach can tailor instruction and activities to cater to different ability levels of students. (Nordström, T., Nilsson, S., Gustafson, S., 2023) differentiated teaching approaches can increase students' motivation and engagement in physical education lessons. One of the critical aspects of differentiated teaching strategies is creating a supportive learning environment where students with special needs feel safe and supported to take risks and try new activities. This can include forming small groups of similar ability levels, where students can work on goals tailored to their own pace, allowing for a more personalized and immersive learning experience (Hilary Neve & Collett, 2017). Recognizing ability diversity in the classroom must be considered, as this directly contributes to developing students' self-confidence and social skills (Bhatnagar & Many, 2022).

The use of technology in differential teaching strategies also offers significant potential. Adaptive apps and equipment can help students with special needs follow instructions and participate in activities more independently. For example, apps that visualize movements or provide visual and audio feedback can significantly assist students who require additional support to understand and carry out instructions (Whipple & VanWeelden, 2012). In addition, collaboration between physical education teachers, exceptional education specialists, and therapists (if applicable) is crucial in planning and implementing differential teaching strategies. Through this collaboration, comprehensive individualized learning plans can be created that focus not only on students' physical but also social and emotional needs (Scruggs & Mastropieri, 2017). This allows physical education to be more inclusive and positively impact the overall development of students.

In inclusive physical education, appropriate evaluation and assessment play an essential role in measuring the progress and achievement of students with special needs. Traditional evaluation approaches often need to accurately reflect the abilities or development of these students, given their diverse needs and abilities. Therefore, educators need to develop and implement flexible and adaptive assessment strategies to accommodate students' differences and provide greater insight into their learning and development (Schuck & Lambert, 2020).

The use of formative assessment, for example, allows teachers to conduct continuous assessments throughout the learning process, providing constructive feedback and modifying learning approaches as needed (Wight, 2015). These assessments focus on the result and the learning process, considering

students' effort, progress, and participation. This approach emphasizes competency-based learning, where students are assessed based on achieving specific standards tailored to their abilities (Wu et al., 2019).

In addition, alternative assessments, such as portfolios, learning journals, or project-based assessments, effectively provide a broader context for assessing student achievement. This type of assessment allows students to demonstrate their abilities and understanding through various formats, facilitating a more holistic and individualized assessment (Akpan & Beard, 2016). It also provides opportunities for students to reflect on their learning processes, an essential component of inclusive physical education. Integrating technology in assessment can improve accessibility and equity for students with special needs. Educational apps and software allow educators to customize assessments and provide real-time feedback, which can increase student motivation and engagement in learning (Nordström et al., 2019).

However, challenges remain in implementing these appropriate evaluations and assessments, particularly in teacher training and resource development. Evaluation and assessment in inclusive physical education requires flexible, diverse, and adaptive approaches to accurately measure and support the learning of students with special needs. By implementing innovative and inclusive assessment strategies, educators can ensure that all students have meaningful and enriching learning experiences that support their holistic development.

In response to this challenge, this study proposes exploring different strategies implemented in inclusive physical education learning. The aim is to assess the effectiveness of these strategies in improving the engagement, participation, and learning outcomes of students with special needs. As such, this research is academically relevant and essential for inclusive physical education practice in schools.

This study aimed to identify and analyze effective learning strategies in inclusive physical education, focusing on students with special needs. The methodological approach of this study will be a systematic literature review, which allows for a comprehensive identification and analysis of the different strategies implemented and evaluated in the context of inclusive physical education. Inclusion and exclusion criteria will be established to ensure that only relevant and high-quality studies will be reviewed. The literature selection and analysis process will follow strict guidelines to ensure the validity and reliability of the findings

Research on inclusive physical education learning strategies for students with special needs has the potential to make a significant contribution to educational practice. By identifying and analyzing a practical approach, this research will support the development of more inclusive physical education and ensure that every student has an equal opportunity to participate and thrive in a supportive educational environment.

## METHODS

### *Research Design*

The design of this study was a systematic literature review by PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines (Sauer & Seuring, 2023), which aimed to comprehensively collect, evaluate, and synthesize findings from previous studies on inclusive physical education learning strategies for students with special needs in senior secondary schools. This methodology allowed the researcher to identify and analyze the evidence in the literature, ensuring that the conclusions were based on a complete picture of the existing research.

