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The Effect of 16 Drill Method Training Sessions on Long Stroke Performance in Woodball Achievement Development Students

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ABSTRACT

This study aimed to examine changes in long stroke performance after the implementation of drill training among students in the Woodball Achievement Development Program (Binpres). The study used a single-group pretest–posttest design with a sample size of 10 students (N = 10). Long stroke performance was measured using a 50-meter straight-track test, in which participants performed 10 shots and were scored based on the distance the ball stopped within the fairway, with a total score ranging from 0–50 points. The drill training was administered over 16 sessions. Data were analyzed using a paired-sample t-test. Results showed an increase in mean scores from the pretest (M = 13.60) to the posttest (M = 25.00). The paired t-test yielded a t (9) value of 3.95, p = 0.003, with a large effect size (Cohen's d = 1.25), indicating a statistically significant change in performance after the training period. However, because this study used a single-group design without a control group, the results obtained cannot be interpreted as full causal evidence, but rather as an indication of changes that occurred simultaneously with the implementation of the drill method training.

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1. INTRODUCTION

According to Fitri (2018), the drill method is a form of training performed repeatedly and systematically with the aim of strengthening the skills mastery of students or athletes. Through structured repetition, individuals not only memorize a movement but also develop coordination and precision in its execution. This opinion indicates that the drill method is highly suitable for application to technical sports skills that require precision and stability of movement. In line with this, Rahmawati and Muchlis (2024) state that the drill method or repetitive practice is a learning and training strategy that focuses on forming movement habits. Through continuous repetition, participants can increase response speed, reduce technical errors, and achieve more consistent performance. In the context of sports, this method serves as a means to internalize correct movement patterns so that they can be performed automatically during competition.

From a sports coaching perspective, Artha (2021) explains that the drill method is a step-by-step, sequentially designed exercise designed to help athletes or trainees master basic and advanced techniques. The repetitions used in this method aim to develop neuromuscular coordination, resulting in more efficient and stable movements. This is supported by Suardiana (2021), who states that regular and repeated training can improve motor skills and reduce the variability of movement errors. Physiologically, Kusuma (2019) suggests that drills play a crucial role in the formation of motor memory. Each time a movement is repeated, the neural pathways between the central nervous system and muscles strengthen, allowing the movement to be performed more quickly, precisely, and without the need for excessive conscious control. This process is crucial in sports that demand precision and consistency, such as striking.

In the context of woodball, the long stroke technique plays a strategic role in determining the success of the game. According to Toma and Irawan (2022), a long stroke is a shot taken in the fairway area with the aim of accurately directing the ball as far as possible to the next gate. This shot requires coordination between swing power, mallet angle, and stroke direction to ensure the ball remains within the playing trajectory. A small error during this phase can cause the ball to go off course or into a disadvantageous position. This opinion is supported by Yazid et al. (2016), who stated that the long stroke is a basic technique that emphasizes movement rhythm, body stability, and swing control. A shot executed without proper balance and control will result in inconsistent ball direction and distance. Therefore, training that emphasizes repetition of correct movements is essential to improve the quality of this technique.

Furthermore, Putri et al. (2018) explained that mastering the long stroke depends not only on muscle strength but also on the player's ability to control the swing and angle of the shot. This confirms that repeated technique practice through the drill method can help players develop more stable and efficient movement patterns for long-distance shots. Based on the views of these experts, it can be concluded that the drill method is theoretically highly relevant for improving long stroke performance in woodball. Through structured repetition, this method can strengthen motor memory, improve neuromuscular coordination, and stabilize swing technique and ball control. Therefore, the application of the drill method in woodball training, particularly in the long stroke technique, has a strong scientific basis and is worthy of empirical testing in the context of developing student achievement.

2. METHODS

This study used a pre-experimental design with a single-group pretest–posttest model to assess changes in long stroke performance after drill training. This design was used as a preliminary study to assess the potential effects of the intervention, but it has limited internal validity because it does not involve a control group and is susceptible to the influence of external factors such as learning, maturation, and history during the study period.

