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OPTIMIZATION OF CONE MEDIA IN IMPROVING FOOTBALL DRIBBLING SKILLS OF GRADE V STUDENTS OF UPT SDF SD INPERES KARUNRUNG

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Abstrak:
Keterampilan menggiring bola merupakan kemampuan dasar yang penting dalam permainan sepak bola, khususnya bagi siswa sekolah dasar yang sedang berada pada tahap perkembangan koordinasi motorik. Hasil pengamatan awal menunjukkan bahwa sebagian siswa kelas V di UPT SPF SD Inpres Karunrung masih mengalami kesulitan dalam mengontrol bola, menjaga arah dribel, dan menyesuaikan kecepatan gerak. Oleh karena itu, diperlukan metode pembelajaran yang sederhana, menarik, dan sesuai dengan karakteristik siswa. Media kerucut digunakan sebagai alat bantu latihan karena mudah diterapkan dan mampu memberikan stimulus gerak yang terarah. Penelitian ini menggunakan metode eksperimen dengan desain one group pre-test–post-test. Subjek penelitian adalah siswa kelas V yang mengikuti pembelajaran pendidikan jasmani. Instrumen penelitian berupa tes keterampilan menggiring bola yang menilai tiga aspek, yaitu kecepatan, akurasi, dan kontrol bola. Data dikumpulkan melalui pengukuran sebelum (pre-test) dan sesudah (post-test) pelatihan menggiring bola menggunakan media kerucut yang dilaksanakan selama beberapa sesi. Analisis data dilakukan dengan uji statistik untuk mengetahui perbedaan hasil sebelum dan setelah perlakuan. Hasil penelitian menunjukkan adanya peningkatan keterampilan menggiring bola setelah penggunaan media kerucut. Rata-rata waktu kecepatan menggiring bola menurun dari 10,48 ± 2,15 detik menjadi 10,07 ± 2,01 detik. Skor akurasi meningkat dari 2,7 ± 0,67 menjadi 3,5 ± 0,70, sedangkan kontrol bola meningkat dari 2,6 ± 0,48 menjadi 3,4 ± 0,51. Meskipun nilai p belum menunjukkan perbedaan yang signifikan secara statistik, peningkatan nilai rata-rata pada ketiga aspek tersebut menunjukkan kecenderungan perkembangan keterampilan menggiring bola siswa. Disimpulkan bahwa media kerucut efektif sebagai alat bantu pembelajaran untuk meningkatkan keterampilan menggiring bola siswa kelas V dan dapat dijadikan alternatif pembelajaran pendidikan jasmani yang inovatif dan mudah diterapkan di sekolah dasar.

Abstract:
Dribbling is a fundamental skill essential to soccer, especially for elementary school students who are developing motor coordination. Initial observations indicate that some fifth-grade students at the SPF Technical Implementation Unit (UPT SPF) of SD Inpres Karunrung still experience difficulty controlling the ball, maintaining dribbling direction, and adjusting speed. Therefore, a simple, engaging, and student-specific learning method is needed. Cones are used as training aids because they are easy to implement and provide a focused movement stimulus. This study employed an experimental method with a one-group pre-test–post-test design. The subjects were fifth-grade students enrolled in physical education. The research instrument was a dribbling skills test that assessed three aspects: speed, accuracy, and ball control. Data were collected through measurements before (pre-test) and after (post-test) dribbling training using cones, conducted over several sessions. Data were analyzed using statistical tests to determine differences in results before and after the treatment. The results showed an improvement in dribbling skills after using cones. Average dribbling speed decreased from 10.48 ± 2.15 seconds to 10.07 ± 2.01 seconds. Accuracy scores increased from 2.7 ± 0.67 to 3.5 ± 0.70, while ball control improved from 2.6 ± 0.48 to 3.4 ± 0.51. Although the p-value did not show a statistically significant difference, the increase in average scores in all three aspects indicates a trend toward improving students' dribbling skills. Conclusion: The cones are an effective learning aid for improving fifth-grade students' dribbling skills and can be used as an innovative and easily implemented alternative physical education learning tool in elementary schools.

A. INTRODUCTION

Football is one of the most popular sports among elementary school students because it is recreational, competitive, and capable of developing fundamental motor skills. In football, dribbling is one of the fundamental skills that every player must master. This skill functions to control the ball, pass defenders, regulate the game's tempo, and create attacking opportunities. According to Mielke (2007), dribbling is a basic ability that all players must possess because it enables them to maintain ball control while moving. Meanwhile, Arpad (1980) explains that dribbling is an offensive skill used to control the ball and pass opponents effectively.

