Human resource management of Physical Education teachers for students with special needs in inclusive schools

Gestión de recursos humanos de profesores de Educación Física para alumnos con necesidades especiales en escuelas inclusivas

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Abstract. This study used the systematic literature review to explore articles related to human resource management and physical education teachers who work with students with special needs in inclusive schools. Data were obtained from articles searched through Google Scholar. The keywords used were ("Human Resource Management" OR "HR Management") AND ("Physical Education Teacher" OR "PE Teacher") AND ("Special Needs Students" OR "Students with Disabilities" OR "SEN Students") AND ("Inclusive Schools" OR "Inclusive Education"). The search focused on articles published in Scopus-indexed journals between 2019 and 2024. During the search, inclusion and exclusion criteria were applied. The initial search generated 17,400 articles. Furthermore, the articles were screened again in several stages, and 16 articles that fit the theme and met the inclusion requirements were yielded. During the article selection, this study followed the PRISMA guidelines. The results of this study showed that inclusive education presents significant challenges in human resource management, especially regarding the readiness and competence of physical education teachers. For example, the teachers did not receive sufficient training in inclusive methodologies, leading them to feel underprepared for the diverse needs of students. Thus, comprehensive training that covers theory and hands-on practice was identified as a solution. Teachers with more in-depth training and experience showed more positive attitudes and abilities. In addition, adjustments to teaching methods and effective use of technology, with school support and collaboration between teachers, staff, and parents, were key to success. Furthermore, policy changes and adequate resource allocation were also crucial. Periodic evaluation of inclusive practices was necessary to ensure continuous development. Thus, increased training, supportive policies, and ongoing support from the government and schools were necessary to achieve effective, inclusive physical education.

Keywords: management, human resources, teachers, PE, students with special needs, inclusive schools

Resumen. Este estudio utilizó la revisión sistemática de la literatura para revisar la gestión de los recursos humanos relacionados con los profesores de educación física para estudiantes con necesidades especiales en las escuelas inclusivas . Los datos se obtuvieron de artículos buscados a través de Google Scholar. La búsqueda se centró en los publicados en revistas indexadas en Scopus publicadas en 2019-2024. Las revistas se seleccionaron teniendo en cuenta criterios de inclusión y exclusión. Las palabras clave utilizadas fueron; («Human Resource Management» OR «HR Management») AND («Physical Education Teacher» OR «PE Teacher») AND («Special Needs Students» OR «Students with Disabilities» OR «SEN Students») AND («Inclusive Schools» OR «Inclusive Education»). Se buscaron 17.400 artículos entre 2019-2014. Además, se revisaron de nuevo en varias etapas y se obtuvieron 16 artículos que se ajustaban al tema y cumplían los requisitos de inclusión. Durante la selección de artículos, este estudio siguió las directrices PRISMA. La conclusión de este estudio muestra que la educación inclusiva presenta desafíos significativos en la gestión de recursos humanos, especialmente en lo que respecta a la preparación y competencia de los profesores de educación física. La falta de énfasis en las metodologías inclusivas en la formación hace que los profesores se sientan poco preparados para las diversas necesidades de los alumnos. Se identificó como solución una formación integral que incluya teoría y práctica. Los profesores con una formación más profunda y experiencia mostraron actitudes y aptitudes más positivas. Además, los ajustes en los métodos de enseñanza y el uso eficaz de la tecnología, con el apoyo de la escuela y la colaboración entre profesores, personal y padres, fueron la clave del éxito. También son cruciales los cambios políticos y una asignación adecuada de recursos. La evaluación periódica de las prácticas inclusivas es necesaria para garantizar un desarrollo continuo. Así pues, para lograr una educación física integradora eficaz es necesario aumentar la formación, adoptar políticas de apoyo y contar con el respaldo continuo del gobierno y las escuelas.

Palabras clave: gestión, recursos humanos, profesores, educación física, alumnos con necesidades especiales, escuelas integradoras.

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Introduction

Human resource management (HRM) is an important aspect of office management, which contributes to achieving the school's mission. A school's reputation is frequently seen by the administration, reflecting the school's quality assurance (Javed & Alenezi, 2023; Rosdiana & Soedarmo, 2019). One critical aspect of school quality standards is its

educators or teachers, as emphasized in Government Regulation No. 32 of 2013 concerning National Education Standards (Government of Indonesia, 2013). To assure the school's quality, teachers are assessed through school documents, which contain a track record of teacher education and training. Teacher training needs are determined based on a school's needs analysis, which is essential in inclusive classes. As the inclusive classes develop, the teacher skills

receive the spotlight. Teachers need to adapt to the environment and the needs of diverse student conditions. Teachers need to adjust the quality of tools, methods, and models to improve the quality of service to students. Additionally, teacher skills to understand and respond to different student conditions are critical in improving the quality of learning outputs. Teachers with good competence can perform their duties more effectively, which in turn improves their performance in the classroom and student learning outcomes (Kartika & Ambara, 2021; Nurhaqia et al., 2023; Setiawan, 2020; Nugroho, 2023). Despite this, in reality, the professional development needs of teachers in inclusive schools often receive insufficient attention from school leadership.

