

Evaluating Inclusive Physical Education Programs to Enhance Physical Literacy Among Physically Disabled University Students in Punjab, Pakistan

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Abstract

This study explores the effectiveness of inclusive physical education programs in enhancing physical literacy among physically disabled university students in Punjab, Pakistan. Physical literacy, which encompasses motivation, confidence, competence, and knowledge, is essential for individuals with disabilities to foster independence, improve well-being, and promote social inclusion. The research aims to assess the challenges faced by disabled students in physical education and evaluate how inclusive programs contribute to overcoming these barriers.

Qualitative research design was employed, using semi-structured interviews as the sole data collection tool. Interviews were conducted with physically disabled university students, teachers and head of departments to gather in-depth insights into their experiences, challenges, and perceptions of inclusive physical education programs. Thematic analysis was applied to identify common patterns and themes in the responses.

Findings indicate that inclusive PE programs face four major challenges. Accessibility remains a key issue, as many universities lack essential infrastructure such as accessible toilets, libraries, lecture halls, and adaptive sports equipment, leading to exclusion and reduced participation. Teacher preparedness is another barrier, with many educators lacking training in adaptive physical education, making it difficult to modify activities to accommodate students with disabilities. Peer interactions also significantly impact students' motivation and participation, as negative social experiences, such as exclusion and marginalization, deter engagement in PE activities. Lastly, curriculum flexibility is a concern, as rigid standardized PE programs fail to address the diverse needs of students, often resulting in their exclusion. The study highlights the need for adaptive activities and individualized learning goals to ensure equitable participation.

The study concludes that enhancing the effectiveness of inclusive physical education programs requires systemic reforms. Universities should invest in accessible infrastructure, implement disability-sensitive curricula, and provide targeted training for instructors. Addressing these gaps will ensure that physically disabled students receive equitable opportunities to develop physical literacy, ultimately fostering lifelong engagement in physical activities and improving their overall well-being.

Keywords: Inclusive Physical Education, Physical Literacy, Physically Disabled Students.

Introduction:

Physical literacy is a multifaceted and complex construct that does not cover physical activity only but also encompasses the motivation, confidence, physical competence, knowledge, and understanding to value and take responsibility for engaging in physical activities throughout every individual's life (Ilahi et al., 2024; Whitehead, 2010). This holistic approach highlights the importance of physical literacy in promoting physical well-being along with mental and social health. For individuals with physical disabilities, developing physical literacy is both a right and a necessity, as it enables their integration into society and enhances their quality of education and their upcoming life.

The Importance of Physical Literacy

Physical literacy operates as the basis for a lifelong engagement in physical activities, which is essential for maintaining health and well-being for every individual. It is specifically crucial for individuals with physical disabilities, as it equips them to cope with the challenges in society and the environment which ultimately foster their independence and ensure social inclusion. Developing physical literacy in this population enhances motor skills, boosts self-esteem, and promotes mental health, thereby contributing to a holistic sense of well-being (Edwards et al., 2017; Yar et al., 2025).

Challenges in Developing Physical Literacy Among Physically Disabled Students

Despite its significance physically disabled students often encounter numerous challenges in developing physical literacy. In the countries like Pakistan, in the existence of limited resources, less trained teachers and reduced interest of the students in physical literacy, the situation is worse (Fazal et al., 2024). These challenges can be broadly categorized into infrastructural, attitudinal, and systemic barriers.

Infrastructural Barriers

In many educational settings, particularly in developing countries like Pakistan, universities lack the necessary infrastructure to accommodate students with physical disabilities. Facilities such as ramps, accessible restrooms, and adaptive sports equipment are often absent, limiting the participation of these students in physical education (PE) programs. A study highlighted that only 4.85% were equipped with toilets specifically designed for children with disabilities (Jamil, 2020). This lack of infrastructure not only hinders physical participation but also sends a message of exclusion to these students.

