

The Effect of Wall Shooting Drill Using B.E.E.F Method on Free Throw Accuracy in Senior High School Basketball Athletes

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Keywords

Basketball; Free throw Accuracy; Drill wall shooting; B.E.E.F Method

Abstract

This study aimed to determine the effect of wall shooting drill training using the B.E.E.F. method (Balance, Eyes, Elbow, and Follow-Through) on the free-throw accuracy of basketball athletes at SMAN 3 Tegal City. The study employed a quantitative approach with a quasi-experimental method using a one-group pre-test-post-test design. The sample consisted of 25 athletes selected through a total sampling technique. The treatment was administered over 12 training sessions within four weeks. Data were collected through free-throw tests conducted before and after the treatment. The data were analyzed using descriptive statistics, the Shapiro-Wilk normality test, and a paired-samples t-test. The results showed that the mean free-throw score increased from 3.92 in the pre-test to 4.84 in the post-test. The paired-samples t-test revealed a significance value of 0.037 ($p < 0.05$), indicating a significant difference between the pre-test and post-test results. Therefore, it can be concluded that wall shooting drill training using the B.E.E.F. method has a significant effect on improving free-throw accuracy among basketball athletes. This method can be recommended as an alternative training program to enhance free-throw performance in school-level basketball athlete development.

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INTRODUCTION

Basketball is a sport characterized by various movement components, including running, walking, jumping, as well as elements of physical fitness throughout the game. (Kristiana & Syamsudin, 2025). This game involves several basic techniques, such as dribbling and passing the ball, as well as other basic technical skills, which include throwing and catching, ball control (dribbling), shooting, pivoting, and lay-up technique (Selan et al., 2023). Among these skills, shooting is a very important basic technique in basketball, where the frequency and accuracy of shots play a major role in determining the team's performance in scoring and the final result of the game (Salsabila & Syamsudin, 2025). One type of shot that has a significant impact on a team's victory is the free throw, because it provides the opportunity to score points without direct interference from the opponent, making it often a determinant of winning or losing in a basketball game. (Angraini et al., 2020)

A free throw is a penalty shot given to a player as a result of an opponent's foul and is performed without direct interference from defending players (Afifuddin et al., 2020). Free throw success becomes one of the important factors in determining point scoring and the final result of the game (Meirizal et al., 2022). However, free throw accuracy still often fails due to suboptimal mastery of basic shooting techniques, such as body balance, elbow position, focus on the ring, and improper follow-through movement. (Saputra & Rosha, 2023). Therefore, the ability to make free throws needs to be trained systematically through practice methods that help athletes improve their shooting technique, maximizing their chances of scoring. (Angela, 2023)

One of the training methods that can be used to improve shooting accuracy is wall shooting practice (Andika, 2019). Wall shooting is a shooting exercise that uses a wall as a reflecting medium to train the consistency of shooting movements and the accuracy of hand position, elbow alignment, index finger release, and the continuity of motion (follow-through) (Ishaq et al., 2020). So that the exercise can be done with the correct technique, the implementation of the B.E.E.F method (Balance, Eyes, Elbow, and Follow Through) can be used as a basic guideline in carrying out the shooting technique (Saputri et al., 2025). This method emphasizes four main components, namely Balance (body balance), Eyes (focus gaze on the ring), Elbow (correct elbow position), and Follow Through (continuation movement after the ball is released) (Fadhlurrahman et al., 2023). Thus, wall shooting exercises combined with the B.E.E.F method are expected to help improve the free throw accuracy of basketball athletes.

Research on improving shooting skills in basketball has been widely conducted by previous researchers. Some studies show that technical exercises such as shooting drills can improve free throw accuracy through the application of the B.E.E.F (Balance, Eyes, Elbow, Follow Through) concept as a guideline for basic shooting technique. (Angela, 2023; Ishaq et al., 2020). Research (Liana, 2019) shows that wall shooting exercises using the B.E.E.F method can improve the free throw ability of basketball athletes. However, the study is still limited to participants of extracurricular activities at certain schools with a relatively small sample size and has not yet linked the issue of free throw accuracy in the context of competitive games. Therefore, research on the effectiveness of wall shooting drill exercises using the B.E.E.F method on free throw accuracy in high school basketball athletes still needs to be further studied, especially in the context of athletes at SMAN 3 Kota Tegal. The novelty of this research lies in the application of wall shooting drill exercises systematically combined with the B.E.E.F method through a progressive training program over 12 sessions and an increased sample size of high school basketball athletes.

Based on the results of observations at the POPDA Tegal City 2025 basketball competition, the free throw abilities of athletes from several schools are still not optimal, so the opportunity to score points has not been maximized. A common problem that occurs is that athletes focus more on the outcome of their shots rather than mastering proper basic shooting techniques, while the free throw training conducted still lacks emphasis on specific and repetitive technique correction. This condition causes the free throw accuracy of athletes to remain low, especially in aspects such as body balance, focus of vision, elbow position, and follow-through movement. One of the schools showing this problem is SMAN 3 Kota Tegal. Therefore, a systematic and effective form of training is needed, such as wall shooting drills using the B.E.E.F method to help

improve the free throw accuracy of the basketball athletes at SMAN 3 Kota Tegal. Thus, this study aims to determine the effect of wall shooting drill exercises using the B.E.E.F method on the free throw accuracy of basketball athletes at SMAN 3 Kota Tegal.

