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Original Article Research

Efforts to Improve Physical Education Learning Outcomes Using the Volleyball Game Approach Learning Model for Grade VII Students

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Abstract

Physical education is an essential component of the educational system that improves students' social, physical, and mental abilities holistically. Through physical education, students are expected to achieve a healthy, fit condition and develop good character and personality. Applying physical education principles in daily life can also help students establish active, positive lifestyles. This study aimed to improve Class VII A students' volleyball skills by implementing a game-based learning approach at SMP Tri Murti Wagir in the 2025/2026 academic year. This study used a classroom action research design with two cycles, each including planning, action, observation, and reflection. Data were collected through observation and learning outcome tests, and analyzed descriptively based on students' learning mastery. The findings showed that in the initial condition, students' learning mastery was still low: only 14.29% of students achieved mastery, while 85.71% had not yet reached the expected standard. After implementing the volleyball game approach in Cycle I, learning outcomes improved to 42.86%. In Cycle II, learning outcomes improved further, reaching a more optimal level of 80.95%. These results indicate that the use of a game-based approach in volleyball learning encourages students to participate actively, thereby increasing their motivation and understanding of the material being taught. Therefore, this method was proven to be effective in improving the quality of physical education learning in a sustainable manner.

Keywords: Volleyball, learning outcomes, learning models, physical education

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1. INTRODUCTION

To increase students' motivation, engagement, and learning outcomes, physical education instruction has placed greater emphasis on student-centered and game-based strategies. Learning exercises developed through games increase involvement, create exciting learning opportunities, and support the development of basic athletic movement skills. Prior research has shown that game-based learning can increase students' engagement and academic performance in physical education, especially when it comes to learning volleyball (Batez et al., 2021; Gustian et al., 2024; Sobari et al., 2025) (Batez et al., 2021; Gustian et al., 2024; Sobari et al., 2025).

The introduction is an introduction regarding Schools as the best place to learn (Darazatzati & Wicaksono, 2026). They are directly responsible for the quality of education and can improve all aspects of the educational unit (Siregar et al., 2021). Among other things, they can improve the comprehensive learning process according to competencies to create an effective and conducive learning atmosphere in the field, so students are enthusiastic about participating in the learning process (Mahendra et al., 2026). Implementing learning must consider students' characteristics and developmental stage (Aguss et al., 2021). The ideal learning process consists of four components: cognitive, affective, psychomotor, and manipulative (Irmansyah, 2017). Advances in education have led to numerous learning approaches. These methods can be used as appropriate solutions to address current learning challenges (Kuncoro, 2021).

However, because few teachers have studied these methods, schools have not widely adopted them (Azahrah et al., 2021). One of teachers' responsibilities, particularly for physical education teachers, is to provide engaging and useful physical education lessons (Maliki, 2017). Consequently, teachers must possess the skills to utilize approaches, models, methods, and learning strategies that align with the subject matter and meet students' needs (Rukmana et al., 2021). Observations at Tri Murti Wagir Junior High School in the 2025/2026 academic year indicate that students' ability levels are still lower-middle. Classroom observations revealed that students in class VII A were not particularly interested in physical education, especially volleyball, preferring soccer (Putra & Sistiasih, 2021). Some students appeared sleepy and lazy while completing assignments given by their teachers (Irfandi & Rahmat, 2022).

Because the teacher gives them monotonous and boring material, so students are unable to complete their assignments (Yusmar, 2017). In class VIIA of Tri Murti Wagir Middle School in Wagir District, Malang Regency (Marsiyem et al., 2018), the author found that students' abilities vary in sports, especially in terms of movement (Ilham Surya Fallo, 2016). Student learning data show that 85% of students failed to meet the minimum completion criteria (KKM) of 7.2. The results indicate problems in volleyball lessons that need to be addressed. Because the school lacks adequate facilities, the teaching and learning process has not developed at Trimurti Middle School. Previous studies show that game-based learning can improve students' motivation, participation, and learning outcomes in physical education, including volleyball (Awaludin et al., 2024; Romadhona et al., 2024; Sobari et al., 2025). However, studies examining the implementation of a volleyball game approach through classroom action research in junior high schools remain limited. Therefore, these challenges require encouraging students' enthusiasm and motivation to participate in physical education and health learning. Action research specifically focused on volleyball learning is crucial (Ilyas & Almunawar, 2020). Students can explore their freedom of movement wherever they can, which also supports their growth and development (Rachmalia et al., 2022).

