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Comparison of Drill and Game Situation Training Methods on Basketball Players Shooting Accuracy

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Abstract. This study aims to determine the comparison of the effectiveness between the drill and game situation training methods on improving the shooting accuracy of basketball players. This study used a quasi-experimental method with a pretest-posttest control group design. The subjects of the study consisted of 30 teenage basketball players who were divided into two groups, namely the drill training group and the game situation training group, each consisting of 15 people. Both groups were given treatment for six weeks with a frequency of three training sessions per week. The instrument used to measure shooting accuracy was a standard shooting test consisting of 20 shooting attempts from various positions. The results of the analysis showed that both training methods provided a significant increase in shooting accuracy. The drill group experienced an increase from an average value of 6.07 to 10.13, while the game situation group increased from 6.00 to 11.53. The independent t-test showed a significant difference between the two groups in the posttest results ($p = 0.013 < 0.05$). This shows that training with the game situation method is more effective than the drill method in improving shooting accuracy. The conclusion of this study is that the game situation training method is superior in improving the shooting accuracy of basketball players because it involves technical, tactical, and psychological aspects that are closer to the match situation. It is recommended that coaches and physical education teachers combine the two methods proportionally according to the athlete's development stage.

Keywords: Basketball, drills, game situations, shooting accuracy, training methods.

1 Introduction

Basketball is a sport that requires a combination of technical skills, physical abilities, and understanding of tactics in the game. Among the various technical skills that are important in basketball, the ability to shoot accurately is one of the key elements that determines the success of a team. Accurate shots will produce the points needed in a match and become an important indicator of player performance, both at beginner and professional levels (Fox, Bowers, & Foss, 1993).

In the context of sports coaching and training, especially basketball, training methods have a crucial role in improving player skills. Two training methods that are often used by coaches are the drill training method and the game situation training method. Both have different approaches in training shooting skills and other aspects.

Drill training is a training method that is repetitive and systematic, with a focus on repeating certain technical movements in controlled conditions. This method is used to improve basic techniques, such as body position, hand movement, and shooting mechanics (Bompa & Carrera, 2005). In drill training, players are trained to perfect their shooting techniques from various positions without pressure or interference from opponents. The main advantage of this exercise is the opportunity for players to repeat movements consistently to form the right motor patterns.

In contrast, the game situation method emphasizes exercises carried out in a context that resembles a real game. In this method, exercises are carried out in dynamic conditions, where players must make decisions in a short time, face pressure from opponents, and consider time and space factors. This exercise is believed to be more effective in improving the transfer of skills to real match situations because it involves more complex tactical and psychological elements (Rink, 2006).

Although both methods have been widely used in basketball training, it is still a debate which method is more effective in improving shooting accuracy. Several previous studies have shown that drill exercises can strengthen the basics of technique and improve shooting consistency in non-pressure situations (Wissel, 2012). However, other studies have shown that game situation exercises are more effective because they provide a realistic game context and prepare players to face pressure during the match (Light, 2013).

Basketball coaches often face a dilemma in determining the proportion of drill and game situation training in daily training programs. Using too much drill training can cause players to be less prepared to face pressure during a match. Conversely, using game situation training without mastering good basic techniques can reduce the quality of shots because the movements performed have not been optimally formed.

Therefore, it is important to conduct research that compares the effectiveness of the two methods empirically, especially in relation to shooting accuracy. This research will provide an important contribution to the development of basketball training methods, especially for coaches and sports trainers in designing targeted training programs. By knowing which method is more effective in improving shooting accuracy, coaches can be more optimal in preparing athletes for matches, both at school, club, and higher competition levels.

In addition, shooting accuracy is also influenced by various factors, including muscle strength, eye-hand coordination, mental focus, and playing experience. Thus, the effectiveness of a particular training method can also depend on the characteristics of the player, age, and level of experience. Therefore, this study also needs to consider the aspect of individualization of training, so that the results obtained are relevant and applicable.

