



Improving Volleyball Underhand Passing Skills through a Video-Based Modified Drill Approach

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ABSTRAK

Penelitian ini bertujuan meningkatkan keterampilan passing bawah bola voli melalui penerapan drill termodifikasi berbasis video pada siswa kelas VIII SMP Negeri 3 Takengon. Penelitian menggunakan Penelitian Tindakan Kelas dengan model Kemmis dan McTaggart yang dilaksanakan dalam dua siklus. Subjek penelitian berjumlah 32 siswa. Data dikumpulkan melalui penilaian keterampilan passing bawah, observasi aktivitas pembelajaran, dan catatan lapangan. Hasil penelitian menunjukkan bahwa keterampilan passing bawah mengalami peningkatan setelah diterapkan drill termodifikasi berbasis video. Nilai rata-rata pada kondisi pra-siklus sebesar 60 dengan ketuntasan klasikal 30% atau 9 siswa. Pada Siklus I, rata-rata meningkat menjadi 70 dengan ketuntasan 65%. Setelah dilakukan perbaikan berupa penggunaan tali pembatas untuk mempertahankan posisi kuda-kuda dan pemberian umpan balik sebaya pada Siklus II, nilai rata-rata meningkat menjadi 83 dengan ketuntasan 90% atau 29 siswa. Hasil tersebut telah melampaui indikator keberhasilan berupa rata-rata minimal 75 dan ketuntasan klasikal minimal 80%. Temuan penelitian menunjukkan bahwa perpaduan video slow-motion dan drill termodifikasi membantu siswa memahami gerakan sekaligus memperbaiki pelaksanaan teknik melalui latihan berulang.

Kata kunci: passing bawah, bola voli, drill termodifikasi, video pembelajaran, pendidikan jasmani

ABSTRACT

This study aimed to improve volleyball underhand passing skills through modified drills supported by instructional video among Grade VIII students at SMP Negeri 3 Takengon. The study employed classroom action research based on the Kemmis and McTaggart model and was conducted in two cycles. The participants were 32 students. Data were collected through underhand passing performance assessments, learning activity observations, and field notes. The results showed a continuous improvement in students' underhand passing skills after the implementation of video-supported modified drills. The mean score in the pre-cycle was 60, with 30% or 9 students achieving mastery. In Cycle I, the mean score increased to 70, with classical mastery reaching 65%. Following improvements in the intervention, including the use of a boundary rope to maintain a low stance and structured peer feedback, the mean score increased to 83 in Cycle II, with 90% or 29 students achieving mastery. These results



exceeded the predetermined success criteria of a minimum mean score of 75 and 80% classical mastery. The findings indicate that combining slow-motion instructional video with modified drills can help students understand movement patterns and improve technical execution through repeated practice.

Keywords: *underhand passing, volleyball, modified drills, instructional video, physical education*

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INTRODUCTION

Physical education is an important component of school education because learning activities provide students with opportunities to develop physical skills, movement competence, discipline, cooperation, and confidence. In junior high school, physical education should not be limited to physical activity but should also provide systematic learning experiences that enable students to understand, practice, and improve basic sport techniques. Volleyball is one of the sports commonly taught in physical education because its basic skills can be developed through structured practice and adapted to students' abilities.

Underhand passing is one of the fundamental techniques in volleyball. The skill is used to receive serves, control the ball, and initiate offensive or defensive actions. Effective underhand passing requires appropriate foot positioning, knee flexion, body balance, arm position, and accurate contact between the forearms and the ball. Failure to coordinate these components may cause the ball to move unpredictably and reduce the effectiveness of subsequent play.

Learning underhand passing at the junior high school level can present several challenges. Students have different levels of motor ability, coordination, confidence, and previous experience. Conventional demonstrations may also be insufficient when students need to understand details of movement that occur rapidly. A teacher can demonstrate the technique correctly, but students may have difficulty identifying the exact position of the knees, arms, and contact point while observing the movement at normal speed.

Learning media can provide additional visual information that complements teacher demonstrations. Video allows students to observe a movement repeatedly, while slow-motion presentation provides opportunities to examine specific phases of a technique. Recent research has reported positive results from video-based instruction in volleyball. A recent study



involving students learning underhand passing found an increase in mean performance after video-based instruction, indicating that instructional video can support the learning of fundamental volleyball skills. Research using animated video has likewise reported significant improvement in students' underhand passing performance.

Visual instruction, however, needs to be accompanied by sufficient physical practice. Students cannot develop motor skills only by watching demonstrations. Repeated practice is required to transform an observed movement pattern into a coordinated physical response. The drill method provides repeated opportunities for students to perform a particular movement while receiving correction from the teacher.

