

IMPROVING LONG JUMP LEARNING OUTCOMES THROUGH MIDDLE SCHOOL STUDENTS' HOPSCOTCH GAME

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ABSTRACT

This study aims to determine the effectiveness of implementing the hopscotch game in long jump learning for students of public middle school 13 Penajam Paser Utara, as well as to improve students' long jump abilities, including in aspects of landing method, jump angle, support, and starting speed. This study used a classroom action method with two cycles, involving 32 students of class VII C. Measurements were carried out through long jump tests before and after implementing the hopscotch game, with quantitative data analysis to compare student learning outcomes. The results showed a significant increase in students' long jump abilities. The average long jump score in the pre-cycle was 70, increasing to 72.50 in cycle I and reaching 83.44 in cycle II. This increase shows the effectiveness of the hopscotch game in improving students' abilities, with a learning completion percentage reaching 100%. The application of the hopscotch game in long jump learning has proven effective in improving the long jump abilities of students of public middle school 13 Penajam Paser Utara. Therefore, students can utilize the hopscotch game as an engaging alternative learning method to enhance their physical abilities and skills.

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1. INTRODUCTION

Physical education is an integral component of the education system that aims to develop aspects of physical fitness, motor skills, critical thinking skills, social skills, emotional stability, and healthy lifestyles (Kaya & Saritaş, 2020; Gil-Moreno & Rico-Gonzalez, 2023; Hasmyati et al., 2024). An effective physical education program can contribute significantly to the physical, cognitive, and socio-emotional development of students (Hernández-Martínez et al., 2023). Athletics, including the long jump event, is one of the sports taught in the physical education curriculum at the junior high school level.

The long jump is one of the athletic events that requires the skill of jumping as far as possible with one push (Zhang et al., 2022). According to Kim and Park (2021), mastering the long jump technique requires adequate coordination between the run-up,

push-off, floating in the air, and landing. The ability to perform the long jump with the correct technique is not only important for achieving achievements in sports but also plays a role in the development of physical fitness and motor skills in general (Raiola & D'Elia, 2022).

Based on initial observations conducted at Public Middle School 13 Penajam Paser Utara, it was found that students' learning outcomes in the long jump material had not yet reached the learning objective achievement criteria that had been set. This finding is in line with the research of Singh et al. (2023), which stated that low learning outcomes in athletic skills are often caused by less varied learning methods and a lack of approaches that are oriented toward student needs. Several studies indicate that traditional learning approaches in physical education often fail to motivate students to participate actively (Mosston & Ashworth, 2020; Wong et al., 2021).

Further observations identified several common mistakes that students often make when doing the long jump, including aspects of the start, push, floating in the air, and landing. In the start aspect, many students have not been able to control their running speed properly, in line with the findings of Rodrigues et al. (2021), which stated that speed control is a crucial factor in mastering long jump techniques. In terms of push-off, Gonzalez-Villora et al. (2019) identified that difficulty in placing the push-off foot correctly is a common mistake that hinders the achievement of optimal results.

In the floating phase in the air, most students were unable to maintain satisfactory body balance, a phenomenon also found in the study by Schmidt et al. (2021). Meanwhile, in the landing phase, Tan et al. (2022) emphasized the importance of correct landing techniques to avoid injury and optimize jump distance, but students of Public Middle School 13 Penajam Paser Utara still experienced difficulties in this aspect.

Given the characteristics of junior high school students, who are still in the development stage and tend to like fun activities, a learning approach is needed that can attract interest and be effective in improving long jump skills. Casey and MacPhail (2022) suggest the use of a game-based approach that can create a more enjoyable and motivating learning environment. One effective approach to consider is incorporating traditional games into the learning process.

The game of hopscotch, as one of the popular traditional games in Indonesia, has the potential to be a medium for learning long jump (Rahmanto et al., 2020). Hidayat et al. (2020) revealed that traditional games can be integrated into the physical education curriculum to create meaningful and contextual learning experiences. The hopscotch game involves the activity of jumping on one leg, which is similar to the movement in the long jump, so it can be an effective training tool. A study conducted by López-Fernández and Avelar-Rosa (2023) showed that traditional games can be an effective pedagogical tool in the development of basic motor skills.

