

Exercise Modification to Enhance Layup Shoot Abilities in Basketball Games

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Authors' contribution:

A. Conception and design of the study; B. Acquisition of data; C. Analysis and interpretation of data; D. Manuscript preparation; E. Obtaining funding

ABSTRACT

Aim that research wants to try implementing modifications to the form of training to improve lay-up shoot movement skills in basketball games for extracurricular students at Gegesik 1 Public Junior High School, Cirebon Regency. The method used in this research is the experimental method. The research sample of 22 students. The type of instrument used to measure the lay-up shooting ability in basketball. Based on result, it can be concluded that the t-count values of the pre-test and post-test (15, 578, and 26.581) are greater than the t-table values with a df of 21 of 1.721 or t-count values of $26.581 > t\text{-table } 1.721$ and $26,581 > 1,721$, and the probability value is Sig. 0.00 0.05, so the alternative hypothesis in this study is accepted. Based on the results of the theoretical study and statistical tests that the authors have carried out, the authors draw the conclusion that there is a significant effect of training modifications on the lay-up shoot ability of basketball games in extracurricular activities of students

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INTRODUCTION

The game of basketball is one of the game sports listed in the physical education subject curriculum. The game of basketball is taught from junior high school levels up to the university level. At the junior high school level, the game of basketball is also taught at Gegesik 1 Public Junior High School, Cirebon Regency. The game of basketball has the characteristic of putting as many balls into the opponent's net as possible. This is because the essence of the game of basketball itself is to put the ball into the net at the opponent's rim. According to Khoerun (Candra, 2018), the lay-up shoot is one of the most popular shooting tactics among basketball players because it is the simplest. Lay-up shots are made by taking the ball to the top of the ring, jumping toward the ring, and then putting the ball into the ring either through the rebound board or into the ring itself (Siahaan et al., 2019). According to Wissel (Riza et al., 2018), precision in shooting is the fundamental ability that must be practiced in lay-up shoots.

Basketball is a sport that is in great demand by students. Basketball training includes a variety of elements and is tailored to the training category (Sofyan & Budiman, 2022). However, in reality, there are still many students who do not master the techniques of playing basketball, especially the lay-up shooting technique. This is because students sometimes experience difficulties when taught material regarding techniques in basketball games, especially the layup shoot. Students regard the layup and shoot technique as difficult because it consists of a series of movements that require coordination and a dynamic level of harmony.

Conditions at Gegesik 1 Public Junior High School, Cirebon Regency, make basketball one of the sports that get more priority from the school. This is evidenced by the availability of facilities and management, like basketball courts and rings that are standard size. The learning process is taught in intracurricular activities and includes physical education and extracurricular subjects, which are held in the afternoon.

To be able to play basketball well, each player must master the basic techniques of the game. These include passing, receiving the ball, dribbling, and shooting. Therefore, as a teacher or coach, practicing basic basketball techniques is very fundamental so that students are able to play basketball. The obligation of a basketball coach, among the main ones, is to teach the basic techniques of the game (the fundamentals) of basketball as well as possible.

Because of the importance of the lay-up in basketball, teachers and coaches must provide appropriate training based on the needs of their students. In the process of practicing basketball, students should be introduced to a series of movements that are easy to remember and easy to do. This will have an impact on the results of continued continuous motion to achieve motion coordination that is relevant to the ability to lay up and shoot in basketball. When the ability of the series of movements is correct, it will be easy to accept and perform the next series of movements.

The issue is that students don't grasp how to employ the lay-up shoot technique since, up until now, learning has primarily been focused on the teacher, preventing students from being innovative in their knowledge acquisition. Naturally, this lack of comprehension will also affect the kids' lay-up shooting abilities (Sofyan, 2020). As a result, the teacher or coaches must be adaptable in order to determine the exercise by modifying the appropriate form of exercise for their students. Learning basic lay-up techniques means learning accuracy. The most basic thing that must be considered when practicing accuracy in a series of lay-up shoot movements is that students must be able to remember the movements that are formulated. This means that when students are able to remember a series of movements, they will be able to easily apply these movements, including the lay-up and shoot steps.

Based on the observations made by the author through interviews with basketball extracurricular coaches, there were 22 students at Public Junior High School, Cirebon Regency, who took part in extracurricular basketball game activities. In the following, the author briefly describes the empirical data on the condition of basketball students' abilities related to the ability to lay up shots. Overall, they are still classified as standard, even below average, but have the opportunity to have good abilities with routine training that is carried out in a planned and sustainable manner. The condition of students' abilities regarding the ability to lay up and shoot in basketball games in general has constraints on the series of motions. This made the students give reasons why it was difficult to do; sometimes they felt they forgot about the lay-up shoot sequence. Based on a sample of 22 students who were observed by the author with the coach's permission, it was found that the initial test results of the author's students when accompanying the coach, who

was conducting a lay-up shoot ability test in basketball games as a whole, were still low. The low ability of students is indicated by the number of errors during the initial phase, the implementation phase, and the final attitude phase. So the authors are interested in realizing expectations by planning research so that they can find out the effectiveness of training as an alternative in solving problems with modifications to the form of basketball training, especially in the lay-up technique.