Attitudinal Barriers

Societal attitudes towards disability significantly impact the inclusion of physically disabled students in PE programs. Negative perceptions and low expectations from peers, educators, and even family members can lead to the demotion of these students. Such approaches can reduce their motivation to participate in physical activities, thereby impeding the development of physical literacy. In Pakistan, cultural norms and misconceptions about disability often result in the isolation of individuals with disabilities, further intensifying their exclusion from mainstream activities (Lynch & Curtner-Smith, 2019; Manzoor et al., 2024; Stroebel et al., 2017).

Systemic Barriers

The education system itself can pose challenges to the inclusion of physically disabled students in PE programs. A lack of policies promoting inclusive education, insufficient teacher training, and rigid curricula that do not accommodate diverse learning needs are significant obstacles.

In Pakistan, while there have been efforts to promote inclusive education, the implementation of these policies, particularly in PE, remains limited (Raza et al., 2025; Reilly et al., 2022; Sit et al., 2022).

Inclusive Physical Education: A Pathway to Physical Literacy

Inclusive Physical Education (PE) programs are designed to accommodate students of all abilities, ensuring that physically disabled students have equal opportunities to participate in physical activities. These programs are grounded in the principles of educational equity, recognizing every student's right to access PE (Belton et al., 2019).

Benefits of Inclusive PE Programs

Inclusive PE programs offer numerous benefits to physically disabled students. They provide opportunities for social interaction, enhance motor skills, and promote a sense of belonging. Moreover, these programs can enhance self-esteem and confidence, as students are able to participate in activities together with their peers. Research indicates that inclusive PE programs can lead to positive outcomes in physical literacy development among students with disabilities (Eutsler, 2023; VanArnhem, 2024).

Challenges in Implementing Inclusive PE Programs

Implementing inclusive PE programs is not without challenges. Educators may lack the essential training to adapt activities for students with miscellaneous needs. Additionally, there may be a scarcity of sources, such as adaptive equipment, to facilitate inclusive practices. In Pakistan, these challenges are intensified by infrastructural limitations and societal attitudes towards disability (Saleem et al., 2023).

Current State of Inclusive PE in Pakistan

In Pakistan, the concept of inclusive education is gaining traction; however, its application in PE programs remains limited. A significant number of children with disabilities in Pakistan still lack access to education due to physical barriers and a shortage of specialized teachers and resources. While some universities report enrolling children with disabilities, the lack of facilities such as ramps and accessible restrooms creates layers of exclusion that prevent students from fully participating in PE activities (Aubert et al., 2022; Qi & Ha, 2012).

Policy Initiatives and Their Impact

The Pakistani government has initiated several policies aimed at promoting inclusive education. However, the implementation of these policies, especially in the context of PE, has been inconsistent. The lack of clear guidelines and resources for universities has resulted in varied practices, with many universities struggling to provide inclusive PE programs (Fazil & Ahmad, 2023; Mehmood & Parveen, 2025; Policy, 2010).

The Role of Educators in Promoting Inclusive PE

Educators play a pivotal role in the successful implementation of inclusive PE programs. Their attitudes, knowledge, and skills notably influence the participation of physically disabled students in PE activities. Professional development programs that equip educators with the skills to design and implement adaptive PE activities are critical. Moreover, encouraging supportive and inclusive universities culture can boost the effectiveness of these programs (Ilahi, 2024; Ryan, 2023, 2025)

Community Engagement and Support

Community engagement is essential in promoting inclusive PE programs. Collaborations with disability advocacy groups, sports organizations, and local communities can enhance opportunities for physically disabled students. Such partnerships can provide additional

resources, support, and awareness, contributing to the successful implementation of inclusive PE programs.

Developing physical literacy among physically disabled students is a multifaceted endeavor that requires addressing infrastructural, attitudinal, and systemic barriers. Inclusive PE programs serve as a vital pathway to achieving this goal, offering numerous benefits that extend beyond physical health.

Rationale

Physical education (PE) plays a central role in the holistic development of students, incorporating physical, mental, and social well-being. However, traditional PE programs often overlook the distinctive needs of students with physical disabilities, leading to their marginalization and limited participation. This exclusion not only hampers their physical development but also affects their self-esteem, social integration, and overall quality of life. In Pakistan, where educational resources and inclusive practices are still evolving, there is a pressing need to evaluate and enhance PE programs to ensure they cater to all students, regardless of their physical abilities.