The use of hopscotch games in long jump learning is in line with the concept of play-based learning proposed by Williams et al. (2022). This approach not only improves physical skills but also the cognitive and socio-emotional aspects of students. Through hopscotch games, students can practice controlling body movements, balance, and leg strength, which are important components in the long jump (Wijaya & Astuti, 2021).

Silva et al. (2020) emphasized that coordination between the eyes, hands, and feet is an important factor in mastering long jump techniques, and hopscotch games can help students train this coordination. This game can also increase leg muscle endurance, which plays an important role in the long jump push (Morales-Belando et al., 2023). The competitive aspect of hopscotch games can be an additional motivation for students to try to jump as far and as accurately as possible (Sutapa et al., 2021; Nurkholis et al., 2021).

The use of traditional games in physical education learning also has added value in the context of preserving local culture (Baena-Morales & González-Villora, 2023). Putra and Hasibuan (2020) argue that the integration of traditional games into the school curriculum can help preserve local wisdom that is increasingly eroded by technological developments. This reasoning is in line with the paradigm of education that is contextual and relevant to students' daily lives (Chow et al., 2021).

Building upon this explanation, this study aims to examine the effectiveness of implementing the hopscotch game in improving long jump learning outcomes for students of Public Middle School 13 Penajam Paser Utara. The results of the study are expected to contribute to the development of athletic learning methodologies at the junior high school level and become a reference for efforts to improve the quality of physical education in Indonesia. The researcher aims to address the problem of how the hopscotch game can be applied to enhance long jump learning for students at Public Middle School.

2. METHOD

This study uses the Classroom Action Research (CAR) type. According to Kemmis et al. (2014), CAR is research conducted by teachers in their classes through self-reflection with the aim of improving performance as teachers so that student learning outcomes increase. This classroom action research was chosen because it has characteristics that are in accordance with the learning problems faced, namely the low long jump learning outcomes of students at Public Middle School 13 Penajam Paser Utara.

The subjects of this study were 32 class VIIC students of Public Middle School 13 Penajam Paser Utara in the 2023/2024 academic year, consisting of 18 male students and 14 female students. This study employs the Kemmis and McTaggart model for classroom action research, which Cohen et al. (2017) has modified. This model consists of four main stages that are carried out repeatedly in the form of a cycle, namely: (1) planning, (2) implementing actions (acting), (3) observing, and (4) reflecting. Long Jump Skills Assessment Rubric. Students use the assessment rubric to evaluate their long jump skills, which encompass four fundamental technical elements:

1. Starting Technique: Body position when running, Speed and rhythm of steps, Accuracy of steps approaching the take-off board.
2. Push-off Technique: Push-off foot position, Body position when pushing off, Accuracy of push-off on the take-off board.

3. Hovering Technique in the Air: Body position in the air, Coordination of leg and hand movements, Body balance.
4. Landing Technique: Foot position when landing, Body position when landing, Body balance after landing.

Each technical aspect is assessed on a scale of 1-4, with a maximum total score of 48. The final score is calculated using the formula: Final Score = (Score Obtained / Maximum Score) x 100. The collected data is analyzed using quantitative and qualitative descriptive analysis techniques. Quantitative data analysis is carried out on the results of the long jump skills test by calculating the learning outcomes of each student. Students are declared complete if they achieve a minimum score of 80 in accordance with the learning objective completion criteria set.

3. RESULTS AND DISCUSSION

Results

Precycle

The research conducted in class VII C Public Middle School 13 Penajam Paser Utara began with observation activities on how students do the squat style long jump and how teachers teach on December 1, 2024. The observation was intended to find out how teachers teach long jump and how students do long jump movements.