Generally, the inclusive education program mandated by the law of the Republic of Indonesia aims to provide equal opportunities for all students, including those with special needs, to participate in the teaching and learning process in school. To achieve this objective, the management of human resources (HR), especially the HR of physical education (PE) teachers, plays a crucial role in ensuring that all students, including those with special needs, obtain an optimal learning experience. Research shows that the successful implementation of inclusive education relies heavily on teachers' understanding and skills in managing diverse classrooms (Mahdi et al., 2021; Setiawan & Apsari, 2019). Thus, the management of human resources in PE teachers should be directed at improving the teachers' competencies in facing the challenges of inclusive education through various education and training efforts. However, one of the main challenges in providing training for physical education teachers who work in inclusive education is the lack of understanding about its area. Research shows that many teachers feel unprepared to teach students with special needs due to inadequate training and available resources (Hartadi et al., 2019; Widodo et al., 2022). This results in low teacher self-efficacy in implementing inclusive teaching strategies. Therefore, it is important to design a comprehensive training program that covers not only the theory of inclusive education but also relevant hands-on practices (Asrul et al., 2023; Dewi et al., 2020a).

In addition, the attitude or response of physical education teachers towards inclusive education is also a key factor in the successful implementation of inclusive education. Research shows that teachers' positive attitudes toward inclusive education can increase students' participation in physical education activities, including students with special needs (Dewi et al., 2020b; Inayatillah & Andayani, 2019). However, there are still challenges in changing the negative perceptions that some teachers have about the abilities of students with special needs (Inayatillah & Andayani, 2019); (Hisham & Khairuddin, 2023). Therefore, it is important to conduct socialization and training that can help teachers understand the importance of inclusive education and how they can contribute to creating a welcoming learning environment for all students (Andry, 2023; Mujiafiat & Yoenanto, 2023). Inclusive teaching strategies in physical education should be designed to meet the needs of all students, including those with special needs. Research shows that using adaptive and inclusive teaching methods can increase student engagement in physical education activities (Fridayati et al., 2022; Pratiwi et al., 2020). In addition, it is important to involve students in the learning process by providing them with opportunities to participate in decision-making regarding the activities to be carried out (Haris et al., 2021; Rosmi & Jauhari, 2023). Thus, inclusive teaching strategies are not only beneficial for students with special needs but can also enhance the learning experience for all students in the classroom.

In addition to teacher training, policy changes and resource allocation are also key concerns in implementing inclusive education. Research shows that policies that support inclusive education must be accompanied by adequate resource allocation, including to provide assistive devices (Baharuddin & Saidang, 2020; Ferizaldi & Fazlina, 2020). Without strong policy support and sufficient resources, efforts to create an inclusive education environment will be difficult to achieve (Jaya et al., 2020; Suryadi, 2023). Therefore, it is important for governments and educational institutions to develop policies that support inclusive education and ensure that resources are allocated effectively to support its implementation.

In addition, an evaluation of physical education teachers' readiness for inclusive education is needed, as it is an important step in ensuring that they can meet the needs of all students. Research shows that systematic evaluation can help identify teachers' strengths and weaknesses in implementing inclusive education (Hartadi et al., 2019; Mumpuniarti & Lestari, 2019). By conducting regular evaluations, schools can develop appropriate professional development programs to improve teachers' skills and knowledge in inclusive education (Jemadis et al., 2022; Mumpuniarti & Lestari, 2019). This will help create a more inclusive learning environment and support the development of all students, including those with special needs.

Thus, human resource management of physical education teachers in inclusive schools requires a comprehensive and integrated approach. Through appropriate training, positive attitude or response changes, inclusive teaching strategies, policy support, and evaluation of teacher readiness, it is hoped that physical education can provide significant benefits for all students and create a more inclusive and supportive learning environment.

