

Regular and Reverse Lay Up Shoot in Basketball: Movement Analysis for Beginners

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Abstract— The purpose of this study is to find out common mistakes made by beginner basketball players at the student university level in doing regular and reverse lay-up shoots. The shoot-up technique was analyzed based on 6 indicators, namely: (1) bringing the ball to the ring, (2) catching the ball and controlling it until it leads to the ring, (3) using two appropriate steps, (4) jumping using the foot right, (5) inserts the ball and bounces the ball to the reflecting board before the ball enters the ring and (6) measures the height of the jump when laying up the shoot. 34 samples or the entire population is sampled. The research method used is descriptive research method. Movement recording devices or videos are used to record sample movements during regular and reverse lay-up shoots. The sample in this study was given the opportunity to do regular and reverse lay-up shoots from the left and right direction for 5 times. The results of the Movement analysis of the regular lay-up shoot for beginner basketball players shows that beginner players can dribbling close to the net very well (0.82). In catching the ball in preparation for laying up to the ring it is still in the sufficient category (0.53). In arranging the steps already in the good category (0.76). In making jumps using one footstool is included in the very good category (0.99). Bouncing the ball before the bounce board is only a small part, which is included in the less category (0.22). The average beginner basketball player has not been able to focus on the jump because their jump height is only 0.215 meters. The results of an analysis of reverse lay-up shoots showed that beginner players were able to dribbling close to the net very well (1.00). In catching the ball in preparation for laying up to the ring is still in the less category (0.24). In arranging steps are still in the sufficient category (0.69). In making a leap using a footstool included in the category enough (0.66). Bouncing the ball before the bounce board is only a small part, which is included in the less category (0.25). The average beginner basketball player has not been able to focus on the jump because their jump height is only 0.215 meters. This study shows that in beginner players, in doing regular lay-up shoot techniques the most common error is (1) not being able to control the ball well before starting the lay-up movement, (2) not making the highest vertical jump and (3) not doing the technique of bouncing the

ball to the reflection board with well. Whereas in the reverse lay-up shoot, almost all indicators are still in the category of sufficient and less so they must be trained as well as possible to improve the technical abilities of the basketball player itself. The results of this study need to be an important concern for coaches and basketball instructors to provide training programs for beginners to fix any of the most basic deficiencies so that they can do the perfect lay-up techniques.

Keywords: *regular lay-up shoot*

I. INTRODUCTION

Basketball is a games that build character so that they are accepted as national curriculum in the education unit. This sport has developed and become a lifestyle for the younger generation as well as being a popular activity at a young age[1]. Basketball has become one of the most interested sports, Daniel H. Daneshvar, et al[2]. Basketball is a form of team game using a ball which this game is done by using your hands to bounce the ball and put it in the ring that has been provided as high as 3.05 meters with a diameter of 0.45 m. The movements in the basketball game are quite complex where the game is designed quickly because each team has limited time to hold the ball, playing the ball in backcourt or frontcourt. These rules cause each player to use the time as well as possible and more to enter the ball into opponent's basket. Some techniques in basketball are passing, dribbling, lay-up and shooting. Mastery in each of these techniques is the key to success to win the match. To master each game technique, of course, every basketball player needs to practice their abilities in order to do every move well. The perfection of technique when competing is an absolute requirement for mastering the game because by controlling good playing techniques, you will get a lot of numbers by putting the ball in the basket. The most basic thing to be able to do a perfect

technique is to understand how to do the technique in detail. By mastering how to do the technique will result in every exercise that is done can produce more efficient and more effective movements which will provide multiple benefits.

One technique in basketball that is often used to put the ball in the ring is the lay-up shoot. Lay is one of the most important techniques in ball play basketball. During basketball games, lay-up is the most commonly employed method of scoring[3]. Lay-up shoots are carried out by bringing the ball to the ring then jumping near the ring by carrying the ball and putting it into the ring through the reflection board or also directly into the ring itself. Lay-up is a shot in the basketball, after dribbling. To do a high jump in lay-up, dribbling speed is required for the last three or four steps. It's important to keep your head upright when going and during a shot. The ball must be tossed to the ring with the wrist and fingers. And you should touch the board first and then enter in to the ring[4]. This shooting technique is very important to make a master because it has the greatest opportunity to obtain point. It is different to regular shooting from a distance, the ball into the ring has fewer opportunities because it is influenced by many factors such as the opposing player's block, the player's concentration at the time of shooting and also the ability of the player himself to shoot. In laying up shooting, proper footsteps need to be considered so that they do not violate existing rules, namely carrying the ball more than two steps.

