

## THE INFLUENCE OF CHAIR DROP TRAINING ON THE STUDENTS VOLLEYBALL SMASH ABILITY

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### **Abstract**

*The problem in this study is that the volleyball smash skills of extracurricular students at SMA Negeri 5 Palembang are still not maximal. The purpose of this study was to see how much influence the up and down bench training had on the improvement of the volleyball smash skills of extracurricular class X students of SMA Negeri 5 Palembang. This research is included in the type of quantitative research with research methods using Quasi Experiments. The sample in this study were 20 class X extracurricular students. The results of this study indicate that there is a significant effect of the exercise up and down the bench on the volleyball smash ability of students with  $t$ -count 2.5025 and  $t$ -table 2.093. Which shows that the  $t$ -count is greater than the  $t$ -table so that there is an effect of bench-up and down training on the smash ability of volleyball extracurricular students.*

**Keywords:** Exercise, Volleyball, Smash

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### **INTRODUCTION**

According to Law Number 3 of 2005 concerning the National Sports System, physical education and sports are carried out as part of an orderly and continuous educational process to acquire knowledge, personality, skills, health and physical fitness. Physical education and sports in question are sports and health physical education (penjasorkes) as they are in the curriculum used today. Physical education and sports are an inseparable part of general education. The aim is to help children grow and develop naturally in accordance with the goals of National education, namely to become fully Indonesian human beings.

Physical Education is an activity carried out in school hours, in order to broaden horizons, and increase knowledge values in various things such as

knowledge about sports (Arisman at el., 2021). Physical education learning activities at school can be used as a place to accommodate and develop the potential of these students. One of the materials in physical education learning is volleyball.

Volleyball in Indonesia is well known by the public, from the lower, middle to upper classes. Volleyball today is not only a recreational sport but has become an achievement sport. Volleyball for performance is a sport that develops athletes' talents to excel at regional, national and international levels. Volleyball is now professionally managed, this can be seen from the emergence of volleyball competitions in Indonesia, such as livoli and proliga. This championship between volleyball clubs in Indonesia is routine every year. In the current era, every proliga participant has brought in foreign players whose body posture is indeed better than local athletes. Good physical quality really supports the various techniques in volleyball. The arrival of foreign players is a competition and a challenge for local players to train better in order to remain competitive (Okilanda at el., 2021).

Volleyball game consists of several techniques, including techniques using the ball which include serving, over passing, under-passing, smash, bait and block (Suharno, 1981). of some of these techniques, the smash is one of the most important techniques in volleyball. This technique is usually used to attack and kill the opponent by throwing the ball so that it falls right over the empty opponent's area. This very hard shot is usually made in conjunction with the jumping motion high enough that the hand exceeds the height of the net. In the current development of volleyball, the ability to smash is very important because smash is an attack in a ball game that aims to get points.

Smash is a technique of hitting the ball very hard and with direction. This technique is usually used to attack and kill the opponent by shooting the ball far right above the empty opponent's area. This very hard shot is usually carried out in conjunction with the jumping motion high enough for the hand to exceed the height of the net. This technique is usually done when the opponent is about to turn off and is carried out in the final stage of the attack. The technique of combining the

strength of two body muscles, namely the muscles of the arms and legs or legs (Mikanda Rahmani, 2014).

To do a good smash, several factors need to be considered: prefix, repulsion, hitting and landing. A good smash is one that is done by hitting the ball strongly and taking a sharp downward dive where the hand is in full contact with the ball at the top so that the ball can fly at high speed.

The factors that affect the smash according to the authors include:

- 1) Strength of the arm and shoulder muscles
- 2) Strength of leg muscle power
- 3) Flexibility on the torso

However, when the researchers made observations, it was found that:

- 1) The student's ability to smash is not optimal
- 2) Lack of leg muscle power
- 3) Lack of training methods

The exercises that can increase leg muscle strength include knee tuck jump training, pike jump training, jump to box training, skipping training, depth jump training, stair climbing and bench training. However, in this case the writer chose to provide training for going up and down the bench because the exercise up and down the bench was a simple exercise and the tools used were easy to get (Putra et al., 2020).