Indeed, research on human movement has touched on many areas. For example, some popular studies investigated the achievement of physical education learning outcomes (Martono et al., 2024; Komari et al., 2024a; Komari et al., 2024b; Septiantoko et al., 2024; Suyato et al., 2024; Widiyanto et al., 2024; Putro et al., 2024; Harmanto et al., 2024; Zulbahri et al., 2024; Susanto et al., 2024a), motor development (Susanto et al., 2024; Susanto et al., 2024), physical education or sport health and fitness (Widiyanto et al., 2024a; Widiyanto et al., 2024b; Syaukani et al., 2024; Pranoto, et al., 2024; Astuti et al.,

2024; Wayoi et al., 2024; Akhmad et al., 2024), law and sports (Ardiyanto et al., 2024; HB et al., 2024a; HB et al., 2024b), sports communication (Charlina et al., 2024), active lifestyle with exercise (Tafuri et al., 2024a), interval training and physiological (Latino et al., 2024a), circuit training programme (Tafuri et al., 2024b; Tafuri et al., 2024c; Latino et al., 2024b; Latino et al., 2024c; Adirahma et al., 2024), injury risk on sports (Anam et al., 2024a; Fahrosi et al., 2024), endurance training and physiological (Latino et al., 2024c), therapeutic sports (Zanada et al., 2024), movement skills (Susanto et al., 2023; Anam et al., 2024b; Pranoto et al., 2024), and sports training and performance (Kurniawan et al., 2024; Susanto et al., 2024), curriculum and management of physical education learning (Mardiyah et al., 2024a; Yani et al., 2024; Mardiyah et al., 2024b), and the management of sports education and archery (Hamsyah et al., 2024; Mulyanti et al., 2024; Setyawan et al., 2023a; Setyawan et al., 2023b; Setyawan et al., 2024a; Setyawan et al., 2024b; Destriani et al., 2024), students' motor skills (Sayekti et al., 2024), and adaptive physical education (Susanto et al., 2024b)

Despite the numerous studies on the topics mentioned above, there remains a lack of scientific research on human resource management for physical education teachers working with students with special needs in inclusive schools, particularly regarding training, attitudes, teaching strategies, policies, and teacher readiness assessment. The scarcity of research on this topic may hinder understanding, research findings, and scientific development in the field. Therefore, it is essential to conduct studies on this topic by thoroughly reviewing the existing literature.

Materials & Methods

To achieve the above objectives, this study employed a systematic literature review by identifying, evaluating, and interpreting all relevant research results. The search was conducted using a comprehensive strategy, Google Scholar. The keywords used in the journal search were ("Human Resource Management" OR "HR Management") AND ("Physical Education Teacher" OR "PE Teacher") AND ("Special Needs Students" OR "Students with Disabilities" OR "SEN Students") AND ("Inclusive Schools" OR "Inclusive Education"). During the search, several inclusion and exclusion criteria were applied. For example, the articles must be published in Scopus-indexed journals to be included in the review. In addition, the publication period was limited between 2019-2024. The complete list of inclusion and exclusion criteria are shown in Table 1

Table 1. Inclusion and exclusion criteria

Criterion	Inclusion	Exclusion	
Period	Journals published in 2019 - 2024	Journals published outside 2019-2024	
Indexed	Scopus-indexed international journal	Non-Scopus-indexed international journal	
Access	Open access	Close access (Subscription)	
Language	English language journal	Non-English language journal	
Article Type	Original research article & review article	Conference proceedings, book, book chapter, book series, editorial, etc.	
Full Text	Articles fulfill the scope/topic of research	Articles do not fit the scope/topic of the research	
Full Text	Articles fulfill the scope/topic of research	Articles do not fit the scope/topic of the research	

 $[\]hbox{The article's content is relevant to the theme of hu-Topic of Discussion } \quad \hbox{man resource management of physical education teachers in inclusions}$

Based on the 2019-2014 search, 17,400 articles were found from various international journal indexing databases, including Scopus and other database sources. Furthermore, after undertaking several stages of the screening process, 16 articles that fit the theme and met the inclusion requirements were selected. During the article selection, this study followed the "Preferred Reporting Items for Systematic Reviews and Meta-Analyses" (PRISMA) guidelines.

These guidelines are expected to produce systematic literature review reports that are more transparent, complete, and accurate, thus facilitating evidence-based decision-making (Page et al., 2021). This systematic literature review gathered all available scientific evidence according to the inclusion and exclusion criteria (Martín-Moya et al., 2021). The process of article selection is illustrated in Figure 1.

Results

This section presents the results of the literature review

related to human resource management of physical education teachers in inclusive schools. The detailed results are shown in Table 2.

