European Journal of Physical Education and Sport Science
ISSN: 2501 - 1235
ISSN-L: 2501 - 1235
Available on-line at: www.oapub.org/edu

DOI: 10.46827/ejpe.v12i8.6126 Volume 12 | Issue 8 | 2025

EXCLUSION IN INCLUSION? BARRIERS TO STUDENTS WITH VISUAL IMPAIRMENT IN PRACTICAL PHYSICAL EDUCATION LESSONS IN GHANA: A CASE STUDY

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Abstract:
This study explores the barriers to participation in practical physical education (PE) lessons faced by students with visual impairment (VI) at Okuapemman School, Ghana. Employing a mixed-methods case study design, data were collected from all 22 students with VI using braille questionnaires and from three PE teachers through purposive sampling and structured interviews. Descriptive statistics and thematic analysis were used to analyze quantitative and qualitative data, respectively. Results showed that while 100% of students with VI participated in practical PE lessons during basic school, only 13.6% participated at the senior high school level. Key barriers included inadequate accessible facilities and equipment (68.2%), exclusion by PE teachers (40.9%), and lack of encouragement from sighted peers (45.5%). Despite these challenges, 95.5% of students expressed readiness to participate when given opportunities. PE teachers identified a lack of training, resources, and administrative support as critical challenges. The study concludes that systemic barriers related to resources and teacher preparedness significantly hinder inclusive PE participation. Recommendations include enhanced practical training for PE teachers, provision of adaptive equipment, and in-service professional development programs facilitated by the Ghana Education Service. These measures are essential to foster truly inclusive physical education and equitable participation for students with visual impairment in Ghana and comparable settings.

Keywords: inclusion, exclusion, barriers, marginalization, visually impaired, physical education

1. Introduction

Inclusive education has become a global standard aimed at providing equal access to education for all students, regardless of disability. This approach is supported by

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international frameworks such as the United Nations Convention on the Rights of Persons with Disabilities (CRPD, 2006), which mandates inclusive education and equal opportunities for persons with disabilities (United Nations, 2006). Ghana adopted inclusive education policies in 2015, with schools like Okuapemman School integrating students from schools for the blind into their secondary education programmes.

Research highlights the multifaceted benefits of inclusive physical education (PE) for students with disabilities, including enhanced physical well-being, communication skills, self-confidence, social relationships, and knowledge acquisition (Qi & Ha, 2012; Rusanescu *et al.*, 2018). Adapted physical education programmes, tailored to meet the unique needs of students with visual impairments, have demonstrated positive effects on motor skills and social inclusion (Goodwin & Watkinson, 2000; Lieberman *et al.*, 2002). However, students with visual impairment (SVI) often face significant barriers to participation in PE, resulting in limited access to physical activity and its associated benefits (Sherrill, 2007; World Health Organization, 2018, Alves *et al.*, 2018).

The Social Model of Disability (Oliver, 1983; Barnes, 2019) provides a useful framework to understand the challenges faced by students with visual impairment in PE settings. This model posits that disability arises not from individual impairments but from societal barriers and exclusion. In PE, these barriers manifest as inaccessible facilities, inadequate accommodations, and negative attitudes from teachers and peers. Previous research has emphasized the importance of creating inclusive PE environments through adapted instruction, specialized equipment, teacher training, and peer support to facilitate participation of SVI (Haegele *et al.*, 2017; Lieberman & Houston-Wilson, 2018; Shields *et al.*, 2016, Liu *et al.*, 2025).

