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Implications of Low Student Enrollment for Physical Education Practices in Rural Elementary Schools

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Abstract

This study analyzes how low student numbers in rural elementary schools affect the implementation of physical education (PE). The research aims to identify the pedagogical, organizational, and contextual challenges faced when class sizes fall far below the national standard. Using a qualitative descriptive design, data were collected through semi-structured interviews with principals, physical education teachers, classroom teachers, and selected students, as well as classroom observations and document analysis in six rural elementary schools in Banyumas Regency, Central Java. The findings indicate three main implications. First, although smaller classes allow more individualized instruction, teachers struggle to create dynamic learning environments due to limited peer interaction, reduced group activities, and low competitive engagement. Second, minimal enrollment leads to structural constraints such as limited facilities, inadequate equipment, and reduced institutional support, which directly affect instructional quality. Third, demographic decline and community attitudes toward rural schooling further reduce student participation and threaten program sustainability. The study concludes that rural schools require targeted policy support, adequate resource allocation, and adaptive instructional strategies to sustain meaningful PE learning. Strengthening community involvement and adopting flexible activity-based models are recommended to support holistic student development in rural contexts.

Keywords: *Physical Education, Rural Schools, Low Enrollment, Elementary Education, Learning Implementation*

INTRODUCTION

Rural elementary schools in Indonesia continue to face structural challenges that threaten the quality and continuity of learning, particularly in physical education. One of the most critical issues is the steadily decreasing number of students, which creates classrooms with very small enrollments (Losina, 2012). This demographic shift is shaped by rural–urban migration, declining birth rates, and parents' preference for schools that offer stronger academic reputations and modern facilities (Badan Pusat Statistik Indonesia, 2025). Studies in several Asian regions have shown that rural demographic decline directly

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influences school operations and learning environments, often resulting in reduced educational opportunities for children (Pinilla & Sáez, 2021).

In the context of physical education, limited class size has unique pedagogical implications. Physical education relies heavily on group-based activities, social interaction, and collaborative skill development. When only a few students are available, it becomes difficult to conduct team-based games, organize structured competitions, and foster motivation through peer dynamics. Previous studies have highlighted that small-class environments in rural settings often reduce the variety of physical activities, limit cooperative learning, and lower student engagement (Mulyani et al., 2024). Teachers must frequently adjust lesson plans, modify game formats, and ensure that learning objectives remain achievable despite insufficient participants (Casey & MacPhail, 2018).

The urgency of this issue is heightened by the increasing emphasis on physical literacy and holistic development in the modern education curriculum. Physical education is expected to contribute not only to motor skill development but also to students' social, emotional, and cognitive growth (Whitehead, 2001). However, when class size becomes too small, these broader goals are more difficult to realize. Furthermore, low student numbers often correlate with limited resource allocation, reduced operational funding, and challenges in maintaining sports facilities and equipment (Anon, 2018). These constraints further restrict the ability of rural schools to provide high-quality PE instruction.

Based on these issues, the present study aims to examine the implications of small student populations on the implementation of physical education in rural elementary schools. This research explores the challenges encountered by teachers, the instructional adaptations they make, and the overall impact on student learning experiences. The findings are expected to contribute to educational policy discussions on how to sustain high-quality physical education in rural contexts despite demographic decline.

METHOD

This study used a qualitative descriptive approach to examine how very small student populations affect the implementation of physical education (PE) in rural elementary schools. The research was conducted in six rural elementary schools in Banyumas Regency, Central Java, selected purposively because they consistently experience low enrollment.

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Data were collected from February to May 2024 through classroom and outdoor observations, semi-structured interviews with six principals, six physical education teachers, several classroom teachers, and twelve students, as well as document analysis of lesson plans and attendance records. Observations focused on teaching strategies, activity organization, and student engagement, while interviews explored challenges and adaptations in PE instruction.

Data were analyzed using a thematic approach. Interview transcripts, observation notes, and documents were coded to identify recurring patterns related to instructional adjustments, activity limitations, and student motivation. Triangulation across data sources was used to ensure credibility.

