DIFFERENCES IN THE EFFECT OF *INTERVAL* TRAINING METHOD AND *REPETITION* TRAINING METHOD ON SWIMMING RESULTS 50 METRES FREESTYLE IN EAGLE ATHLETES AQUATICS FIELD IN 2022

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Abstract

This study aims to determine the influence of the Interval training method and the Reps training method on improving the results of the 50-meter freestyle swimming in the Medan KU I Aquatic Eagle Men's Athletes in 2022. The research method used in this study is the experimental method. The total population used in the inn study was 11 people. The sampling technique used is Purposive Sampling. The number of samples used was 8 people. In this sampling, 2 groups were divided into 2 groups by means of matching ordinal pairing subjects. The study was carried out for 6 weeks with a frequency of exercise 3 times each week. The first hypothesis analysis is that there is a significant influence of the Interval training method on the increase in 50-meter freestyle swimming results in the Medan KU I Aquatic Eagle Athletes in 2022, a t-count of the > t-table (6.54> 3.18), based on hypothesis testing criteria, in this study there is a significant influence of the Interval training method on the results of 50-meter freestyle swimming in the Men's Athletes of the Medan KU I Aquatic Eagles in 2022.The second hypothesis analysis is that there is a significant influence of the Repetition training method on the improvement of 50-meter freestyle swimming results in the Medan KU I Aquatic Eagle Athletes in 2022, obtained t-count> t-table (3.98>3.18), based on hypothesis testing criteria, in this study there is a significant influence of the Interval training method on the results of 50-meter freestyle swimming in the Men's Athletes of the Medan KU I Aquatic Eagles in 2022.The third hypothesis analysis is that the Interval training method has more influence on the increase in the results of 50-meter freestyle swimming in the Medan KU I Aquatic Athletes in 2022, where the results of the comparison of the average results of the increase in post-test data variable X1 > the variable X2 (7.86 > 5.65) then from these results the interval training has more influence on increasing the speed of freestyle swimming 50 meters in the Men's Athletes of the Medan Aquatic Eagles in 2022.

INTRODUCTION

Swimming is essentially one of several sports that have been known since prehistoric times, swimming sports activities are also in great demand by humans, swimming sports are in great demand and are carried out by many people including children, adolescents, adults and even elderly people. The development of swimming sports can be seen from the facilities and infrastructure that have been built to support the community to carry out swimming activities.Swimming is a measurable sport, where an individual's swimming skills can be known according to the results of the speed of swimming travel time or limit (Fadli Surahman, 2016: 33).So the conclusion of the definition of swimming sports above can be interpreted that swimming sports are body activities that are carried out regularly, and can also be done by all ages and have various benefits and goals such as recreational sports, education and achievement.

Freestyle swimming is one of several styles that are indicated to be the easiest to master and have the lowest level of complexity and obstacles than the other three styles. Freestyle swimming has 4 elements of movement, namely body position, leg movement, hand movement, breath taking and coordination. For freestyle swimming training, the main concern besides understanding the right technique is swimming speed, because good swimming speed will be the foundation in obtaining maximum results.

The growth of swimming nowadays has shown a significant increase. This statement is evidenced by the increasing number of swimming pools in various regions and public support for this sport can be seen from the public's interest in carrying out water activities in sports facility centres. The popularity of this sport is known through the rise of swimming club associations in cities and even regions and the increasing number of tournaments held at the pengcab, pengda or provincial level.

Rajawali Aquatik Medan swimming club is one of several clubs that foster swimming athletes in the Medan city area. This club has often participated in various championships at the regional level and even at the district / city level. However, this does not mean that the club does not have problems in swimming, because when an evaluation of athlete improvement is carried out, there are still many athletes who are unable to reach the 50-metre freestyle KU I swimming time limit according to the PRSI SUMUT PENGDA standard.

According to the results of observations that have been made previously at the Rajawali Aquatik Medan swimming club, where this club often carries out swimming training and physical training both in water and on land. Observations made at this club are taking the fastest time records of each athlete in 50 metres of KU I freestyle swimming. This observation was carried out several times so that it got one problem at the fastest time limit they got. The record results obtained by each athlete are still far from the specified time. Where the results they

achieved were based on the assessment standards based on the results of the 50 metre freestyle swimming championship between associations throughout Indonesia (krapsi). This is due to the weak strength of explosive power and the lack of training in freestyle swimming techniques.

Therefore, to improve the results of perfect 50 metre freestyle swimming can be done by using several training methods such as the Interval training method, as well as the Repetition training method.

Training is the process by which an athlete matures into peak performance (Bompa, 2009:2). Furthermore, the programme must be based on the principles of training. This is done so that the planned goals will be realised properly. If the training activities are not appropriate, it will become an obstacle to the goals to be obtained because the ultimate goal of training is to develop sports skills.

