

## **Analysis of differences in lay-up shoot ability from the right and left sides of men's basketball extracurricular members**

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### **Abstract**

The problem in this research is that students are not yet perfect at doing lay-up shoots in both position and movement. This research aims to determine the difference in ability between lay-up shoots from the right side and the left side among boys' basketball extracurricular members aged 11-14 years. This research is a descriptive study using a survey method. The sample in this study was taken by random sampling, totaling 30 students. The instrument of this research is the lay-up shoot test modified. Data collection techniques using test and measurement methods. Data analysis using prerequisite tests and t-tests. The statistical test results showed that the lay-up shoot t-test value on the right and left sides had a calculated t of -1.193 and the t-table value with df 14 at the 5% significance level was 2.14.  $p = 0.253$ , because  $p > 0.05$  there is no significant difference. So it can be concluded that there is no significant difference between lay-up shots from the right side and the left side for boys' basketball extracurricular members aged 11-14 years.

**Keywords:** Differences, lay-up shoot, right side, left side, basketball.

### **INTRODUCTION**

The game of basketball is very interesting and very competitive. Some experts say that identifying how to distinguish winning and losing teams is usually based on the results obtained by a team (Lorenzo et al., 2010). Several authors have expressed the importance of 2-point shots (Ibáñez et al., 2009) and the results of the shot. 3 points contributing factors to team performance that can win the match (Csataljay et al., 2012). Identifying unique aspects, namely physicality, can contribute significantly to success in a sport that has long been of interest to scientists and sports coaches. In sports like basketball, height is a clear and definite competitive advantage.

Specialty of this sport is that basketball is a sport that is popular with school and university students. Basketball is a high-intensity sport characterized by frequent performance of technical skills and special tactics (Conte et al., 2015). The phenomenon of the game of basketball has experienced differences from year to year. Many fans of basketball are starting to reach children, teenagers, and even adults. Through this basketball game, teenagers gain many benefits, especially in terms of physical, mental, and social growth. The sport of basketball is experiencing rapid development, this is proven by the emergence of big clubs in the country. Customer trust is greatly influenced by good facilities, appropriate rates, good staff, and excellent service (Putro et al., 2020). This results in student basketball athletes at both school and college levels becoming more enthusiastic, and existing competitions can be

handled professionally. Each of these competitions will automatically give rise to a generation of potential talents in the field of basketball.

This sport is a sport that can develop different dimensions such as player characteristics (Till et al., 2016). Basketball is a complex technical and tactical discipline, where a player's effectiveness in the game depends on mastery of the execution or treatment of many elements, namely an attack and how the team defends. For this reason, we need quite a bit of time and can spend it studying a limited variety of basketball techniques. Changes in strategy require basketball players to work on the moments that are most frequently used and most effective in making a shot. Therefore, it is a coach's decision about the type of shot or shooting that should be developed and trained in the process of a long-term training program to create a player's good attacking potential (Gaetano et al., 2016)

Basketball is a popular sport and is chosen for extracurricular activities at school. There are also a lot of people interested in sports among students in schools and it is even a very favorite extracurricular activity in the majority of schools. With the existence of extracurricular basketball, extracurricular sports activities that are physical can deepen and broaden knowledge related to physical education subjects. Apart from that, extracurricular sports activities are a vehicle or forum for accommodating, channeling, and developing students' interests, talents, and hobbies in certain sports. Besides that, adolescent basketball players aiming to reach an elite and professional level need to develop performance such as a high level of physiological aspects (Torres-Unda et al., 2013). Through these extracurricular activities, it is hoped that a team can be formed that can represent the school in basketball competitions.