The implementation of the lay-up shoot consists of: (1) The preparatory phase: a wide first step aimed at maintaining balance, followed by a short second step to obtain a strong repulsion prefix so that it can jump high, relaxed shoulders, non-shooting hands are placed under the ball, shooting hands are placed behind the ball, elbows are in and tight. (2) Implementation phase; lift the knee to jump vertically, then the shooting hand is held straight up, then the ball is released with the power of the fingertips at the highest point and bounces around the right hand vertical line on a small plot above the basket, if done from the right side. (3) Follow through phase; landed equally and knees bent and hands relaxed[5].

There are three things to consider in lay-up shots, namely: (1) When receiving a ball, it must be in a floating state. (2) When stepping first should be wide so that balance is maintained, the second step is short to get the repulsion prefix so that it can jump as high as possible. (3) When releasing the ball must be released with a small force, pay attention and bounce the ball in a small plot above the basketball[6]. Meanwhile, to improve the ability of team play when playing each player must learn to lay up with the right hand and left hand so as to obtain victory[7].

Doing the lay-up shoot with the right hand and also the left needs to be mastered which in carrying out attacks the ability to make attacks from all sides is necessary so that every attack carried out can produce points both from the left side and from the right side. Thus, in doing lay-up exercises, you should always use your right and left hand. There are several types of lay ups including regular lay ups and reverse lay ups. Regular lay-up is a common lay-up technique which is to insert the ball from the right side of the ring by first carrying the ball from the same direction. Reverse lay-up shoot is inserting the ball

from the other side of the ring where the ball is brought from the right side of the ring. Meanwhile, from the form of hand inserting the ball into the ring, two lay-up techniques are distinguished namely overhead and underhead. Both of these techniques are carried out in accordance with the conditions of the players and also the needs during the match but the lay-up with overhead lay-up shoot is better than underhand lay-up shoot[8].

The ways to do regular lay-up with the right hand are as follows; (1) From the right side of the ring, dribbling the ball to get the right distance to lay up, (2) After the position is approaching the ring, catch the ball, then set the step by leaning on the right foot first while adjusting the distance to the ring, (3) Jump as high as vertically using the left foot on the side of the ring so that it's easy to reach it (4) Push the ball slowly using your right hand while lifting your right leg higher than your left leg. (5) Bounce the ball on the backboard to insert into the ring.



Fig. 1. Regular Lay Up Shoot With The Right Hand

The method of doing regular lay-up with the left hand is as follows: (1) From the left side of the ring dribbling the ball until it gets the right distance to lay up, (2) After the position is approaching ring, catch the ball, then set the step by leaning on the left foot first while adjusting the distance to the ring, (3) Jumping as high as vertically using the right foot on side of the ring so that it's easy to reach it (4) Push the ball slowly by using your left hand while with lifting your left leg higher than your right leg. (5) Bounce the ball into the backboard to insert into the ring.



Fig. 2. Regular Lay Up Shoot With The Left Hand

The way to do reverse lay-up with the right hand is as follows; (1) From the left side of the ring dribbling the ball until it gets the right distance to lay up, (2) After catching the ball then move your right foot first while adjusting the distance with the ring, (3) Jump as high vertically as possible using the left foot and maintain a position near the ring (4) Push the ball using the right hand while with lifting the right leg higher than the left foot. (5) Bounce the ball to the backboard to insert it into the ring.



Fig. 3. Reverse Lay Up Shoot With The Right Hand

The way to do reverse lay-up with the left hand is as follows: (1) From the left side of the ring dribbling the ball until it gets the right distance to lay up, (2) After the position is approaching ring, catch the ball, then set the step by leaning on the left foot first while adjusting the distance to the ring, (3) Jump as high vertically as possible using the right foot and maintain a position near the ring (4) Push the ball slowly by using your left hand together with lifting your left leg higher than your right leg. (5) Bounce the ball into the backboard to insert it into the ring.