Moreover, Pakistan and Afghanistan are the only countries where Polio has not been eradicated yet (Badizadegan et al., 2022) and the number of paralyzed children due to Polio is more than any other country in the world. Besides that, among five top countries having most disabled population, Pakistan stands at no. 3 (1.84 million) with other countries like India, Nigeria, Indonesia, and Ethiopia (Olusanya et al., 2018; Olusanya et al., 2022). This situation necessitates to explore the physical literacy and activities in the framework of inclusive education for physically disabled students in Pakistan.

Significance

Implementing inclusive PE programs is not only a matter of compliance with educational standards; it is a commitment to equity and social justice. Such programs ensure that students with physical disabilities have equal opportunities to participate in physical activities, promoting their physical health, social inclusion, and emotional well-being. Moreover, inclusive PE advances towards empathy, respect, and understanding among all students, developing a university culture that values variety and inclusively. In the context of Pakistan, enhancing inclusive PE programs can lead to broader societal benefits, including reduced stigma associated with disabilities and the promotion of an inclusive society that recognizes and celebrates the abilities of all its members.

Methodology

This study employs a qualitative research design, using a phenomenological approach to explore the lived experiences of physically disabled students in PE.

Objectives:

1. To explore the infrastructural, educational, social, and curricular obstacles for inclusive Physical Education (PE) in Pakistan.
2. To examine the role of teacher preparedness and peer interactions in enhancing an inclusive PE environment.
3. To assess the impact of curriculum flexibility on the participation and well-being of students with diverse physical abilities in PE programs.

Research Questions:

1. What infrastructural challenges hinder the implementation of inclusive PE in Pakistan?
2. How does teacher preparedness influence the effectiveness of inclusive PE programs?
3. In what ways do peer interactions affect the participation and engagement of students with disabilities in PE?

4. How can curriculum flexibility boost the inclusivity of PE programs for university students with diverse physical abilities?
5. What strategies can universities adopt to create a more inclusive PE environment?

Population and Sampling: The population of the study comprises 52 public universities in Punjab. Of 52 universities, 8 universities of Punjab were selected randomly. A purposive sampling strategy was used to select students with physical disabilities from various public universities in Punjab, Pakistan. 152 public university students from different department and levels were selected from selected universities. Furthermore, 15 PE teachers and 5 heads of departments were also included to gain a broader perspective on the challenges and opportunities inclusive PE.

Research Design and Procedure of the Study: This study employed a qualitative research design to explore the experiences of physically disabled students in physical education (PE) settings. A phenomenological approach was adopted to gain an in-depth understanding of participants' lived experiences. Data collection methods encompassed semi-structured interviews. Semi-structured interviews allowed participants to share their experiences and perceptions in their own words, providing rich, detailed data. Ethical considerations were meticulously addressed; informed consent was obtained from all participants, confidentiality was maintained, and sensitivity was exercised when discussing personal experiences. This methodological framework aligns with similar studies that have effectively utilized qualitative approaches to examine the perspectives of students with disabilities in PE settings (Haegele & Sutherland, 2015). The data analysis employed thematic analysis; a qualitative method effective for identifying patterns within qualitative data. Atlas ti. was used to analyze data. This approach is particularly suitable for exploring the experiences of physically disabled students in physical education (PE) settings (Dawadi, 2020).

Theoretical Framework

To effectively evaluate and enhance inclusive physical education (PE) programs for physically disabled students in Pakistan, it is essential to ground the study in robust theoretical frameworks that address the multifaceted nature of inclusion. This research integrates the Social-Ecological Model (SEM), Universal Design for Learning (UDL), and principles of Social Justice and Human Rights to comprehensively understand and promote inclusive PE practices.