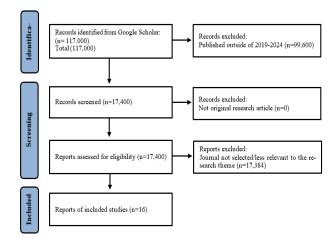


Figure 1. PRISMA flowchart of the article selection process

The article's content is not relevant to the theme of human resource management of physical education teachers in inclusive schools.

Table 2. Literature Review Results

Literature Rev	riew Results Study objectives	Main Findings
, rumoi		Findings of the research: The research revealed that while Chile has estab-
(Castillo- Paredes et al., 2023)	Purpose of the research: The study aims to explore the current state of inclusion for students with special educational needs (SEN) in Physical Education (PE) and Health classes in Chile. The research investigates the alignment between legislative frameworks, such as national decrees and international agreements, and the actual pedagogical practices implemented by educators to promote inclusive education in these settings.	lished a robust legal framework to support inclusive education, significant
(Rojo-Ramos et al., 2022)	training for inclusive education. It focuses on identifying the challenges	Findings of the research: The findings indicated that many Spanish PE teachers felt inadequately prepared to teach inclusively due to limited exposure to practical, hands-on training during their initial education. The study also highlighted a lack of continuous professional development opportunities focused on inclusive education, which contributes to teachers' uncertainty and lack of confidence in addressing the diverse needs of their students.
(Tarantino & Neville, 2023)	Purpose of the research: The study seeks to identify the factors that influence Irish teachers' attitudes toward including children with disabilities and special educational needs in physical education classes. It aims to provide an understanding of how teachers' backgrounds, training, and school contexts affect their ability to implement inclusive practices.	Findings of the research: The research revealed that teachers with more comprehensive training in inclusive education and those who had experience working in inclusive environments tended to have more positive attitudes towards the inclusion of children with disabilities in PE classes. Conversely, teachers with limited exposure to inclusive practices or insufficient training were more likely to encounter challenges in creating an inclusive environment.
(O'Connor & McNabb, 2021)	Purpose of the research: This study aims to examine how a rights-based approach can be used to enhance the participation of students with special educational needs (SEN) in mainstream physical education classes. It focuses on identifying barriers to participation and developing strategies to promote inclusive practices that align with students' rights to education and participation.	Findings of the research: The findings discovered that adopting a rights-based approach helped identify and address the systemic barriers that hindered the participation of students with SEN in PE classes. The study emphasized the need for policy changes, teacher training, and resource allocation to ensure that inclusive practices were consistently implemented, enabling all students to participate fully and equitably in physical education activities.
(Celestino et al., 2023)	Purpose of the research: The research explores physical education teachers' perceptions of their training and capacity to promote inclusive practices for students with disabilities. It investigates how teachers' initial and ongoing professional development impacts their ability to effectively implement inclusive strategies in their teaching.	Findings of the research: The study found that many PE teachers perceived their initial training as insufficiently focused on inclusion lacking practical experience with students with special needs. Teachers reported feeling unprepared to address the unique needs of these students due to inadequate emphasis on inclusive pedagogical methods during their training. The research suggested that more targeted training and professional development were necessary to improve teachers' confidence and competence in inclusive education.
(A. J. Maher & Fitzgerald, 2020)	Purpose of the research: This study investigates the perspectives of special school physical education teachers on their initial teacher education (ITE) and continuing professional development (CPD) in the context of inclusive education in England. It focuses on understanding how these experiences prepare teachers to meet the diverse needs of students with special educational needs and disabilities (SEND).	Findings of the research: The study revealed that special school PE teachers often felt that their initial teacher education did not adequately focus on inclusive education for students with SEND. Additionally, there were limited professional development opportunities specifically tailored to the needs of special school environments. The findings highlighted the need for more specialized training and CPD opportunities to support teachers in developing the skills necessary for inclusive education.
(Alhumaid et al., 2022)	Purpose of the research: The study aims to investigate the attitudes of physical education (PE) teachers in Saudi Arabia toward the inclusion of students with disabilities in PE classes. Additionally, it seeks to examine the influence of sociodemographic variables, such as gender and length of teaching experience, on teachers' attitudes toward inclusion.	Findings of the research: The findings indicated that Saudi Arabian PE teachers generally held moderately positive attitudes toward the inclusion of students with disabilities in their classes. Notably, female teachers demonstrated more positive attitudes towards inclusion compared to their male counterparts, which might be attributed to differences in training programs and cultural contexts.
(Bertills et al., 2019)	Purpose of the research: The research aims to examine the relationship between inclusive teaching skills and student engagement in physical education (PE) settings, focusing particularly on how engagement varied among students with different levels of ability and academic performance.	Findings of the research: The study found that teaching strategies that included close communicative proximity to students with disabilities can positively impact their engagement in PE classes. Students with disabilities tended to be more engaged when teachers were physically closer to them, providing individualized feedback and support, though this sometimes limited peer-to-peer interaction.
(Reina et al., 2019)	Purpose of the research: This study aims to evaluate the effectiveness of specific training programs in enhancing self-efficacy among in-service physical education teachers regarding the inclusion of students with disabilities, comparing teachers in the insular and peninsular regions of Spain.	Findings of the research: The results indicated that the training programs significantly improved the self-efficacy of teachers in both regions, although teachers from insular regions showed a slightly higher increase in self-efficacy levels. This suggests that geographical and cultural contexts may play a role in how such training is perceived and its subsequent impact.
(Furrer et al., 2020)	Purpose of the research: The study explores the impact of different teaching strategies, specifically Individual Reference Norm Orientation (IRNO) and cooperative skills, on the social acceptance and interaction of students with intellectual disabilities (ID) in inclusive PE settings.	Findings of the research: The findings showed that using IRNO was positively related to the social acceptance of all students, regardless of their disability status. However, teaching cooperative skills was only associated with higher social acceptance and not with more positive interactions among students with ID. This suggests that while some strategies may enhance inclusion, their effectiveness can vary depending on the specific social dynamics in the classroom.
(Majoko, 2019)	Purpose of the research: The study aims to investigate the pedagogical practices used by teachers to include children with disabilities in physical education classes within Zimbabwean primary schools.	Findings of the research: The research identified several inclusive practices, such as modified activities, the use of assistive resources, and collaboration with support staff. However, it also highlighted barriers such as large class sizes, inadequate training, and limited resources that hinder effective inclusion in PE classes.
(Rojo-Ramos et al., 2023)	Purpose of the research: This study intends to validate the Evaluation of Teachers' Preparation for Inclusion (CEFI-R) questionnaire for assessing	Findings of the research: The study concluded that the CEFI-R questionnaire is a valid and reliable tool for evaluating the readiness of PE teachers for inclusive education. It identified four key dimensions (conception of diversity,