Interval training is a programme that includes a period of repetitive work followed by a period of rest or a series of repeated exercises combined with a period of rest (Surahman, 2016). Interval training generally includes repetitive work of relatively intense exercise and is combined with a relatively fast recovery period (MacInniet al., 2017).

Repetition training is a method that is able to develop 50 metre freestyle swimming speed because this training method with *repetition* (*repetition*) and rest periods and distance (*distance*) is appropriate or diverse. And also this method emphasises very high intensity work then carried out with an increasingly long period, therefore to carry out the next exercise athletes can carry out more optimally.

Through this explanation, it can be concluded that in improving the results of 50 metre freestyle swimming ability (*Crawl*) can be trained by doing the *Interval* training method and the *Repetition* training method at the Rajawali Aquatik Medan KU I Swimming *club in* 2022.

RESEARCH METHODS

This research will be conducted at Paradiso swimming pool, Jl.Sisingamangaraja No.6, Teladan Barat, Medan Kota Sub-district, Medan City, North Sumatra. The time of this research will be conducted in June 2022, starting from 07.00 - finish and 15.00 - finish. The study was conducted for 6 weeks, 3 times a week (morning and afternoon), starting on Monday, Wednesday, and Friday.

The sampling technique that will be used is the *Purposive Sampling* technique. the sample in this study is Rajawali Aquatik Medan swimming athletes in 2022 totalling 8 people (male) from Rajawali Aquatik Medan swimming athletes. In this sampling is divided into 2 groups, where to equalise the two groups that will be divided by the author using the *Matching Ordinal Pairing* subject method which means that subjects who have similar results with the first test will then be combined with the formula, AB-BA, so that it will automatically consist of 2 groups

including experiment group 1 and experiment group 2 which have the same or similar quality level

Table 1. Ordinal Pairing Technique

Group 1	Group 2
1	2
4	3
5	6
8	7
9	....

(Source: Sugiyono, 2015: 57)

In this study, researchers will try to examine the effect of *interval* training and *repetition* training as independent variables on the results of swimming 50 metres freestyle as the dependent variable. Researchers will find information about the effect of *interval* training and *repetition training* on the results of swimming 50 metres freestyle on male athletes Rajawali Aquatik Medan Year 2022. The purpose of this method is to provide treatment (*experiment*) to the subject so that it can be seen whether there is an influence after treatment.

Research design is a design regarding techniques for conducting data analysis that is carried out economically based on the objectives of the study. The research design that researchers use is an *experimental* research design in the form of a *one group pre test - post test design.*

Researchers determine and use this arrangement and design because the author wants to see about the increase or progress towards freestyle swimming after being given treatment or the use of *interval* training and *repetition* training on the results of 50 metres freestyle swimming speed for male athletes Rajawali Aquatik Medan in 2022. The increase and development of the results of freestyle swimming speed can be carried out through differentiation or comparison between *pre test* and *post test*. What makes the difference between the *pre test* and the *post test is* stated as the result of the treatment. The design of the experimental research in the form of a *one group pre test - post test* that the researcher wants to use is as follows:

$$O_1 _____X_____O_2$$
Sugiyono (2009: 75)

Data collection is carried out twice, namely the *pre test* and *post* test through the delivery of tests and measurements through the *survey* method, which is research will directly observe the application of tests and measurements in the field. The data that has been obtained through the pre-test and *post-test* results are analysed using the Sudjana t-test calculation (2005: 242). To analyse a research data that has been collected, you can use the formula, among others:

1. **Normality Test**

The data normality test is used to determine whether the distribution of the analysed data is normal or not. To test the data is the *Kolmogorov-Smirnov* statistical test. The steps to perform the *Kolmogorov-Smirnov* test based on Kadir (2017: 147)

2. **Hypothesis Test**

Hypothesis testing using the t-test is by comparing the mean between *pre-test* and *post-test*. If the t score does not exceed the t table, so Ha is rejected, if t count is higher than t table so Ha is accepted.

RESEARCH RESULTS AND DISCUSSION

Based on the test criteria is if the value $Do \leq D_{tabel}$ then H_0 is accepted and H_1 is rejected. In other words, if the value of $Do \leq D_{tabel}$ then the data is normally distributed. The results of the normality test summary of the data from the *pre-test* and *post-test* results of 50 metre freestyle swimming for Rajawali Aquatik Medan KU I Putra athletes in group A can be seen in the following table.

Table 2. Normality Test of *Pre-test* and *Post-test* Data Group A

Outcome Data	N	D_0	D_{tabel}
Pre-test	4	0,193	0,680
Post-test	4	0,195	0,680

From Table 4.16 above, it can be seen that the value for the pre-test result is 0.193 and the post-test result is 0.195. Do for *pre-test* results is 0.193 and *post-test* results is 0.195. The value of Do both data results are smaller than D_{tabel} which is $0,193 < 0,680$ and $0,195 < 0,680$, so that H_0 accepted, which means that the sample comes from a normally distributed population. In other words, it can be concluded that the *pretest* and *posttest* data for 50 metre freestyle swimming for Rajawali Aquatik Medan KU I Group A athletes are normally distributed.

