Jurnal Pendidikan Jasmani (JPJ)
Vol. 6, No.3, April 2026
ISSN: 2723-2816 (Online)

The Effect of 3-Post Drill Training on Two-Point Shooting Performance among Simfatic Basketball Club Athletes in Tulang Bawang

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Abstract
This study aimed to determine the effect of 3-Post Drill training on improving two-point shooting skills in basketball players. The research used a quasi-experimental method with a pretest–posttest control group design involving 20 players divided equally into experimental and control groups. The experimental group received 3-Post Drill training for six weeks, while the control group performed conventional training. The paired sample t-test showed a significant improvement in the experimental group ($t = 20.146 > 2.262$; $p < 0.05$) but not in the control group ($t = 0.557 < 2.262$; $p > 0.05$). The independent sample t-test on posttest scores indicated a significant difference between groups ($t = 9.043 > 2.101$; $p = 0.000$), confirming that the 3-Post Drill had a substantial effect on two-point shooting performance. The normalized gain value ($g = 0.48$) was categorized as moderate, highlighting the effectiveness of structured technical repetition from three shooting positions in enhancing shooting performance, coordination, and consistency.

Keywords: *3-Post Drill Training, Two-Point Shooting, Basketball, Shooting Consistency*

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INTRODUCTION

In recent years, the growing public interest in sports activities, particularly among students and university athletes, has significantly increased the popularity of basketball. This sport is characterized by its competitive and dynamic nature, as well as the high level of teamwork required during gameplay (Kurniawan et al., 2024). Basketball is played by two teams, each consisting of five players, with the main objective of scoring as many points as possible by shooting the ball into the opponent's basket. Shooting performance, especially in two-point shots, plays a crucial role in determining a team's overall effectiveness (Dai, 2024). Moreover, basketball is a high-intensity sport that integrates multiple components of physical fitness, including speed, agility, endurance, hand–eye coordination, and rapid decision-making skills (Xue et al., 2024). Therefore, mastering fundamental shooting techniques through structured and consistent training is essential to enhance both individual and team performance.

Several previous studies have demonstrated that the drill method has a significant impact on improving shooting accuracy and skill in basketball. Fadila et al. (2023) revealed

that the drill method increased the two-point shooting accuracy of basketball extracurricular participants from 41.66% to 67.5%. Similarly, Rizkyanto et al. (2023) reported that the two-point shooting skill improved significantly, with the paired sample t-test showing a significance value of 0.00 ($p < 0.05$) and an average score increase of four points. Furthermore, Aulia et al. (2019) emphasized that combining the drill method with visual imagery significantly enhanced shooting performance, resulting in an average score increase of 4.619 points after six weeks of training. These findings indicate that the 3-Post Drill method effectively develops consistent two-point shooting performance through repetitive and systematic practice.

Although previous studies have examined the effectiveness of drill methods in improving shooting ability, most have not emphasized variations in shooting positions that closely simulate real game conditions. Hasibuan et al. (2024) found that training models designed with a game-like situation approach improved players' mental readiness, adaptability, and decision-making accuracy during shooting. This type of training is considered more contextual as it replicates actual game scenarios. However, limited research has specifically examined the effect of the 3-Post Drill— a shooting exercise performed from three distinct positions within the two-point area—on improving two-point shooting performance among basketball players. Therefore, this study aims to investigate the influence of the 3-Post Drill training method on the two-point shooting performance of Simfatic Basketball Club players in Tulang Bawang.

METHOD

This study employed a quasi-experimental method using a Pretest–Posttest Control Group Design. The research subjects consisted of 20 basketball players, who were proportionally divided into two groups: an experimental group and a control group, each comprising 10 participants. The experimental group received a treatment in the form of 3-Post Drill training, while the control group performed conventional training based on the club's regular program. The study was conducted at the Simfatic Basketball Club Training Court in Tulang Bawang over a period of six weeks, with a training frequency of three sessions per week. The treatment involved shooting practice from three different points within the two-point area. The research instrument used was a two-point shooting skill test, administered before (pretest) and after (posttest) the intervention. The collected data were analyzed using several statistical tests: a normality test to verify data distribution, a Paired Sample t-test to determine differences between pretest and posttest scores within the experimental group, an Independent Sample t-test to compare posttest results between the experimental and control

groups, and the Normalized Gain (N-Gain) analysis to assess the level of improvement in two-point shooting ability following the implementation of the 3-Post Drill training.

$$g = \frac{(\text{Posttest Score} - \text{Pretest Score})}{(\text{Maximum score} - \text{Pretest Score})}$$

(Hake, 1998)

Information:

g = normalized gain (the level of learning improvement)

Posttest Score = average score after treatment or intervention

Pretest Score = average score before treatment or intervention

Maximum Score = the highest possible score

RESULTS AND DISCUSSION

Result

This section presents the results of the statistical analyses conducted to examine the effect of the 3-Post Drill training on two-point shooting performance. The analyses include the normality test, paired sample t-test, independent sample t-test, and normalized gain (N-Gain) analysis. The results of the normality test are presented in Table 1.