and promoting inclusive teaching practices in physical education settings. for inclusive teaching roles by aligning with the performance standards for teachers in England. Findings of the research: The study revealed that Saudi Arabian PE teachers generally exhibited moderate levels of self-efficacy regarding inclusive practices for students with autism. Significant differences were noted between els of physical education teachers in Saudi Arabia regarding their ability to include students with autism in their classes. The research identifies factors additionally, teachers with postgraduate degrees demonstrated higher self-influencing these self-efficacy levels, including demographic variables, edu-efficacy than those with lower educational qualifications. The findings suggest	3 17 8 11	, , , , , , , , , , , , , , , , , , , ,	
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ment allowed prospective PE teachers to critically reflect on their preconcerved to their preconsultation of the p		bilities in their teaching practices.	ured teachers' preparedness for inclusion.
Maher et al., 2022a)		Purpose of the research: The study tries to explore how a special school	
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Discussion

This systematic literature review aimed to investigate the human resource management of physical education teachers in inclusive schools. Human resource management of physical education (PE) teachers in inclusive schools is an important component in achieving the goal of inclusive and equitable education for all students, including students with special needs (SEN). Although some countries have developed strong legal frameworks to support inclusive education, there is still a significant gap between regulation and practice on the ground that hinders teachers' ability to effectively integrate students with SEN into inclusive physical education classes (Castillo-Paredes et al., 2023; Rojo-Ramos et al., 2022). Other research suggests that lack of adequate training and limited continuous professional development opportunities leave many teachers feeling unprepared to deal with the diverse needs of students in an inclusive physical education context (Celestino et al., 2023; Maher & Fitzgerald, 2020; Tarantino & Neville, 2023).

Teacher training is one important aspect of improving their competence in managing diverse classrooms, especially in inclusive education. Well-designed training can help teachers understand and implement appropriate teaching strategies for students with special needs (Hernawan et al., 2023; Rofiah et al., 2024). This training includes not only theory but also hands-on practice that allows teachers to adapt to the different needs of students (Rofiah et al., 2024). In addition, adequate support from the school and government is crucial to creating an inclusive environment.

This includes providing sufficient resources, such as educational aids and facilities that are friendly to students with special needs (Dewantara & Kusumastuti, 2020; Suryadi, 2023). Research shows that without adequate support, the implementation of inclusive education deals with various obstacles that can hinder the teaching and learning process (Suryadi, 2023); (Dewantara & Kusumastuti, 2020).

