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### Improvement of Shooting Techniques on Free Throw Line in Basketball Game

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#### Abstract

In a basketball game, shooting is an element that determines a team's victory. One of the shooting techniques in basketball is the free-throw technique. Purpose: This study aimed to assess the improvement of free-throw processes in basketball games using the ring modification method. Methods and Material: This study uses a quantitative approach with experimental methods with the pre-test post-test control group design. Statistical analysis used: the pre-test and post-test were carried out using a shooting skill assessment scale instrument in basketball games, and then treatment is given. Result: The average increase in the experimental group is better than the control group after treatment is delivered. Conclusion: the results of the study show that ring modification can affect improving shooting techniques from the free-throw line on basketball extracurricular activities at SMP Negeri 5 Bandung.

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## INTRODUCTION

Basketball is one of the most popular competitive sports in the world. Apart from being competitive, basketball is considered fun, educational, entertaining, and healthy so that all ages can play it. The hallmark of a competitive basketball game requires each playing team to put the ball into each other's basket and try to secure the basket on their

own so that the opponent can't score. Therefore, mastering playing skills individually is an ability that must be owned in playing basketball. Individual skills such as shooting, passing, dribbling, rebounding, and teamwork to attack or defend are a requirement for success in playing this sport (Bazanov & Haljand, 2017).

A basketball team can win a match depending on individuals who must master several techniques in basketball games such as passing, shooting, dribbling and rebounding, and teamwork (Csataljay, Donoghue, Hughes, & Dancs, 2017). To put the ball into the opponent's basket, every player on the basketball team must master shooting techniques in basketball games. In a basketball match, shooting is a decisive element in winning a game. The most dominant technique in basketball is shooting because the basketball team's victory is measured by the points collected or the most (Taryono, 2010; Wicaksono, 2014). Other basic techniques, namely passing, dribbling, defense, and rebounding, allow players to have a high success rate of shooting, but the players themselves must be able to shoot techniques (Wissel, 2012, p.71). Shooting techniques are also divided into 3, namely the short shoot, which is a way of throwing the ball at a short distance, long shot, which is how to throw the ball long distance or in a three-point line (three-point), and there is also a medium shoot which is done by shooting at a short distance, namely on the inner line. or medium line.

One of the shooting techniques in basketball is the free shot technique, namely the free throw. The free throw technique is part of the shooting technique in basketball, but what distinguishes it is the place to do it and the situation when shooting, which the opponent does not give guard. A free throw is an opportunity given to a player to score one point, uncontested from a position behind the

free-throw line and inside the semicircle (FIBA, 2005). The ball entered on the free throw is called a penalty shot and counts as one (1) point. In addition to easy points, free throws can determine the win or loss of a team in a match (Rubiana, 2017). It is based on taking foul shots outside the game, which means the match time will be stopped during the free throw. The player who makes the free throw is not subject to interference from the opponent. Therefore every player gets the opportunity to perform at his best to earn points for his team (Muttaqin, Hidayah, Mukarromah, 2019).

Nowadays, basketball is very popular at various ages, one of which is at school age. Mini-Basketball aims to provide opportunities for children of all abilities to enjoy a rich and quality experience. The basketball game is played with a large ball, being too high a target for most children. In Mini-Basketball, the ball size is reduced, and the target height, basket, is lowered (FIBA, 2005).

Recently, research has shown that players almost always have a better percentage of free-throw shots in practice than in competitive matches (Dandy, Brewer, & Tottman, 2001). The cause of the child's inability to make a basketball free throw is due to several problems, one of which is that when most children make the free throw, the ball does not reach the basketball hoop.

In every basketball game, the hoop is an essential part of the basketball game equipment available. By official regulations (FIBA, 2017) states that in a basketball game,

a basketball court must have two backstop units (the official term for a basketball hoop unit which includes baskets, nets, boards, and poles) on both sides of the court. According to the rules (FIBA, 2017), the standard size of the ring height is 3.05 meters from the floor. Using the actual size of the ring height for children to play basketball will make it difficult to reach when shooting, according to the understanding of mini basketball that the basketball game for boys and girls. The point is a modification of adult games adapted to the needs of children (FIBA Mini Basketball Rules, 2005). Modifications can be done for a variety of things, one of which the change to sports. Besides facilitate people for doing sports, improvement in the field of sport applied to various things, including sports for children and sports for learning in the training process. Modification analyzes and develops subject matter to support the potential learning activities and facilitate students (Akhror & Tuasikal, 2019).