Despite the existence of inclusive education policies in Ghana, such as the Inclusive Education Policy (Ghana Education Service, 2018), students with visual impairment continue to face challenges accessing appropriate PE experiences in schools (Komabu-Pomeyie, 2020; Deku & Vanderpuye, 2017; Opoku *et al.*, 2017). This is consistent with findings globally, where attitudinal and environmental barriers persist despite legislative support (Haegele *et al.*, 2018; Sherrill, 1998; Agbenyega; 2007; Avoke, 2002). In particular, lack of teacher training and resource constraints hinder effective inclusion (Rink, 2012). Schools are often ill-equipped to accommodate the specific needs of students with disabilities, especially in dynamic and physically demanding environments like PE (Rink, 2012). The education sector in Ghana is progressively adopting inclusive approaches, and empirical studies emphasize the importance of targeted teacher training, availability of support personnel, and institutional commitment to truly inclusive PE and sports experiences for students with disabilities (Sherrill, 2007; Bota *et al.*, 2017; Butakor *et al.*, 2020). However, there is a lack of Ghana-specific case studies examining how these barriers manifest in mainstream secondary schools implementing the Inclusive Education Policy. This study aims to investigate the barriers to participation faced by students with visual impairment in practical PE lessons at Okuapemman School.

2. Material and Methods

2.1 Research Design

This study adopted a mixed-method case study design that integrated both quantitative and qualitative methods to obtain a holistic understanding of the barriers faced by students with visual impairment (SVI) in practical physical education (PE) lessons at Okuapemman School. The case study approach was chosen for its capacity to provide an in-depth, context-specific exploration of real-life issues (Yin, 2018), making it well-suited to examine the barriers experienced by SVI and PE teachers in an inclusive school environment.

2.2 Participants and Sampling

The study targeted all 22 students with visual impairment currently enrolled at Okuapemman School, as well as the three PE teachers responsible for delivering the PE curriculum. A census sampling technique was used for the SVI to ensure comprehensive representation, while purposive sampling was applied to select the PE teachers based on their direct involvement in teaching PE and their professional insights into the inclusion process.

2.3 Data Collection Instruments

Two primary data collection tools were employed. A questionnaire consisting of nine closed-ended and one open-ended item was designed to gather data on students' participation in PE practical lessons and perceived barriers to inclusion. The items were informed by relevant literature on inclusive education and adapted for accessibility. The questionnaires were translated into Braille to accommodate the students' needs.

A structured interview guide was developed to explore PE teachers' perspectives on the challenges and barriers to including students with visual impairments in practical lessons. The guide focused on instructional strategies, resource availability, training, and institutional support.

2.4 Data Collection Procedures

The questionnaire was administered in a one-on-one setting to each of the 22 students with visual impairment by the researcher and a team comprising a Braille expert and 22 sighted student assistants. Each student was paired with a sighted peer to assist with the transcription and verification of responses. Students were allotted 40 minutes to complete the questionnaire, and clarifications were provided by the researcher and Braille expert as needed.

To ensure confirmability, student responses were transcribed into a Word document and later reviewed during a follow-up session held three months later, where the original participants, together with their sighted assistants, verified the accuracy of their answers.

Structured interviews with the three PE teachers were conducted after the student data collection phase. With informed consent, all interviews were audio-recorded to ensure the integrity of responses. These sessions occurred approximately three months after the student questionnaire administration.

2.5 Data Analysis

Data from the student questionnaires were analyzed using descriptive statistics, including frequencies and percentages, to provide an overview of participation levels and commonly reported barriers. Interview transcripts were subjected to thematic analysis to identify recurring patterns, themes, and categories related to teachers' experiences and perceived barriers. This involved coding, categorizing, and interpreting responses in line with Braun and Clarke's (2006) framework for thematic analysis.

2.6 Ethical Considerations

Ethical approval was obtained prior to the study. Participants were fully informed of the study's purpose and provided informed consent. Participation was voluntary, and all data were collected and stored in a manner that ensured confidentiality and anonymity. All instruments were adapted to be accessible to students with visual impairment, and all participants were treated with dignity and respect throughout the research process.