The results of a preliminary study that was carried out from October to December 2018, every Thursday and Saturday on the basketball court at SMK Negeri 3 Yogyakarta when basketball extracurricular activities took place. Researchers found that the players did not master the lay-up shoot technique. Extracurricular basketball practice times are twice a week from 15.30 WIB to 17.00 WIB. From the incidents presented in the discussion above, the lack of intensity of training certainly affects the level of physical fitness of an athlete. Someone who will carry out sports activities regularly and according to their needs will have good physical fitness. Talented athletes will spend hours in practice improving skills that are critical in their chosen sport (Ward et al., 2007). According to (Hastuti, 2008), efforts to increase physical fitness must be carried out by a person at least 3-4 times a week for 30-45 minutes per physical activity. From what the previous expert said, if we refer to this statement, of course, the training carried out in extracurricular basketball in Yogyakarta is still lacking because it is only carried out twice a week.

Related to the lay-up shoot is the technique of entering the ball in playing basketball. Besides that, the lay-up shoot is something that must be learned in the sport of basketball (Supervisor & Conte, 2021). Lay-up shoot according to (Donovan, M. (2010)) when dribbling the ball toward the basket at speed, lay-up shoot using the correct footwork. The success of a squad/team is always determined by the accuracy and number of points in executing a lay-up shoot. Successful lay-up shooting still requires the use of the right techniques and steps to maximize the shot (Tomas et al., 2023).

The importance of skills can vary between playing positions. Basketball players can be divided into three playing positions, namely guard, forward, and center, each of which has a different role. To achieve these requirements, different skills are needed to play well in each position (In et al., 2010). To get the opportunity and success in doing a lay-up shoot, you need the right technique. In the basketball game, the layup shoot can be done from various sides, namely from the right side of the ring, from the left side of the ring, and the middle side. On the right and left sides of the basketball hoop, the backboard is not directly facing the player, so the player must be able to find the right angle for the ball to enter the basket. When attacking the ball is more often passed to the right and left than to the middle, and this attack tactic is more often successful in scoring scores.

Based on the background above, the researcher wants to research to determine the difference in lay-up shooting ability from the right and left sides of boys' basketball extracurricular members aged 11-14 years in Yogyakarta. The importance of skills can vary between playing positions. Basketball players can be divided into three playing positions, namely guard, forward, and center, each of which has a different role. To achieve these requirements, different skills are needed to play well in each position (In et al., 2010).

**METHOD**

This research uses a survey method with test and measurement techniques. The research aimed to determine whether or not there was a relationship between the lay-up shooting ability from the right and left sides in men's basketball extracurricular participants. This type of research is comparative research. Comparative research is research that seeks to find similarities and differences about objects, people, work procedures, ideas, and criticism of people, groups, or ideas or work procedures. Time and Place: Research was carried out in January and February 2019. Research data was collected in January 2019 at the basketball court at SMK Negeri 3 Yogyakarta, at 15.00 WIB. The targets/research subjects in this study were all members of the men's basketball extracurricular aged 11-14 years in Yogyakarta with the criteria of extracurricular participants at SMK Negeri 3 Yogyakarta including being members of the men's basketball core team at SMK Negeri 3 Yogyakarta for the 2012/2013 academic year with a total of 30 students. The sample in this research was taken purposively. Purposive sampling is a technique for selecting research subjects with certain considerations based on the research objectives. The lay-up shoot instrument was adopted and then modified from the lay-up shoot skills test (Betty Retnowulan & Kunta Purnama, 2017). Modified tests include: 1) when doing a lay-up shoot from the right and left. 2) When releasing the ball, there are two methods used, namely via the backboard and directly into the basketball ring. The test is carried out from the right and left sides. The test begins with a warm-up followed by an example of a lay-up shoot, then the lay-up shoot test is carried out 8 times. From the trial of the lay-up shoot test instrument, the validity was 0.560 and the reliability was 0.718. In this research, data analysis techniques are used to determine the differences in lay-up shoots from the left and right sides, by comparing the mean lay-up shoots from the results of the left side test and the right side test so that we know which one is the best.