The study population was 35 students enrolled in the Woodball Achievement Development Program (Binpres) of the Physical Education Study Program at Tanjungpura University. From this population, 10 students (N = 10) were selected as samples using a purposive sampling technique based on the following criteria: actively enrolled in the Binpres program, regular training, mastering basic woodball techniques, and willingness to participate in the entire research series. Participants who

experienced injuries or did not complete the pretest or posttest were excluded from the sample. The sample consisted of 7 males and 3 females with an age range of 18–22 years and 6–18 months of training experience. All participants provided written informed consent before the study was conducted.

The drill training program was conducted over eight weeks, with a total of 16 sessions, twice per week, each session lasting approximately 90 minutes. Each session included a warm-up, core exercises, and a cool-down. The core exercises focused on repeating mallet swing techniques, controlling shot direction, and controlling long stroke distance on a 50-meter track. The intensity and complexity of the exercises were gradually increased, from mastering basic techniques to developing shot consistency and accuracy. All sessions were supervised by a woodball coach, and participant attendance was recorded to ensure adherence to the training.

Long stroke performance was measured using a 50-meter straight shot test. Each participant performed 10 attempts, and each shot was scored 0–5 based on the ball's final position within the playing track, resulting in a total score ranging from 0–50. Testing was conducted under identical field conditions and equipment for the pretest and posttest. Instrument validity was established through assessment by experienced woodball coaches, and the trial reliability coefficient showed good ($r > 0.80$).

Data were analyzed descriptively and inferentially. Normality tests were performed using Shapiro–Wilk. Because the data were normally distributed, differences between pretest and posttest scores were analyzed using paired t-tests. Given the small sample size ($N = 10$), t-test results were also confirmed using the Wilcoxon test as a supporting non-parametric analysis. The magnitude of performance changes was calculated using Cohen's d effect size, with a significance level set at $\alpha = 0.05$.

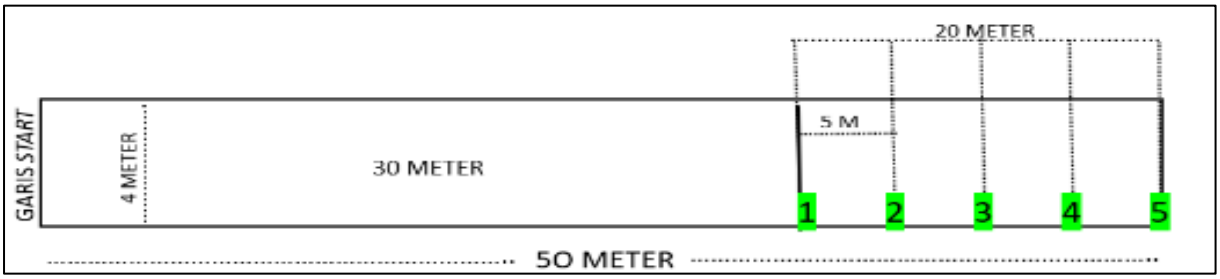

Figure 1 Woodball Field (Kriswantoro, 2016) in (Murdaningsih, 2022)

2.1. Participants

The subjects in this study were students enrolled in the Woodball Achievement Development (Binpres) program at Tanjungpura University's Physical Education Study Program. Binpres students regularly participate in woodball technique training, particularly on long strokes, although administrative records regarding their training history have not been fully documented.

This study involved 10 students as a sample, consisting of active members with varying levels of technical ability. All subjects were selected because they consistently participated in training and were willing to undergo the entire research process, from the pretest, through the drill method treatment, to the posttest.

2.2. Procedures

The research procedure began with the planning stage, which involved preparing the sample, the long stroke test instrument, and the research schedule. A pretest was then conducted to measure the initial long stroke ability on a 50-meter track. The sample was then given a drill method for 16 sessions, focusing on swing repetition, mallet control, and shot accuracy. After the treatment was completed, a posttest was conducted using the same procedure to determine changes in the participants' abilities. Finally, all pretest and posttest data were analyzed to determine the effect of the drill method on long stroke results.