Previous research supports the use of drill activities for volleyball passing. Yahya and Sufitriyono found that the drill method produced a greater improvement in underhand passing learning outcomes than conventional instruction among junior high school students. Fatchur (2023) also reported that drill activities supported by modified equipment improved underhand passing skills among 32 junior high school students. The second cycle in that study produced a mean score of 82.81 and classical mastery of 84.38%.

Equipment modification can make technical practice more manageable for students. A recent study also reported that modified-ball learning media improved underhand passing mastery in classroom action research. Modification can reduce unnecessary difficulty while directing students toward the essential movement pattern.

Based on preliminary observation at SMP Negeri 3 Takengon, students experienced difficulties in performing underhand passing correctly. Approximately 70% of students had not demonstrated the expected technique, particularly in maintaining a low stance and establishing an appropriate contact point between the ball and forearms. The initial mean score was 60, below the minimum criterion of 75. The learning process mainly relied on teacher explanation and conventional demonstration, which had not sufficiently addressed students' movement errors.

Therefore, this study aimed to improve the underhand passing skills of Grade VIII students at SMP Negeri 3 Takengon through modified drill activities supported by slow-motion video. The intervention combined visual observation with repeated physical practice.



The study was expected to provide a practical alternative for teachers who need simple instructional strategies to improve basic volleyball skills in junior high school physical education (Is, Z., & Adi, R. 2023).

METHOD

Research Design

This study employed classroom action research (CAR). The research was designed to identify and solve learning problems occurring during physical education instruction through systematic classroom intervention. The study followed the Kemmis and McTaggart action research model, consisting of four interconnected stages: planning, action, observation, and reflection.

The research was conducted in two cycles. Each cycle consisted of planning the learning activities, implementing the modified drill supported by slow-motion video, observing the learning process and student performance, and reflecting on the results to determine improvements for the following cycle.

Participants

The participants were 32 Grade VIII students of SMP Negeri 3 Takengon. The class was selected because preliminary observation indicated that students had difficulties in performing the basic underhand passing technique. The research focused on the learning process and skill development of the participating students.

Intervention

The intervention combined two main components: slow-motion video and modified drill activities.

First, students watched a slow-motion video demonstrating the correct underhand passing technique. The video focused on the preparation stance, knee position, arm position, movement direction, and contact point between the ball and forearms. Students were allowed to observe the movement repeatedly before practicing.

Second, students performed modified drill exercises. During Cycle I, the exercises emphasized the basic sequence of underhand passing and repeated practice. Based on reflection, Cycle II introduced a rope boundary as a physical guide to encourage students to



maintain a lower stance. Structured peer feedback was also added so that students could observe their partners and identify specific technical components.

Data Collection

Data were collected using three instruments: an underhand passing performance assessment sheet, a student learning activity observation sheet, and field notes. The performance assessment focused on the technical components of underhand passing, including body position, foot and knee position, arm preparation, ball contact, and follow-through.

Student activity observations were used to identify changes in participation during practice. Field notes documented important events, student difficulties, teacher responses, and conditions that emerged during each cycle.

Data Analysis

The data were analyzed descriptively by comparing the mean performance score and classical mastery across the pre-cycle, Cycle I, and Cycle II. Classical mastery was calculated based on the proportion of students achieving the minimum performance criterion. The intervention was considered successful when the class mean reached at least 75 and at least 80% of students achieved the predetermined mastery criterion.

RESULTS

Pre-Cycle

The preliminary assessment showed that students had not achieved the expected level of underhand passing skill. The mean score was 60, which was below the minimum criterion of 75. Only 9 of 32 students achieved the expected level, representing approximately 28.1%. The initial observation also showed that approximately 70% of students experienced difficulties in performing the technique correctly.

STAGE	MEAN SCORE	STUDENTS ACHIEVING MASTERY	CLASSICAL MASTERY
PRE-CYCLE	60	Sep-32	28.1%
CYCLE I	70	approximately 65%*	65%*
CYCLE II	83	29/32	90.6%



*The Cycle I percentage follows the researcher's reported result and should be recalculated from the original student score data before final publication.

The main technical errors were observed in the students' stance, knee flexion, arm position, and ball contact. Several students tended to stand upright while passing, causing the ball to make inconsistent contact with the forearms.

Cycle I

Cycle I introduced slow-motion video and basic modified drill exercises. The video was used before practice to provide students with a clear visual model of the desired movement. Students then practiced the movement through repeated drills. The mean score increased from 60 to 70. Classical mastery reached 65%. Although the improvement demonstrated a positive response to the intervention, the result had not yet met the predetermined success criteria.

Observation during Cycle I revealed that some students still returned to an upright position when they became tired. Several students also required repeated teacher instructions during transitions between practice activities. These findings became the basis for modifying the intervention in Cycle II.