**RESULTS AND DISCUSSION**

Data analysis using prerequisite tests and t-tests. Apart from that, data analysis is used to determine the differences in lay-up shoots from the right and left sides, by comparing the mean lay-up shoots from the results of the right side test and the left side test so that it is known which is the best. The formula for calculating the mean (average) is as follows: Information:  $Me = \text{Mean (average)}$ ,  $\Sigma =$  Epsilon (number),  $X$  values  $i$  to  $n$ ,  $N =$  number of individuals.

$$Me = \frac{\sum X}{n}$$

Table 1. Frequency data for comparison of lay-up shoots from the right and left sides

	Right	Left
Minimum Value	7,00	7,00
Maximum Value	12,00	11,00
Average	8,60	9,00
Median	8,00	9,00
Modus	8,00	9,00
Std. Deviasi	1,35	1,13

According to the table above, the results show the frequency of comparison between lay-up shoots from the right and left sides, with the average value of lay-up shoots from the right side being 8.60 and the average value of lay-up shoots from the left side being 9.00. From these results, it can be said that because the average value of lay-up shoots from the left side is greater than the average value of lay-up shoots from the right side, it is said that the side on the left is considered more effective in doing lay up shoots than doing lay-up. shoot from the right.

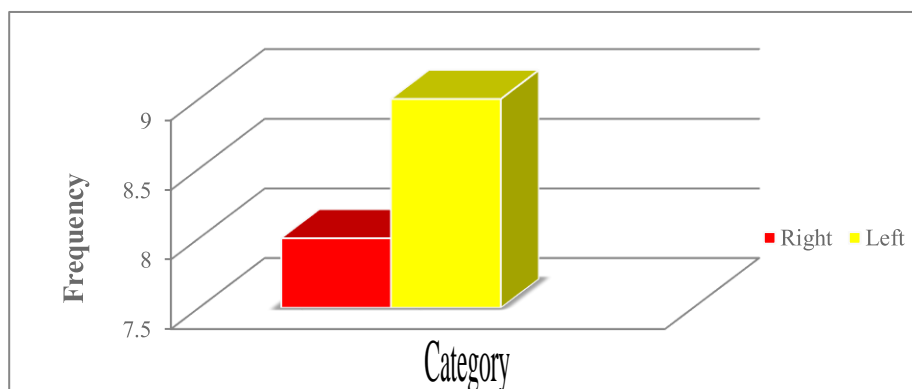


Figure 1. Histogram of the average lay-up shoot on the right and left sides

There is no significant difference, namely if the significant value is greater than 0.05 (significant < 0.05) then  $H_0$  is rejected, and if the significance is less than 0.05 (significant > 0.05) then  $H_0$  is accepted.

Table 2. Lay up shoot t-test from the right and left sides

Variable	Uji-t			Information
	count	df	Sig.	
Lay up shoot right-left side	-1,193	14	0,253	No Significant

Based on the results of statistical tests (table 2), the t-test value between the right and left side of the layup shoot has a calculated t value of -1.193,  $p = 0.253$ , because  $p > 0.05$  there is no significant difference in the lay up shoot from the right side. and left. Judging from the average values (table 1), the right side's average value is 8.60 and the left side's average value is 9.00 because the average value of the left side lay-up shoot is greater than the average lay-up value. upshoot the right side, then the left side is more effective in doing lay-up shoots.

The lay-up shoot is a technique that is often used in basketball and is most often chosen by attacking players (Hardhina, 2022). Today's athletes with all their subtlety have developed an astonishing number of shots while sliding, scything, twisting, and floating in the air by the rules of the game of basketball, a player who is carrying his ball at the time the final bounce of the ball is only allowed to add three steps, namely the first step, the second step and the third, ready to shoot the ball into the ring before the next foot lands on the floor. When doing a lay-up shoot, you have to have high confidence. This was stated by (Nunes et al., 2022) that if you want to be confident in your abilities, players can control their thoughts, feelings, and movement skills.