Based on the background described above, the researcher wants to try implementing modifications to the form of training to improve lay-up shoot movement skills in basketball games for extracurricular students at Gegesik 1 Public Junior High School, Cirebon Regency, by imitating the movements of kangaroos, deer, and giraffes. The author hopes that the advantages of the new exercise modification will provide students with an understanding of how to have the concept of motion to be able to get used to doing layups with easy-to-remember motion patterns. Because imitating the animals Kangaroo, Deer, and Giraffe will allow students to easily perform layups that they will remember in a basketball game.

METHODS

Research methods are The research method is a scientific method used to obtain data with a specific purpose. The method used in this research is the experimental method. Furthermore, the experimental method is a method used to look for the effect of certain treatments on others under controlled conditions. The purpose of experimental research is to investigate possible causal relationships by subjecting one or more experimental groups to one or more treatment conditions and comparing the results with those of one or more control groups that are not subjected to treatment conditions.

Research design is a process of collecting and analyzing research data. In this study, the authors used a quantitative approach research design technique by first holding a pre-test, then giving treatment, and afterward holding a post-test. So that the ability of the initial and final samples can be seen and the level of difference quantified. The research design was carried out by administering tests and measurements, which the researcher directly observed in the field. Tests and measurements carried out include pre-test and post-test:

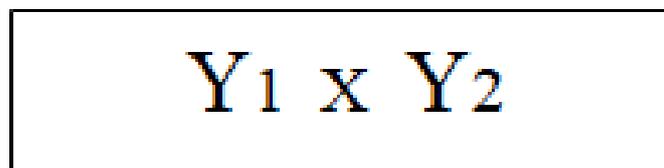


Figure 1. Research Design

To determine the size of the sample, it is necessary to carry out various considerations related to the variables studied. The sample used in this study were students participating in basketball extracurricular activities at Gegesik 1 Public Junior High School, Cirebon Regency, for the 2022-2023 academic year. Because the study population consisted of 22 students (less than 30), the authors took the entire population as a sample; in this case, a total or saturation sampling technique was used (total sampling). The sampling technique was chosen a total sample can be used in case studies with specific and very homogeneous characteristics and populations. The population size is

usually less than 30 subjects, so the research population automatically becomes a research sample of 22 students.

In collecting data, a measurement tool is needed, so that by using this tool, data is obtained, which is the result of measurement. Nurhasan (2013) explained that the test is a tool used to obtain data from the object to be measured. In research, measurements were carried out twice, namely at the beginning and end of the study or before and after the treatment was given. The type of instrument used to measure the lay-up shooting ability in basketball.

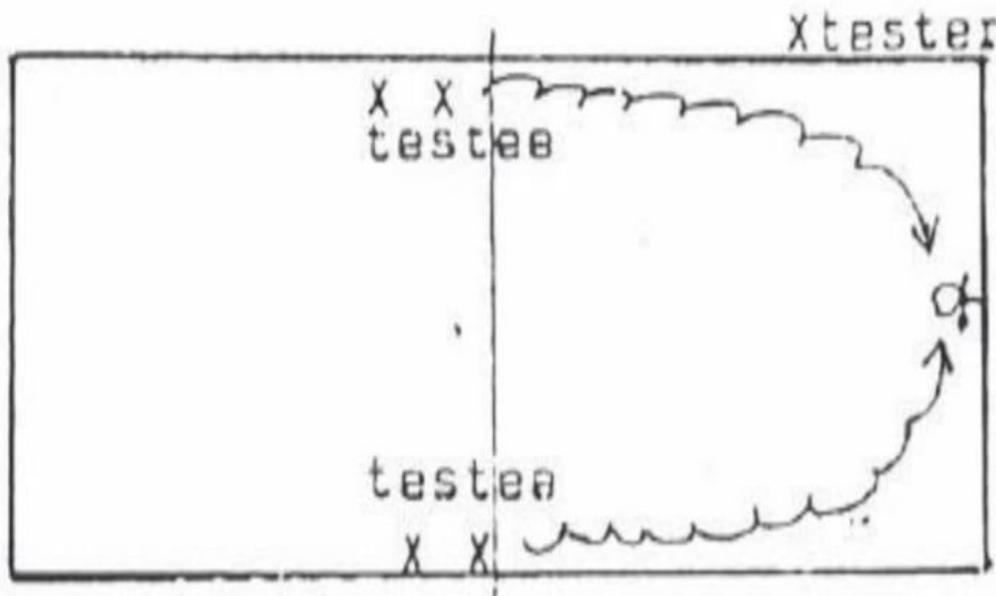


Figure 2. Implementation of the Lay Up Shoot Test

Hypothesis testing uses the t-test with the help of the SPSS 17 program, namely by comparing the means between the pre-test and post-test groups. If the value of t count is less than t table, then H_a is rejected; if t count is greater than t table, then H_a is accepted. To test the hypothesis in this study, researchers used the help of the SPSS version 17 program.