RESULT

Overview of Findings

The analysis revealed that extremely small student populations in rural elementary schools significantly affected the implementation of physical education. Four major themes emerged from the data: (1) reduced student motivation and participation, (2) limited variety of physical education activities, (3) adaptive teaching strategies adopted by teachers, and (4) social–emotional consequences for students in small-class environments. These findings were derived from interviews, classroom observations, and school document analysis, and collectively illustrate how declining enrollment reshapes the quality of PE instruction in rural contexts.

1. Reduced Student Motivation and Participation in Physical Education

A consistently low number of students was found to diminish learners' enthusiasm for participating in PE activities. Teachers reported that students were less energetic, especially when activities required teamwork or competitive play. One PE teacher explained:

> *"The children often look less motivated. When there are only four or five students, they get bored easily because there are not many peers to play with." (PE Teacher 1)*

Field observations supported this statement. In several PE sessions, only three to six students were present, resulting in limited interaction and monotonous routines. Activities such as modified ball games lacked rotation and competitive elements, causing students to become passive.

Attendance records also indicated a gradual decline in participation over time. Teachers stated that students were less inclined to attend PE classes when sessions were perceived as

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repetitive or not engaging. These findings show that extremely small class sizes directly undermine student motivation and participation, which are essential components of effective PE learning.

2. Limited Variety of Physical Education Activities and Pedagogical Constraints

Small class sizes significantly constrained the range of activities that teachers could implement. Many physical activities rely on teamwork, peer engagement, and group dynamics, which are difficult to achieve when student numbers fall below the minimum required for standard game formats. Teachers struggled to implement sports such as mini-volleyball, soccer, or traditional group games.A teacher described the limitation as follows:

> *"There are many games we simply cannot conduct because there are too few students. Even dividing them into two teams is impossible, so I often have to modify or change the activity altogether." (PE Teacher 2)*

Classroom observations confirmed that teachers predominantly used individual-based drills such as dribbling, passing in pairs, and coordination exercises. These activities, while beneficial for skill refinement, lack the social and cooperative features essential to PE learning.

Resource constraints amplified these challenges. Two schools possessed only a single ball for the entire class, making it impossible to run simultaneous drills. Inventory records showed that sports equipment procurement was deprioritized due to the small student population, further restricting practical activity options. As a result, the pedagogical breadth of PE classes became narrow, reducing opportunities for holistic physical literacy development.

3. Teacher Adaptation Strategies in Managing Small PE Classes

Despite these challenges, teachers implemented a range of adaptive strategies to maintain instructional quality. These adaptations aimed to ensure that PE learning remained aligned with curricular goals while addressing the limitations imposed by small class sizes.

Teachers commonly modified game formats into individual or pair-based activities. For example, soccer was adapted into sequential shooting practice, and traditional games were converted into simplified movement tasks. Spatial adjustments were also made, such as reducing field size to maintain intensity and engagement in physical activity.One teacher described the benefit of personalized instruction:

> *"Smaller classes allow me to give more individual feedback, but it still doesn't make the activities as dynamic as in larger classes." (PE Teacher 3)*

Teachers also incorporated social and emotional learning into PE sessions. With limited opportunities for peer competition, teachers emphasized values such as cooperation, confidence-building, and self-improvement. In some cases, teachers merged two scheduled PE sessions into one extended class to optimize time and ensure a more meaningful experience for students.

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These adaptive strategies demonstrate teachers' commitment to maintaining instructional quality despite structural limitations. However, the necessity of constant modification indicates that small class sizes impose substantial planning burdens on educators.

4. Social–Emotional Effects on Students in Small-Class Environments

The study also found significant social–emotional implications. Some students displayed increased confidence due to greater teacher attention. However, most students reported boredom, reduced excitement, and a lack of social stimulation because of limited peer interaction. One student noted:

> *"We always play the same activities because there are only a few of us. Sometimes I don't feel like joining the class." (Student 5)*

Observations revealed that students struggled to sustain motivation and energy during individual-based activities conducted over extended periods. The absence of group dynamics limited their opportunities for teamwork, cooperation, and competition—elements central to PE learning.

Teachers further reported that students became over-reliant on teacher direction due to the absence of peer modeling and collaborative problem-solving. This reliance weakened their autonomy, creativity, and initiative—traits that are typically nurtured in well-functioning PE environments.