Dribbling is an essential fundamental skill in football that functions to maintain ball possession while moving. Mielke (2007) states that dribbling is a basic ability that players must master in offensive situations. Arpad (1980) also explains that dribbling plays an important role in regulating the tempo of the game and in getting past opponents.

However, observations show that the dribbling skills of fifth-grade students at the elementary school level are still in the low category. Many students are unable to maintain ball control, frequently lose balance, and struggle to sustain speed while dribbling. This condition indicates that fundamental motor skills—particularly foot–eye coordination and body balance—have not yet developed optimally. In fact, the elementary school period is a crucial early stage of motor development that strongly influences children's motor abilities in subsequent phases. Therefore, more varied and effective learning strategies are needed to improve the quality of football skill instruction.

Initial observations at UPT SPF SD Inpres Karunrung showed that students' dribbling skills were still low; many students had difficulty maintaining balance, frequently lost ball control, and were inconsistent in their movements. This condition indicates that the development of students' motor coordination is not yet optimal (Nopiyanto & Raibowo, 2016)

One alternative solution is the use of cone media as a learning tool. Cones are simple training aids that can be applied to various dribbling exercises. They serve as obstacles and directional markers that help students practice agility, coordination, changes in movement direction, and structured ball control. Saputra's (2019) research shows that the use of cones in football training can improve agility and the accuracy of ball control in young players. In addition, Nopiyanto and Raibowo (2016) state that the use of modified media in physical education can significantly enhance students' fundamental motor skills.

This issue is exacerbated by the use of monotonous learning media that do not provide sufficient motor stimulus to improve students' dribbling skills. Learning media that lack variety can reduce student motivation and fail to activate motor learning processes effectively (Syukur et al., 2022).

In elementary school practice, learning media are often used monotonously and with limited variation, reducing students' motivation to train optimally. Unengaging learning approaches may also hinder the development of students' motor skills. The use of cones, which are flexible and easy to modify, can create an engaging, challenging, and enjoyable training environment. Exercises such as slalom, zig-zag patterns, and various dribbling routes help students improve decision-making, movement accuracy, and overall body coordination.

Cones serve as a simple yet effective medium that provides visual and kinesthetic obstacles. Saputra (2019) notes that the use of cones in dribbling drills has been proven to improve agility and movement accuracy.

Based on this description, optimizing the use of cones in dribbling instruction is essential to address students' low skill levels and support a more effective learning process. Therefore, this study focuses on analyzing the effectiveness of cone media in improving the dribbling skills of fifth-grade elementary school students. The results of this study are expected to contribute to the development of innovative, applicable, and student-centered physical education learning methods.

Research also indicates that obstacle-based media such as cones can enhance coordination, ball control, and consistency of touches in beginner players (Pradana, 2024; Azandi et al., 2023). Thus, cones can be an appropriate instructional tool for elementary school students.

This study aims to determine the effectiveness of using cone media in improving the speed, accuracy, and ball control of fifth-grade students.

B. METHODE

This study employed an experimental research method using a one-group pre-test–post-test design to examine the effectiveness of cone-based training in improving football dribbling skills among fifth-grade elementary school students. This design was selected because it allows for direct comparison of students'

performance before and after the intervention within the same group, making it suitable for school-based research with limited administrative and technical constraints (Coker, 2017).

The research subjects consisted of all fifth-grade students at UPT SPF SD Inpres Karunrung who participated in physical education classes during the study period. A total sampling technique was applied, meaning that all students in the population were included as participants. This approach was chosen due to the relatively small population size and to ensure that the findings accurately represented real instructional conditions (Booth et al., 2012).

The research instrument was a football dribbling skill test developed based on fundamental football technique standards. The test assessed three components of dribbling performance: speed, accuracy in navigating cone obstacles, and ball control during directional changes. Cones were arranged in zig-zag and slalom patterns to create a standardized dribbling course. Such test formats are widely recognized as valid measures of coordination, agility, balance, and ball-handling skills in beginner players (Mielke, 2007; Arpad, 1980).

The research procedure consisted of three stages: pre-test, intervention, and post-test. During the pre-test, students performed the dribbling test to establish baseline performance. The intervention phase involved six training sessions using cone-based drills, each lasting approximately 23–35 minutes. Training activities included zig-zag dribbling, slalom movements, combination dribbling with sudden directional changes, and reactive dribbling based on verbal cues. These exercises were delivered progressively, beginning with simple movement patterns and advancing to more complex tasks to support systematic skill development (Saputra, 2019). After the intervention, a post-test was administered using the same procedures as the pre-test.

Data analysis was conducted using descriptive statistics (mean and standard deviation) and inferential analysis with the paired sample t-test to determine significant differences between pre-test and post-test scores. This analytical approach is commonly used in sports and physical education research to evaluate training effectiveness (Wang et al., 2017).