The systematic approach to this literature review involved several key stages, from developing explicit inclusion and exclusion criteria to a structured literature search across multiple electronic databases, quality, evaluation, and synthesis of findings from the selected studies. This ensured that all relevant literature was identified and thoroughly examined, reducing selection bias and strengthening the reliability of the results.

This study sought to generate a deeper understanding of best practices in implementing inclusive physical education learning strategies through the systematic literature review design. This includes recognizing the diverse needs of students and how learning strategies can be adapted to support the full and effective participation of all students in physical education activities, with the ultimate goal of improving inclusivity and accessibility in physical education in senior secondary schools.

**Table 1.** Inclusion and Exclusion Criteria

Criteria	Description
Inclusion	Research Focus: A study that explicitly investigates inclusive learning strategies in the context of physical education, including the development, implementation, and evaluation of such methods for students with special needs in senior secondary schools.
	Target Population: Studies involving senior high school students with special needs, including but not limited to learning disabilities, autistic spectrum disorders, motor disorders, and other special needs.
	Publication Type: Studies published in peer-reviewed journals, dissertations, and academic theses ensure the credibility of the methodology and findings.
	Publication Deadline: Studies published from 2012 and above to ensure the relevance and topicality of the information.
	Language: Documents available in English or with abstracts in English facilitate the review and analysis process.
Exclusion	Research Focus: Studies that did not focus on inclusive learning strategies in physical education or did not discuss physical education, as well as studies that did not evaluate its impact on students with special needs in senior secondary schools.
	Target Population: Studies that did not include high school students or did not specifically address students with special needs. This includes studies focusing on the general population or students without special needs, as well as research conducted at other levels of education, such as primary or university education.
	Publication Type: Articles or documents that do not undergo a peer-review process, such as blogs, personal opinions, editorials, and letters that do not provide empirical evidence or systematic analyses.
	Publication Deadline: Studies published before 2012, as the information may need to be updated to current inclusive physical education practices.
	Language: Documents that were unavailable in English and did not have English abstracts would complicate the review and analysis process due to accessibility and comprehension limitations.

### *Study Selection Process*

Following PRISMA guidelines, primary data sources included searches in relevant databases, scientific journals, and other sources. The article selection process was rigorous, following the PRISMA steps, thus ensuring the inclusion of studies that fit the objectives of this study. The study selection process in this systematic literature review was initiated with a comprehensive literature search using reputable electronic databases such as PubMed, Scopus, and Web of Science. Relevant keywords and phrases, determined based on the research objectives, were combined to ensure broad coverage of potential studies. Initial results were screened through titles and abstracts to evaluate their suitability to the pre-established inclusion criteria (see Table 1). This initial selection was followed by a full-text review of the selected documents to verify their relevance further. The references of the selected articles were also reviewed to identify additional studies that may have needed to be included. This iterative process incorporated only studies that met all inclusion criteria and provided substantial insight into the research topic for further analysis (see Figure 1).

