

## The Optimization of Physical Fitness through Mahatma Breathing and Karate

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### Abstract

In physical education subject, students' physical fitness is low just like in English Education Study Program of STKIP Pasundan Cimahi. This research was conducted to know the influence of *mahatma* breathing and karate towards the physical fitness in student from STKIP Pasundan Cimahi. The method used in this research is experimental method. The data were obtained from physical fitness test using *Tes Kebugaran Jasmani Indonesia (TKJI)*. As many as 20 students were chosen as population. By using total sampling technique, the entire population was taken as sample. The sample was divided into two groups. Group A was implemented *mahatma* breathing and Group B was implemented karate. The result showed that 1) *mahatma* breathing gives significant influence towards the physical fitness of STKIP Pasundan Cimahi's students; 2) karate gives significant influence towards the physical fitness of STKIP Pasundan Cimahi's students; and 3) the implementation of *mahatma* breathing gives more significant influence than karate in increasing the physical fitness of STKIP Pasundan Cimahi's students. Overall, *mahatma* breathing and karate can be implemented to optimize physical fitness.

**Keywords:** Physical fitness, karate, *mahatma* breathing

### Introduction

Based on Setiawan (2009) education basically plays important role in educating the life of nation which targeting to increase Indonesian quality in social, spiritual and intellectual aspect and also professional ability. The teacher is not only suggested teaching each academic subject but also urged to teach external beneficial subjects for example physical education subject.

Physical education subject is an integral part of education. This subject intends to develop many aspects such as physical fitness, motor, critical thinking, social, intellectual, emotional stability, morality and healthy life pattern through selected physical education activity which is planned systematically to achieve national education purposes.

Besides, the students also have to learn extracurricular that exists in school and college. Extracurricular not only gives physical fitness but also develop students' skill in certain sport branch.

A certain education institution which develops students' hobby, interest, talent and potency is able to give chance to them in order to develop their hobby, interest, talent and potency. Patimah (2011) defines extracurricular as education activity that is conducted outside course time. The activity is held inside or outside environment in order to extend knowledge, enhance skill and internalize values or norms. The purpose of extracurricular is to form complete human being. In other words, extracurricular is education activity that is held outside course time to help students' development based on their need, potency, talent and interest through activity that is carried out particularly by capable and competence educator.

Physical fitness is the capability of body to do adjustment towards physically load without causing over exhaustion. Based on Nurhasan (2013) there are many definitions of physical fitness, as follows:

1. Karpovichi defines physical fitness as the ability of someone to do certain tasks which need the effort of muscle.
2. Based on Mathews physical fitness is the ability of someone to execute given tasks.
3. According to the result of national seminar physical fitness is the capability to carry out certain tasks or works efficiently without feeling tired.

In general, students' physical fitness is low or under average and can come down with illness easily because of their laziness to do activity or sport so it makes their physical fitness is not good.

Since physical fitness is important, the teacher must be able to plan a good exercise and provide an exact exercise program.

There are ten components of physical fitness. Those components are as follows: (1) strength, (2) endurance, (3) muscular power, (4) speed, (5) flexibility, (6) agility, (7) coordination, (8) balance, (9) accuracy, and (10) reaction (Harold W. Kohl et al., 2013)

Sport can exercise organs. If sport is accompanied by breathing, so the respiratory system will work perfectly. It can be caused by the reaction of muscle and nerve all together, so the oxygen goes into whole body cells evenly (Lai et al., 2008). Matsuzaki (2006) mentions the best breathing way is *fuku-siki* breathing (using belly). This breathing is done by moving diaphragm vertically. In fact, breathing correlate with mental function and condition. The setting of breathing means the setting of body and soul balance.

It can be concluded that if someone wants to do sport, it is better to implement the way of breathing management in order to produce healthy body. The respiratory system will be more perfect because the muscle and nerve react all together, so the oxygen goes into whole body cells evenly especially to lungs.

According to Irianto (2004) human body is designed to move and do activity physically, so doing exercise physically is part of our life pattern. Physical, motor, emotion and social grow and develop as the function of organs. Physical is a medium to do activity which having biological and psychological process which produce or cause body movement, emotional thinking, feeling and communicating each other.

Iskandar in Nasrulloh (2012) suggests that physical fitness depends on two basic components. There are:

- 1) Organic fitness. This component refers to special characteristics which are descended from parents.
- 2) Dynamic fitness. This component has more variables that are used to lead the readiness and body capacity in order to move and act in certain stage depend on situation and condition.