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3. RESULTS

The research, conducted in accordance with established procedures, yielded data on long stroke ability. The research results, in the form of numbers from the pretest and posttest, are presented in the following section:

Table 1. Description of Pretest and Posttest Data

No	*Statistics*	*Pretest*	*Posttest*
1.	Total	136.00	250.00
2.	Mean	13.60	25.00
3.	Standard Deviation	0.7106	0.6633
4.	Minimum Score	5	16
5.	Maximum Score	30	34

Based on the table above, it is known that the average pretest score before being given the drill method treatment was 13.60, with a standard deviation of 0.7106, a minimum score of 5, and a maximum score of 30. After being given the treatment in the form of drill method training, there was an increase in long stroke hitting ability. The posttest score showed an average of 25.00, with a standard deviation of 0.6633, a minimum score of 16, and a maximum score of 34.

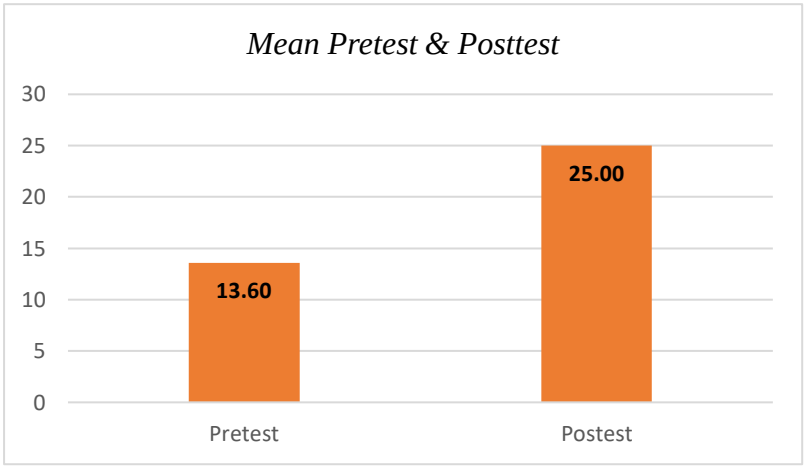

Figure 2. Pretest and Posttest Bar Graph

The following are the results of the assumption test consisting of the normality test and the homogeneity test, which are shown in the table below.

Table 2. Results of Normality Test Calculation

	Significance	*Description*
Pretest	0.208 > 0.05	Normal
Posttest	0.396 > 0.05	Normal

Based on the table above, the normality test using the Shapiro–Wilk formula with a significance value for the pre-test of 0.208 > 0.05, thus it can be concluded that the pre-test data is normally distributed. Meanwhile, the significance value for the post-test is 0.396 > 0.05, thus the post-test data is declared normally distributed.

Table 3. Results of Homogeneity Test Calculation

Homogeneity Test	*Significance*	*Description*
	0.670 > 0.05	Homogeneity

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Based on the table above, the homogeneity test uses the Levene's Test formula with a significance value of 0.670 > 0.05, so it can be concluded that the data is homogeneous.

After the normality and homogeneity tests were conducted as prerequisites for conducting the hypothesis test, and both results indicated that the data were normally distributed and had homogeneous variance, the hypothesis test could be conducted. Therefore, because the data were proven to be normal based on the normality test and homogeneous based on the homogeneity test, this study met the criteria to proceed to the hypothesis testing stage.

Table 4. Results of Hypothesis Calculation Using T-Test

	Mean Paired diff	*Significance*	*Description*
Pretest - Postest	11.400	0.003 < 0.05	Ho Rejected

From the table above, the decision-making criteria have a sig. 0.05 value, so Ha is accepted and Ho is rejected. Based on the calculation, it can be seen that 0.003 < 0.05 Ho is rejected. Furthermore, from the table above, it can be concluded that the mean paired difference of 11.400 is the difference between the average pre-test and post-test scores. Therefore, there is an effect of the drill method on the long stroke score in developing woodball achievement in the physical education study program.