3. Results and Discussion

3.1 Participation of Students with Visual Impairment in Physical Education Practical Lessons

All 22 participants (100%) reported participating in practical Physical Education (PE) lessons during their basic school education. However, participation dramatically declined at the senior high school (SHS) level, where only 3 students (13.6%) reported involvement in practical PE lessons, and 19 students (86.4%) reported non-participation. This indicates a significant drop in engagement in PE among students with visual impairment upon transition to SHS.

Table 1: Participation of Students with Visual Impairments in PE Practical Lessons

Participation Level	Frequency	Percentage (%)
Basic School PE Participation		
Yes	22	100%
No	0	0%
Senior High School PE Participation		
Yes	3	13.6%
No	19	86.4%

An open-ended question explored how participants spent their time during scheduled PE practical lesson periods when they did not participate. Responses varied: some engaged in academic work, such as reading or private studies; others practiced braille in

the braille library, while a few reported sleeping during this time. These responses suggest that students with visual impairment are not adequately included or accommodated during PE practical lessons.

Illustrative participant comments include:

"I use the PE period to read books because I'm not included in the physical activities." (Male participant).

"I'm not involved in PE classes, so I use that time to practice braille." (Female participant).

"I'm not able to participate in PE, so I sleep during that period." (Female participant).

"I'm not accepted during PE classes, so I use that time to do my homework." (Male participant)

One participant shared an exclusionary experience:

"The PE teacher said I will get injured, so I shouldn't join the class."

Another stated:

"The last time I went to PE class, I was told to sit and wasn't included, so I don't go anymore. Instead, I use that time to read books or study."

These accounts reflect significant exclusionary practices contributing to disengagement in physical activity.

3.2 Barriers to Participation in Practical PE Lessons

The results from Table 2 highlight multiple barriers to participation in practical PE lessons. The most frequently reported barrier was inadequate facilities and equipment, with 86.4% (sum of strongly agree and agree) indicating that current resources do not meet their needs. Additionally, 50% of participants (sum of strongly agree and agree) reported being prevented from participating in PE lessons by teachers. Lack of encouragement from sighted peers was also identified as a barrier by 68.2% of participants. Notably, most participants did not cite fear of injury or their visual impairment itself as primary barriers, indicating that environmental and social factors are the predominant obstacles.

Table 2: Barriers to Participation in Practical PE Lessons

Barrier Statement	Strongly Agree (%)	Agree (%)	Undecided (%)	Disagree (%)	Strongly Disagree (%)	Total (%)
PE teachers always prevent us from taking part	40.9	9.1	4.5	18.2	27.3	100
I don't attend PE lessons with able-bodied peers due to fear of injury	4.5	18.2	9.1	45.5	22.7	100
I don't take part because I can't see	9.1	9.1	0	40.9	40.9	100
Facilities and equipment are not designed to suit us	68.2	18.2	4.5	0	9.1	100
Sighted peers don't encourage us to participate	45.5	22.7	4.5	18.2	9.1	100

3.3 Participants' Readiness to Participate in PE Practical Lessons

Half of the participants, 11(50%), reported being fully ready to participate in practical PE lessons, with an additional 10(45.5%) indicating they were somewhat ready. Only one participant (4.5%) expressed uncertainty about their readiness. This demonstrates a strong willingness among students with visual impairment to engage in physical education when inclusive opportunities are available.