Overall, organic fitness component is hard to be developed; meanwhile dynamic fitness component is able to be developed by doing physical activity. In achieving physical fitness there are so many ways to do. According to Irianto (2004) to get vitality is determined by the quality of exercise, for example the aim of exercise, the selection of exercise model, the facility and the concept of exercise or FIT (frequency, intensity and time). Based on the concept of exercise the frequency of doing exercise must be three until five times in a week. Then, the intensity of exercise is approximately 75-85% of maximum heart rate (MHR) and the time length to do exercise is 20-60 minutes.

*Mahatma* was established on October 28<sup>th</sup>, 1995 by Dr. H. Riva'i, MBA. *Mahatma* has many purposes in health and hospitality in religion, society and big family of *mahatma*. Riva'i (2008) notes the word *mahatma* is neither from Sanskrit nor India. *Mahatma* is an abbreviation of *maju sehat bersama* (move forward and healthy together). Just like its name, *mahatma* aims to invite the society to enhance their health.

*Mahatma* teaches three strengths that must be mastered by each individual (Santoso, 2006).

There are:

1. Steps in martial art strength. Each member must be able to master taught steps in martial art because each movement has benefit for body. There are ten steps in martial art of *mahatma* breathing that useful for activating the antibody.
2. Breathing strength. Each movement has breathing strength since it helps the organ to work. There are two essential types of breathing: deep breathing and costal breathing. Deep breathing constructs the diaphragm and causes the air enters the entire lungs and the belly expands. Meanwhile, costal breathing uses the intercostal muscles to expand the rib cage while inhaling.
3. Spirit strength. Spirit is the basic thing in *mahatma* and one's life. In order to make the result visible, it is good to have spirit strength.

In *mahatma* breathing, the breathing method used is deep breathing. The outstanding thing in deep breathing is the movement of diaphragm up and down. This aims to expedite the air's exchange because diaphragm is the main respiratory. The rhythmic movement gives massaging effect to liver, gastric, spleen, intestines, kidney, lungs and heart.

There are ten movements and each movement has its benefits. First movement heals gastritis. Second movement increases immunity and heals exhaustion. Third movement activates the antibody and heals allergy. Forth movement heals asthma. Fifth movement increases the endurance of body,

Sixth movement cures kidney failure, urolithiasis and lumbago. Seventh movement heals heart disease. Eight movement cures diabetes. Ninth movement heals back pain and tenth movement cures headache and dizziness.

Sagitarius (2008) states karate is martial art from Japan. Karate was developed in 1922 and brought from Japan through Okinawa. At first, it was called *-tote* or Chinese hands. When Karate entered Japan, Japanese nationality was at high level. It made Gichin Funakoshi changed Okinawan kanji (*tote* = Chinese hands) into Japanese kanji become karate (empty hands). The word karate consists of two kanji, *kara* which means empty and *te* which means hands.

In Indonesia karate was brought by Drs. Baud A. D. Adikusumo in 1963. Nowadays karate becomes popular since there are a lot of karate competitions. There are three main techniques in karate. There are *Kihon* (basic technique), *Kata* (steps in martial arts) and *Kumite* (competition). Funakoshi states that karate emphasizes spiritually rather than physically. Actually, karate consists in daily life. Someone exercises his body and soul and develops into complete soul. He has modesty and ready to look after the truth. Karate can be taught to all people, young, old, woman and man. The aim of karate is not to be the strongest and not looking for win, but to complete character (Vertonghen and Theeboom, 2012).

The study of physical fitness's enhancement was initially conducted by Syarifuddin (2012). In his study, entitled *-The Effort to Increase Physical fitness through Skipping Exercise towards the Students of Sempalai 3 Elementary School*, there was significant enhancement in experimental group with the value of *t* as many as 3.271 (*n*=18; *t* table = 2.110). In later research using the exercise of walk faster program in SD Negeri 1 Kedaton Bandar Lampung, it was obtained the percentage of enhancement as many as 34.30% (Kurniawan, 2013). Since students' physical fitness is still in low category, it was suggested to use extracurricular as a means of increasing students' physical fitness (Prakoso and Hartoto, 2015)

The purpose of this research is to know the influence of *mahatma* breathing and karate towards the physical fitness of STKIP Pasundan Cimahi's students. Both activities are believed to increase students' physical fitness. The previous researches were limited by the difficulty in determining the standardization of evaluation. Therefore, this research provided the measurement using *Tes Kesegaran Jasmani Indonesia (TKJI)*. Thus, in the future this research is expected to obtain the illustration of reference to give recommendation and contribution towards the enhancement of physical fitness especially for students and society. Also, the development and the study result of students must be evaluate to know how far the aim of learning process that has been achieved by the students.