RESULTS

The results of the research data obtained were carried out by the authors using research instruments through a test of the ability to lay up and shoot in a basketball game. As for the research data collection process, it was carried out with pre-treatment pre-test activities and post-treatment post-test activities by recording the results of increasing the ability to shoot layups in basketball games obtained from the research sample. The data collection refers to the research variable under study, namely the effect of training modifications on the ability to lay up and shoot basketball games in extracurricular activities of students at Gegesik 1 Public Middle School, Cirebon Regency, 2022–2023 Academic Year.

Description of Mean and Standard Deviation

The results of data calculations through the SPSS version 17 window program can be explained by the average value and the standard deviation value of the minimum and maximum values in Table 1 as follows:

Table 1. Description of the Average and Standard Deviation

Lay up shoot ability in Basketball Game	N	Minimum	Maximum	Mean	Std. Deviation
Prestest	22	2,00	5,00	3,1818	,95799
Posttest	22	4,00	7,00	5,4545	,96250
Valid N	22				

Source: Results of Data Processing

Statistical description According to Table 1, the author's average ability of students in the layup shoot prior to the application of the exercise modification treatment has the lowest average value of 2 and the highest average value of 5. While the ability of students in the layup shoot after the application of the exercise modification treatment has an average value with the lowest value of 4 and the highest value of 7, This means that there is a significant difference in the average value from an average value of 3 to an average value of 5. This proves that there is a significant increase from before and after given the application of the paired training treatment for the ability to lay up and shoot students for extracurricular activities in basketball games at Gegesik 1 Public Middle School, Cirebon Regency, in 2022.

After the average value and standard deviation are known, the next step is to calculate the distribution of the data from the initial test and the final test of the lay-up shoot ability in basketball games, whether they are normally distributed or not. For more details about the data normality test for the ability to lay up and shoot a basketball game for extracurricular activity students at Gegesik 1 Public Middle School, Cirebon Regency in 2020, it can be seen in Table 2 below:

Table 2. Pretest and Posttest Data Normality Test

Lay up shoot ability in Basketball Game	Kolmogorov-Smirnov ^a			Significance testing rules	Information
	Statistic	Df	Sig.		
Prestest	,441	4	.200	0,200 > 0,05	Normal
Posttest	,285	6	,200	0,200 > 0,05	

Source: Results of Data Processing

Based on Table 2, the author can explain that the data on the results of the initial and final tests of the ability to lay up and shoot the basketball game of students at SMP Negeri 1 Gegesik, Cirebon Regency, have a standard category of results that meet the normal testing rules based on Kolmogorov statistics for the initial test of $0.20 > 0.05$ and the final test of $0.20 > 0.05$ (normal significance). So the results of the data from the two tests regarding the ability to lay up and shoot a basketball game for students at Gegesik 1 Public Middle School, Cirebon Regency in 2022 have normally distributed data, and then the author tests the homogeneity of the data so that they can find out the success of the research towards testing the hypothesis, whether it is acceptable or not.

After it is known that the data from the ability of the sample has variants that are normally distributed and homogeneous, the next step is to make a difference between the results of the initial test and the results of the final test through the t-test, which is related to the results of the ability to lay up and shoot basketball games in students at Gegesik 1 Public Middle School, Cirebon Regency in 2022. Based on Table 3, it can be concluded that the t-count values of the pre-test and post-test (15, 578, and 26.581) are greater than the

t-table values with a df of 21 of 1.721 or t-count values of $26.581 > t\text{-table } 1.721$) and $26,581 > 1,721$, and the probability value is Sig. 0.00 0.05, so the alternative hypothesis in this study is accepted. This means that implementing modified exercises will have a significant impact on students' ability to lay up and shoot a basketball game in extracurricular activities at Gegesik 1 Public Middle School, Cirebon Regency in 2022. On the results of the initial test and the final test after being given a training modification treatment on the ability to lay up and shoot a basketball game, the authors tested the proposed hypothesis, which can be explained as follows:

Table 3. T test (Paired Samples Test)