From the description above, it can be concluded that the students' lack of ability to do smashes is due to a lack of jumping height and a lack of training methods. To improve the results of the smash, the researcher tried to give him an up and down bench exercise. The purpose of this exercise is to increase the explosive power of the leg muscles, because having good leg muscle strength will affect the increase in the ability to smash.

## **METHOD**

The form of research used in this research is quantitative research with a quasi-experimental method, with a pre-test post test design. According to (Narbuko Ahmadi, 2017) Quasi-experimental research aims to obtain information which is an estimate for the information that can be obtained by actual experiments in

circumstances that make it impossible to control or manipulate all relevant variables. The researcher must clearly understand what compromises exist in internal validity. design and live up to those limitations.

According to (Sugiyono, 2012) Population is a generalization area consisting of objects or subjects that have certain qualities and characteristics set by researchers to study and draw conclusions. The population in this study were 27 extracurricular students class X SMA Negeri 5 Palembang.

According to (Sugiyono, 2012) The sample is part of the number and characteristics possessed by this population. In this study using purposive sampling technique (sampling with a specific purpose), namely male gender and only class X extracurricular students, this is because extracurricular class X students are more active than class XI and XII. Because the population is large, and researchers cannot possibly study everything in the population, for example because of limited funds, energy and time, the sample taken in this study was 20 people.

In quantitative research, data analysis is an activity after data from all respondents or other data sources have been collected. Activities in data analysis are: grouping data based on variables and types of respondents, tabulating data based on variables from all respondents, presenting data for each variable studied, performing calculations to answer problem formulations, and performing calculations to test hypotheses that have been proposed. For research that does not formulate a hypothesis, the final step is not taken. Data analysis techniques in quantitative research use statistics.

### **Normality test**

The data normality test is carried out to determine the normality of the data or the data is in a normal state. The data normality test in this study used the Lillieforse (Sujana ,1996) method. In this thesis (Romei Hadi, 2010) to find out whether the study population is normal or not.

### **RESULT AND DISCUSSION**

This research was conducted at SMA Negeri 5 Palembang accredited A. which is located on Jalan Laksamana R.E. Martadinata / GotongRoyong Sungai Buah, Kalidoni District, IlirTimur II Palembang. This school is located (far from

the main road) in the community circle with a land area of 16,665m and a building area of 2,332 m. SMA Negeri 5 Palembang was founded in 1977 and operated in 1977 Land Status Owned Alone. Learning activities at SMA Negeri 5 start from the morning at 6:30 a.m. to 4:00 p.m. in the afternoon. school schedule starts from Monday to Friday.

This research was conducted in a volleyball field in SMA Negeri 5 Palembang from 2 August to 6 September 2019. The sample in this study were 20 class X male extracurricular members, this research activity starts from 15:30 WIB until 17:00 WIB. The initial activity in this study was that students did a pre-test (pre-test) to do a smash. Furthermore, students were given treatment, namely exercises up and down the bench with a frequency of training 3 times a week. This bench up and down exercise aims to improve the smash results on the final test (post test) in the study.

This study aims to determine whether or not there is an effect of Bench Up and Down training on smash ability. The data collection in this study used an instrument test. The test instrument in this study was the Nurhasan smash test.