Table 1. Shapiro–Wilk Normality Test for Pretest and Posttest Data

Group	Variable	W Statistic	Sig.	Description
Experimental	Pretest	0.870	0.842	Normal
Experimental	Posttest	0.873	0.842	Normal
Control	Pretest	0.933	0.842	Normal
Control	Posttest	0.898	0.842	Normal

Based on the Shapiro–Wilk normality test (Table 1), all calculated W values are greater than the critical value (0.842), indicating that the data in both the experimental and control groups are normally distributed. Therefore, the assumption of normality required for parametric statistical analysis is satisfied, ensuring that subsequent analyses can be interpreted with statistical validity.

Table 2. Results of the Paired Sample t-Test for the Experimental and Control Groups

Group	N	Pretest (Mean ± SD)	Posttest (Mean ± SD)	Mean Difference ($\bar{D}$)	t-value	t-table (0.05; df = 9)
Experimental	10	3.10 ± 0.99	7.40 ± 1.07	4.30	20.146	2.262
Control	10	3.00 ± 1.15	3.30 ± 0.95	0.30	0.557	2.262

The results of the paired sample t-test (Table 2) indicate that the 3-Post Drill training produced a significant improvement in two-point shooting performance. The experimental group showed an increase in the mean score from 3.10 ± 0.99 (pretest) to 7.40 ± 1.07 (posttest), with a calculated t-value of 20.146, which is greater than the critical t-table value of 2.262 ($p < 0.05$). This result demonstrates a statistically significant difference between the pretest and posttest scores. In contrast, the control group showed no meaningful change, with a mean score increase from 3.00 ± 1.15 to 3.30 ± 0.95, and a t-value of 0.557, which is lower than the t-table value (2.262). These findings indicate that the 3-Post Drill training method effectively enhances two-point shooting performance among basketball players, whereas conventional training did not produce a significant improvement.

Table 3. Results of the Independent Sample t-Test for Pretest Scores between the Experimental and Control Groups

Group	N	Mean	SD	t-value	t-table (5%)	Sig. (2-tailed)	Description
Experimental	10	3.10	0.994	0.208	2.101	0.839	Not significant
Control	10	3.00	1.155	—	—	—	—

Both groups demonstrated comparable baseline abilities prior to the treatment.

Table 4. Results of the Independent Sample t-Test for Posttest Scores Between the Experimental and Control Groups

Group	N	Mean	SD	t-value	t-table (5%)	Sig. (2-tailed)	Description
Experimental	10	7.40	1.075	9.043	2.101	0.000	Significant
Control	10	3.30	0.949	—	—	—	—

The results of the study indicate that the 3-Post Drill training had a significant effect on improving two-point shooting performance among basketball players (Tables 3 and 4). Based on the results of the Independent Sample t-Test, the initial performance of the experimental and control groups showed no significant difference (Sig. = 0.839 > 0.05). However, after the intervention, a significant difference was found between the two groups (t-value = 9.043 > t-table = 2.101; Sig. = 0.000 < 0.05), indicating that the 3-Post Drill method was effective in improving two-point shooting performance.

Table 5. Results of the Normalized Gain (N-Gain) Analysis Between the Experimental and Control Groups

Group	Mean Pretest	Mean Posttest	Gain Value (g)	Category
Experimental	3.1	7.4	0.48	Moderate

Control	3.0	3.3	0.03	Low

Note:
High: $g \geq 0.70$ Moderate: $0.30 \leq g < 0.70$ Low: $g < 0.30$

The results of the normalized gain analysis (Table 5) show that the experimental group achieved an average gain score of 0.48, which falls within the moderate category, while the control group obtained a score of 0.03, categorized as low. According to Hake's (1998) classification, a moderate gain value indicates that the 3-Post Drill training was moderately effective in improving two-point shooting performance among basketball players.