Lay up shoot ability in basketball game	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Pretest	15,578	21	,000	3,18182	2,7571	3,6066
Posttest	26,581	21	,000	5,45455	5,0278	5,8813

Source: Results of Data Processing

DISCUSSION

Based on the results of the data analysis, the initial test averaged 2, and the final test averaged 4. It can be concluded that there was a significant effect of the modified exercise treatment on the ability to lay up and shoot basketball players for extracurricular activities at Gegesik 1 Public Middle School, Cirebon Regency, in 2020. t-count results ($15.578 > t\text{-table } 1.721$ and $26.581 > t\text{-table } 1.721$): $dk = 22 - 1$ or $22 - 1 = 21$ at 95% confidence level (0.05) yielded a t-table value of 1.717, indicating that the research hypothesis is accepted.

The implementation of basic lay-up shoot technical skills in basketball games is very dominant in constructing attack patterns through ball control, either individually or in pairs on a team. A lay-up shot, according to Sodikun (2002), is a type of shot that begins with catching or dribbling the ball, then resting on one foot and continuing to move the other foot forward, then resting on one foot and jumping as high as possible with the ball towards the basket (basketball).

The ability to lay up and shoot the ball can be well mastered if practiced in pairs using various variations and combinations of players in an effort to control the ball while preparing attacks against opponents. This means that good ball control is considered successful if the player can control and master the ball to be passed to his own friend without being hindered by the opponent.

Empirical evidence from the results of this study is in line with the opinion or theory put forward that training modifications should regulate the learning material being practiced, starting from easy to more difficult, or from simple to more complex. And then the definition of modification put forward modification can be interpreted as an effort to make changes with adjustments both in terms of the physical material (facilities and equipment) as well as in purpose and method (method, style, approach, rules, and assessment). As is the case in this study, in each movement, there are easy movements and difficult movements, and adjustments are made to the form of the exercise in order to improve lay-up shoot skills in basketball games. The training modifications are in the form of animal movements and shapes such as kangaroos (the preliminary stage), deer (the execution stage), and giraffes (the stage of releasing the ball towards the hoop). The

phase of imitating the kangaroo animal is a modification of the exercise in carrying out mastery of carrying a basketball as the first step for the procession of the layup shoot movement, which functions as mastery of the ball. And the phase of imitating the deer animal is a modification of the jumping exercise by carrying a basketball as a continuation of the procession of the lay-up shoot movement, which functions as the fulcrum of the jump to reach the hoop stance to shoot the ball. While the phase of imitating the giraffe animal is a modification of the exercise of releasing the ball or shooting the ball towards the basketball hoop as the ultimate goal of the procession of the layup shoot movement, which functions as a shooting ball.

In conclusion, this modification provides an opportunity for a series of layup and shoot movements that are easier to imitate and learn. Then the results of the series of movements carried out can serve as a pattern of initial support, follow-up movements, and the ability to be in a position to put the ball into the basketball hoop with an effective wrist flick. This means that the modified layup shoot training pattern that was developed has its own characteristics, so it can be done properly and correctly.

Exercise is a physical activity according to certain methods and rules that are carried out systematically over a relatively long period of time, and the load increases progressively. The same thing regarding training was put forward that training is a systematic work process that is carried out repeatedly with an increasing training load. Meanwhile, exercise is a systematic participation in training that aims to increase physical functional capacity and exercise endurance. The meaning of training, is that all efforts result in an increase in ability in sports competitions.

In this study, the exercises were carried out in eight meetings with systematic movements, so it can be concluded that using the exercise method, movement patterns and animal shapes can influence lay-up and shoot skills in basketball games. This is in line with behavioristic theory, where the concept of learning is based on stimulus and response. A person is considered to have learned something if he has been able to show changes in behavior. Based on this theory, success can be seen if there is a change in behavior in the form of attitudes, knowledge, and skills.

CONCLUSION

Based on the results of the theoretical study and statistical tests that the authors have carried out, the authors draw the conclusion that there is a significant effect of training modifications on the lay-up shoot ability of basketball games in extracurricular activities of students at Gegesik 1 Public Middle School, Cirebon Regency, in 2022.

Some suggestions that the writer can make in connection with the research that the writer has done are as follows: 1) Coaches and teachers are expected to be able to apply exercise modifications and other training strategies in an effort to improve basketball playing skills, especially for other basic technical materials to support actual play in inter-school basketball matches; 2) For schools, it can add value to achieving non-academic achievements on the sports achievement track, specifically for basketball games; 3) for other researchers to be more effective and efficient in conducting further research by taking into account costs, time, location, and population, as well as larger and more relevant research samples.

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CONFLICT OF INTEREST

Authors declare that they have no conflicts of interest.

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