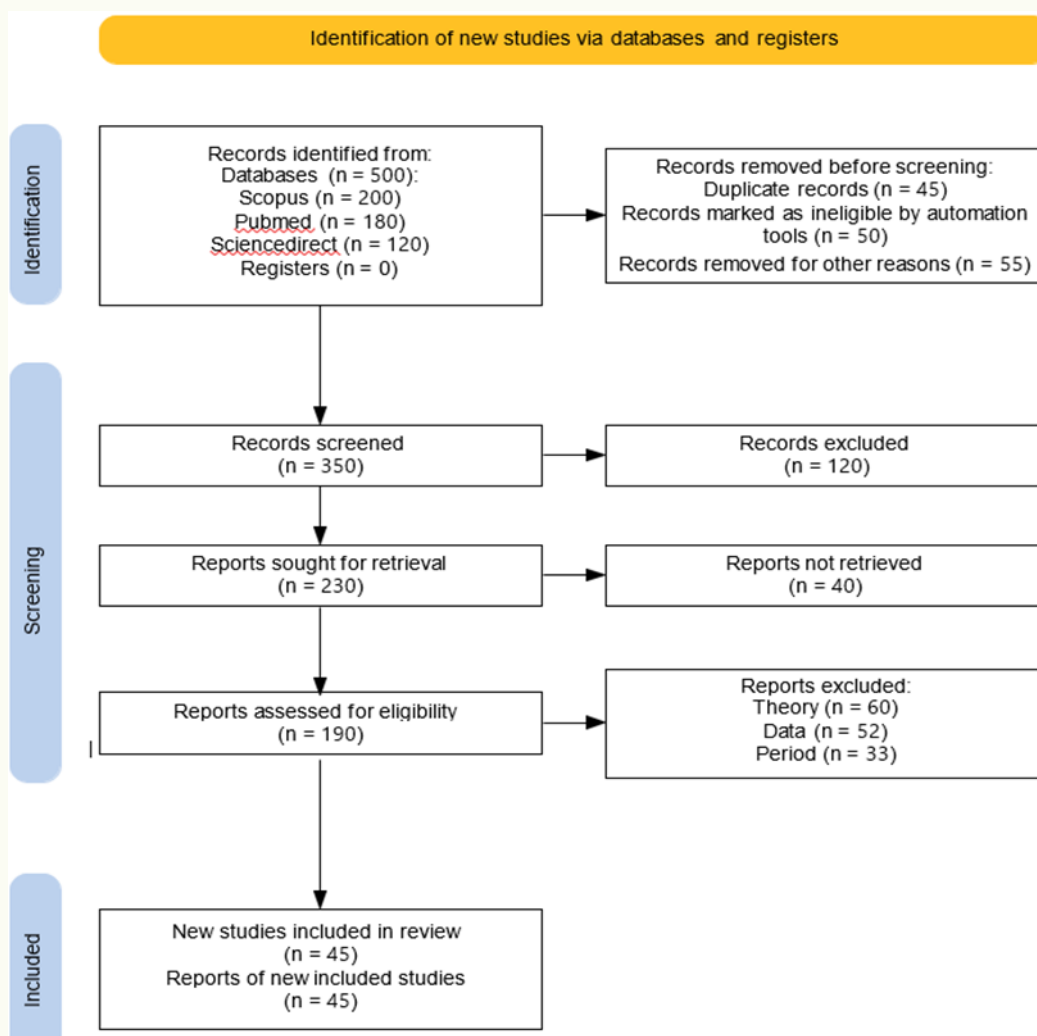


Figure 1. Diagram of the study screening process

### Data Analysis

We applied the PRISMA framework to ensure transparency and consistency in the analyses. After a rigorous literature selection process, we used the PRISMA flow chart to visualize the number of studies identified, screened, and eliminated based on the inclusion and exclusion criteria. The studies were finally included for analysis. Each selected research was then analyzed in depth to explore findings based on similarities and differences in learning strategies and their effectiveness in inclusive physical education. The analysis results will be summarised and synthesised to build a comprehensive understanding of best practices and recommendations for future implementation. These thematic analyses will also provide insights into areas that require further research, providing a basis for developing evidence-based inclusive physical education theory and practice.

## RESULT AND DISCUSSION

### Results

Results of this study is presented in Table 2.

**Table 2.** Key Findings on Inclusive Learning Strategies for students with Special Needs

Key Findings from Systematic Review		
Findings	One of the supporting Journals of Systematic Review	Explanation
Implementing a Differentiated Learning Approach	(Strogilos, 2018)	Physical education teachers should design activities adapted to different ability levels, ensuring every student with special needs can participate actively and safely.
Use of Assistive Technology	(Lersilp et al., 2016)	Schools should provide and utilize assistive technologies, such as interactive learning apps and adaptive equipment, to support the learning of students with special needs in physical education.
Professional Training for Teachers	(Fernández-Batanero et al., 2019)	Organize regular workshops and training for physical education teachers on inclusive strategies and the use of assistive technology, improving their ability to teach students with special needs.
Collaboration with Physical and Occupational Therapists	(Dillon et al., 2021)	Increase collaboration between physical education teachers and physical and occupational therapists to design learning programs supporting students' needs.
Improved Accessibility of Sports Facilities	(Kurnianugraha et al., 2021)	Schools should ensure that all sports facilities are accessible and safe for students with special needs, including providing mobility aids and infrastructure modifications when necessary.
Development of Inclusive Learning Materials	(Martínez, 2020)	Make learning materials inclusive and accessible to all students, including those with visual or hearing impairments, through symbols, audio, and enriched visual materials.
Constructive Feedback Approach	(Akpan & Beard, 2016)	Provide constructive and positive feedback to students with special needs, encouraging the development of their motor skills and building confidence.
Encouraging Parent and Community Involvement	(Ilkım et al., 2018)	Develop programs that enable parental and community participation in physical education activities, supporting an inclusive and supportive learning environment for students with special needs.