METHODS

This study uses a quantitative approach with a quasi-experimental method (quasi-experimental design) using a One Group Pre-test–Post-test Design. The research was conducted at the basketball court of SMAN 3 Kota Tegal and GOR Wisanggeni Kota Tegal. The population in this study is all basketball extracurricular athletes at SMAN 3 Kota Tegal, with the sampling technique using total sampling, resulting in a sample of 25 athletes. The independent variable in this study is drill wall shooting training using the B.E.E.F method (Balance, Eyes, Elbow, and Follow Through), while the dependent variable is free throw accuracy. The treatment was given for 12 sessions with a training frequency of 2–3 times per week.

In each treatment session, athletes perform wall shooting drills by applying the principles of the B.E.E.F method (Balance, Eyes, Elbow, Follow Through) as the foundation of shooting biomechanics. The practice is done by shooting the ball at a wall located approximately ± 2 meters from the athlete's position. The use of the wall as a medium is designed to improve free throw accuracy through repetition of shooting movements and to maintain a consistent shooting rhythm. Here is the form of practice in each session:

Table 1. Training program

WEEK	MEET	FORM OF TRAINING	TRAINING VOLUME
1	1-3	Drill wall shooting using B.E.E.F method	3 set x 20 repetition
2	4-6	Drill wall shooting combination using B.E.E.F method and free throw shooting practice	3 set x 25 repetition
3	7-9	Drill wall shooting using B.E.E.F method	4 set x 25 repetition
4	10-12	Drill wall shooting combination using B.E.E.F method and free throw shooting practice	4 set x 30 repetition

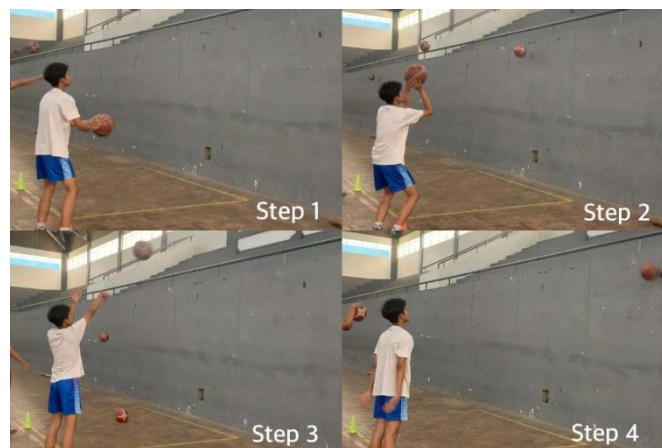


Figure 1. Wall Shooting Training Using B.E.E.F Method

Data collection was carried out through free throw tests during the pre-test and post-test, where each athlete was given the opportunity to take 10 free throws according to the standard free throw line. Scores were given with the provision of a value of 1 if the ball successfully went into the hoop and a value of 0 if the ball did not go in. The research data were analyzed using descriptive statistics to determine a general overview of the data, followed by the Shapiro-Wilk

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RESULTS AND DISCUSSION

The results of this study were obtained from the analysis of pre-test and post-test data on the free throw accuracy of basketball athletes at SMAN 3 Kota Tegal after being given treatment in the form of wall shooting drill practice using the B.E.E.F. method. Data analysis was carried out in stages through descriptive statistics to determine an overall picture of the data, such as the mean, standard deviation, maximum value, and minimum value, then continued with the Shapiro-Wilk normality test, as well as the paired sample t-test to determine the effect of the training given on improving the athletes' free throw accuracy. Overall, the results of the study showed an improvement in free throw ability after the athletes participated in the wall shooting drill training program using the B.E.E.F. method during the treatment period.

Table 2. Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
PRE-TEST	25	1	8	3.92	1.824
POST-TEST	25	1	8	4.84	2.211

Based on the results of the descriptive statistical analysis, the average pre-test score for athletes' free throw accuracy was 3.92, while the average post-test score increased to 4.84. The minimum pre-test score was 1 and the maximum score was 8, while the minimum post-test score was 1 and the maximum score was 10.

Table 3. Normality Test

Variable	Statistic	Sig.
PRE-TEST	.919	.050
POST-TEST	.963	.470

Based on the results of the Shapiro-Wilk normality test, the pre-test significance value was 0.050 and the post-test significance value was 0.470. Since the significance values for both data sets are greater than 0.05, the data are considered normally distributed, allowing hypothesis testing to proceed using the paired-sample t-test.

