



## The Effect of Dumbbell Load Training on Straight Block Speed on Muay Thai Athletes Unsyiah Banda Aceh

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### Abstract

*Based on the results of observations at UKM Unsyiah, not all athletes from UKM Muay Thai Unsyiah can hit "straight" well and quickly. There are still many who make shots that are not directed, not on target, and weak on the targets they do hit. This situation is caused by the lack of support from the physical ability of the athlete and the lack of mastery of hitting techniques properly and correctly. In addition, it was found that around 80% of beginners experienced weakness when hitting straight, which was caused by weak weight training. The purpose of this study was to determine the effect of dumbbell weight training on the speed of straight strokes in the Unsyiah Muay Thai Student Activity Unit athletes. This research method uses quantitative research using a correlational technique design. The sample used was the UKM Muay Thai Unsyiah athletes, totaling eight people, consisting of four male athletes and four female athletes. The results showed that dumbbell weight training had an effect on the speed of straight strokes in the athletes of UKM Muay Thai Unsyiah. Then, from the calculation of the correlation coefficient of the data, the value of the effect of dumbbell weight training on the speed of straight strokes is 0.92, where the interpretation of the correlation coefficient lies in a high level of influence (there is an effect). The percentage of the correlation coefficient is 84.64%, which means that dumbbell weight training (X) contributes to the speed of straight strokes (Y) by an amount of 84.64% and the remaining 15.36% is influenced by other factors. The results of this study mean that the better the straight stroke speed of an athlete, the better the results are obtained from dumbbell weight training.*

**Keywords:** Dumbbell Weight Training, Straight Blow, Muaythai.

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## A. Introduction

Nowadays, in addition to physical fitness, exercise has become part of a healthy lifestyle that is lived by many people. Martial arts as a sport is not something new. The number of classes opened for various existing martial arts shows the interest of the Indonesian people in this sport ([Kholis, 2016](#)). In particular, the sport of Muay Thai and at the same time martial arts has quite a lot of fans in Indonesia ([Nilasari et al., 2020](#)).

The martial arts sport has brought the names of several Indonesian boxers to the international arena. As a sport that is quite well known and has many enthusiasts, its existence as a sports facility is quite popular in the community ([Syukriadi et al., 2021](#)).

Various types of martial arts sports such as Karate, Tae Kwon Do, and others also have their charm for the public who love martial arts. But of course, the interest of boxing lovers to train like an athlete is certainly not small, or just to maintain physical fitness ([Nilasari et al., 2020](#)).

In a boxing match, the technique often and always used by boxers in carrying out attacks to get points is the punch technique. This punching technique consists of several kinds, including punches such as Jab, straight, hook, and uppercut ([Yusuf, 2015](#)). Of the four types

of strokes, only one type of stroke is the point of attention in this research study, namely the straight stroke.

The type and form of a straight punch are one of the target techniques aimed at the facial area up to the stomach border with the impact area of the first end of the batting team ([Los Arcos & Martins, 2018](#)). The execution movement is relatively easy to practice or demonstrate compared to other punching techniques, so many boxers use this punching technique in every match ([Los Arcos & Martins, 2018](#)).

Besides that, boxers who have a very fast straight stroke speed can do it repeatedly and require concentration to hit the right target. Boxers can collect a lot of points during a match, and can provide a great opportunity to become a winner in a match. If the boxer does not experience a KO, then the winner is determined by the one who has the most points ([Los Arcos & Martins, 2018](#)).

The Unsyiah Muay Thai Student Activity Unit is a Student Activity Organization of Syiah Kuala University that was established on March 10, 2016. It was founded by Aulia Rahman who is one of the Muay Thai athletes who once represented Indonesia at the Muay Thai World Championship. The Unsyiah Muay Thai UKM was established to develop

this Muaythai sport at the student level and in the surrounding community. The Unsyiah Muay Thai UKM is not only a place to improve physical and spiritual health but also a place to channel the talents and interests of an individual. The Unsyiah Muay Thai UKM is open not only for individuals who already have skills but also for individuals who are new and want to know (beginners) this Muay Thai martial art.

Based on the results of observations at UKM Unsyiah, shows that not all athletes from UKM Muay Thai Unsyiah can do straight strokes well and quickly. There are still many who make punches that are sometimes undirected and weak and do not hit the target. This situation is thought to be caused by the lack of support from the boxers' physical abilities and lack of good mastery of the punch technique. In addition, it was found that around 80% of beginners experience weakness when hitting straights, especially when doing the straight stroke technique, which is caused by weak dumbbell weight training.

Whereas in Muay Thai sport, dumbbell weight training is very necessary to hit straights with hard punches ([Khakiki & Wahyudi, 2022](#)). However, fans of Muay Thai are not only male athletes, even female athletes are interested in practicing Muay

Thai because it has many advantages over other martial arts ([Wicaksono & Hariyanto, 2021](#)).