### Discussion

Based on a review of the literature on inclusive physical education learning strategies for students with special needs in senior secondary schools, our findings suggest some essential recommendations that can help improve the quality and effectiveness of learning. These recommendations cover a broad spectrum of strategies, from implementing differentiated learning approaches, using assistive technology, and professional teacher training and increased collaboration with physical and occupational therapists. In addition, improving the accessibility of sports facilities, developing inclusive learning materials, providing constructive feedback, and encouraging parental and community involvement are essential factors in creating a supportive learning environment for all students.

A differentiated learning approach allows teachers to tailor learning activities to students' needs, ensuring that every student can participate in and benefit from physical education activities regardless of their limitations. Assistive technology and adaptive equipment are essential tools that support students

with special needs in accessing and enjoying physical education lessons more independently and effectively.

Professional training for teachers is vital in preparing them with the knowledge and skills needed to implement inclusive learning strategies. This includes an understanding of the use of assistive technology and how to collaborate effectively with physical and occupational therapists. This collaboration is essential, especially in designing learning programs that suit students' individual needs and assist in developing their motor and social skills.

Improving the accessibility of sports facilities demonstrates the school's commitment to inclusive education and ensures that all students can participate in sports activities safely and comfortably. The development of inclusive learning materials enriches students' learning experience by providing a variety of learning methods that can reach students with different types of special needs.

Providing constructive feedback and building student confidence are critical aspects of increasing student motivation and engagement in learning. Parent and community involvement supports students in academic and social aspects and strengthens the support network for students with special needs

#### *Strategy Classification Based on Special Needs*

Classification of inclusive physical education learning strategies based on unique needs is crucial to identifying and implementing the most effective approaches for students with different needs. Appropriate adaptation of learning strategies can facilitate a more inclusive learning experience, strengthen student engagement, and improve learning outcomes. Strategies for students with physical needs include adaptations to equipment and environments. For example, using modified equipment, such as giant balls or rackets with thicker handles, can help students with physical limitations more easily participate in sports activities (Wilhelmsen et al., 2021). In addition, environmental adjustments, such as a reduction in court size or the use of safer surfaces, allow students with mobility impairments to engage actively without fear of injury.

Secondly, strategies for students with intellectual needs involve adjustments to instruction and communication. This approach includes using step-by-step instructions, visualization of tasks, and providing constructive and specific feedback (Bhatnagar & Many, 2022). These strategies aim to clarify expectations, reinforce understanding, and increase students' independence in learning. Thirdly, practical strategies for students with sensory needs, such as hearing or visual impairments, include using assistive technology and alternative communication methods. Using sign language interpreters, large text, or amplified audio materials can facilitate access to instruction and information. This approach ensures that all students can follow instructions and participate fully, regardless of sensory limitations.

Fourth, strategies for students with emotional or behavioral needs involve establishing a learning environment that supports and ensures emotional safety. This can include developing consistent classroom routines, providing emotional support through a positive approach, and constructively handling conflict. These strategies aim to create a safe, inclusive classroom atmosphere where students feel accepted and valued. An inclusive approach in physical education demands adjustments to the physical aspects of learning and requires sensitivity to students' emotional and social needs. By implementing individually tailored strategies, educators can encourage the engagement of all students in physical learning, promote academic success, and support social and emotional development (Protic-Gava et al., 2018). In designing and implementing inclusive physical education learning strategies, educators must continuously apply the principles of reflection and adaptation. This involves ongoing evaluation of the effectiveness of the strategies implemented and a willingness to make adjustments based on feedback and the specific needs of students (Marron et al., 2023). As such, inclusive learning approaches can dynamically adjust to developments and changes in students' need profiles, ensuring that physical education remains a valuable and inclusive experience for all.