Based on the test criteria, if the value $Do \leq D_{tabel}$ then H_0 is accepted and H_1 is rejected. In other words, if the value of $Do \leq D_{tabel}$ then the data is normally distributed. The results of the normality test summary of the data from the *pre-test* and *post-test* results of 50 metre freestyle swimming for Rajawali Aquatik Medan KU I Putra athletes in group B can be seen in the following table.

Table 3. Normality Test of Group B *Pre-test* and *Post-test* Data

Outcome Data	N	D_0	D_{tabel}
Pre-test	4	0,236	0,680
Post-test	4	0,233	0,680

From Table 4.16 above, it can be seen that the value for the pre-test result is 0.236 and the post-test result is 0.233. Do for *pre-test* results is 0.236 and *post-test* results is 0.233. The value of Do both data results are smaller than D_{tabel} which is $0,236 < 0,680$ and $0,233 < 0,680$, so that H_0 accepted, which means that the sample comes from a normally distributed population. In other words, it can be concluded that the *pretest* and *posttest* data for 50 metre freestyle swimming for Rajawali Aquatik Medan KU I Group B athletes are normally distributed.

The summary of the results of the hypothesis test of the *pre-test* and *post-test* results of 50 metre freestyle swimming for Rajawali Aquatik Medan KU I Putra athletes with the Interval method can be seen in Table 5 below.

Table 5. First Hypothesis t-test

Data	N	t_{hitung}	t_{tabel}
Pre-test	4	8,00	3,18
Post-test	4		

Based on Table 4.18 above, it can be seen that the value of t_{hitung} of 8.00 and obtained the value of $t_{hitung} > t_{tabel}$ which is $8,00 > 3,18$. Because the value t_{hitung} is in the H_0 rejection area, it can be concluded that H_0 is rejected. That is, there is a significant effect of the *Interval* training method on improving the results of 50 metre freestyle swimming for Rajawali Aquatik Medan KU I athletes in 2022.

The summary of the results of the hypothesis test of the *pre-test* and *post-test* results of 50 metre freestyle swimming for Rajawali Aquatik Medan KU I Putra athletes with the Repetition method can be seen in Table 6 below.

Table 6. Second Hypothesis t-test

Data	N	t_{hitung}	t_{tabel}
Pre-test	4	4,53	3,18
Post-test	4		

Based on Table 6 above, it can be seen that the value of t_{hitung} of 4.53 and obtained the value of $t_{hitung} > t_{tabel}$ which is $4,53 > 3,18$. Because the value t_{hitung} is in the H_0 rejection area, it can be concluded that H_0 is rejected. That is, there is a significant effect of the *Repetition*

training method on improving the results of 50 metre freestyle swimming for Rajawali Aquatik Medan KU I athletes in 2022.

The third hypothesis to be tested in this study is whether the interval training method has more effect on improving the results of 50 metre freestyle swimming in Medan KU I aquatic athletes in 2022. To test this hypothesis, it can be seen through the increase in freestyle swimming results between the Inteval method and the Repetition method in Table 7 below.

Table 7. Improvement of 50 Metre Freestyle Swimming Results in Medan Aquatic Athletes KU I Group A and Group B

Statistics	Group A				Group B			
Initial Test	35,56	38,78	38,86	44,85	38,65	37,64	42,38	44,59
Final Test	29,87	30,55	32,46	33,79	33,12	34,56	35,38	35,59
Improved	5,69	8,23	6,4	11,06	5,53	3,08	7,00	9,00
Average improvement	7,84				6,15			

Based on the results of the third hypothesis test analysis of the *pre-test* and *post-test* results between group A and group B, the average increase in group A was 7.84 and the average increase in group B was 5.65. If the average increase in group A> the average increase in group B (7.84> 6.15), then based on the results of the comparison of the average value of the increase it can be concluded that the *interval* training method has more effect on improving the results of 50 metre freestyle swimming in Medan Aquatic Athletes KU I Year 2022.

CONCLUSIONS

Based on the results of hypothesis testing and discussion of the research results, the researcher draws the following conclusions: (1) There is an effect of *Interval* training on improving the results of swimming 50 metres freestyle on Male Athletes KU I Rajawali Aquatik Medan Year 2022. (2) There is an effect of *Repetition* training on improving the results of swimming 50 metres freestyle on Male Athletes KU I Rajawali Aquatik Medan Year 2022. (3) *Interval* training has more effect on improving the results of swimming 50 metres freestyle on Male Athletes KU I Rajawali Aquatik Medan Year 2022.

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