Thus, effective human resource management of physical education (PE) teachers in inclusive schools is crucial in ensuring equitable, inclusive education for students with special needs. While many countries have implemented legal frameworks to support inclusive education, the gap between regulation and practice on the ground remains a significant barrier. Insufficient training and a lack of continuous professional development leave many teachers unprepared to manage diverse classrooms. Therefore, comprehensive and practice-focused training is an important solution to improve teachers' competencies in inclusive education. In addition, schools and governments must provide sufficient resources and facilities to create an inclusive learning environment. Without this support, the implementation of inclusive education will continue to face various challenges that may hinder the successful integration of students with special needs in physical education.

Challenges in Physical Education Teacher Training for Inclusive Education

Initial training of physical education teachers often does not place enough emphasis on inclusive methodologies, leading to a lack of practical experience relevant to the needs of students with special needs (Celestino et al., 2023; Maher & Fitzgerald, 2020). For example, PE teachers in Spain felt unprepared to teach inclusively due to a lack of practical training during their initial education (Rojo-Ramos et al., 2022). This is exacerbated by limited continuous professional development opportunities focused on inclusive education. As a result, teachers felt uncertain and less confident in addressing the needs of diverse students (Rojo-Ramos et al., 2022). Therefore, more focused training and continuing professional development opportunities are needed to improve teachers' competencies in inclusive education (Maher & Fitzgerald, 2020; Tarantino & Neville, 2023).

The importance of inclusive education-focused training cannot be overlooked, given that teachers are at the fore-front of implementing inclusive education policies. Research shows that well-designed training can help teachers understand and implement appropriate teaching strategies to work with students with special needs (Watulingas & Cendana, 2020). In this context, training should include not only the theory of inclusive education but also hands-on practice that enables teachers to adapt to the different needs of students (Ananda et al., 2023). Thus, more inclusive education-focused training will provide teachers with the necessary skills to create inclusive and supportive learning environments for all students.

In addition, continuous professional development is very important to ensure that teachers stay up-to-date with best practices in inclusive education. Research shows that teachers who engage in continuous professional development programs tend to be more confident and effective in teaching students with special needs (Bayu et al., 2023). Therefore, it is important for educational institutions to provide opportunities for teachers to attend training and workshops on a regular basis (Sudirman et al., 2022). This will not only improve teachers' competencies but will also contribute to improving the quality of education in general.

In addition, support from school management and government is also crucial in creating a supportive environment for inclusive education. Research shows that without adequate support, the implementation of inclusive education will face various obstacles that can hinder the teaching and learning process (Minsih et al., 2021). Therefore, it is important for school management to ensure that all teachers have access to the necessary resources to support students with special needs (Iskandar, 2024). This support can include the provision of educational aids, facilities that are friendly to students with special needs, and policies that support inclusive education at the school level.

Physical Education Teacher's Attitude or Response to Inclusive Education

Another finding discussed in this research is teachers' attitudes towards inclusive education. This research believes that teachers' attitudes are strongly influenced by their level of training and experience. Teachers who have more comprehensive training and experience in inclusive environments tend to have more positive attitudes towards

the inclusion of children with disabilities in PE classes (Tarantino & Neville, 2023). Teachers with positive experiences in teaching students with special needs tend to be more open and accepting towards inclusive education (Habibie & Trifitrianto, 2020). Conversely, negative experiences or lack of interaction with students with special needs can lead to skeptical or negative attitudes toward inclusive education (Bayu et al., 2021; Habibie & Trifitrianto, 2020). Therefore, it is important to create opportunities for teachers to interact with and learn from the experience of teaching students with special needs, either through mentor programs or collaboration with more experienced colleagues (Nuarilenzy et al., 2022). Furthermore, teachers in Saudi Arabia, for example, generally have fairly positive attitudes toward inclusion, but these attitudes vary by gender and training context (Alhumaid et al., 2022). In contrast, teachers with inadequate inclusive training or limited experience in inclusive practices tend to encounter challenges in creating inclusive environments (Alhumaid, Tarantino & Neville, 2023). The lack of knowledge and skills in dealing with students with special needs can hinder teachers' ability to provide effective and inclusive education (Watulingas & Cendana, 2020). Therefore, it is important to develop training programs that are more focused on inclusive education, which include not only theory but also practical activities relevant to students' needs (Ananda et al., 2023).

Teacher training should be designed to improve their understanding of students with special needs and ways to accommodate these needs in teaching (Bayu et al., 2023). Research shows that training that focuses on inclusive teaching strategies can help teachers develop the skills needed to create a supportive learning environment for all students (Sudirman et al., 2022). Thus, improving the quality of teacher training is key to changing their attitudes toward inclusive education.