Social-Ecological Model (SEM)

The SEM posits that individual behavior is influenced by a complex interplay of factors across multiple levels: individual, interpersonal, organizational, community, and policy (Bronfenbrenner, 1994). In the context of inclusive PE, this model emphasizes that a student's participation is not solely determined by personal motivation or ability but is also shaped by interactions with peers and teachers (interpersonal level), institutional infrastructure and culture (organizational level), societal attitudes towards disability (community level), and educational policies (policy level) (Lee & Park, 2014). By applying the SEM, this study acknowledges that fostering physical literacy among physically disabled students requires interventions at all these levels to create a supportive and enabling environment.

Universal Design for Learning (UDL)

UDL is an educational framework that advocates for designing instructional materials and activities to accommodate the diverse needs of all learners from the outset, rather than making retroactive adjustments (Hall et al., 2003; Selvam, 2018). In PE, UDL involves providing various means of representation (e.g., visual, auditory, kinesthetic), engagement (e.g., varying levels of challenge, choices in activities), and expression (e.g., different ways to demonstrate skills) to ensure that all students, including those with physical disabilities, can access and

participate meaningfully (Kumar & Wideman, 2014). Implementing UDL principles in PE aims to remove barriers to learning and promote inclusivity by considering the variability of learners.

Social Justice and Human Rights

Grounding inclusive PE practices in the principles of social justice and human rights emphasizes the moral and legal obligations to provide equitable educational opportunities for all students, regardless of their abilities (Ainscow, 2005). This perspective challenges discriminatory practices and advocates for systemic changes to eliminate barriers that hinder the participation of physically disabled students in PE. It aligns with international declarations, such as the United Nations Convention on the Rights of Persons with Disabilities, which asserts the right to inclusive education and participation in physical activities (Della Fina et al., 2017). By integrating SEM, UDL, and social justice principles, this study adopts a comprehensive approach to evaluating and enhancing inclusive PE programs. The SEM provides a holistic understanding of the various factors influencing participation, UDL offers practical strategies for designing inclusive PE curricula, and the social justice framework ensures that these efforts are aligned with ethical imperatives and legal standards. This integrated theoretical foundation facilitates the development of inclusive PE programs that are not only accessible but also equitable and empowering for physically disabled students.

Data Analysis:

Qualitative data were analyzed through Atlas ti. After transcribing the interviews of physically disabled students, their teacher and head of the respective departments, the following themes were identified after proceeding all the requirements of thematic analysis i.e. coding, generating subthemes and finally generating themes through the software mentioned above.