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2. METHOD

This study uses the PTK method to improve students' sports abilities at Trimurti Junior High School, class VII A, in Wagir District, Malang Regency, in the 2025/2026 academic year, using a volleyball game approach learning model. In the PTK model, the concept used is the PTK Cycle (Lardika & Salam, 2019). The PTK Cycle is implemented through the stages of planning, implementation, observation, and reflection to improve students' learning outcomes in each cycle (Ilyas & Almunawar, 2020).

2.1 Participants

All students of class VII A of Trimurti Junior High School in Wagir District, Malang Regency, consisting of 21 students, were studied in the semester period (odd/even) of the 2025/2026 academic year. There were 8 female students and 13 male students. 1. Physical education learning outcomes and 2. Volleyball learning outcomes are the subjects of this study. This study will be conducted in Implemented in two cycles for four meetings. Cycles I and II will begin on February 26 and last until April 26, 2025/2026. Trimurti Junior High School is located in Wagir District, Malang Regency, and implements PTK. The study was conducted during the second semester of the 2025/2026 academic year. All participants were actively involved in every cycle of the classroom action research

2.2 Research Design

This research was conducted in two cycles, each of which included:

1. Creating lesson plans, learning media, and assessment tools, which constitute the initial planning phase.
2. Implementation: Applying the volleyball approach learning model to learning activities.
3. Observation: Observing the learning process of students and teachers during the activity.
4. Reflection: Assessing the results of the action to determine improvements for the next cycle.

These four stages follow the Classroom Action Research cycle proposed by (Lardika & Salam, 2019), which emphasizes continuous improvement through reflection in each cycle.

2.3 Instruments

This study used several data collection methods to obtain information on students' learning activities and volleyball learning outcomes. The instruments were prepared based on the indicators assessed during the implementation of the PTK Cycle. The relationship between the types of data, data collection techniques, research subjects, and research instruments is presented in Table 1.

Table 1.

Types of Data, Data Collection Techniques, and Research Instruments

No.	Type of Data	Subject	Data Collection Technique	Research Instrument
1	Volleyball learning activities	Students	1. Performance assessment of basic volleyball techniques	1. Performance assessment rubric for basic volleyball techniques
			2. Performance assessment of volleyball playing skills	2. Observation sheet for the implementation of basic volleyball techniques (based on the performance assessment rubric in the lesson plan)
2	Volleyball learning outcomes	Students	1. Affective	1. Observation sheet for affective assessment (based on the affective assessment rubric in the lesson plan)
			2. Cognitive	2. Written test (based on the cognitive assessment rubric in the lesson plan)
			3. Psychomotor	3. Performance assessment of basic volleyball techniques (based on the psychomotor assessment rubric in the lesson plan)

2.4 Procedures

The research was implemented in two cycles using the PTK Cycle. Each cycle consisted of planning, implementation, observation, and reflection. During the planning stage, lesson plans, learning media, and assessment instruments were prepared. In the implementation stage, the teacher applied the volleyball game approach in physical education, then observed students' learning activities and reflected to evaluate results and identify improvements for the next cycle (Ilyas & Almunawar, 2020; Lardika & Salam, 2019).

2.5 Data Analysis

The data were evaluated qualitatively and quantitatively, namely:

1. Quantitative data in the form of student learning outcomes were analyzed by calculating the average score and the percentage of learning completion.
2. Qualitative data derived from observation findings were analyzed by describing student activities during the learning process.

The classical learning completion formula is:

Completion = (number of students)/(total number of students) × 100%

An indicator of success is that this research was successful if:

1. At least 72% of students achieved scores above the Minimum Competency (KKM) (adjusted to the school's Minimum Competency).
2. Students were more engaged in physical education activities and learning.

3. RESULTS

3.1 Preliminary Observation

Before the PTK Cycle was implemented, preliminary observations were conducted to identify students' initial learning outcomes in volleyball in Class VII A of Trimurti Junior High School. The results showed that only 3 out of 21 students (14.29%) achieved the Minimum Competency Criteria (KKM), while 18 students (85.71%) had not achieved mastery. These findings indicate that students' learning outcomes in volleyball are still low and need to be improved through a volleyball game approach. The preliminary learning outcomes are presented in Table 2.