In the context of coaching young athletes, such as junior high or high school players, effective training must consider pedagogical principles and stages of motor skill development. Drill training is very suitable for early stages of learning basic techniques, while game situation training is more suitable for use when players have mastered basic techniques and need to develop understanding of the game (Harsono, 1988).

Based on the explanation above, it is clear that there is a need to conduct a comparative study between the drill training method and the game situation training method on improving shooting accuracy in basketball. This study will not only provide scientific evidence of the effectiveness of each method, but also provide practical recommendations that can be applied in training programs by coaches and physical education teachers.

Through this study, it is hoped that a better understanding can be obtained on how to train accurate shooting efficiently, as well as how to combine the two methods in a balanced way to produce basketball players who not only have good technique, but are also able to perform optimally in real game situations.

2 Method

This study uses a quantitative experimental approach, with a quasi-experimental design of the nonequivalent control group design type. This design is used because the research subjects were not selected randomly, but were divided into two groups based on the equality of initial characteristics (Arikunto, 2013). The first group was given treatment using the drill training method, while the second group used the game situation training method. Independent variable (X1): Drill training method Independent variable (X2): Game situation training method, Dependent variable (Y): Basketball shooting accuracy

This study aims to determine the differences in the effects of the two training methods on shooting accuracy in basketball games. The population in this study were all extracurricular basketball players at the school, totaling 30 people. The sample was determined using a purposive sampling technique, namely selecting subjects with the following criteria: Age between 15-17 years who actively participate in training and do not experience injuries

The sample was divided into 2 groups homogeneously based on the results of the shooting accuracy pretest:

a. Group A (n = 15): received treatment using the drill training method
b. Group B (n = 15): received game situation method treatment

Pretest: All participants took a shooting accuracy test before the treatment.

Treatment Administration:

a. Drill Group: repetitive shooting technique exercises (form shooting, spot shooting, free throw drill, catch and shoot).
b. Game Situation Group: shooting practice in game conditions (3 on 3, 5 on 5, fast break shooting, contested shot).

Treatment Duration: 6 weeks, 3x per week, training duration 90 minutes/session.

Posttest: All participants were re-tested for their shooting accuracy after the treatment.

The instrument used to measure shooting accuracy was the Basketball Shooting Accuracy Test, modified from the FIBA standard and the Basketball: Steps to Success guide by Wissel (2012). This test has been validated by two certified coaches and has a reliability of r = 0.87. The test was conducted with: 5 shooting points (right/left baseline, right/left wing, top of the

key) 3 attempts from each point Total 15 subsequent shots Score = number of balls entered (0–15).

Data were analyzed using:

a. Normality test (Kolmogorov-Smirnov)

b. Homogeneity test (Levene's Test)

c. t-test (Independent Sample T-Test) to determine the difference in average shooting accuracy between the drill and game situation groups.

Data processing was carried out with the help of the SPSS version 25 program. The level of significance used was $\alpha = 0.05$. If the p value <0.05, then there is a significant difference between the two methods.

3 Result

Table 1. Description of initial data

The following is a summary of the shooting accuracy values before treatment (pretest):

Group	N	Average	SD	Minimum Value	Maximum Value
Drill	15	6,07	1,33	4	8
Game Simulatiom	15	6,00	1,41	4	8

The average pretest results of both groups were almost the same (difference of only 0.07 points), indicating homogeneous initial conditions.

Table 2. Final Data Description

After 6 weeks of treatment, the following posttest data were obtained:

Group	N	Average	SD	Minimum Value	Maximum Value
Drill	15	10,13	1,51	7	12
Game Simulatiom	15	11,53	1,46	9	14

There was a significant increase in both groups. The game situation group showed a higher average than the drill group (difference of 1.40 points).