Fig. 4. Reverse Lay Up Shoot With The Left Hand

Common mistakes for students when doing lay up shoots are located in the first step too high, inconsistent shots (long or short), hesitant in doing so, accepting the ball not in hovering conditions, dribble coordination and lack of lay-up shoots, shots touching the side of basketball basket[9]. Many basketball players, especially the beginner players who do not understand the implementation of lay-up shoots in basketball. This will result in the exercise carried out will take time to make movements that are not effective or even the wrong movements. There fore we need an in-depth study to analyze every movement of basketball shooting lay-up as input for every basketball player.

II. METHOD

The research method used is descriptive analysis which is a method that serves to describe or provide an overview of the object under study through data or samples that have been collected as they are without analyzing and making conclusions that are applicable to the public[10]. The population in this study were students who participated in based basketball skills as many as 34 people. Samples were taken from the population with a total sampling technique. All samples are beginner basketball players with age around 18 ± 2 years, more than 3 times a week the sample did basket ball exercise. Samples are students who do physical activities every day and has done basketball practice for more than 32 meetings at the time of this research. This study uses a survey method by analyzing the ability of the sample in basket ball lay up. Three cameras are used to record samples during the

lay-up test, namely from the left side of the ring, the right side of the ring and also from the front side of the ring. Each sample was given the opportunity to lay up as much as 5 times on each lay-up technique starting from the regular lay-up shoot from the right and left side then proceed with reverse lay-up shoot from the right and left side.

There are 6 indicators analyzed on each lay-up movement, both regular and reverse, namely; (1) bring the ball closer to the ring, (2) catch the ball and control it until it leads to the ring, (3) use two appropriate steps, (4) jump using the right foot, (5) insert the ball and bounce the ball towards bounce board before the ball enters the ring. In addition, the height of the jump when laying up the shoot is also calculated.

The analysis is done by giving a value to each movement that is carried out the sample. While to measure the height of the jump is calculated using the smart video analysis application. Scoring on each indicator using a scale between 1-1 which is 0.80-1.00 (very good), 0.60-0.79 (good) 0.40-0.60(sufficient), 0,20-0,40 (less), 0,00-0,20 (bad).

III. RESULTS AND DISCUSSION

A. Regular Lay Up Shoot With Right Hand

The results of the analysis of regular lay-up shoot with the right hand show that beginner basketball players have dribbled close to the net very well (0.94) deviation of 0.24. However, in catching the ball in preparing to lay up to the ring it is still in the sufficient category (0.65) with a deviation of 0.49. In arranging the steps already in the very good category (0.94) with a deviation of 0.24, so making the jump using the left foot is very good (1.00). Only a small portion of those who bounce the ball first onto the bounce board are included in the less category (0.21) with a deviation of 0.41. The average beginner basketball player has not been able to focus on the jump because their jump height is only 0.22 meters.

Table I. Results of Regular Lay-Up with the Right Hand

No	Indicator	Result	
1	Bring the ball correctly approaching the ring	0.94	± 0.24
2	Catch the ball and can control it	0.65	± 0.49
3	Using two steps correctly (right - left)	0.94	± 0.24
4	Jumping with the left foot	1.00	± 0.00
5	Bouncing the ball to the reflecting board before entering the ring	0.21	± 0.41
6	Height jump	0.22 meters	

B. Regular Lay-Up Shoot With Left Hand

The results of an analysis of the regular lay-up shoot with the left hand show that beginner basketball players have dribbled close to the net in either category (0.71) deviation of 0.46. In catching the ball in preparation to lay up to the ring it is still in the sufficient category (0.41) with a deviation of 0.50. In arranging two steps, namely from left to right, it is still in the sufficient category (0.59) with a deviation of 0.50. Doing the jump using the right foot is very good (0.97) with a deviation of 0.17. The indicator bounces the ball to the bounce board first in the less category (0.24) with a deviation of 0.43.

The average beginner basketball player has not been able to focus on the jump because their jump height is only 0.21 meters when doing regular layouts with his left hand.