Table 1. Pre-cycle Long Jump Learning Outcomes

No.	Value Range	Total	Criteria	Information	Percentage
1	> 93 – 100	0	Very Good	Completed	0%
2	> 86 – 93	0	Good	Completed	0%
3	≥ 80 – 86	10	Enough	Completed	31,25%
4	< 80	22	Poor	Not Completed	68,75%

Table 1 showed that the learning outcomes of the squat-style long jump are 10 students with sufficient criteria in the category of complete learning outcomes and 22 students with insufficient criteria in the category of incomplete learning outcomes. Because in the pre-cycle the students had not met the learning objective completion criteria achievement, namely 31.25% of students who completed and 68.75% who did not complete, the research was continued in cycle I.

Cycle I

Table 2. Long Jump Learning Results Cycle I

No.	Value Range	Total	Criteria	Information	Percentage
1	> 93 – 100	0	Very Good	Completed	0%
2	> 86 – 93	0	Good	Completed	0%
3	≥ 80 – 86	13	Enough	Completed	40,63%
4	< 80	19	Poor	Not Completed	59,37%

Table 2 shows that the learning outcomes of the squat-style long jump include 13 students who met sufficient criteria in the complete category and 19 students who did not meet sufficient criteria in the incomplete category. The outcome of the long jump shows that there are still some students who still experience difficulties, especially in doing push-off movements when they are about to float in the air and swing their arms from above to the front, the length of the jump, and landing techniques. Because in cycle I students have not met the learning objective completion criteria achievement, which is 40.63% of students who have completed and 59.37% who have not completed, the research was continued in cycle II.

Cycle II

Table 3. Long Jump Learning Results Cycle II

No.	Value Range	Total	Criteria	Information	Percentage
1	> 93 – 100	1	Very Good	Completed	3,125%
2	> 86 – 93	0	Good	Completed	0%
3	≥ 80 – 86	31	Enough	Completed	96,875%
4	< 80	0	Poor	Not Completed	0%

Building upon Table 3, the learning outcomes of the squat-style long jump are 31 students with sufficient criteria (a complete category) and 1 student with excellent criteria (a complete category). The long jump learning outcomes show that all students have achieved the learning objective completion criteria (LOCC). The study is done since 100% of students completed LOCC. Furthermore, Figure 1's diagram will display the learning outcomes of each cycle.



Figure 1. Long Jump Results Bar Chart Each Cycle

The comparison table for each phase of the cycle, which includes pre-cycle, cycle I, and cycle II, indicates an increase in students' ability to perform the squat-style long

jump based on assessment indicators established by researchers and teachers. The evidence indicates that the hopscotch-playing approach is successful in completing student learning outcomes. Details reveal that as many as 10 students completed the pre-cycle action, 13 students completed the cycle I action, and 32 students completed the cycle II action. Furthermore, this study will discuss in the discussion of this study the factors that increase the ability to do the squat-style long jump with the hopscotch-playing approach.

Discussion

This classroom action research focuses on the application of the hopscotch game to improve learning outcomes of the squat-style long jump in students of Public Middle School 13 Penajam Paser Utara. Analysis of the research results showed a significant increase from the pre-cycle to cycle II, with the average student score increasing from 70.00 in the pre-cycle to 72.50 in cycle I and reaching 83.44 in cycle II, with the class completion rate reaching 100% at the end of cycle II.

Initial Learning Conditions

During the pre-cycle stage, researchers discovered that students continued to struggle with performing the squat-style long jump. Initial observations identified several main problems, including students being afraid to jump because they felt their legs were not strong enough and rarely did jumping activities before. Of the 32 students, only 10 students achieved a completion score of 80. The most prominent difficulty was seen in the approach aspect, where students tended to reduce speed when approaching the take-off board, which resulted in a less than optimal jump distance.

Analysis of student movements in the pre-cycle also showed weaknesses in the take-off and landing aspects. In the push aspect, students have not been able to optimally shift horizontal momentum to vertical. In the landing aspect, students still do not control their body positions well, which results in low landing effectiveness.

