



The Effect of Wall Passing Practice on Volleyball Overhead Passing Learning Outcomes Among Vocational High School Students

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Abstract: Volleyball is one of the compulsory learning materials in physical education that requires students to master basic technical skills, particularly overhead passing. However, many vocational high school students experience difficulties in performing proper overhead passing techniques because of limited coordination, incorrect body positioning, and insufficient repetitive practice. This study aimed to investigate the effect of wall passing practice on improving students' volleyball overhead passing learning outcomes. The research employed Classroom Action Research (CAR) using the Kemmis and McTaggart spiral model consisting of planning, action, observation, and reflection in two cycles. The participants were 36 tenth-grade students of SMKS Muhammadiyah 9 Medan during the 2023/2024 academic year. Data were collected through performance assessment sheets, observation, and documentation. Descriptive statistical analysis was used to evaluate students' learning achievement based on the percentage of classical mastery learning. The findings revealed continuous improvement in students' performance across the research cycles. Initial mastery learning reached only 22.2%, increased to 41.7% in Cycle I, and finally reached 77.8% in Cycle II, exceeding the minimum classical mastery criterion of 70%. The average score also increased from 33.06 during the preliminary observation to 65.56 in Cycle I and 86.67 in Cycle II. The findings indicate that repetitive wall passing practice effectively improves students' technical skills, hand-eye coordination, confidence, and learning achievement in volleyball overhead passing. Therefore, wall passing practice can be recommended as an effective instructional strategy for physical education teachers in vocational high schools.

Keywords: Volleyball; Wall Passing Practice; Overhead Passing; Learning Outcomes; Physical Education

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INTRODUCTION

Physical education is an integral component of the educational process that contributes to students' physical, cognitive, affective, and social development through structured physical activities. The implementation of physical education not only aims to improve physical fitness but also develops motor skills, teamwork, discipline, responsibility, and lifelong healthy lifestyles. Consequently, learning activities should provide meaningful experiences that enable students to acquire sports skills through active participation and continuous practice (Keliat, E., Karo, A. A. P. K., & Hendrawan, D, 2025).

Volleyball is one of the compulsory learning materials in physical education at the vocational high school level. Among the fundamental techniques taught, overhead

passing is considered one of the most essential because it functions as the basis for organizing offensive play and maintaining ball control during a game. Proper execution of overhead passing requires coordination between body posture, foot positioning, finger contact, arm extension, and visual perception. Therefore, students need sufficient practice opportunities to develop movement consistency and technical accuracy.

Despite its importance, mastering overhead passing remains a challenge for many students. Preliminary observations conducted at SMKS Muhammadiyah 9 Medan during the 2023/2024 academic year revealed that only 8 out of 36 students (22.2%) achieved the Minimum Mastery Criterion (KKM = 75), whereas 28 students (77.8%) failed to meet the expected standard. Students commonly demonstrated incorrect body positioning, inadequate knee flexion, improper finger contact with the ball, and poor coordination between upper and lower body movements, resulting in inaccurate ball direction and ineffective passing performance. These findings indicate that the existing instructional approach has not yet facilitated optimal development of students' volleyball skills.

One instructional strategy that has received considerable attention is repetitive skill training using wall-passing exercises (Giawa, E., Sari, L. P., & Karo, A. A. P. K, 2025). This training method allows learners to perform high-frequency repetitions independently while receiving immediate feedback from the rebounding ball. Repetition is widely recognized as an effective approach for improving motor learning because it strengthens neuromuscular coordination, enhances movement automation, and increases technical consistency during skill execution.

Several previous studies have confirmed the effectiveness of wall-based volleyball training. Hasyim et al. (2022) found that overhead passing practice using wall media produced better improvements in students' passing performance than paired passing exercises because learners were able to perform more repetitions and develop better movement control. Likewise, Shellen et al. (2024) reported that wall-bounced passing significantly improved students' volleyball learning outcomes by increasing technical consistency and learning motivation during physical education lessons. More recently, Hasmuddin et al. (2026) demonstrated that both wall-passing and individual passing exercises effectively improved passing accuracy among junior high school students through repeated movement practice and enhanced hand-eye coordination. Similarly, Meysurah et al. (2026) concluded that wall-rebound training significantly enhanced underhand passing skills among students participating in volleyball extracurricular activities.

Besides wall-passing exercises, researchers have introduced various instructional models to improve volleyball learning. Adjie (2025) demonstrated that the Team Game Tournament learning model significantly improved students' overhand passing performance through collaborative learning and increased learning motivation. Al-Bazi and Al-Zubaidi (2025) reported that the Schmeck instructional model effectively developed agility and overhead setting skills among volleyball learners. Furthermore, Mangolo et al. (2025) developed the Crossbox Net training aid, which improved the effectiveness of volleyball practice by facilitating more structured technical exercises. Mardian and Setiawan (2025) also emphasized that variations in students' passing ability indicate the need for appropriate instructional methods and learning media to optimize technical skill development.

Although previous studies consistently demonstrate the benefits of wall-passing exercises and innovative instructional approaches, several research limitations remain. First, most studies employed experimental designs involving extracurricular athletes or focused on improving technical performance rather than classroom learning

achievement. Second, limited studies have implemented wall-passing practice within the framework of Classroom Action Research (CAR) in regular physical education classes at vocational high schools. Third, previous research has rarely evaluated learning success using the classical mastery learning criteria adopted in Indonesian schools. Consequently, empirical evidence regarding the effectiveness of wall-passing practice as a classroom instructional strategy remains limited.