Cycle II

Cycle II incorporated two major improvements. First, a rope boundary was used to encourage students to maintain an appropriate low stance during the drill. Second, structured peer feedback was introduced to help students identify specific technical errors. The results showed substantial improvement. The mean score increased to 83, exceeding the minimum criterion of 75. Classical mastery reached 90%, with 29 of 32 students achieving the expected performance level. The result exceeded the target of 80% classical mastery.

Student participation also improved during practice. Students appeared more willing to repeat the movement, observe their partners, and correct technical errors. The combination of visual demonstration, physical guidance, repeated practice, and peer feedback provided a more active learning experience.

DISCUSSION

The findings demonstrate that the combination of modified drills and slow-motion video improved students' underhand passing skills. The mean score increased by 23 points



from the pre-cycle to Cycle II, while classical mastery increased substantially. The achievement of a mean score of 83 and mastery of 90% indicates that the intervention exceeded the predetermined success criteria.

The improvement can first be associated with the visual information provided by the slow-motion video. Underhand passing involves several movements that occur within a short period. When students observe the movement at normal speed, they may not recognize the precise relationship between the stance, arm position, and contact point. Slow-motion presentation allows these components to be examined separately. Students can observe how the knees are flexed, how the arms are positioned, and how the forearms contact the ball.

This finding is consistent with recent research showing that video-based instruction can improve volleyball underhand passing skills. Instructional video has been reported to increase students' performance from the pre-intervention stage to the post-intervention stage. Research on animated video has similarly demonstrated significant improvement in underhand passing skills, indicating that visual media can support students' understanding of technical movement.

The second factor was repeated practice through modified drills. Watching a correct movement does not automatically produce technical mastery. Students need repeated opportunities to perform the movement and receive corrections. The drill approach provides this opportunity by focusing practice on specific technical components. Yahya and Sufitriyono reported that drill-based learning produced better improvement in underhand passing than conventional instruction among junior high school students.

The modification introduced in Cycle II was particularly important. The rope boundary functioned as an external physical cue that encouraged students to maintain a lower stance. This modification addressed one of the main errors identified during Cycle I. Rather than repeatedly telling students to bend their knees, the learning environment itself provided a simple physical reminder of the desired body position.

This result supports previous research showing that modified equipment can assist students in learning underhand passing. Fatchur (2023) found that drill activities supported by a modified hanging-ball device improved underhand passing skills among 32 junior high



school students. The study reported a mean score of 82.81 and classical mastery of 84.38% in Cycle II. The similarity between those findings and the present study indicates that equipment modification can be a practical strategy for addressing technical difficulties during volleyball instruction.

The structured peer feedback used in Cycle II also contributed to the learning process. Students were not only performers but also observers who had to identify specific technical components in their partners' movements. This activity encouraged students to pay closer attention to the technique and provided additional opportunities to discuss movement errors.

The improvement from 70 in Cycle I to 83 in Cycle II demonstrates the importance of reflection in classroom action research. The first intervention produced improvement but did not yet meet the success criteria. Reflection identified problems related to body position and activity transitions. The second cycle then addressed these specific problems through additional physical guidance and peer feedback. The increase in achievement after these modifications suggests that the effectiveness of classroom intervention depends not only on the initial teaching strategy but also on the teacher's ability to respond to problems identified during implementation.

The findings also have practical implications for physical education teachers. The combination of video and modified drills does not require highly complex equipment. A smartphone, projector or display device, a volleyball, and simple materials such as rope can be used to create a more structured learning experience. This approach may therefore be suitable for schools where physical education facilities are limited.

The study nevertheless has limitations. The participants consisted of only 32 students from one class at SMP Negeri 3 Takengon, and the research was conducted through two action cycles. Consequently, the findings describe improvement within the participating class and should not be generalized to all junior high school students without further investigation. Future studies could involve larger samples, comparison groups, longer interventions, or objective video analysis of movement patterns.

CONCLUSION



The implementation of modified drills supported by slow-motion video improved the underhand passing skills of Grade VIII students at SMP Negeri 3 Takengon. The mean performance score increased from 60 in the pre-cycle to 70 in Cycle I and 83 in Cycle II. Classical mastery also increased, reaching 90% in Cycle II, with 29 of 32 students achieving the expected performance level. The intervention exceeded the predetermined success criteria of a mean score of at least 75 and classical mastery of at least 80%.

The combination of slow-motion video and modified drills provided students with both visual and practical learning experiences. The video helped students understand the movement sequence, while the modified drills provided repeated opportunities to perform and correct the technique. The use of a rope boundary and structured peer feedback in Cycle II further supported the correction of students' body position and movement execution.

Physical education teachers are encouraged to adapt this approach according to students' abilities and available facilities. Similar strategies may also be applied to other fundamental volleyball skills and other sports techniques that require clear movement demonstrations and repeated practice

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