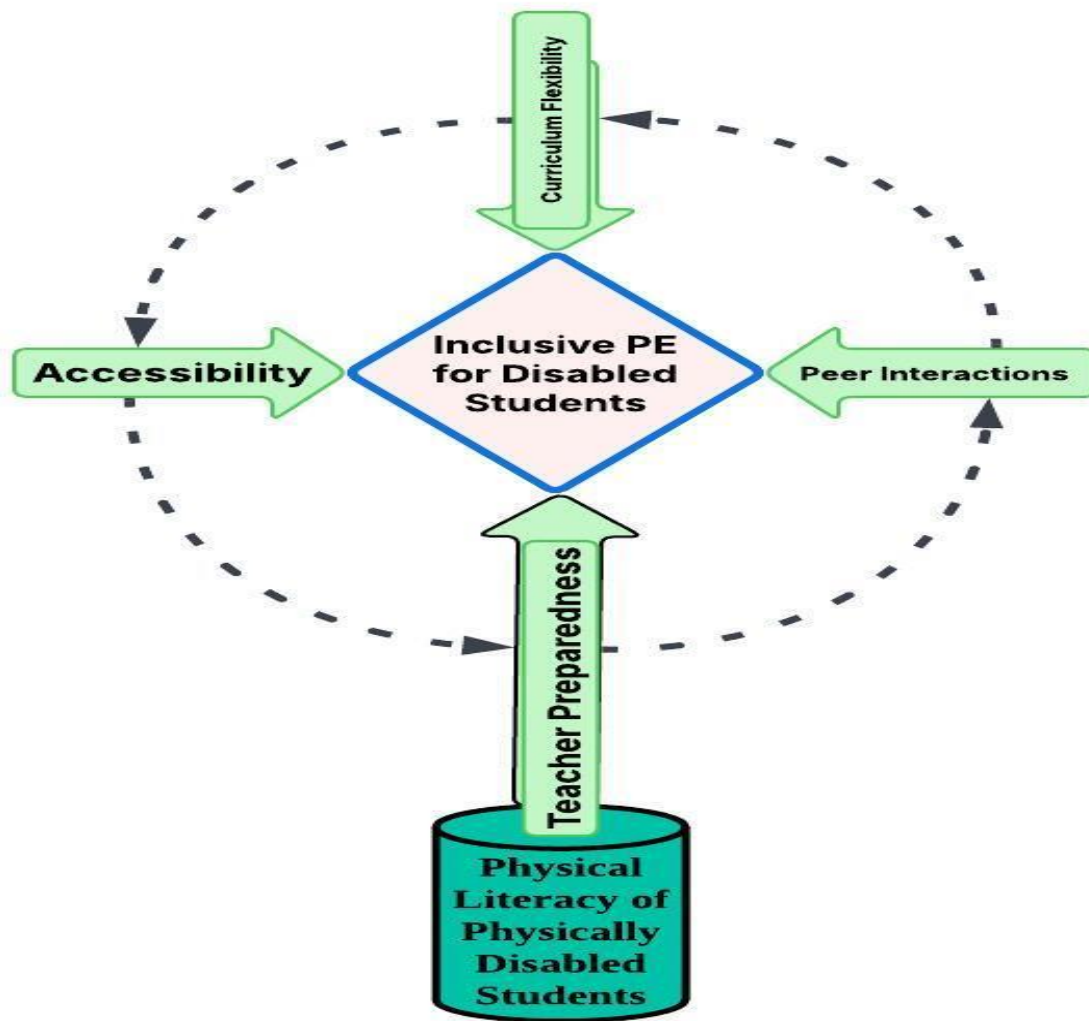


Figure 1: Themes generated from the lived experiences of physically disabled students, their respective teachers and head of the departments.

1. Accessibility

Accessibility emerged as a significant theme, highlighting the physical and systemic barriers that hinder the participation of students with physical disabilities in PE. Many institutions lack the necessary infrastructure, such as ramps, adaptive equipment, and accessible restrooms, making it challenging for these students to engage fully in physical activities. This lack of accessibility not only limits their participation but also affects their motivation and sense of inclusion. Addressing these barriers is crucial for fostering an inclusive environment that promotes physical literacy among all students. A respondent reported “ We do not have any equipment where we can make physical activities, specifically designed for special students. Besides that, we face a pathetic encounter in a well-furnished gym which is specially designed for students. Consequently, we cannot even have access to the equipment.” A respective teacher told “there are no space for physical activities as our university has no special equipment for physically disabled students.”

2. Teacher Preparedness

The preparedness of PE teachers to accommodate students with physical disabilities was another critical theme. Many educators feel ill-equipped to modify activities or provide appropriate support due to limited training in adaptive physical education. This gap in knowledge and skills can lead to unintentional exclusion or inadequate support for disabled

students. Enhancing teacher training programs to include comprehensive modules on inclusive practices and adaptive techniques is essential for empowering educators to create supportive and effective PE environments. A teacher explored “ we are ill-equipped. We do not have any instruments for physically disabled students. We are not provided with any sort of physical training for special students. We are facing a pathetic situation as no one is caring for physical education for physically disabled students in the country.” A respective head of a department explored “ No one is interested in physical activities of the physically disabled students. Neither students nor teachers or administrators are interested in this regard. They perceive it a useless activity which is alarming.”

3. Peer Interactions

Peer interactions play a vital role in the PE experiences of students with physical disabilities. Positive social interactions can enhance engagement, motivation, and a sense of belonging. However, negative experiences, such as bullying or social isolation, can deter participation and negatively impact self-esteem. Promoting a culture of empathy, respect, and collaboration among students is essential. Implementing peer mentoring programs and cooperative learning strategies can foster positive peer relationships and support inclusive participation in PE activities. As a student responded “ students do not consider us as their peers. They articulate as if we are not part of their community. They do not respect us. Some of them criticize and bully as well. Such a situation enhances demotivation and directs towards isolation which ultimately play a negative impact on our studies.” Students with physical disabilities in Pakistani public universities were facing some kind of pathetic situation throughout their entire period of studies.