DISCUSSION

The findings of this study reveal that extremely small student populations in rural elementary schools significantly shape the implementation and quality of physical education. The discussion in this section integrates the empirical results with relevant literature to interpret how declining enrollment affects pedagogical practices, student engagement, and broader educational objectives in rural settings.

First, the decline in student motivation and participation is consistent with research indicating that small-class environments in rural schools often reduce students' enthusiasm for physical activities (Mulyani et al., 2024). While small classes can strengthen teacher–student interaction, PE as a subject relies heavily on group dynamics, competition, and collaborative activities. With only a few students available, these elements become limited, resulting in repetitive routines that reduce engagement. This aligns with previous research showing that rural school conditions diminish opportunities for peer interaction, which is central to physical literacy development (Uyar, 2023).

Second, the limited variety of PE activities reflects structural and pedagogical

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constraints. Many team-based sports require a minimum number of participants to run effectively. When enrollment drops below this threshold, teachers must modify or replace activities, reducing curricular breadth. This supports evidence that rural schools with limited human and material resources struggle to maintain diverse physical activity programs (Adedeji & Olaniyan, 2011). Teachers in Banyumas Regency face similar restrictions, as school documents show reduced equipment availability due to declining enrollment and budget constraints.

Third, teacher adaptation strategies demonstrate resilience and professionalism, yet the need for constant modification highlights systemic challenges. While individualized feedback is a benefit of small classes, continuous alteration of lesson plans increases teacher workload. This echoes Robinson (2008), who emphasized that rural educators often face additional burdens due to infrastructural limitations, particularly in resource-poor settings. Although teachers in this study used creative strategies such as modifying games and reducing spatial requirements, these adaptations still fell short of restoring the richness of team-based PE experiences (John & Segalo, 2021).

Fourth, social–emotional impacts on students were evident throughout the data. Students expressed boredom and decreased motivation due to limited peer interaction. Research suggests that PE contributes significantly to social development, including cooperation, communication, and teamwork (Bailey, 2006). In very small classes, opportunities to develop these competencies diminish. Although some students benefited from increased teacher attention, the overall learning environment lacked the social energy typically present in PE lessons.

Lastly, the challenges identified in this study reinforce broader concerns about educational equity in rural Indonesia. Schools with low enrollment often receive fewer resources and are at risk of consolidation, further limiting students' opportunities for meaningful PE experiences. These structural factors exacerbate disparities between rural and urban education systems. The implications are particularly concerning given the central role of PE in promoting physical health, social skills, and lifelong physical activity habits.

Overall, this study highlights the need for targeted interventions to ensure that physical education remains meaningful and effective in schools experiencing demographic decline. Possible solutions include cluster-based PE programs involving

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multiple nearby schools, mobile PE instructors, shared facilities, or district-level policies to protect PE time and resources in low-enrollment contexts. These interventions would help sustain the quality of physical education regardless of population decline.

CONCLUSION

This study examined the implications of small student populations on the implementation of physical education in rural elementary schools in Banyumas Regency, Indonesia. The results demonstrate that declining enrollment has significant effects on student motivation, the variety of available activities, teacher workload, and the social–emotional experiences of students. Although teachers implemented adaptive strategies to maintain instructional quality, structural limitations prevented the full realization of physical education goals.

Small-class conditions offer some benefits, such as greater individualized attention; however, these advantages do not outweigh the broader pedagogical and social limitations. The findings emphasize that physical education in rural contexts requires systemic support to address challenges resulting from demographic changes.

Based on the findings, several conclusions can be drawn: **Small-class environments reduce student motivation and engagement** due to repetitive activities and lack of peer interaction. **The range of PE activities becomes limited**, especially those requiring group participation. **Teachers employ various adaptations**, but these measures only partially compensate for structural limitations. **Students' social–emotional development is affected**, particularly in collaborative and competitive skills. **Policy support is urgently needed** to sustain PE programs in low-enrollment rural schools. Future efforts should focus on creating collaborative PE models across schools, enhancing resource allocation, and training teachers in alternative instructional strategies suitable for small-class environments. Strengthening rural PE practices is essential to ensuring educational equity and promoting students' holistic development.

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