Basketball is a mental and physical game. Developing mental aspects is the key to improving the appearance and fundamental performance. The strategy for a team in facing a match is absolute. The lay-up shoot strategy is quite precise and efficient. Many events in a match are fundamental strategies for carrying out lay-up shoots. From this incident, it can be concluded that the incident was probably the result of the team's tactical plan. A coach's tactical and strategic abilities will have the potential to make their players' technical skills better, as well as develop their opponent-focused strategies.

Defensive strategy is an action that results in accurate task results, therefore players must make the right decisions during the match and be able to choose to make lay-up shoot movements correctly and accurately. This will result in better treatment effectiveness of other lay-up shoot movements, and thus a higher number of points will occur. The influence of the defensive strategy used by the opponent or zone defense will be pressure on players who usually complete an attack using a lay-up shoot, which seems to be a very important element of a basketball game (McCormick, 2014)

When a team is designing a good attack strategy for the team, what the coach must pay attention to is taking into account the potential within the team and a coach can implement tactics that allow each player to use their talents well and sequentially to complete as many actions as possible simultaneously. effective and efficient in making points (Gaetano et al., 2016). Performing a good lay-up shoot is when

the ball bounces moderately, not too flat, and not too high. A ball with a moderate bounce will be easier to control towards the target, the reflection will be thrown away vertically from the basketball hoop area, so it is possible for the ball to still enter after bouncing. The higher the ball bounces, the more difficult it is to control the ball towards the target. An athlete's training is very important when measuring the success of a shot or lay-up shoot. The more frequently you practice shooting at the ring, the more mature your lay-up shooting skills will be.

Apart from that, basketball cannot be separated from habits or habits, therefore the habit of the lay-up shoot technique in taking a shot also influences the success of putting the ball into the basketball ring. Therefore, the results of the lay-up shoot ability test from the right and left side of boys' basketball extracurricular members aged 11-14 years in Yogyakarta show that the boys' basketball team members are better at doing lay-up shots from the left side than the right side.

## **CONCLUSION**

Based on the analysis of the research results and discussion, it can be concluded that there is no significant difference in the ability to lay up shoot from the right and left sides between the ability to lay up shoot from the right and left sides of boys' basketball extracurricular members aged 11-14 years in Yogyakarta, but from The results obtained were that the lay up shoot on the left side was more effective than the lay up shoot on the right side. From what is known above and based on the research conclusions that have been presented, several suggestions can be given, namely for basketball teachers and coaches, should pay attention to the factors that influence the lay-up shoot movement when developing athletes or students. For students to add other exercises that affect their ability to lay up shoot from the right and left sides, such as muscle strength, hand-eye coordination, and so on. For future researchers, use a larger sample and control factors that can influence lay-up shooting skills from the right and left sides, such as body condition, psychological factors, and so on.

## **REFERENCE**

- Betty Retnowulan, R. R., & Kunta Purnama, S. (2017). The contribution of body height, arm length, arm muscle strength and leg power on the ability of free throw shoot of woman basketball athletes. *European Journal of Physical Education and Sport Science*, 3(3), 79–96. <https://doi.org/10.5281/zenodo.438121>.
- Conte, D., Favero, T. G., Lupo, C., Francioni, F. M., Capranica, L., & Tessitore, A. (2015). Time-motion analysis of italian elite women's basketball games: Individual and team analyses. *Journal of Strength and Conditioning Research*, 29(1), 144–150. <https://doi.org/10.1519/JSC.0000000000000633>.
- Csataljay, G., James, N., Hughes, M., & Dancs, H. (2012). Performance differences between winning and losing basketball teams during close, balanced and unbalanced quarters. *Journal of Human Sport and Exercise*, 7(SPECIALISSUE.2), 356–364. <https://doi.org/10.4100/jhse.2012.72.02>
- Donovan, M. (2010). *101 youth basketball drills. A&C Black..pdf*. (n.d.).
- Gaetano, R., Gaetano, A., Domenico, T., & Mario, L. (2016). Analysis of learning a basketball shot. *Journal of Physical Education and Sport*, 16(1), 3–7. <https://doi.org/10.7752/jpes.2016.01001>.
- Hardhina, O. (2022). Exercise Modification To Enhance Layup Shoot Abilities in Basketball Games. *International Journal of Basketball Studies*, 1(1), 17–24. <https://doi.org/10.31949/ijobs.v1i1.3726>.
- Hastuti, T. A. (2008). Kontribusi Ekstrakurikuler Bolabasket Terhadap Pembimbingan Atlet dan Peningkatan Kesegaran Jasmani. *Pendidikan Jasmani Indonesia*, 5(1), 45–50.
- Ibáñez, S. J., García, J., Feu, S., Lorenzo, A., & Sampaio, J. (2009). *Sergio J. Ibáñez.pdf*. July, 458–462.
- In, D. I., Evel, E. L., Bdelkrim, N. I. B. E. N. A., Haouachi, A. N. I. S. C., Hamari, K. A. C., & Htara, M. O. C. (2010). *P r c -l d e -l m b p*. 1346–1355.
- Lorenzo, A., Gómez, M. Á., Ortega, E., Ibáñez, S. J., & Sampaio, J. (2010). Game related statistics