#### *Strategy Comparison and Contrast*

Inclusive physical education learning demands diversified strategies to meet the needs of diverse students. As described by (Boer et al., 2011), game-based learning methods promote the engagement and motivation of students with special needs through fun and interactive activities. Compared to traditional approaches, which tend to be more rigid and less customized (Schuck & Lambert, 2020), game-based strategies offer greater flexibility and opportunities for adaptation to meet individual needs. However, the differentiation approach to teaching, as practiced by (Akpan & Beard, 2016), allows



instructors to customize learning objectives, resources, and activities based on individual student abilities. Lee found that this approach significantly improved the learning outcomes of students with special needs compared to game-based methods, which can sometimes be too generalized to target specific areas of need.

On the other hand, assistive technologies in physical education, such as customized learning apps and adaptive equipment, offer great potential for inclusion. (Soetan et al., 2021) Showed that using assistive technology increased the independence and participation of students with physical limitations. Nonetheless, (Kristén et al., 2022) underline the limitations of assistive technology, including dependence on technological resources and possible isolation from group activities, which contrasts with play-based approaches and differentiation that encourage more social interaction. The integration of inclusive physical education with outdoor activities has also been examined. (Trad et al., 2021) documented how outdoor activities strengthen the social and emotional skills of students with special needs, providing a different perspective than classroom learning focusing on motor and physical skills. However, outdoor activities require more intensive supervision and environmental adaptations, posing logistical challenges (Wu et al., 2019).

A comparison of these strategies reveals that only some approaches are superior in all contexts. The success of learning strategies depends on their adaptation to the specific needs of students, available resources, and the educational context. In line with these findings, future research should explore combinations of strategies to maximize the effectiveness of inclusive physical education learning (Robinson, 2017). A holistic approach that combines the strengths of different strategies may offer the most effective solution to support all students, especially those with special needs, in an inclusive physical education environment.

#### *Knowledge Gaps and Opportunities for Further Research*

In this systematic review of inclusive physical education learning strategies for students with special needs in senior secondary schools, several knowledge gaps have been identified, offering significant opportunities for further research. Firstly, while there is an increasing understanding of the effectiveness of various inclusive learning strategies, there needs to be more studies that examine the long-term impact of these approaches on the physical, social, and emotional development of students with special needs. Longitudinal investigations could provide greater insight into how participation in inclusive physical education activities contributes to students' long-term well-being.

Secondly, current research tends to be focused on the effectiveness of particular strategies in isolated contexts without considering how combinations of different approaches may interact to support students with special needs. Future studies integrating multidisciplinary approaches in physical education may provide more comprehensive guidance for practitioners. Thirdly, little existing research explores the perspectives of students with special needs regarding their experiences in inclusive physical education learning. Participatory research methodologies involving students as co-researchers could reveal valuable insights into the design and implementation of more responsive and inclusive programs.

Finally, while assistive technology is recognized as having the potential to improve accessibility and engagement in physical education, research on developing, implementing, and evaluating these tools is limited. Further research targeting technological innovation and critically assessing their use could facilitate more inclusive and interactive learning experiences. By addressing these knowledge gaps, future research could significantly contribute to inclusive physical education practice, ensuring that all students, especially those with special needs, fully benefit from their learning experiences.

Our analysis suggests that educators and policymakers must carefully consider several vital aspects. Firstly, the interpretation of the results shows that implementing inclusive learning strategies significantly improved the participation, motivation, and learning outcomes of students with special needs. This confirms the importance of pedagogical approaches designed to meet the needs of diverse student populations, which align with the basic principles of inclusive education that target eliminating all forms of discrimination and promoting equality and access to education (Uygur, Ayçiçek, Doğrul, & Yelken, 2020).

However, implementing inclusive learning strategies in the field faces various challenges. These include lacking resources, such as adaptive equipment, appropriate teaching materials, and teacher professional support. In addition, there are also challenges in the form of a need for more awareness and

specialized training regarding the need for inclusive education among physical education teachers. These difficulties highlight the urgent need for more robust support systems and comprehensive teacher training, ensuring that all educators have the necessary knowledge and skills to implement effective and inclusive learning strategies (Tomokawa, Miyake, & Asakura, 2020).