In order to improve teachers' positive attitudes towards inclusive education, it is important to conduct socialization and training that can help teachers understand the importance of inclusive education and how they can contribute to creating a welcoming learning environment for all students (Himawan et al., 2022). Training programs that involve reflective practice can help teachers evaluate their attitudes and approaches to inclusive education and identify areas for improvement (Sovitriana et al., 2024). Thus, developing a comprehensive and sustainable training program will improve teachers' attitudes towards inclusive education and classroom teaching effectiveness.

Inclusive Teaching Strategies in Physical Education

The use of inclusive teaching strategies, such as modified activities, assistive resources, and collaboration with support staff, has been shown to be effective in increasing the participation of students with disabilities in PE classes (Majoko, 2019). In addition, approaches emphasizing communicative closeness between teachers and students with disabilities can positively influence their engagement in PE

classes (Bertills et al., 2019). However, the effectiveness of these strategies may vary depending on the specific social dynamics within the classroom, as shown by research (Furrer et al., 2020) regarding the relationship between cooperative teaching strategies and social acceptance in the classroom

Furthermore, research shows that using assistive technology tools in teaching can also increase the participation of students with disabilities (Budiman et al., 2024). These tools, such as educational software and visual aids, allow students to access learning materials in a way that is more appropriate to their needs. Thus, integrating technology in physical education not only assists students with disabilities but also enriches the learning experience for all students in the classroom (Fadhli, 2020). Therefore, training teachers in using assistive technology tools and other educational resources is essential to improve the effectiveness of inclusive teaching.

Nevertheless, there are also challenges in implementing inclusive teaching strategies. Research shows that a lack of training and support for teachers can hinder their ability to implement inclusive teaching strategies (Maharani, 2023). Teachers who do not receive adequate training may not feel confident in addressing the needs of students with disabilities, which in turn may affect their attitudes toward inclusive education as a whole (Lestari et al., 2024). Therefore, it is important to provide comprehensive and continuous training for teachers so that they can develop the necessary skills to create an inclusive learning environment.

In addition, collaboration between teachers, support staff, and parents is also a key factor in the successful implementation of inclusive education. Research shows that when all parties are involved in the education process, students with disabilities tend to get better support and are better able to participate in classroom activities (Fransisca, 2023). Therefore, it is important for schools to build strong partnerships between teachers, support staff, and parents to help students with disabilities achieve their potential.

Need for Policy Change and Resource Allocation

Adopting a rights-based approach to inclusive education can help to identify and address systemic barriers that hinder the participation of students with SEN in PE classes (O'Connor & McNabb, 2021). Studies show that policy changes, teacher training, and adequate resource allocation are necessary to ensure that inclusive practices are implemented consistently, enabling all students to participate fully and equally in physical education activities (O'Connor & McNabb, 2021). This includes the need for educational policy adjustments, budget allocations, and improved facilities and support for PE teachers.

Policy changes that support inclusive education should include a clear and measurable framework for implementation on the ground. Research shows that inconsistent or unclear policies can cause confusion among teachers and hamper their efforts to effectively implement inclusive education (Rahmi & Muqowim, 2022). Therefore, it is important

for governments and educational institutions to develop policies that support inclusive education and ensure that all parties are involved in the process (Sudarto, 2017). This includes involving teachers, parents, and communities in formulating policies that are relevant and responsive to the needs of students with SEN.

Policies related to teacher training are also a crucial aspect of implementing inclusive education. Research shows that teachers who receive adequate training are more confident and effective in teaching students with special needs (Baharuddin & Saidang, 2020). Therefore, training programs should be designed to provide teachers with the necessary skills and knowledge to create an inclusive learning environment. This includes training on adaptive teaching strategies, the use of educational aids, and how to collaborate with support staff (Affandi et al., 2022). By improving teachers' competencies, they are expected to better meet the needs of all students in the classroom.

Adequate resource allocation is also crucial to support inclusive education. Research shows that without sufficient support, implementing inclusive education will face various obstacles that can hinder the teaching and learning process (Ishak et al., 2024). It is important for school management to ensure that all teachers have access to the necessary resources to support their students (Insiatun et al., 2021). This includes the provision of educational aids, facilities that are friendly to students with special needs, and support from the school and government.

In addition, it is important to create a school culture that supports inclusive education. Research shows that a positive and inclusive school environment can increase students' participation in SEN and encourage better social interaction between students (Fibrianto et al., 2022). Therefore, schools need to develop programs that promote awareness and understanding of diversity among students and staff (Oktavia et al., 2021). By creating an inclusive culture, all students are expected to feel accepted and valued, which in turn will increase their engagement in physical education activities.