Table 2.

Preliminary Learning Outcomes of Students

Learning Outcome Category	Number of Students	Percentage (%)
Achieved KKM	3	14.29
Did Not Achieve KKM	18	85.71
Total	**21**	**100**

3.2 Cycle I

Cycle I results showed improved student learning outcomes after implementing the volleyball game approach. The distribution of students' learning outcomes in Cycle I is presented in Table 3.

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Table 3.

Distribution of Students' Learning Outcomes in Cycle 1

Score Range	Category	Achievement Category	Number of Students	Percentage (%)
≥81	Very Good	Achieved KKM	1	4.76
76–80	Good	Achieved KKM	5	23.81
71–75	Fair	Achieved KKM	3	14.29
66–70	Poor	Did Not Achieve KKM	12	57.14
≤65	Very Poor	Did Not Achieve KKM	0	0.00
Total			**21**	**100**

Based on Table 3, 9 students (42.86%) achieved the Minimum Competency Criterion (KKM), while 12 students (57.14%) did not achieve the Minimum Competency Criterion (KKM). Compared with the preliminary observation, students' learning outcomes improved, but the predetermined success indicator had not yet been achieved. Therefore, improvements were made in Cycle II.

3.3 Cycle II

Cycle II results showed improved student learning outcomes after improvements based on Cycle I reflections. The distribution of students' learning outcomes in Cycle II is presented in Table 4.

Table 4.

Distribution of Students' Learning Outcomes in Cycle II

Score Range	Category	Achievement Category	Number of Students	Percentage (%)
≥81	Very Good	Achieved KKM	1	4.76
76–80	Good	Achieved KKM	5	23.81
71–75	Fair	Achieved KKM	11	52.38
66–70	Poor	Did Not Achieve KKM	4	19.05
≤65	Very Poor	Did Not Achieve KKM	0	0.00
Total			**21**	**100**

Based on Table 4, 17 students (80.95%) achieved the Minimum Competency Criterion (KKM), while 4 students (19.05%) did not achieve the Minimum Competency Criterion (KKM).

Compared with Cycle I, students' learning outcomes improved and the predetermined indicator of success was achieved.

3.4 Comparison of Students' Learning Outcomes

The comparison of students' learning outcomes from the preliminary observation, Cycle I, and Cycle II is presented in Table 5.

Table 5.

Comparison of Students' Learning Outcomes from the Preliminary Observation, Cycle I, and Cycle II

Research Stage	Students Achieving KKM	Students Not Achieving KKM	Percentage of Students Achieving KKM (%)
Preliminary Observation	3	18	14.29
Cycle I	9	12	42.86
Cycle II	17	4	80.95

Based on Table 5, students' learning outcomes improved in every research stage. The percentage of students achieving the Minimum Competency Criterion (KKM) increased from 14.29% in the preliminary observation to 42.86% in Cycle I and 80.95% in Cycle II. At the same time, the number of students who did not achieve KKM decreased from 18 students in the preliminary observation to 12 students in Cycle I and 4 students in Cycle II. These results indicate that the implementation of the volleyball game approach improved students' learning outcomes.

4. DISCUSSIONS

The findings indicate that implementing a game-based volleyball learning approach effectively improved the Physical Education learning outcomes of Class VII A students at SMP Tri Murti Wagir in the 2025/2026 academic year. This improvement was reflected in the percentage of students achieving learning mastery across each cycle. In the initial condition, the learning mastery rate was only 14.29%, indicating that most students had not yet achieved the expected competency standards in volleyball skills and learning outcomes. After implementing the game-based approach in Cycle I, the mastery level increased to 42.86%. Although this result had not yet reached the predetermined criterion for classical mastery, the increase demonstrated a positive impact of the intervention on student learning. Furthermore, in Cycle II, the percentage of learning mastery increased significantly to 80.95%, indicating that the targeted level of classical mastery had been successfully achieved.