1. Normality and Homogeneity Test
2. Normalitas (Kolmogorov-smirnov)

1. Drill: p =0,156
2. Game Simulations: p=0,187

Both p>0.05 = data is normally distributed

Homogenitas (Levene's Test)

P=0,412

p.0,05, then the variance of the two groups is homogeneous

Table 3. Hypothesis Testing (Uji t)

Group	n	Mean	S.Dev
Drill	15	10,13	1,51
Game Simulatiom	15	11,53	1,46

Hasil Uji t:

t = -2,635

df = 28

p = 0,013 (p < 0,05)

Interpretation:

There is a significant difference between the posttest results of the drill and game situation groups. The group that practiced with the game situation method had statistically higher shooting accuracy compared to the drill group.

4 Discussion

Based on the pretest and posttest data, both the drill and game situation groups experienced a significant increase in shooting accuracy. This shows that both methods are equally effective, but with different degrees of effectiveness.

Drill training focuses on repeating structured basic techniques, such as shooting form, catch and shoot, and free throw shooting. This model allows players to improve their posture, hand position, ball release angle, and shooting movement rhythm. According to Harsono (1988), continuous motor repetition training will strengthen movement patterns and improve muscle memory, which are important for technical skills such as shooting. However, although drills improve skills mechanically, the results show that the group using the game situation method achieved a higher increase in shooting accuracy. This shows that technical skills that are trained contextually are transferred more quickly to real match situations.

The game situation method places players in conditions that resemble real games. In this training, players practice shooting under time pressure, pressure from opponents, and in various

body positions and uncertain game conditions. This training model requires athletes to combine technical, tactical, cognitive, and emotional aspects simultaneously. According to Light (2013), game-based learning stimulates critical thinking skills, quick decision-making, and response to situational pressure—abilities that are very relevant in competitive sports. Rink (2006) also stated that the success of skills in a game is not only determined by mastery of techniques, but also how the techniques are applied in the context of the game.

With training that resembles a match situation, players can improve spatial awareness, shooting accuracy while moving, and the ability to choose the right time to shoot. This contributes to the achievement of higher shooting scores in the game situation group compared to the drill group.

Drill training tends to ignore the cognitive and affective aspects that play a role in match performance, such as pressure from opponents, noise, or quick decisions while playing. In contrast, game situations encourage players to shoot under stressful conditions, where the heart rate increases and the brain must work quickly to assess when and where to shoot. According to Schmidt et al. (2019), sports skills called open skills such as shooting in basketball are more effectively honed through variable and situational approaches than closed approaches such as drills. This is because these skills depend on changing situations and require adaptation.

In the context of Long-Term Athlete Development (LTAD), players at the Training to Train or Training to Compete stage should not only focus on basic techniques, but also on the ability to apply techniques in the context of the game. Bompa & Buzzichelli (2019) emphasized that training should move from basic techniques to a contextual approach so that the transition to the match is more effective.

Thus, the results of this study support a training approach that adapts to the athlete's development level. For beginners, the drill method is important. But for competitive adolescent athletes, the game situation approach is the key to improving real performance. These results can be used as a reference for coaches and Physical Education teachers that the development of shooting techniques should not only be carried out in the form of structured drills, but combined with training in the context of real games.

5 Conclusion

Based on the results of the data analysis and discussion that have been carried out, it can be concluded that both training methods—drill and game situation—are equally effective in improving the shooting accuracy of basketball players. This is indicated by a significant increase in posttest results in both groups after being treated for six weeks, the game situation training method has a greater influence on increasing shooting accuracy compared to the drill method. This is evidenced by the average posttest results of the game situation group which are significantly higher than the drill group, as well as the t-test results which show a significant value ($p = 0.013 < 0.05$), game situation training provides a more realistic game context, thus training players to shoot under pressure, fatigue, and quick decision-making conditions—aspects that are very important in real match situations and Although the drill method is still needed as a basis for mastering shooting techniques, a combination of drill and game situation methods is highly recommended to build effective and applicable shooting skills in the game. Thus, for coaches and physical education teachers, the application of shooting training is not enough with just the drill

method, but must be enriched with a game situation approach so that the training results are more optimal and relevant to real match conditions.

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