The present study addresses these gaps by implementing wall-passing practice through Classroom Action Research involving tenth-grade students at SMKS Muhammadiyah 9 Medan. Unlike previous studies that primarily emphasized technical performance, this study evaluates improvements in students' learning outcomes based on classical mastery learning while simultaneously observing changes in technical execution throughout two action cycles. Therefore, this study contributes practical evidence regarding the effectiveness of wall-passing exercises as an instructional strategy for improving overhead passing learning outcomes in vocational high school physical education.

Based on the identified problems and research gaps, this study aims to examine the effect of wall-passing practice on improving volleyball overhead passing learning outcomes among tenth-grade students of SMKS Muhammadiyah 9 Medan. The findings are expected to enrich the literature on volleyball learning strategies and provide practical recommendations for physical education teachers in implementing effective skill-based instruction.

METHOD

This study employed Classroom Action Research (CAR) using the Kemmis and McTaggart spiral model, which consists of planning, action, observation, and reflection. The research was conducted in two cycles to improve students' volleyball overhead passing learning outcomes through wall-passing practice.

The study was conducted at SMKS Muhammadiyah 9 Medan during the 2023/2024 academic year. The participants were 36 tenth-grade students, selected using total sampling because all students in the class became the subjects of the classroom action research.

The intervention consisted of overhead passing practice using a wall as the learning medium. In Cycle I, students practiced the correct overhead passing technique repeatedly in small groups. Based on the reflection results, improvements were implemented in Cycle II by regrouping students according to their learning achievement and providing additional guidance and practice opportunities for students who had not yet achieved mastery.

Data were collected through performance assessment, observation, and documentation. Students' overhead passing skills were evaluated using a performance rubric covering body posture, foot position, hand position, ball contact, and passing accuracy.

The data were analyzed descriptively by calculating the mean score and the percentage of classical learning mastery for each cycle. The action was considered successful when at least 70% of students achieved the Minimum Mastery Criterion (KKM = 75).

RESULT AND DISCUSSION

Result

The implementation of wall-passing practice was conducted through two cycles involving 36 tenth-grade students of SMKS Muhammadiyah 9 Medan. Students' learning outcomes were evaluated based on the percentage of classical mastery learning and the average performance score obtained in each cycle.

Table 1. Students' Overhead Passing Learning Outcomes

Assessment Stage	Students Achieving Mastery	Percentage (%)	Average Score	Category
Preliminary Observation	8	22.2	33.06	Not Achieved
Cycle I	15	41.7	65.56	Not Achieved
Cycle II	28	77.8	86.67	Achieved

The preliminary observation indicated that only 8 students (22.2%) achieved the Minimum Mastery Criterion (KKM = 75), with an average score of 33.06. After implementing wall-passing practice in Cycle I, the number of students achieving mastery increased to 15 (41.7%), and the average score improved to 65.56. However, the classical mastery criterion of 70% had not yet been achieved.

Following improvements in the learning strategy during Cycle II, students demonstrated substantial progress. A total of 28 students (77.8%) achieved the Minimum Mastery Criterion, while the average score increased to 86.67. These results indicate that the implementation of wall-passing practice successfully met the classical mastery standard established for this study.

Discussion

The findings demonstrate that wall-passing practice effectively improved students' overhead passing learning outcomes. The increase in both average scores and classical mastery from the preliminary observation to Cycle II indicates that repetitive practice enabled students to perform the correct passing technique more consistently. Repeated movements helped students improve body positioning, finger contact, arm extension, and hand-eye coordination, which are essential components of successful overhead passing.

These findings are consistent with Hasyim et al. (2022), who reported that wall-passing exercises produced better overhead passing performance than paired passing practice because students were able to perform more repetitions independently. Similarly, Shellen et al. (2024) found that wall-bounced passing improved students' volleyball learning outcomes by enhancing technical consistency throughout the learning process.

The present findings also support Hasmuddin et al. (2026), who concluded that repetitive wall-passing practice significantly improved volleyball passing accuracy through continuous motor learning. Likewise, Meysurah et al. (2026) reported that wall-rebound training effectively enhanced students' passing skills by increasing movement repetition and coordination.

The improvement observed in Cycle II was also influenced by instructional refinement during the reflection stage. Students who had already mastered the skill were distributed across learning groups to assist their peers, while students experiencing difficulties received additional guidance and more practice opportunities. This collaborative learning environment enabled students to correct technical errors more effectively and increased their confidence during practice.

The results indicate that wall-passing practice is an effective instructional strategy for improving volleyball overhead passing learning outcomes. Besides increasing technical performance, this learning approach encourages active participation,

independent practice, and continuous motor skill development, making it suitable for physical education learning at the vocational high school level.

CONCLUSION

The implementation of wall-passing practice effectively improved the volleyball overhead passing learning outcomes of tenth-grade students at SMKS Muhammadiyah 9 Medan. The percentage of classical learning mastery increased from 22.2% during the preliminary observation to 41.7% in Cycle I and reached 77.8% in Cycle II, exceeding the minimum mastery criterion of 70%. The improvement indicates that repetitive wall-passing practice enhanced students' technical execution, movement coordination, and learning achievement.

This study suggests that wall-passing practice can be used as an effective instructional strategy in physical education, particularly for teaching fundamental volleyball skills. However, the study was limited to one class and employed a classroom action research design; therefore, future studies are recommended to involve larger samples and experimental approaches to further examine the effectiveness of wall-passing practice across different educational settings.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this research.

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