The improvement in learning outcomes across the cycles suggests that the game-based approach created a more engaging and student-centered learning environment. In volleyball learning activities, students were not merely passive recipients of teacher-delivered information but were actively involved in structured game situations designed to achieve specific learning

objectives. Such active participation enabled students to practice fundamental volleyball skills in enjoyable and meaningful contexts, thereby enhancing their understanding of the learning material.

The effectiveness of the game-based approach can be explained through constructivist learning theory, which emphasizes that knowledge is constructed through direct learning experiences. Through game activities, students were provided with opportunities to explore movement patterns, collaborate with peers, and solve problems arising during gameplay. These experiences allowed students to develop their understanding actively rather than relying solely on teacher instruction. Consequently, learning became more meaningful and contributed positively to the improvement of students' learning outcomes. This finding is supported by recent evidence indicating that game-based learning promotes active participation, meaningful learning experiences, and student-centered instruction, enabling learners to construct knowledge while simultaneously improving cognitive, affective, and psychomotor outcomes in Physical Education (Mercan & Selçuk, 2024).

In addition to improving learning outcomes, the game-based approach also appeared to enhance students' motivation and participation during the learning process. Classroom observations revealed that students demonstrated greater enthusiasm and engagement compared to the initial condition. Students participated more actively in learning activities, showed increased confidence in performing volleyball techniques, and collaborated effectively with their teammates. This increased level of participation likely contributed to the substantial improvement in learning outcomes observed throughout the study.

The findings of this study are consistent with previous research indicating that game-based learning approaches in Physical Education can enhance student motivation, participation, and skill acquisition. Learning activities designed in the form of games create a more enjoyable environment that reduces boredom and encourages active involvement. Furthermore, game-based learning provides authentic learning experiences that facilitate the development of motor skills and improve students' understanding of sports-related concepts and techniques. These findings are consistent with previous studies demonstrating that game-based and game-centered approaches improve students' engagement, game performance, motor skills, and learning outcomes in Physical Education and volleyball learning (Breed et al., 2025; Camacho-Sánchez et al., 2023; de Oliveira Castro et al., 2022; Yan et al., 2022).

However, this study extends previous findings by demonstrating the effectiveness of a game-based volleyball learning approach implemented through a Classroom Action Research design. Unlike previous review studies that generally synthesized evidence across different educational contexts, this study provides empirical evidence that continuous reflection and instructional improvement across two action cycles can substantially increase students' learning mastery, from 14.29% in the preliminary observation to 80.95% in Cycle II.

The increase in learning mastery from 14.29% in the initial condition to 80.95% in Cycle II demonstrates that the game-based volleyball approach is an effective instructional strategy for junior high school students. These findings suggest that learning models aligned with students' characteristics and interests can significantly improve both the learning process and learning outcomes. Therefore, the game-based approach may serve as an alternative teaching strategy for Physical Education teachers seeking to enhance student achievement while creating a more active, enjoyable, and meaningful learning environment.

Overall, the success of this study indicates that implementing a game-based volleyball learning approach not only improved students' mastery of fundamental volleyball skills but also increased their motivation, participation, and engagement during the learning process. Therefore, Physical Education teachers are encouraged to incorporate various game-based activities into their instructional practices to promote effective and sustainable learning experiences.

5. CONCLUSIONS

This Classroom Action Research was conducted in Class VII A of Trimurti Junior High School, Wagir District, Malang Regency, during the 2025/2026 academic year through two cycles, namely planning, action, observation, and reflection. Based on the results of the study, it can be concluded that the implementation of a game-based volleyball learning approach improved students' volleyball learning outcomes in Physical Education. The percentage of students who achieved learning mastery increased from 42.86% (9 students) in Cycle I to 80.95% (17 students) in Cycle II, showing that the target of classical learning mastery was achieved.

The findings show that the game-based volleyball learning approach can make the learning process more active and enjoyable. This approach encourages students to participate more actively and helps improve their learning outcomes. Therefore, it can be used as an alternative teaching strategy for Physical Education teachers, especially in volleyball lessons.

This study was limited to one class in one junior high school and only focused on volleyball learning. Therefore, the findings cannot be generalized to other schools, grade levels, or sports. Future studies are recommended to involve more participants, apply the game-based learning approach to other sports and educational levels, and examine its long-term effects on students' learning outcomes and learning motivation.

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