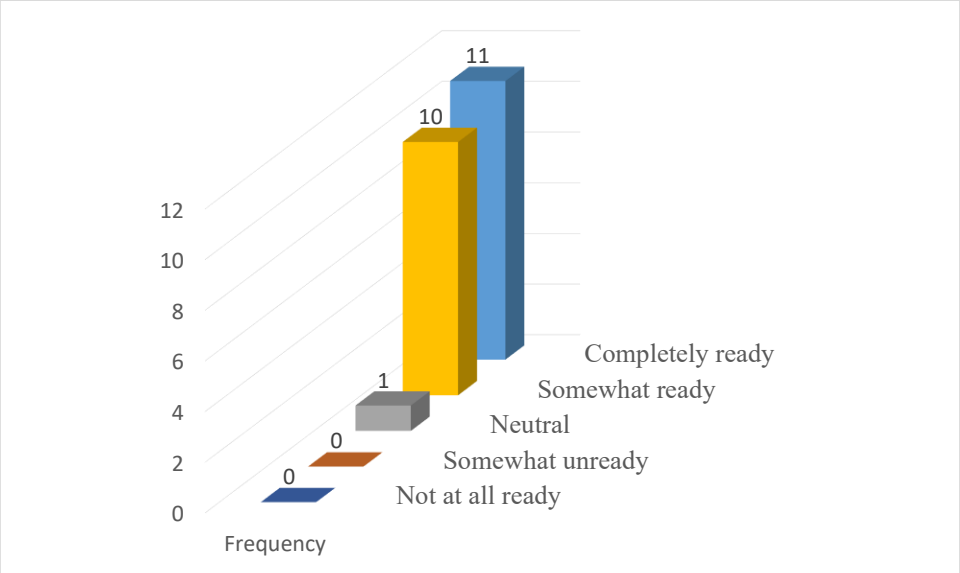

Figure 1: Participants' Readiness to Engage in PE Practical Lessons

3.4 Perspectives of Physical Education Teachers on Barriers to Inclusion

Each of the three PE teachers was asked to elaborate on the barriers they face when involving students with visual impairment in practical lessons. Interviews with the three PE teachers revealed two primary categories of barriers: personal and administrative.

3.4.1 Personal Barriers

A major concern expressed by all teachers was their lack of training and expertise in teaching physical education to students with visual impairment. Teacher 1 openly admitted:

> *"To be frank, the university I attended did not offer any courses specifically related to teaching PE to students with disabilities. I recall only one course in special needs education, but it was not focused on physical education. So, you see where I am coming from."*

He further acknowledged:

> *"I don't feel confident in my ability to adapt physical activities for students with visual impairment. I need more training and support to handle them effectively."*

Teacher 2 also expressed his fear, which directly affects inclusion:

> *"For me, I don't know how to handle them properly. Although I had some education on special education, I think they are too frail and may get injured. That is why I usually leave them out of my class, I don't want to take any risks."*

Teacher 3 similarly highlighted her uncertainty regarding how to adapt lessons:

> *"I'm not sure how to modify physical activities to make them accessible for students with visual impairment. I need more guidance and resources. Although I took a course in Adapted Physical Education (APE), there was no practical exposure, so I actually can't figure out how to engage them effectively in PE lessons. I find it challenging, and honestly, I don't dare to try."*

3.4.2 Administrative Barriers

In addition to personal limitations, teachers face significant administrative challenges such as a lack of equipment and insufficient support from school management. Teacher 2 lamented:

> *"We don't have the resources or equipment needed to make PE accessible for students with visual impairment."*

Teacher 1 echoed this, stressing the discouraging effect of resource scarcity:

> *"Even if I had the skills, where would I get equipment like balls with bells or sound? The absence of such equipment puts us off and makes it difficult to push harder for the inclusion of visually impaired students in sports and PE."*

Teacher 3 also noted the lack of institutional support:

"We are not getting the support we need from the school, neither are the necessary equipment provided. If the equipment were available, we would be forced to engage these students somehow, but we don't have what it takes."

Time constraints further compounded the problem. Teacher 2 commented:

"I'm under pressure to meet the curriculum requirements and don't have the time to adapt lessons for students with visual impairment. This makes inclusion even more difficult."

These direct quotes highlight the genuine struggles and fears PE teachers face, ranging from a lack of preparation, fear of injury, to institutional constraints like equipment and insufficient administrative support, resulting in excluding students with visual impairment from PE lessons.