which discriminate between winning and losing under-16 male basketball games. *Journal of Sports Science and Medicine*, 9(4), 664–668.

McCormick, B. (2014). the Relationship Between Lateral Movement and Power in Female Adolescent Basketball Play. *Arena-Journal of Physical Activities*, 0(3), 13–26. <https://www.uav.ro/jour/index.php/ajpa/article/view/421>.

Nunes, H., Iglesias, X., Del Giacco, L., & Anguera, M. T. (2022). The Pick-and-Roll in Basketball From Deep Interviews of Elite Coaches: A Mixed Method Approach From Polar Coordinate Analysis. *Frontiers in Psychology*, 13(March). <https://doi.org/10.3389/fpsyg.2022.801100>.

Putro, K. H., Siswantoyo, & Aman, M. S. (2020). Analysis of Effects of Service Quality and Loyalty on Interest Rates of Basketball Athletes in Sahabat Basketball Club Yogyakarta. *HOLISTICA – Journal of Business and Public Administration*, 11(2), 151–160. <https://doi.org/10.2478/hjbpa-2020-0025>.

Supervisor, S., & Conte, D. (2021). *Master Degree Program Of International Basketball Coaching Basketball Shot Typologies In Men And Women ' S Euroleague Confirmation Of Liability For The Regularity Of The Lithuanian / Foreign Language Final Master ' S Thesis Supervisor ' S Assessment*.

Till, K., Jones, B. L., Cogley, S., Morley, D., O'Hara, J., Chapman, C., Cooke, C., & Beggs, C. B. (2016). Identifying talent in youth sport: A novel methodology using higher-dimensional analysis. *PLoS ONE*, 11(5), 1–18. <https://doi.org/10.1371/journal.pone.0155047>.

Tomas, J. P. Q., Lucero, K. I., Ajero, C. J. P., & Thomas, R. J. V. (2023). Comparative Study on Model Skill of ERT and LSTM in Classifying Proper or Improper Execution of Free Throw, Jump Shot, and Layup Basketball Maneuvers. *Journal of Advances in Information Technology*, 14(3), 594–600. <https://doi.org/10.12720/jait.14.3.594-600>.

Torres-Unda, J., Zarrazquin, I., Gil, J., Ruiz, F., Irazusta, A., Kortajarena, M., Seco, J., & Irazusta, J. (2013). Anthropometric, physiological and maturational characteristics in selected elite and non-elite male adolescent basketball players. *Journal of Sports Sciences*, 31(2), 196–203. <https://doi.org/10.1080/02640414.2012.725133>.

Ward, P., Hodges, N. J., Starkes, J. L., & Williams, M. A. (2007). The road to excellence: Deliberate practice and the development of expertise. *High Ability Studies*, 18(2), 119–153. <https://doi.org/10.1080/13598130701709715>.