Table 4. Paired Sample T-Test

Variable	Mean Difference	t	Sig. (2-tailed)
Pre-test – Post-test	-.920	-2.211	.037

Based on the results of the paired sample t-test, the mean difference obtained was -0.920. Then, the calculated t-value was -2.211 with a significance value (Sig. 2-tailed) of 0.037, which means that this significance value is less than 0.05, indicating that there is a significant difference between the pre-test and post-test free throw accuracy results of athletes after being given treatment in the form of wall shooting drill practice using the B.E.E.F. method.

The study results indicate that wall shooting drill practice using the B.E.E.F. method has a significant effect on improving the free throw accuracy of basketball athletes at SMAN 3 Kota Tegal. This is shown by the increase in the mean free throw score from 3.92 in the pre-test to 4.84 in the post-test, as well as the results of the paired sample t-test which obtained a significance value of 0.037 ($p < 0.05$). The results indicate that training that emphasizes the

aspects of Balance, Eyes, Elbow, and Follow Through can help athletes improve basic shooting techniques so that free throw accuracy becomes better.

The improvement in free throw accuracy in this study is suspected to occur because wall shooting practice provides a repeated and focused stimulus on the consistency of shooting mechanics. Using a wall as a training medium allows athletes to make movement corrections in a more controlled manner, particularly in elbow position, ball release direction, and follow-through motion. Previous research has shown that wall shooting practice based on the B.E.E.F method can significantly increase free throw success rates, from 30% at the beginning of the cycle to 90% at the end of the second cycle (Ishaq et al., 2020). These findings indicate that structured, repetitive training directed at the technical components of shooting can enhance the effectiveness of mastering shooting techniques in athletes.

The balance aspect in the B.E.E.F method helps athletes maintain body balance before taking a shot, making body weight distribution more stable when the ball is released. Good balance is associated with better control of the direction and strength of the shot, thus forming the basis of effective shooting technique. In addition, the eyes aspect helps improve the athlete's visual focus on the target (the hoop), which is related to visual orientation ability during free throws. The position of the elbow, aligned with the target line, also plays an important role in creating the correct ball trajectory, while the follow-through maintains the continuity of the hand movement after releasing the ball to keep the ball's direction and rotation stable throughout the shot trajectory. The combination of these four aspects aligns with previous research findings, which show that the B.E.E.F method is effective in improving free throw accuracy because it provides structured practice that emphasizes shooting technical components systematically (Hardi et al., 2025; Saputri et al., 2025).

The results of this study are in line with previous findings, which state that shooting exercises based on the B.E.E.F method can improve basketball athletes' shooting ability and free throw accuracy. Research Angela (2023) states that applying the concepts of Balance, Eyes, Elbow, and Follow Through can improve shooting movement coordination, thereby increasing shot accuracy. Furthermore, Ishaq et al. (2020) explain that wall shooting exercises are effective in improving shooting movement consistency through repeated practice that emphasizes mastering basic techniques. Research Liana (2019) showed a significant difference between pre-test and post-test shooting skills, with the average score increasing from 2.40 to 5.00. Thus, the results of this study reinforce previous findings that systematically and repeatedly conducted technical practice can improve basketball players' shooting skills.

Although the research results show a statistically significant increase, the average increase in free throw accuracy of 0.92 points still indicates a limited practical improvement. This condition suggests that wall shooting drills using the B.E.E.F method have a positive effect on free throw accuracy, but have not yet produced optimal improvement for all athletes. This result is likely influenced by several factors, such as the relatively short duration of the training program, limited training frequency, and differences in basic abilities among athletes. In addition, free throw success is not only determined by technical aspects, but is also influenced by psychological factors such as concentration, self-confidence, and the ability to manage pressure while making free throws.

CONCLUSION

Wall shooting drills using the B.E.E.F. method significantly improved free-throw accuracy; however, the magnitude of improvement was relatively modest and should be interpreted considering the study's methodological limitations. Based on the research results, it can be concluded that drill wall shooting exercises using the B.E.E.F (Balance, Eyes, Elbow, Follow Through) method have a significant effect on improving the free throw accuracy of basketball athletes at SMAN 3 Kota Tegal. The analysis results show that the average free throw ability of athletes increased from 3.92 during the pre-test to 4.84 during the post-test, with statistical test results showing a significance value of 0.037 ($p < 0.05$), so the research hypothesis is accepted. This improvement is demonstrated by a significant difference between the pre-test and post-test results after the training program was administered over 12 sessions. These findings indicate that systematically and repeatedly conducted practice can help athletes improve the

consistency of their shooting technique, particularly in aspects of body balance, eye focus, elbow position, and follow-through movement. Improvements in these technical aspects contribute to better shooting mechanics, thereby enhancing free throw accuracy. Even so, the increase in the average free throw score from 3.92 to 4.84 needs to be understood by considering the limitations of this research methodology, such as the lack of a control group, the relatively small sample size, and the training duration that only lasted for 12 sessions. Therefore, wall shooting drills using the B.E.E.F method can be recommended as an alternative shooting training program for basketball coaches. For future research, it is suggested to use a larger sample size, a control group, and a longer training duration in order to obtain more comprehensive results regarding the effectiveness of this method.

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