Evaluation of Physical Education Teacher Readiness for Inclusive Education

Assessing PE teachers' readiness for inclusive education can be done using evaluation tools such as the CEFI-R questionnaire. The questionnaire identified four key dimensions: conceptions of diversity, methodology, support, and community participation (Rojo-Ramos et al., 2023). The results of these evaluations can be used to design more effective training and professional development programs, which will improve teachers' readiness and competence in dealing with the needs of students with special needs (Maher et al., 2022a); (Maher et al., 2022b).

Training programs designed based on the results of this evaluation should include specific training on modifying the curriculum, training on collaborative teaching strategies, and effective use of assistive resources (Watulingas & Cendana, 2020). Research shows that teachers who receive

appropriate training tend to be more confident and better in managing inclusive classrooms (Perdana et al., 2023). In addition, training that focuses on developing practical skills can assist teachers in implementing teaching strategies that are more adaptive and responsive to the needs of students with disabilities (Setyowati & Wardani, 2020). Thus, appropriate training can improve the quality of inclusive education in schools.

Support from the community and collaboration with support staff are also important aspects of improving teachers' readiness for inclusive education. Research shows that when teachers work with support staff, they can be more effective in meeting the needs of students with special needs (Rosmi & Jauhari, 2023). Therefore, it is important to create an environment that supports collaboration between teachers, support staff, and parents so that all parties can contribute to creating an inclusive learning experience for students (Budiman et al., 2024). By building strong partnerships, it is expected that students with special needs can more easily integrate and participate in physical education activities.

In addition, it is important to continuously evaluate and monitor the implementation of inclusive education in the classroom. Research shows that ongoing evaluation can help identify areas for improvement and ensure that inclusive practices are implemented consistently (Abdurrahman et al., 2023). By conducting regular evaluations, schools can develop better strategies to support teachers and students in the learning process (Irmayanti & Yuliani, 2020). It will also help identify additional training needs for teachers so that they can continuously improve their skills and knowledge in inclusive education.

Conclusion

This study found that inclusive education presents significant challenges in terms of human resource management, particularly the key challenges of teacher preparedness and competence and the lack of continuous professional development opportunities. A key challenge in training PE teachers for inclusive education is the lack of emphasis on inclusive methodologies in training. This has led to many teachers feeling underprepared to manage classrooms with diverse student needs. The importance of more comprehensive training that includes both theory and hands-on practice has been identified as a solution to improve teachers' competence in dealing with students with special needs. In addition, PE teachers' attitudes and responses to inclusive education are strongly influenced by their level of training and experience. Teachers with more in-depth training and experience in inclusive settings show more positive attitudes and better abilities in teaching students with special needs. Therefore, socialization and continuous training are crucial to build a more open and inclusive attitude.

In terms of teaching strategies, adjustments to methods and the use of assistive technology tools have effectively increased the participation of students with disabilities in PE

classes. However, the effectiveness of these strategies depends on teacher training and support from schools and support staff. Collaboration between teachers, staff, and parents also plays an important role in ensuring the successful implementation of inclusive education. Furthermore, the need for policy change and resource allocation cannot be ignored. Policies supporting inclusive education must be clarified and consistent to provide proper guidance for teachers. In addition, the allocation of adequate resources, including facilities that are friendly to students with special needs, is an important prerequisite for the success of inclusive education. Adequate support from schools and government, both in the form of policies and resources, is needed. Furthermore, the evaluation of PE teachers' readiness for inclusive education shows that training based on evaluation results can help teachers be more prepared and confident in facing inclusive challenges. Periodic evaluation of inclusive practices is also important to ensure that the approaches taken continue to evolve and meet students' needs. Therefore, managing PE teacher human resources in inclusive education requires a holistic approach, including adequate training, policy changes, ongoing support, and consistent evaluation to ensure equitable and inclusive education for

The implications of these findings suggest that improvements in training and support for physical education teachers are necessary to achieve effective inclusive education. Teacher training curricula should place more emphasis on inclusive methodologies and provide relevant practical experiences. In addition, policy changes that support inclusion and the allocation of adequate resources should be a priority to address the gap between regulation and practice. Continued support from government, schools, and communities is also essential to create a welcoming environment for all students. These implications demand the involvement of all parties to ensure that students with special needs can be well integrated into physical education activities in inclusive schools.

Conflicts of interest

The authors declare no conflicts of interest.

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