4. Curriculum Flexibility

The rigidity of PE curricula was identified as a barrier to inclusion. Standardized programs often fail to consider the diverse abilities and needs of all students, leading to exclusion or marginalization of those with physical disabilities. Introducing flexibility into the curriculum by incorporating adaptive activities, offering choices, and setting individualized goals can make PE more inclusive. This approach ensures that all students have equitable opportunities to develop physical literacy and enjoy the benefits of physical activity. A head of the department stated “ there are many barriers in promoting physical activities among physically disabled students in higher education institutions. All the stakeholders, including the government and university administration, look passive in enhancing and promoting physical literacy for these students. It is observed that even curricula have no space for physical disabled students specifically. These students in no capacity took part in any kind of physical activities practically. The pity situation necessitates instant steps in policy formulation and curriculum development that may produce some space for physically disabled student.”

Addressing these themes requires a comprehensive approach involving policy changes, professional development for educators, infrastructure improvements, and the promotion of an inclusive university culture. By tackling these areas, universities can create PE environments that support the physical, social, and emotional well-being of all students, regardless of their physical abilities.

Discussion

The exploration of inclusive physical education (PE) programs for students with physical disabilities in Pakistan reveals a multifaceted landscape shaped by infrastructural, educational, social, and curricular factors. This discussion delves into the identified themes i.e. Accessibility, Teacher Preparedness, Peer Interactions, and Curriculum Flexibility, supported by relevant literature to provide a comprehensive understanding of the current challenges and potential pathways for fostering inclusivity in PE.

Accessibility is a cornerstone of inclusive education, directly influencing the participation of students with physical disabilities in PE activities. In Pakistan, despite all the universities reporting the enrollment of children with disabilities, a few educational institutions are equipped with toilets designed for these students. Inadequate access to libraries, lecture halls and recreational areas is evident from the literature which also points out towards the pathetic situation (Jayasinghe et al., 2023). This infrastructural inadequacy not only hinders physical access but also perpetuates exclusion, discouraging enrollment and regular attendance (Beka & Rama, 2024; Yoh et al., 2008). The absence of adaptive equipment further exacerbates these challenges, limiting students' full participation in PE activities and impeding their physical literacy development. Addressing these infrastructural deficiencies is crucial to fostering an environment where all students can participate equitably.

The competence and confidence of educators in delivering inclusive PE are pivotal. Many teachers in Pakistan lack adequate training in adaptive physical education, leading to uncertainty and reluctance to modify activities to accommodate all students. This gap in professional development can result in unintentional exclusion and reinforce negative attitudes toward disability (Kamran & Bano, 2023). Integrating disability and inclusive education into teacher training programs is essential. Such initiatives have shown promise in increasing teachers' awareness and ability to create inclusive classrooms, thereby enhancing the educational experiences of students with disabilities (Idrees & Ilyas, 2012).

Social dynamics within PE classes significantly impact the experiences of students with physical disabilities. Positive peer interactions can enhance motivation and a sense of belonging, whereas negative experiences, such as bullying or social isolation, can deter participation and adversely affect self-esteem. In Pakistan, societal attitudes toward disability often influence peer relationships, leading to exclusion or marginalization of students with disabilities. Promoting a culture of empathy and respect within universities is crucial. Implementing peer mentoring programs and cooperative learning strategies can foster supportive peer interactions, thereby enhancing the inclusivity of PE classes. These findings are consistent with the work of Idrees and Ilyas (2012) and, Tabassum and Rahman (2023).