Some components can be modified as an approach in training, namely 1) the size, weight, or shape of the equipment used. 2) Playing field 3) Playing time or length of play 4) Game rules, and 5) Number of players. To develop a game model, several things must be considered, namely 1) reducing distance, 2) providing more opportunities to score points, 3) providing opportunities for schools that have limited facilities and infrastructure to organize basketball game learning, 4) providing customized equipment to make appearance easier (Riyadi, 2012).

Modified basketball sport will be able to develop children's skills faster than standard equipment for adults because they are not obstructed by equipment that is too heavy, and the field is too broad according to the child, and finally, that modified sport can foster joy and pleasure in children (Syahnuar, 2020).

Based on observations made by researchers in the field, the age range of students of SMPN 5 Bandung who participated in basketball extracurricular activities were 12-14 years old, and the average height ranged from 130-150 cm. This age range is a transition period from the learn to train stage to the train to train step (Long Term Athlete Development, 2008). Children of this age are young, who are specialists in basketball (Bompa, 1994 & Harsono, 2014). If this is not given more training in learning shooting skills on the free-throw line, of course, it will cause problems when learning to shoot a basketball free throw with a national standard ring size which has a height of 3.05 meters (Prasmita, Haetami & Triansyah, 2018).

Has a background in practicing shooting techniques in basketball to the amateur or especially children are still using the tools and methods that together with the professional. The problem posed by the writer in this study is the improvement of shooting technique skills. The shooting technique from the line is free-throw in games or basketball using a modification of the ring for children of junior high school level.

## METHOD

From 45 people who participated in basketball extracurricular activities at SMP Negeri 5 Bandung. Then selected 14 girls new members who enrolled in extracurricular basketball considered as never had any knowledge of how to do a shooting technique (amateur) or less in mastering techniques on the line of free-throw shooting and the age range of them is 12-14 years.

After that, it was divided randomly into two groups, namely the experimental group (7 students) and the control group (7 students). The method used in the study was an experimental method using pre-test post-test control group research design. Pre-test

was performed on experimental and control groups, after the group of experiments will be given treatment using the method of modification ring and a group of control given conventional exercise.

Procedures: All data collection was carried out in the field every basketball extracurricular training schedule at SMP Negeri 5 Bandung three times a week (Monday-Thursday-Friday). A total of 17 meetings were divided into 15 times of training (treatment), one time in the beginning and one time in the end. The pre-test was carried out in the experimental and control groups using the scoring scale test for shooting skills in basketball games.

The assessment of the initial shooting test in a basketball game uses the Shooting Rating Scale in Basketball Games

(Komarudin, 2016). Each group member took ten free shots, and then the assessment was carried out by the coaching staff of 3 extracurricular basketball coaches at SMPN 5 Bandung. After completing the pre-test, data collection and the results are known through the scoring of shooting technique assessment (Komarudin, 2016).

According to the criteria for assessment of shooting techniques, the two groups (experimental and control) will get different training treatments. The experimental group was given treatment with exercises using a ring whose height was gradually modified.

1. 1st to 5th meeting of the experimental group will use exercises using a ring with a height of 1.83 meters.
2. 6th to 10th Meeting practice using a hoop which is raised to 2.45 meters high.
3. 11th to 15th Meeting practice using the ring with a standard height of 3.05 meters.

While the control group for 15 meetings will be given conventional training using the hoop with a standard height in basketball games.