C. RESULT AND DISCUSSION

The results of the study indicate an improvement in students' dribbling skills after participating in six training sessions using cone media. Descriptive analysis shows changes in the three measured skill aspects, namely speed, accuracy, and ball control. In the dribbling speed aspect, the average time achieved by students decreased from 10.48 ± 2.15 seconds in the pre-test to 10.07 ± 2.01 seconds in the post-test. This reduction in time indicates that students were able to dribble the ball faster after the training. These findings align with recent studies reporting that the use of cones as visual obstacles can enhance agility and motor acceleration in dribbling activities (Rahman & Putra, 2021). Nevertheless, the paired sample t-test produced a p-value of 0.448, indicating that the improvement was not statistically significant.

Dribbling speed increased from an average of 10.48 ± 2.15 seconds to 10.07 ± 2.01 seconds. Cones as visual obstacles have been proven to enhance agility and motor response speed (Rahman & Putra, 2021).

Dribbling accuracy increased from 2.7 ± 0.67 to 3.5 ± 0.70. Obstacle-path training has been shown to increase movement precision (Lestari & Widodo, 2022).

In the dribbling accuracy aspect, there was an increase in the mean score from 2.7 ± 0.67 to 3.5 ± 0.70, with an improvement of 0.8 points. This increase indicates that students were better able to follow the obstacle path without touching the cones and made fewer errors. Recent studies show that obstacle-based training can enhance movement accuracy and improve coordinative abilities in elementary school students (Lestari & Widodo, 2022). Although the significance value was p = 0.408, indicating that the improvement was not statistically significant, the change in the mean score still reflects meaningful practical progress in the students' movement quality.

The ball control aspect also showed improvement, with the average score increasing from 2.6 ± 0.48 in the pre-test to 3.4 ± 0.51 in the post-test. This 0.8-point improvement demonstrates better stability of touch and closer ball control. These results are consistent with recent findings showing that training using modified media such as cones can improve ball control skills through visual stimuli and more structured movement spaces (Siregar, 2023). Although the statistical analysis produced a p-value of 0.301, meaning the improvement was not statistically significant, the increase in the mean score still reflects positive development in students' technical abilities.

Students' ball control improved from 2.6 ± 0.48 to 3.4 ± 0.51. This finding is in line with Siregar (2023), who asserts that cone obstacles increase ball control stability.

Overall, the three variables demonstrated a pattern of performance improvement after the treatment, even though the differences were not statistically significant. The changes in mean values for speed, accuracy, and ball control provide evidence that training using cone media remains pedagogically effective in improving students' dribbling skills. These findings align with recent research emphasizing the importance of simple yet structured learning media in supporting the development of fundamental motor skills in elementary school students (Nurhayati & Frimansyah, 2024). Therefore, cone media can be considered a practical instructional tool that can be implemented effectively in physical education.

Although the improvements were not statistically significant ($p > 0.05$), the increase in average values indicates practical skill improvements relevant to physical education learning (Nurhayati & Frimansyah, 2024).

Table 1. Results of pre-test and post-test analysis

Variable	Pre-test (Mean ± SD	Post-test (Mean ± SD)	ΔChange	*p-value*
Kecepatan (detik)	10.48 ± 2.15	10.07 ± 2.01	↑ 0.41	0.448
Ketepatan (skor)	2.7 ± 0.67	3.5 ± 0.70	↑ 0.8	-0.408
Kontrol (skor)	2.6 ± 0.48	3.4 ± 0.51	↓ 0.8	-0.301