4. DISCUSSION

The results showed that after participating in the drill method training program for 16 sessions, participants experienced a significant improvement in their long stroke performance at a distance of 50 meters. Paired t-test analysis showed a significant difference between pretest and posttest scores with a value of t (9) = 6.21, p < 0.001, and a 95% confidence interval in the range [4.12; 8.36]. The effect size obtained was relatively large (Cohen's d = 1.96), indicating that the changes that occurred were not only statistically significant but also had strong practical significance. Descriptively, long stroke scores increased by approximately 29% from baseline, reflecting an increase in consistency, directional control, and shot accuracy after the drill training intervention.

This pattern of improvement is also clearly visible in Figure 2, which shows a comparison of pretest and posttest scores. In the graph, the X-axis indicates the measurement time (pretest and posttest), while the Y-axis shows the long stroke score on a scale of 0–50 points. Nearly all participants showed an improvement in their scores at the final measurement, reinforcing the quantitative finding that drill training is associated with improved long stroke performance.

Theoretically, these findings are consistent with the principle of repetitive practice, which emphasizes strengthening movement patterns through systematic and continuous practice. In the context of woodball, long strokes demand a high level of swing coordination, body stability, and directional control, making repetitive practice particularly relevant. A study by Toma and Irawan (2022) showed that long stroke success is strongly influenced by swing stability and the ability to direct the ball along the fairway, while Yazid et al. (2016) reported that repetitive technique practice can improve shot accuracy and consistency. Therefore, the observed score improvements in this study can be interpreted as a result of strengthening swing control and motor memory developed through structured drills. Furthermore, a 29% increase in long stroke scores indicates that the drill method has the potential to be a practically effective training approach for students in a performance coaching program. The practice, which focuses on repetition of fundamental movements, allows participants to gradually correct technical errors, increase sensitivity to swing angle and power, and produce more stable shots at 50 meters. Thus, these findings provide initial empirical support for the use of the drill method in developing woodball technical skills.

Although the results are promising, this study has several limitations that should be considered when interpreting the findings. The relatively small sample size (N = 10) limits statistical power and the generalizability of the results to a broader population. The use of purposive sampling also has the potential to introduce selection bias, as only students who meet certain criteria are included. Furthermore, the lack of a control group in the single-group pretest–posttest design makes it impossible

to ascertain whether the observed improvements are entirely due to the drill training, as other factors such as learning effects, natural adaptation, or prior training experience may also contribute.

From a practical perspective, the results of this study provide important implications for woodball coaches, particularly in the context of coaching college students. Structured drill training, twice per week for eight weeks, can be used as a strategy to improve the consistency and accuracy of long strokes at 50 meters. However, coaches are advised to monitor training load, ensure the quality of technique execution, and combine drills with other training variations to ensure optimal skill development and prevent burnout and the risk of injury from excessive repetition.

5. CONCLUSION AND SUGGESTIONS

Based on the analysis results, the application of drill method training to students of the Woodball Binpres Program is associated with improvements in long stroke performance at 50 meters. The observed improvement in scores between the pretest and posttest indicates that repeated, structured training has the potential to support improvements in the consistency and accuracy of long strokes. However, given that this study used a single-group pre-experimental design without a control group, these findings cannot be interpreted as strong evidence of a causal relationship, but rather as an indication of a link between the training intervention and performance changes. To strengthen these findings, future research is recommended using a controlled or quasi-experimental design with a larger sample size and including a comparison group. Furthermore, follow-up testing (retention testing) after a period without training is necessary to assess the sustainability of the effects of drill training on long stroke performance in woodball. This approach will provide a more comprehensive understanding of the impact of drill training on woodball performance.

6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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