## FINDINGS AND DISCUSSION

### Findings

Table 1 presents data from the control and experimental group means scores in the pretest and post-test. It can be seen from Table 1 that the mean results of the control group have increased from the pretest  $55.28 \pm 12.86$  to  $85.14 \pm 5.92$  at post-test. Furthermore, the

mean results of the experimental group also 6.37 at post-test.  
increased from  $53 \pm 14.24$  at pretest to  $91.42 \pm$

Table 1. Results of the Pre-test Post-test mean of the Control and Experimental groups

| Group                            | Result            | Normality | Homogeneity |
|----------------------------------|-------------------|-----------|-------------|
| <b>Control Group (n=7)</b>       |                   |           |             |
| Pre Test                         | $55.28 \pm 12.86$ | .200*     | 0.758       |
| Post Test                        | $85.14 \pm 5.92$  | .200*     | 0.08        |
| <b>Eksperimental Group (n=7)</b> |                   |           |             |
| Pre Test                         | $53 \pm 14.24$    | .061*     | 0.758       |
| Post Test                        | $91.42 \pm 6.37$  | .200*     | 0.08        |

In addition, the results of the analysis from the calculations in the table also show that the mean post-test data of the experimental group ( $91.42 \pm 6.37$ ) was higher than the control group  $85.14 \pm 5.92$ .

Further, Table 2 below presents the gain score or presentation increase in a sample control group scores. This gain score is obtained from the comparison of the pre-test and post-test scores in the sample.

Tabel 2. Gain score (%) Control Group and Experimental Group

| No | N-Gain (%)<br>Control Group | N-Gain (%)<br>Experimental<br>Group |
|----|-----------------------------|-------------------------------------|
| 1  | 83.33                       | 100.00                              |
| 2  | 74.36                       | 95.52                               |
| 3  | 79.63                       | 80.65                               |
| 4  | 53.13                       | 84.09                               |
| 5  | 73.53                       | 69.23                               |
| 6  | 40.63                       | 64.10                               |
| 7  | 47.83                       | 73.13                               |

Further, Table 2 below is the current gain score or presentation increase in scores on a sample control group. This gain score is obtained from the comparison of the pre-test and post-test scores in the sample.

The data in table 2 above explains the gain score obtained by the control group and experiment group. In the control group, it can be seen that the most miniature presentation of the increase in the shooting score was 40.63%, and the most significant percentage of the

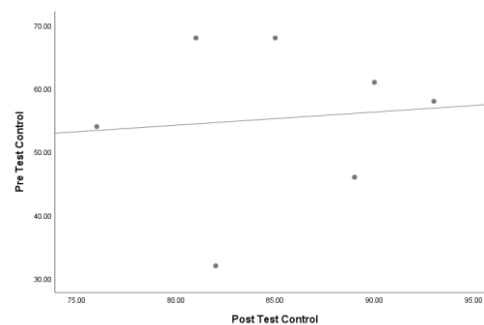
increase in score was 83.33%, with an average increase of  $64.43\% \pm 17.02\%$ . In the experimental group, it can be seen that the score with the most miniature presentation of the rise in the shooting score was 64.10%, and the most significant percentage of the increase in the score was 100.00%, with an average increase of  $80.96\% \pm 13.33\%$ .

Tabel 3. Improved Shooting Results

| Group                   | Correlation | Sig (2-tailed) |
|-------------------------|-------------|----------------|
| Control Group (n=7)     | 0.174       | 0.00           |
| Eksperiment Group (n=7) | 0.96        | 0.01           |

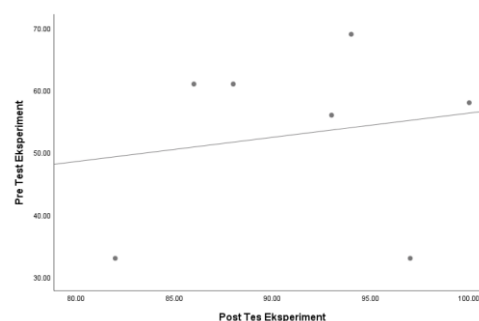
Table 3 presents the test data for each group using the paired sample test. From the data above, it can be concluded that the significant value of the control group is 0.01, or it can be supposed that  $0.01 < 0.05$  so that there is a substantial difference in the results of the shooting scores of the pre-test and post-

test in the control group. Furthermore, the significance value of the experimental group was 0.00, of which  $0.00 < 0.05$ , so it could be concluded that there was also a significant difference in the results of the pre-test and post-test shooting scores of the experimental group


**Figure 1.** The Correlation between Pre-test and Post-test Control Group

The data from Figure 1 describe that there is a low significant correlation between the pre-test and post-test in the control group ( $r = 0.174$ ). The relationship indicates that the

result of pre-test and post-test in the control group have a positive correlation. There is an increased shooting performance of the control group with low correlation values.