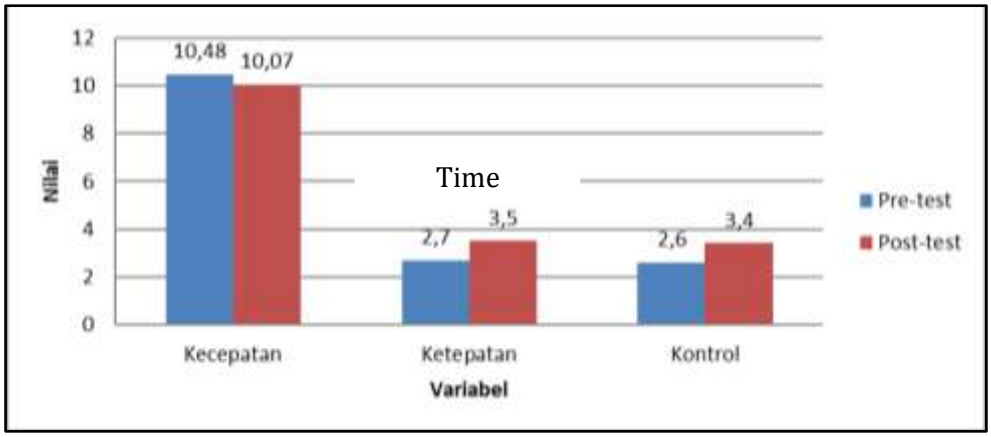

Figure 1. Comparison of pre-test and post-test scores

Discussion

The findings of the study indicate that the use of cone media provides a positive influence on improving the dribbling skills of fifth-grade students, although it has not yet demonstrated statistical significance. The increase in average scores across all variables—speed, accuracy, and ball control—shows that structured practice can enhance the quality of students' dribbling techniques. These findings are consistent with research on equipment-based sports learning, which states that the use of physical media such as cones can improve learners' visual focus, coordination, and motor responses (Santos et al., 2020).Peningkatan pada aspek kecepatan dribbling mengindikasikan bahwa latihan berbasis rintangan mampu memperbaiki kemampuan akselerasi dan perubahan arah siswa. Cone berfungsi sebagai stimulus visual yang membantu siswa meningkatkan kelincahan melalui pola gerak yang teratur. Hal ini sejalan dengan temuan Sari & Pratama (2021), yang menyebutkan bahwa latihan dengan rintangan konstan dapat mengoptimalkan kemampuan motorik agility pada anak sekolah dasar. Walaupun nilai signifikan belum menunjukkan perubahan signifikan, peningkatan nilai rata-rata tetap menggambarkan kemampuan praktis yang relevan dalam konteks pendidikan jasmani

The increase in dribbling speed indicates that cone-based obstacles help improve students' acceleration and agility (Sari & Pratama, 2021). Cones function as visual stimuli that encourage directional changes and rhythmic movement.

Pada variabel ketepatan dribbling, peningkatan skor menunjukkan bahwa siswa semakin mampu mengikuti jalur dribbling dengan lebih presisi dan mengurangi kesalahan menyentuh cone . Pembelajaran menggunakan media rintangan memberikan kesempatan bagi siswa untuk belajar mengontrol arah & gerak Nurhayati (2022),

Dribbling accuracy improved because students practiced using structured paths. According to Nurhayati (2022), pathway-based media enhance movement accuracy by improving directional control and consistency of ball touches.

Improvements in dribbling speed indicate that obstacle-based training can improve students' acceleration and change of direction abilities. Cones serve as visual stimuli that help students improve agility through regular movement patterns. This aligns with the findings of Sari & Pratama (2021), who stated that training with constant obstacles can optimize agility motor skills in elementary school children. Although the scores did not indicate significant changes, the increase in average scores still reflects relevant practical skills in the context of physical education.

The increase in ball control suggests improved proprioception and movement coordination. Ardiansyah et al. (2023) emphasize that repetitive movement pattern exercises with obstacles significantly enhance ball control among players aged 10–12. For the dribbling accuracy variable, the increase in scores indicates that students are increasingly able to follow dribbling paths with greater precision and reduce errors in contacting the cones. Learning using obstacle-based media provides opportunities for students to learn to control direction and movement. Nurhayati (2022) suggests that path- and target-based training can improve movement accuracy and consistency of ball contact in students. Overall, the use of cones has proven effective in creating a learning environment that is more active, varied, challenging, and motivating for students (Santos et al., 2020). This simple medium is highly suitable for implementation in elementary school physical education.

The ball control variable also showed significant improvement. This indicates that students have made progress in maintaining distance from the ball, making targeted touches, paying attention to postural stability when making directed touches, and maintaining postural stability while dribbling. Gradual cone-based exercises help students improve proprioception and coordination. These findings align with recent research by Ardiansyah et al. (2023), which showed that repetitive movement pattern-based exercises with obstacles are effective in improving ball-handling skills in students aged 10–12.

D. CONSCLUSION

Based on the research results, it can be concluded that the use of cones has a positive impact on improving the dribbling skills of fifth-grade students at the Karunrung Elementary School (UPT) Inpres Elementary School. The six training sessions demonstrated improvements in all measured aspects, namely speed, accuracy, and ball control. Although the statistical analysis showed that these improvements were not quantitatively significant, the changes in the average scores in the pre-test and post-test indicate a development in students' practical and pedagogical skills.

Improvements in these three aspects indicate that training using cones can help students improve coordination, motor stability, and ball control in structured situations. Cones have been shown to create an engaging, challenging training environment that aligns with the motor developmental stages of elementary school students. Therefore, cones can be recommended as an effective tool in physical education learning, particularly in developing dribbling skills in soccer. The use of cone media has been shown to improve students' dribbling speed, accuracy, and ball control, although not significantly in statistical terms. Cones can be considered an effective instructional medium in physical education, particularly in developing basic football techniques.

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