Implementation of Engklek Game in Learning

We chose the hopscotch game as a learning approach because its movement characteristics align with the fundamental long jump technique. Biomechanically, the jumping movement in the hopscotch game involves the same components as the long jump, namely the start phase, push-off, floating in the air, and landing ([Howard-Shaughnessy et al., 2013](#); [Rizki et al., 2022](#)).

The implementation of the hopscotch game in long jump learning is carried out through several variations of the game that are adjusted to the technical aspects that are to be developed ([McGann et al., 2020](#); [Rahmanto et al., 2020](#)): 1) Start Phase: The hopscotch game trains students to control their steps and speed, especially when approaching the marked boxes. This training is relevant to the need for start techniques in the long jump, which requires optimal step and speed settings approaching the take-off board. 2) Push-off Phase: The hopscotch game trains students to push off with one foot, enabling them to jump over boxes marked with stones. This movement directly strengthens the leg muscles that play a role in the long jump push-off, especially the extensor muscles, such as the quadriceps, gastrocnemius, and soleus. 3) Floating Phase:

When jumping between boxes in the hopscotch game, students learn to maintain body balance in the air. This skill is crucial during the gliding phase of the long jump, as it helps optimize the distance. 4) Landing Phase: In the game of hopscotch, students must land precisely on the designated box. This activity develops body control and dynamic balance necessary for effective landing in the long jump.

Improving Learning Outcomes

The improvement in learning outcomes from pre-cycle to cycle II shows the effectiveness of the hopscotch game in developing long jump skills. In cycle I, the average score of students increased from 70.00 to 72.50. Although this increase is relatively small, it indicates an initial neuromuscular adaptation in students to the movement patterns required in the long jump.

A more significant increase occurred in cycle II, where the average score reached 83.44. This progress can be explained through more optimal biomotor adaptation, where students have been able to internalize the movement patterns learned through the hopscotch game and apply them in the long jump technique. This improvement is in line with the principle of positive learning transfer, where skills acquired in one activity (hopscotch game) can be transferred to another activity (long jump) that has a similar movement pattern.

Analysis of the components of the long jump technique showed an even increase in all aspects: 1) Improvement in the Starting Technique: Students showed better ability in controlling running speed and no longer reduced speed significantly when approaching the take-off board. This improvement is the result of practicing controlling steps in the hopscotch game. 2) Improvement in Push-off Technique: Students' push-off strength increased as a result of repeated single-leg jumping movements in the hopscotch game. Students also showed better ability in converting horizontal momentum to vertical. 3) Improvement in Hovering Technique: Students showed better body control while floating in the air, which is a result of increased proprioception (awareness of body position) trained through the hopscotch game. 4) Improvement in Landing Technique: Students' landing technique became more effective, with more controlled body position and better balance. This enhancement is a result of practicing landing right on the box in the hopscotch game.

The improvement in learning outcomes that occurred from the pre-cycle to cycle II was the result of improvements in various aspects of biomechanics of movement through the hopscotch game. The similar movement patterns between the hopscotch game and the long jump allow for positive learning transfer, where skills acquired in the hopscotch game can be applied effectively in the long jump technique.

4. CONCLUSION

The application of the hopscotch game in long jump learning for students of Public Middle School 13 Penajam Paser Utara is effective in improving students' long jump abilities with increasingly long jump results, landing methods, jump angles, support, and speed of students in taking the run-up. These results demonstrate a significant increase in students' long jump abilities. The average long jump score in the pre-cycle was 70, increasing to 72.50

in cycle I and reaching 83.44 in cycle II. This increase shows the effectiveness of the hopscotch game in improving students' abilities, with a learning completion percentage reaching 100%. The application of the hopscotch game in long jump learning has proven effective in improving the long jump abilities of students of Public Middle School 13 Penajam Paser Utara. Therefore, students can utilize the hopscotch game as an engaging alternative learning method to enhance their physical abilities and skills.

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