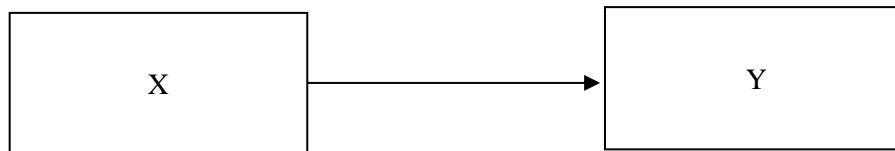
Based on the problems mentioned above, one of the efforts made to increase the concentration on the type of straight stroke speed for the athletes of UKM Muaythai is to improve the quality of physical condition. According to ([Bompa, 2011](#)) defines: the quality of exercise or the physical condition of athletes is a very systematic model and effort to improve the functional abilities of athletes by the demands of the sport they are engaged in so that they can achieve the standard figures as determined.

Increasing the speed of the stroke, it can be done by providing a directed, regular and systematic physical training load through the application of a method or form of exercise that focuses on the direction of the speed of the stroke and must be guided by the values and principles of exercise ([Mustain & Akbar, 2021](#)). Likewise, the push-up exercise model and dumbbell weights are a form of physical exercise and weights, so push-ups and dumbbell exercises are used as a tool for the load in the implementation of the formation of the quality of the exercise ([Persadanta et al., 2020](#)).

Seeing the various problems that occur in Muaythai athletes, especially in straight

strokes, both in terms of training and the quality of training to improve straight strokes. Therefore, it is necessary to pay attention to the efforts of qualified trainers who have adequate equipment and have met the standards in Muaythai. Likewise, with a person's physical ability to carry out a type of activity, the athletes of UKM Muaythai, especially their physical condition, will greatly affect their movement ability which will determine the achievement of peak performance.

Based on a review of these problems, it is necessary to conduct research related to dumbbell weight training in Muay Thai athletes with the title: "The Effect of Dumbbell Weight Training on Straight Stroke Speed in Muaythai Unsyiah Athletes



Information :

X = dumbbell weight training

Y = Straight stroke speed

The dumbbell weight training test and the element of straight stroke speed will be held at UKM Unsyiah, Kec. Syiah Kuala, Banda Aceh. This research is planned to be carried out on Wednesday, December 30, 2020.

The population used in this research study was the athletes of UKM Muay Thai

of UKM Banda Aceh".

## **B. Method**

The form of the approach used in this research study is a quantitative approach. This study aims to the extent to which the variables in one variable are related to variations in other factors. This type of research is correlational. This study was designed to determine the magnitude of the effect of the independent variable (dumbbell weight training) on the dependent variable (Straight stroke speed in SME Muaythai Unsyiah Athletes. The research design can be described in the following scheme:

Unsyiah, amounting to 8 people consisting of 4 male athletes and 4 female athletes conducted by purposive sampling. The reason for choosing this population is

- a. the population has received dumbbell weight training from the same trainer.
- b. Willing to be a sample in research.

c. Aged around 18-27 years.

Data collection is done directly to the research sample. This research will be carried out for 4 weeks at the UKM Muay Thai Unsyiah. The stage in the implementation of data collection in this study consisted of 3 treatments, namely: initial test treatment, treatment/administration of dumbbell exercise programs, and final test treatment. The data analysis technique was carried out by collecting data, testing analysis, and testing hypotheses.

From a series of field research conducted on the SME Athlete of Muaythai Unsyiah, research data was obtained in the form of straight stroke speed test data. Straight Stroke Speed Test Results From Dumbbell Training Program The data used in this research is to include all athletes of UKM Muay Thai Unsyiah in 2020, who have met the requirements of a sample of 8 athletes. 1. Calculating the Average Straight Stroke Speed Pretest From the results of the straight stroke speed test, the following research pretest score data were obtained:

### C. Result and Discussion

**Table 1 Straight Punch Speed Pretest Score**

No	Initial Name	Pretest	Fast
1.	AH	16	0,53
2.	IZ	17	0,57
3.	JD	22	0,73
4.	VM	10	0,34
5.	AY	11	0,37
6.	CN	12	0,4
7.	SM	13	0,43
8.	FD	19	0,63
	Jumlah	120	4

Based on the results of the straight stroke speed test on the UKM Muaythai Unsyiah athlete, as shown in the table above, then the data obtained was continued to look for the average value, namely:

$$\bar{x} = \frac{\sum x}{n}$$

$$= \frac{120}{8}$$

$$= 15$$

Based on the results of the above calculations, it can be stated that the average straight stroke speed test for UKM Muaythai Unsyiah athletes is 15.