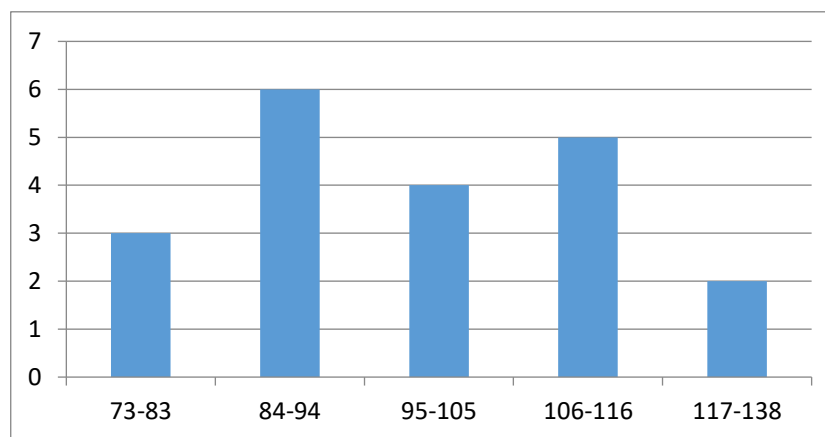
### Description of the Preliminary Test Data (Pre Test)

Before being given treatment in the form of up and down bench exercises, students first take a pre-test (pre-test) by doing a smash test

**Table 1.** Pre Test Smash Result Data

NO	5X EXPERIMENT		Value of the sum of goals and time
	TARGET	TIME	
1	7	8,7	89
2	10	8,9	107
3	9	8,5	92
4	6	8,4	77
5	11	8,9	111
6	8	8,8	96
7	12	9,6	135
8	7	9,1	100
9	5	8,8	84
10	9	8,8	101
11	14	9,4	138
12	8	9,2	107
13	7	9	98

14	6	8,8	88
15	10	9,2	116
16	8	8,1	77
17	5	9,2	95
18	11	8,7	106
19	7	8,7	89
20	8	8,7	94



**Figure 1.** Histogram of the Pre Smash Test Result Bar

### Description of the Final Test Data (Post Test)

After students take a pre-test and are given treatment in the form of bench-climbing exercises, then students take a post-test, which is a smash test.

**Table 2.** Post Test Smash Result Data

NO	SKOR 5X Trial		The sum of the goals and time
	Target	Time/Second	
1	12	7,2	76
2	14	7,3	86
3	14	7,6	98
4	9	7,3	69
5	16	7,5	101
6	12	7,6	91
7	11	7,9	99
8	15	7,7	105
9	16	7,9	116
10	13	7,7	98
11	9	8,2	104
12	17	8	123
13	18	7,9	123
14	16	7,7	108
15	10	7,9	96



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16	11	7,5	84
17	18	8,1	130
18	13	7,6	94
19	9	8	96
20	14	7,6	98

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## Discussion

Based on the results of the research it was found that there was an effect of bench-up and down training on the volleyball smash ability of extracurricular grade X students of SMA Negeri 5 Palembang. This is evidenced by the research findings that  $t_{count}$  is greater than  $t_{(table)}$  (2.5025 2,52.093). The effect of up and down bench training on the ability of this smash is that it shows that the quality of training is tested significantly. Through a continuous and consistent training program, students experience a good improvement in smashing.

Based on the results of the research carried out above, it can be concluded that the exercise of going up and down the bench can increase the strength of the leg muscles so that it can increase the ability to smash, the leg that has power will certainly produce a high jump when doing a smash so it will be difficult for opposing players to anticipate.

Various types of exercise can increase leg muscle strength, in this study the researchers took one form of exercise that can increase leg muscle strength, namely up and down bench exercises. Exercise up and down bench According to Donald & Myer (in journal of residu, 2013) exercise up and down bench is an exercise to jump on a block then jump back and forth like the initial stance using both legs together. Bench ups and downs are a simple form of plyometric exercise to increase leg muscle power. According to Dekdikbud (in the journal IPJ, 2000) Going up and down the bench is standing in front of the bench with your feet and body facing the bench, get on the bench using one leg, after the body is on the bench then come back down with one leg too, do it by alternating between legs right and left.