4. Discussion

The findings of this study revealed significant barriers faced by students with visual impairment in participating in practical physical education lessons. These barriers are largely societal and environmental, consistent with the Social Model of Disability (Oliver, 1983; Barnes, 2019), which attributes disability to external exclusionary factors rather than individual limitations. The lack of accessible facilities and equipment, reported by 68.2% of participants, reflects longstanding challenges noted in the literature (Sherrill, 2007; World Health Organization, 2018). Accessible environments are essential for fostering inclusion and promoting participation among students with disabilities.

Additionally, 40.9% of students indicated that PE teachers prevent them from taking part in lessons, which may be linked to the teachers' lack of training and confidence. Similar studies have highlighted that insufficient teacher preparation results in exclusionary practices, as educators feel unprepared to adapt activities for students with visual impairments (Grenier, *et al.* 2023; Haegele *et al.*, 2018; Lieberman *et al.*, 2017). Fear of injury and uncertainty about how to modify lessons were significant concerns among teachers, mirroring findings from other contexts (Haegele *et al.*, 2018).

Social barriers were also evident, with 45.5% of students reporting a lack of encouragement from sighted peers. This aligns with previous research emphasizing the importance of peer support and positive attitudes to foster social inclusion and a sense of belonging in inclusive PE settings (Shields & Synnot, 2016; Spencer-Cavaliere & Watkinson, 2010).

Administrative challenges, including lack of resources, support staff, and time constraints, further compound exclusion. These issues are commonly cited as impediments to successful inclusion and highlight the urgent need for systemic interventions (Rink, 2012; Komabu-Pomeyie, 2020). Providing adapted equipment,

comprehensive teacher training, and sufficient administrative support are critical steps toward achieving meaningful inclusion of students with visual impairment in physical education.

5. Implications

5.1 For Universities Training PE Teachers

Tertiary institutions in Ghana responsible for training PE teachers should enhance their curricula to include practical experiences working with students with visual impairment. This will better prepare future PE teachers to adapt instruction and foster inclusion in physical education settings.

5.2 For Physical Education Teachers in Inclusive Senior High Settings

Physical educators should actively work to include students with visual impairments in practical lessons by creatively modifying equipment and activities to ensure accessibility and meaningful participation. Such efforts will contribute to a more inclusive environment that values diversity and promotes equal opportunities for all students.

5.3 For the Ghana Education Service (GES)

As inclusive education advances in Ghana, the Ghana Education Service must prioritize equitable access to physical activity for students with visual impairment. This includes directing heads of inclusive senior high schools to provide user-friendly sports facilities and equipment. Moreover, GES should collaborate with university departments to establish ongoing in-service training programs aimed at equipping PE teachers with the skills and knowledge necessary to successfully include students with visual impairment in practical lessons, thereby enhancing their overall educational experience.

6. Recommendations

Future studies should examine the impact of targeted teacher training programs on PE teachers' confidence and competence in including students with visual impairments in practical lessons. Additionally, a nationwide survey assessing the availability and accessibility of inclusive physical education facilities and equipment in Ghanaian basic and senior high schools is warranted.

7. Conclusions

This study concludes that:

1) The limited availability of accessible equipment and facilities significantly hinders the participation of students with visual impairment (VI) in physical activity and physical education (PE), creating a substantial barrier to their inclusion.

2) The lack of knowledge and training among physical education (PE) teachers regarding instructional adaptations for students with VI prevents effective integration of these students into practical lessons, further marginalizing their participation.
3) The absence of encouragement and support from sighted peers and teachers discourages students with VI from participating in practical PE lessons, compounding their exclusion from physical activity.

7.1 Limitations

The study's sample size was limited to a single school, which may not be representative of all-inclusive schools in Ghana. Additionally, findings may not be generalizable to other contexts or populations.

Acknowledgments

The researcher thanks all the participants who agreed to participate in this study. Further thanks go to all the research assistants who participated in the data collection process.

Funding Statement

The author received no financial support for this research or the publication of this article.

Informed Consent Statement

Participants' consent was sought prior to data collection.

Conflict of Interest Statement

The author declares no conflicts of interest.

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