Table II. Results of Regular Lay-Up Shoot with Left Hand

No	Indicator	Result	
1	Bring the ball correctly approaching the ring	0.94	± 0.24
2	Catch the ball and can control it	0.65	± 0.49
3	Using two steps correctly (right - left)	0.94	± 0.24
4	Jumping with the left foot	1.00	± 0.00
5	Bouncing the ball to the reflecting board before entering the ring	0.21	± 0.41
6	Height jump	0.21 meters	

C. Reverse Lay-Up Shoot With Right Hand

The results of an analysis of the reverse lay-up shoot with the right hand show that beginner basketball players have dribbled close to the net very well (1,00). But in catching the ball in preparing to lay up to the ring is still in the category of less (0.26) with a deviation of 0.45. In setting the steps already in the category enough (0.74) with a deviation of 0.45. In doing the jump using the left foot in the category of enough (0.71) with a deviation of 0.46. Only a small percentage of those who bounce the ball first onto the bounce board are included in the less category (0.29) with a deviation of 0.46. The average beginner basketball player has not been able to focus on the jump because their jump height is only 0.21 meters.

Table III. Reverse Lay Up Shoot Analysis with Right Hand

No	Indicator	Result	
1	Bring the ball correctly approaching the ring	1.00	± 0.00
2	Catch the ball and can control it	0.26	± 0.45
3	Using two steps correctly (right - left)	0.74	± 0.45
4	Jumping with the left foot	0.71	± 0.46
5	Bouncing the ball to the reflecting board before entering the ring	0.29	± 0.46
6	Height jump	0.21 meters	

D. Reverse Lay Up Shoot With Left Hand

The results of an analysis of the reverse lay-up shoot with the left hand show that beginner basketball players have dribbled close to the net very well (1,00). But in catching the ball in preparing to lay up to the ring is still in the category of less (0.21) with a deviation of 0.41. In arranging steps ie left to right in the less category (0.65) with a deviation of 0.49, In making a jump using the right foot included in the enough category (0.62) with a deviation of 0.49. Only a small portion of those who bounce the ball first onto the bounce board are included in the less category (0.21) with a deviation of 0.41. The average beginner basketball player has not been able to focus on the jump because their jump height is only 0.22 meters.

Table IV. Reverse Lay-Up Shoot Analysis with Left Hand

No	Indicator	Result	
1	Bring the ball correctly approaching the ring	1.00	± 0.00
2	Catch the ball and can control it	0.21	± 0.41
3	Using two steps correctly (left-right)	0.65	± 0.49
4	Jumping with the right foot	0.62	± 0.49
5	Bouncing the ball to the reflecting board before entering the ring	0.21	± 0.41
6	Height Jump	0.22 meters	

E. Regular Lay Up Shoot

Regular lay-up shoots are analyzed in beginner basketball players which consist of 6 assessment indicators while the results of the analysis show that beginner players can dribbling close to the net very well (0.82) deviations of 0.38. In catching the ball in preparation for laying up to the ring it is still in the sufficient category (0.53) with a deviation of 0.50. In arranging the steps already in the good category (0.76) with a deviation of 0.43, In making the jump using a footstool included in the very good category (0.99) with a deviation of 0.12. Bouncing the ball first onto the reflecting board is only a small part, which is included in the less category (0.22) with a deviation of 0.42. The average beginner basketball player has not been able to focus on the jump because their jump height is only 0.215 meters.

Table V Results of Analysis of Regular Lay-Up Shoot

No	Indicator	Result	
1	Bring the ball correctly approaching the ring	0.82	± 0.38
2	Catch the ball and can control it	0.53	± 0.50
3	Using two steps correctly	0.76	± 0.43
4	Jumping with the right foot	0.99	± 0.12
5	Bouncing the ball to the bounce board before entering the ring	0.22	± 0.42
6	Height jump	0.215 meters	

F. Reverse Lay Up Shoot

The results of the analysis conducted on reverse lay-up shoot, shows that beginner players can dribbling close to the net very well (1.00). In catching the ball in preparation for laying up to the ring is still in the category of less (0.24) with a deviation of 0.43. In arranging steps are still in the sufficient category (0.69) with a deviation of 0.47, In making the jump using a footstool included in the sufficient category (0.66) with a deviation of 0.48. Bounce the ball first onto the reflecting board only a small part, which is included in the less category (0.25) with a deviation of 0.44. The average beginner basketball player has not been able to focus on the jump because their jump height is only 0.215 meters.