The rigidity of PE curricula poses significant challenges to inclusivity. Standardized programs often fail to accommodate the diverse needs of students, resulting in the exclusion of those with physical disabilities. In Pakistan, the traditional education system has been characterized by segregation, with students with disabilities often placed in special educational institutions or entirely excluded from mainstream education. Recent policy changes emphasize the importance of inclusive education, advocating for curriculum modifications that reflect the diverse abilities of all students. Introducing flexibility into the PE curriculum by incorporating adaptive activities and setting individualized goals can make PE more inclusive, ensuring that all students have equitable opportunities to develop physical literacy and enjoy the benefits of physical activity.

Conclusion and Recommendations

The findings underscore the necessity for a comprehensive approach to inclusive PE that addresses infrastructural, educational, social, and curricular dimensions. By improving accessibility, investing in teacher preparedness, fostering positive peer interactions, and introducing curriculum flexibility, educational institutions in Pakistan can create an environment that supports the physical, social, and emotional well-being of all students, regardless of their physical abilities.

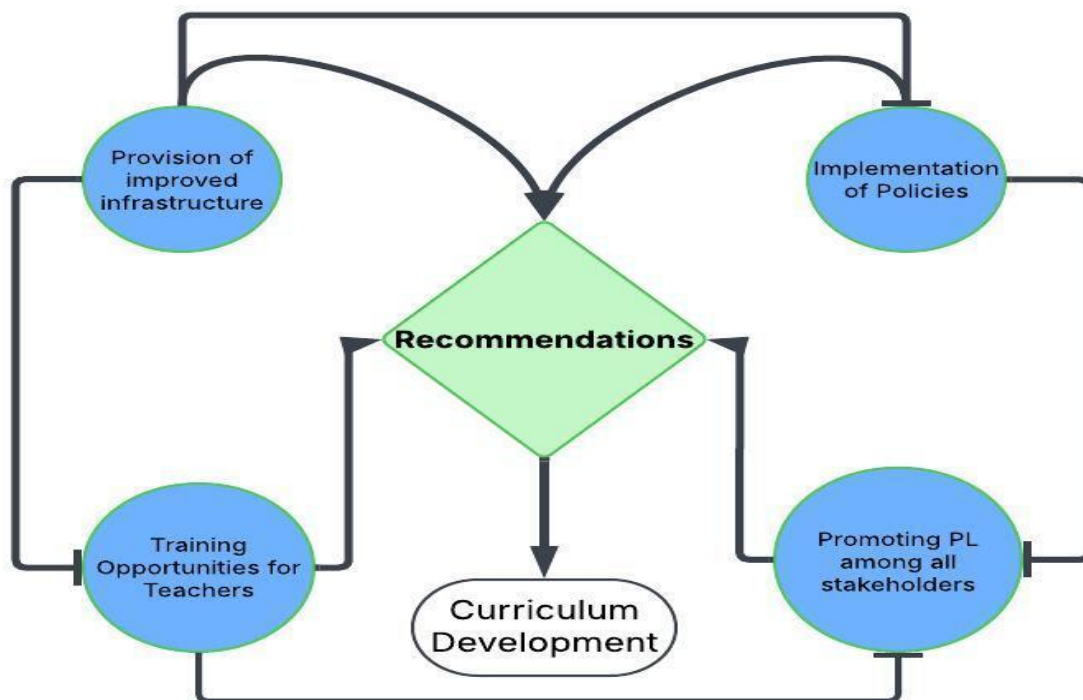


Figure 2: Recommendations of the study

As figure 2 illustrates, to promote inclusive physical education (PE) in Pakistan, a multifaceted approach is essential. First, enhancing infrastructure by constructing accessible facilities, such as ramps and specialized restrooms, is critical to accommodating students with physical disabilities. Second, integrating comprehensive training on inclusive education into teacher preparation programs will equip educators with the necessary skills to support diverse learners. Third, fostering a culture of empathy and respect through peer mentoring and cooperative learning strategies can improve social collaborations among students. Finally, revising the PE curriculum to include adaptive activities and individualized goals will ensure that all students have equitable opportunities to develop physical literacy. Implementing these strategies requires collaboration among policymakers, educators, and communities to create an educational environment that is truly inclusive.

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