**Figure 2.** The Correlation between Pre-test and Post-test Eksperiment Group

The data from Figure 2 describe that there is a highly significant correlation between the pre-test and post-test in the experiment group ( $r = 0.96$ ). The relationship indicates that the result of pre-test and post-test in the experiment group have a positive correlation. There is an increased shooting performance of the experiment group with high correlation values.

## Discussion

Free-throw is one of the basic techniques of basketball. In basketball games, this technique is most often used to score numbers because victory is determined by the number of balls that enter the basketball hoop so that each team that controls the ball is always looking for opportunities to shoot free throws, so shooting free throws is a basic technique that must be learned by excellent and correct as well as improved skills (Rudiansyah, Usman & Hakim, 2014). The free throw shot is a very decisive element in basketball games. Researchers (Button et al., 2003) have dealt with various types of analysis in sport, including free throws, in detail.

The results showed positive data by adjusting the needs and practicing shooting techniques by modifying the ring height to improve the shooting technique skills of the free-throw line for new girl extracurricular members of SMPN 5 Bandung. Described in the gameplay Mini Basketball, which modifies almost all equipment and equipment used in basketball games aimed at children, positively impacts the development of shooting techniques. The use of modification tools in the form of ring

modifications is expected to assist the coach in designing the training process, especially in shooting skills from the free-throw line when facing a match.

Scoring from free throws is an essential skill in the competitive sport of basketball. Free throws can result in up to 35% of the points scored during the last five minutes of a basketball match and are especially important in games where teams are separated by a small point margin (Gómez, Lorenzo, Jiménez, Navarro, & Sampaio, 2015). In addition, the attacking player who shows a higher percentage of free-throw shots is a significant positive predictor of winning (Choi, Kim, Lee, Suh, & So, 2015). To produce good free throw skills. It can be done with several modifications, one of which is modifying the height of the ring (Rubiana, 2017). Therefore, it is hoped that using the ring modification method can help in the training process, especially shooting training from the free-throw line for junior high school level children.

This study used two groups with different treatments, where the control group was used as a comparison from the experimental group, which was given treatment using ring modification. In the results of the increase in control and experiment, it was found that the average N gain was more significant in the experimental group than the control group (Figure 3). These results indicate that the improvement in shooting practice using hoop modifications on basketball in the experimental group was more significant in improving the shooting performance of the free-throw line.

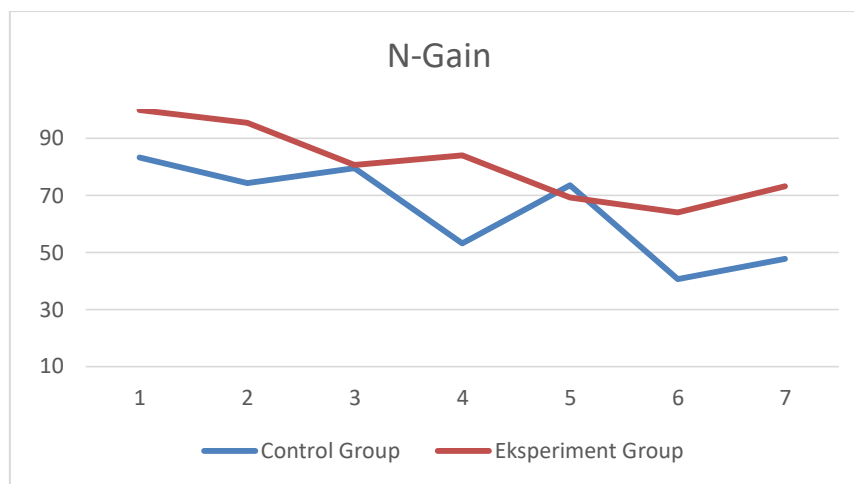


Figure 3. Average Result of N Gain Control Group and Experiment Group

## CONCLUSION

The conclusion from the research that has been done is that there is an effect of increasing the results of shooting skills from the free-throw line on new female members in basketball extracurricular activities at SMP Negeri 5 Bandung, where a significant increase was obtained better with the group using a modified basketball hoop than the group with conventional training or without ring modification.

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