1. Calculating the Average Post-Test Score for Straight Strokes

From the results of the straight stroke speed test, the following research post-test

score data were obtained:

**Tabel 2 Skor Postest Kecepatan Pukulan Straight**

No	Initial Name	Post-test	Fast
1.	AH	17	0,57
2.	IZ	23	0,77
3.	JD	25	0,83
4.	VM	14	0,47
5.	AY	14	0,47
6.	CN	15	0,5
7.	SM	15	0,5
8.	FD	26	0,87
Jumlah		149	4,97

Based on the results of the straight stroke speed test on the UKM Muaythai Unsyiah athlete, as shown in the table above, then the data obtained was continued to look for the average value, namely:

$$\begin{aligned} \bar{Y} &= \frac{\sum Y}{n} \\ &= \frac{149}{8} \\ &= 18,65 \end{aligned}$$

From the results of the above calculations, it can be stated that the average straight stroke speed test for UKM Muaythai Unsyiah athletes is 19.

The values obtained from giving the pretest test can be seen as listed below:

10 11 12 13 16 17 19 22

The frequency distribution for students' initial test data is as follows:

1. Define range

$$\begin{aligned} \text{Range (R)} &= \text{Highest Value} - \text{Lowest Value} \\ &= 22 - 10 \\ &= 12 \end{aligned}$$

2. Define multiple classes

$$\begin{aligned} \text{Number of classes} &= 1 + 3.3 \log \sqrt[n]{f_0}; \text{ with } n=8 \\ &= 1 + 3.3 \log \sqrt[8]{8} \\ &= 3.98 \end{aligned}$$

3. Determine the class length

$$\text{denominatorsth} = \frac{\text{Range}}{\text{Multiple Class}}$$

$$\begin{aligned} P &= \frac{12}{4} \\ &= 3 \end{aligned}$$

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value of  $(\bar{x}_1) = 15$ ,  $v\text{standard}(S_1^2) = 20,28$  and standart deviation  $(S_1) = 4,50$ .

To find out whether the class has the same variance, it must first have normality conditions. The normality test aims to determine whether the data from the pretest test results in this study are normally distributed.

$$\begin{aligned} \chi^2 &= \sum_{i=1}^k \frac{(F_0 - F_e)^2}{F_e} \\ &= 8,4194 \end{aligned}$$

With a level Significant  $\alpha = 0,05$  and multiple class  $k = 8$ . Then the degrees of freedom (dk) to distribution chi-quadrat  $dk = 8-1 = 7$ , it can be concluded that the pretest test data is normally distributed.

### Post-test Normality Test Analysis

The values/scores obtained from giving the post-test test can be seen as listed below:

14 14 15 15 17 23 25 26

The frequency distribution for the post-test data is as follows:

1. Define range

$$\begin{aligned} \text{Range (R)} &= \text{Highest Value} - \text{Lowest Value} \\ &= 26 - 14 \\ &= 12 \end{aligned}$$

2. Define multiple classes

$$\begin{aligned} \text{Number of classes} &= 1 + 3.3 \log \frac{f_0}{n}; \text{ with } n=8 \\ &= 1 + 3.3 \log \frac{12}{8} \\ &= 3.98 \end{aligned}$$

3. Determine the class length

$$\begin{aligned} \text{Class length} &= \frac{\text{Range}}{\text{Multiple Class}} \\ P &= \frac{12}{4} \\ &= 3 \end{aligned}$$

### Data Homogeneity Test

The homogeneity test aims to find out whether this sample comes from the same or different variances. Based on the calculation of the results of the pretest and post-test tests, previously, it was obtained  $S_1^2 = 20,28$  pretest and  $S_2^2 = 24,85$  to posttest.

Based on the distribution table F obtained:

$$\begin{aligned} F_{(\alpha)(n_1-1, n_2-1)} & \\ &= F_{0,05(8-1, 8-1)} \\ &= F_{0,05(7, 7)} \\ &= 3,79 \end{aligned}$$

### D. Conclusion

Based on the results of data analysis and

discussion, the results of the study can be concluded that dumbbell weight training affects the speed of straight strokes in UKM Muay Thai Unsyiah athletes. From the calculation of the correlation coefficient of the data, the value of the effect between dumbbell weight training on straight stroke speed is 0.92 where the interpretation of the correlation coefficient lies in a high level of influence (there is an effect). The percentage of its correlation coefficient is 84.64%. The results show which means that dumbbell weight training (X) contributes to the speed of straight strokes (Y) by 84.64% and the remaining 15.36% is influenced by other factors.

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3) For further research, it can be used as reference material to see the managerial and competence of school principals who have teacher backgrounds, both from sports teachers and other teachers.

## F. Conflict of Interest

In the research that has been done, there is no conflict of interest from any party.

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