The advantages of up and down bench training are that it helps build leg muscles, leg muscle endurance, leg strength and leg muscle explosive power in a simple way. Not only reaches the lower legs, but this exercise is also effective for

cutting fat in the area of the hips, abdomen and thighs. The disadvantage of up and down bench training is that the training is limited to increasing leg muscle strength and explosive power.

According to (Sukirno, 2012) the game of volleyball which means hitting the ball is beaten before it falls to the ground. The attraction is that each team may play the ball twice in its own area and the third must be crossed to the opponent's area by over the net (net) that was installed.

Smash is a technique of punching hard and deadly towards the opponent, this technique aims to get points or points in the volleyball game. The procedures for implementing the smash are as follows:

**1) Prefix**

Stand with one foot behind according to individual habits depending on normal smasher or left-handed smasher. Take one step forward for 2 to 4 steps, arms begin to move backward, gradually lower body weight to help with repulsion.

**2) Refusal**

Step on the next leg, until the feet are almost parallel with one foot slightly forward slightly to brake the forward motion in preparation for a vertical jump. Swing your arms back and up as much as you can, legs bent so that the knees make an angle of  $\pm 110$  degrees, the body to jump with more body weight rests on the front leg.

**3) Jump**

Start jumping with your heels and toes on the floor and swinging your arms forward as your feet push up. The soles of the feet, wrists, hips and torso are all moved in harmony, which is the perfect series of motion, explosive movements and vertical leaps.

**4) Hit the ball**

The distance of the ball in front of the reach of the hitting arm, immediately flick the arm behind the head and quickly flick forward the length of the arm is extended and the highest against the ball. Hit the ball as fast and as high as possible, hit the ball with the palm of the hand just above the center of the upper



ball The wrist is actively kicking forward with the palms of the hands and fingers covering the ball. After hitting the ball the hitting arm makes a further movement towards the midline of the body followed by bending body movements. The movements of the arms, palms, bodies, non-hitting hands and feet must be harmonious and explosive to maintain balance while in the air. Correct hitting will result in a hard and fast ball descending to the floor.

##### 5) land

landed with both kai flat. Flex your knees when landing to reduce the impact of your feet on the floor, land with your toes or the soles of your forefoots and lean forward, try to make the landing for both feet almost the same as where you jumped (Sukirno, 2012)

Thus, the exercise up and down the bench can improve the student's ability to do the smash, this can be seen from the results obtained by an average pre-test of 8.4 while the post-test on average is 13.35, then to test the effect of up and down bench training on smash ability. Volleyball in extracurricular class X SMA Negeri 5 Palembang, researchers used the t-test with a result of 2.5025. Based on the criteria for testing the hypothesis, namely reject  $H_0$  and accept  $H_a$  if  $t_{(count)} > t_{table}$  at the significant level  $\alpha = 0.05$  or accept  $H_0$  and reject  $H_a$  if  $t_{(count)} < t_{table}$  at the significant level  $\alpha = 0.05$ . Because  $t_{(count)} > t_{table} = 2.5025 > 2.093$  then  $H_a$  is accepted and  $H_0$  is rejected, or in other words, there is an effect of going up and down bench training on the volleyball smash ability of class X extracurricular students of SMA Negeri 5 Palembang.

## CONCLUSION

Based on the results of data analysis that has been carried out in this study, the researcher concludes that there is an effect of up and down bench training on the volleyball smash ability of extracurricular grade X students of SMA Negeri 5 Palembang. This is evidenced by the results of research findings which show that t count is greater than t table ( $2.5025 > 2.093$ ).

Based on the findings of the above research, various things that need to be suggested are as follows: For Trainers / Teachers In order to be able to provide a

menu of up and down bench exercises in improving the smash skills of volleyball extracurricular students.

For student To be diligent in doing exercises, especially up and down bench exercises to improve your smash skills in playing volleyball. For schools In order to support student training through the fulfillment of volleyball facilities and infrastructure for students.

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