Table VI. Reverse Lay-Up Shoot Analysis Results

No	Indicator	Result	
1	Bring the ball correctly approaching the ring	1.00	± 0.00
2	Catch the ball and can control it	0.24	± 0.43
3	Using two steps correctly	0.69	± 0.47
4	Jumping using the right foot	0.66	± 0.48
5	Bouncing the ball to the bounce board before entering the ring	0.25	± 0.44
6	Height jump	0.215 meters	

Lay is one of the most important techniques in ball play basketball. During basketball games, lay-up is the most commonly employed method of scoring, [5]. This is used to ensure that the ball can enter the ring, because when shooting from a certain distance too many obstacles experienced by the attacking players. This will be influenced by blocks made by opponents, the distance of the ring to players who are still far away and also the ability to shoot that has not been adequate. With the lay-up, the ball can be sure to enter the ring by placing the ball in the ring through the reflection board. There are several types of lay-up shoots, including regular and reversed lay-up shoots. The success of lay-up is influenced by the technique of doing the movement itself, starting from the movement of bringing the ball to the ring to jumping and inserting it into the ring.

Dribbling the ball well is important for laying up. The ball can be dribbled correctly meaning the player can control the ball. Losing a ball means losing the chance to get a point. Both in regular lay-up shoots and also reverse lay-up shoots need to pay attention to dribbling techniques to bring the ball closer to the ring. In the actual game every player who will lay up must be able to pass the opposing player by dribbling the ball. Beginner players can already do this technique very well but without obstacles, both when doing regular and reverse lay-up shoots.

Catching the ball means preparing the ball to lay up. Control of the ball needs to be done. Many beginner players lose the ball when going to lay back repulsions because they cannot control the reinforcements either in their own drills or over by their teammates. Beginner basketball players are still having trouble doing this technique so they need more attention from the players and also the coach. The results of this study show that beginner players perform this technique in the less category.

In accordance with the existing rules basketball players are only given 2 steps while carrying the ball running, if more then it will be considered a violation. This step must be utilized as well as possible by the basket player to set the right distance to the ring and also jump closer to be able to ensure the ball enters the ring. The results of the study still show if beginner players do this technique in the sufficient category.

Jumping using the right foot will also affect the results of the lay-up itself. Besides being able to violate the rules of error in doing jumps can result in results that are not optimal such as a great distance from the ring or even past the achievement to put the ball into the ring itself. Coordination between the left foot and right foot must be trained as well as possible so that beginner basketball players can perform this movement automatically. Jumping with the right foot when doing regular lay-ups is already in the excellent category but in the reverse lay-up shoot is still in the sufficient category, so it becomes the material of concern for the trainer.

Bouncing the ball first to the reflecting board actually has a greater chance of getting the ball in the ring. But very many beginner players do not realize this, which technique is only done by a few people or in the less category. There needs to be

a greater understanding of this for every beginner basketball player.

A jump height of only 0.22 meters is something that needs to be improved on beginner basketball players. The higher the jump, the greater the chance for the ball to enter the ring and this is what every basketball player expects. Because the final goal is to put the ball as much as possible into the opponent's ring.

Basketball is one sport that requires strategy in doing every technique and also in the basketball game itself [3]. The success in getting the ball into the ring is certainly influenced by the technique of carrying out the movement itself. As for the techniques for laying up, the steps are first understood and then trained to become the automation stage. The repetition of movements will certainly be done to create a reflex Movement that will develop according to the frequency of the movements performed. The more often a movement is carried out or trained, then the movement will involve fewer voluntary movements, meaning that the movements become more like reflexes, and such movements are called conditional reflexes (conditioned reflexes), because the conditions have been met in the form of training [7]. so that the exercise with regard to the indicators of the lay-up itself must become a standard of implementation. n in every lay-up training activity. As for training, it certainly can improve lay ability. Exercise by directly practicing in regular exercises and reverse lay-up can significantly improve lay-up ability [11].

IV. CONCLUSIONS AND SUGGESTIONS

This research shows that in beginner players, in doing regular lay-up shoot techniques, they do not reflect the ball well on the reflection board, do not make the highest vertical jump and have not been able to control the ball well before starting the lay-up Movement. Whereas in the reverse lay-up shoot, almost all indicators are still in the category of sufficient and less so they must be trained as well as possible to improve the technical abilities of the basketball player itself. Because of this it needs serious attention for the coaches as well as basketball instructors so that beginner players can fix any of these deficiencies so they can do the perfect lay-up techniques.

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