Addressing these challenges requires innovative and collaborative solutions. One proposed solution is developing and implementing an ongoing professional training program for teachers, covering inclusive learning techniques, the use of adaptive equipment, and strategies to increase student engagement. Such a program can help teachers better understand how to adapt curriculum and learning activities to meet the needs of students with special needs, fostering a more supportive and inclusive learning environment (Duque, Gairal, Molina, & Roca, 2020).

In addition, this research emphasizes the importance of practical recommendations for learning practices. These include using technology in physical education to support inclusive learning, such as apps and software that can be customized for different student needs. The use of technology can not only improve the accessibility of learning materials. Still, it can also enrich the learning experience of students with special needs, giving them equal opportunities to succeed (Baragash, Al-Samarraie, Alzahrani, & Alfarraj, 2019; Cahyani, 'Azizah, & Evans, 2021; Jdaitawi & Kan'an, 2021).

The discussion also underlined the importance of a collaborative approach between schools, parents, and communities to support inclusive physical education. This cooperation can strengthen the support network for students with special needs, ensuring they receive the help they need inside and outside the school environment (Cook & Mcduffie-Landrum, 2019; Schoop-Kasteler & Müller, 2019). Through joint efforts, a more inclusive and supportive educational environment can be created where every student can thrive and reach their full potential regardless of their unique needs.

Further implications of the findings point to the need for policy changes and improved supportive frameworks at the level of schools and the broader education system. This includes allocating adequate resources, such as adaptive equipment, access to the latest educational technology, and policy support for developing teacher training programs. Engagement and collaboration between schools, parents, and communities should also be enhanced to form vital support networks for students with special needs, ensuring they have access to the necessary educational and social resources. Increased awareness and understanding of inclusive needs in physical education among policymakers and education practitioners can promote the implementation of more effective strategies and build genuinely inclusive learning environments (Kirupainayagam & Sutha, 2021).

Given the importance and challenges of implementing inclusive physical education, future research directions should focus on evaluating the effectiveness of implemented learning strategies and identifying best practices and areas for improvement. Further research should also explore the influence of new educational technologies and learning innovations on the participation and learning outcomes of students with special needs. In addition, studies that examine the dynamics of cooperation between schools, families, and communities in supporting inclusive physical education can provide insights into ways to strengthen these support networks. As such, future research will be essential in informing the development of policies, pedagogical practices, and interventions designed to improve access to and quality of physical education for all students.

## **CONCLUSION**

We recognize the importance of inclusive learning in promoting the participation and development of all students, especially those with special needs. The results of this study highlight some learning strategies that are effective in improving the motor and social skills of students with special needs and strengthening a sense of community and inclusiveness within the physical education environment. The findings suggest that with the right approach and curriculum adaptation, all students can benefit from physical education lessons, enriching their learning experience.

The practical implications of this research for teachers and educators are significant. Adopting inclusive learning strategies in physical education requires a deep understanding of individual needs and flexible teaching approaches. This includes using assistive technology, modified games, and group activities designed to promote each student's engagement. This research shows that with a commitment to professionalism and innovation, educators can create learning environments that encourage all students to reach their full potential.

In addition, this study identifies areas for future research that can fill gaps in the existing literature and explore new aspects of inclusive physical education. There is a need for longitudinal studies that assess the long-term impact of inclusive learning strategies and research that compares the effectiveness of different approaches in different contexts. By expanding our knowledge base, the education community can continuously improve and adapt teaching methods to meet the needs of diverse student populations.

The final reflection of this review reaffirms the value of physical education as an essential component of the student learning experience. Inclusive physical education is about meeting the needs of students with special needs and enriching the learning experience for all students. It helps build skills such as empathy, cooperation, and self-esteem, essential for personal and social development. By adopting a more inclusive approach, schools can help prepare students in terms of physical fitness and becoming empathetic and inclusive members of society.

Overall, this research highlights the importance and potential of inclusive physical education in shaping positive and productive educational experiences for all students. By continuously implementing and refining inclusive learning strategies, we hope to improve the well-being of students with special needs and enrich our school communities

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