Discussion

The findings of this study demonstrate that the 3-Post Drill training was effective in enhancing two-point shooting performance among basketball players. This improvement can be attributed to the training's emphasis on repeated practice from three primary shooting positions—low post, middle post, and high post. Such a structured pattern reinforces muscle memory, maintains body balance, and improves shooting consistency. From a neuromotor perspective, repetitive and task-specific training stimulates the motor nervous system, enhancing the ability to control movement, synchronize muscle coordination, and perform actions more efficiently (Tallent et al., 2021). Moreover, structured repetitive practice minimizes unnecessary motion variability and accelerates reaction time during shooting, resulting in more stable and accurate performance (Sutter et al., 2022). Furthermore, training that incorporates a variety of shooting positions and situations allows players to adapt to game-like conditions, improving tactical decision-making abilities (Choo et al., 2024).

The present results are consistent with the findings of Rizkyanto et al. (2023), Fadila et al. (2023), and Latuheru et al. (2022), who reported that drill-based shooting exercises significantly improved two-point shooting performance by emphasizing technique repetition and game-simulated practice. The mean improvement of +4.30 points observed in this study exceeds those reported in previous research, including Fadila et al. (+3.80), Latuheru et al. (+2.65), and Rizkyanto et al. (+4.00). This comparison suggests that the inclusion of three distinct shooting positions in the 3-Post Drill provides a stronger adaptive effect on shooting performance compared to single-point drill methods.

From the perspective of motor learning theory, the improvement in two-point shooting performance can be explained through the concept of skill acquisition based on structured

repetition and practice variation. Training that involves systematic repetition from multiple shooting positions promotes the development of automatic motor patterns and enhances the ability to adapt to dynamic game situations. According to Vleugels et al. (2020), motor skill acquisition becomes more effective when training reduces excessive repetition between trials and increases variability in movement. This approach strengthens motor neural connectivity and improves skill transfer to actual game contexts. Similarly, Caballero et al. (2024) found that incorporating training variations aligned with athletes' skill levels enhances performance stability and accelerates motor learning. Therefore, the application of the 3-Post Drill, emphasizing repetitive practice from three distinct shooting positions, reflects a modern motor learning principle that is both effective and adaptive to competitive performance demands.

In addition, the effectiveness of the 3-Post Drill is reflected in the Normalized Gain (N-Gain) value of 0.48, which falls into the moderate category according to Hake's (1998) classification. This indicates that nearly half of the potential improvement in shooting ability was achieved after six weeks of structured training. Such results highlight that a training model emphasizing positional variation and systematic repetition effectively optimizes motor learning outcomes. From a neuromotor adaptation perspective, the effectiveness of the training can be attributed to neural plasticity induced by structured repetitive practice. Tallent et al. (2021) noted that skill-based and resistance-oriented training elicits adaptations in the corticospinal pathways, which enhance motor control, precision, and movement efficiency. Within this context, the 3-Post Drill provides adaptive stimulation through repeated shooting in game-like conditions, thereby improving coordination, stability, and overall performance consistency.

Overall, these findings indicate that the 3-Post Drill is an effective, efficient, and contextually relevant training method for basketball athlete development programs. Its structured approach, emphasizing positional and technical repetition, not only strengthens the technical aspects of shooting but also fosters stable movement habits and enhances players' readiness in competitive situations.

CONCLUSION

Based on the results and discussion, it can be concluded that the 3-Post Drill training has a significant effect on improving two-point shooting performance in basketball players. The experimental group showed a greater increase in shooting results compared to the control group, with a moderate improvement level indicated by a normalized gain value of 0.48. These findings demonstrate that the 3-Post Drill is effective in enhancing movement coordination,

shooting consistency, and execution timing. Therefore, it can be recommended as an effective training method to optimize two-point shooting performance among basketball players.

ACKNOWLEDGMENT

The researcher would like to express sincere gratitude to all parties who have supported the completion of this research. Special thanks are extended to the leaders and coaches of Simfatic Basketball Club, who have provided permission, facilities, and valuable support during the research process. Appreciation is also conveyed to all basketball players who actively participated in the training and data collection sessions. The researcher gratefully acknowledges the guidance, constructive feedback, and encouragement from supervising lecturers and academic advisors throughout this study. Lastly, heartfelt thanks are given to family and friends for their continuous motivation and moral support. It is hoped that the findings of this study will contribute to the development of sports science, particularly in the field of basketball training and performance improvement.

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