In STKIP Pasundan Cimahi there are of several study programs. There are Physical Education, Civic Education and English Education. The students from Civic Education and English Education also must attend physical education subject as many as two credit hours as *MKDU (Mata Kuliah Dasar Umum)* or general subject. Based on the comparison of three study programs in mid semester test which was given *TKJI (Tes Kebugaran Jasmani Indonesia)*, it was found that the result of English Education study program was the most wistful than others. 90% of the test results were below the average of TKJI standard. Certainly, it was hard for the lecturer to apply sport to the students of English Education in order to increase their physical fitness. Besides, most of the students didn't like sport because of their incapacity to do hard movement. In that case, it is a must to apply light sport but gives significant impact to physical fitness. The program plan of exercise must be systematical and measurable in order to enhance students' physical fitness. The enhancement of physical fitness can be conducted in many ways for example in *mahatma* breathing and karate.

## **Method**

The method used in this research was experimental method. As many as 20 students of English education study program that joined physical education subject in STKIP Pasundan were chosen as population. By using total sampling technique, the data were collected from the entire 20 students. Data are processed statistically used Control Group pre test post test, T1-X1-T2, T1-X2- T2, T-test. Then, the sample was divided into two groups: group A which was implemented *mahatma* breathing and group B which was implemented karate. The instrument used was physical fitness test using *Tes Kebugaran Jasmani Indonesia (TKJI)* such as sprint, sit up, pull up, vertical jump and middle-distance running. Several steps were conducted to obtain the data as follows: calculating the mean score and standard deviation, testing the normality using Liliefors, testing the homogeneity, testing the significance of enhancement and testing the significance of difference.

## Results

Table 1 showed mean score and standard deviation from group A and group B. In group A, the mean score of pretest was 15.4 and the mean score of posttest was 20.1. The standard deviation of group A was calculated as many as 2.87 (pretest) and 2.37 (posttest). Meanwhile, in group B, the mean score of pretest was 14.4 and the mean score of posttest was 16.8. The standard deviation of group B was calculated as many as 2.17 (pretest) and 2.69 (posttest).

Table 2 provided the result of the normality test. The result showed that the value of L ( $(\alpha = 0.05; n = 10; L = 0.258)$ ) is bigger than the entire the value of derived L (Lo). This means that all the data is normal.

Table 3 provided the result of homogeneity test. From the calculation, it could be seen that the value of derived F in group A was 1.46 and group B was 1.54. By comparing with the value of F table 0.05 (9:9) 3.18, both of values are smaller than the value of F table. So, the data is homogeneous.

Table 4 showed the significance of the result's enhancement from group A and group B. Since the value of t table (2.262) is smaller than the value of derived t from group A (10.68), so there is significant influence in group A which was implemented *mahatma* breathing. Also, there is significant influence in group B which was implemented karate with the value of derived t 6.67 bigger than the value of t table (2.262).

The last, after conducting the test of difference's significance, it was obtained the value of derived t was 3.84 and the value of t table is 2.101. Therefore, the value of derived t was placed outside the acceptance area of -t table and t table so the hypothesis is rejected. Then, it could be concluded that there is significant enhancement's difference of the result between group which was treated *mahatma* breathing and group which was treated karate towards physical fitness in STKIP Pasundan Cimahi. It means *mahatma* breathing gives more significant influence rather than karate in the effort to increase physical fitness.

**Table 1. Mean Score and Standard Deviation**

Group	Mean Score		±SD	
	Pre test	Post test	Pre test	Post test
A ( <i>mahatma</i> breathing)	15.4	20.1	2.87	2.37
B (karate)	14.4	16.8	2.17	2.69

SD = Standard Deviation

**Table 2. The Result of Normality Test**

Group	Test Period	Lo	L table	Result
A ( <i>mahatma</i> breathing)	Pretest	0.1844	0.258	Normal
	Posttest	0.1505	0.258	Normal
B (karate)	Pretest	0.1643	0.258	Normal
	Post test	0.2386	0.258	Normal

**Table 3. The Result of Homogeneity Test**

Group	Standard Deviation		F	F table	Conclusion
	Pretest	Posttest			
A ( <i>mahatma</i> breathing)	2.85	2.37	1.46	3.18	Homogeneous
B (karate)	2.17	2.69	1.54	3.18	Homogeneous

**Table 4. The Result of Significance Test of the Enhancement from Group A and Group B**

Group	t <sub>o</sub>	t table	Result
A ( <i>mahatma</i> breathing)	10.68	2.262	Significance
B (karate)	6.67	2.262	Significance

**Table 5. The Result of Difference Significance from Group A and Group B**

Group	t <sub>o</sub>	t table	Result
A ( <i>mahatma</i> breathing)			
B (karate)	3.84	2.101	Significance

### Discussion

In *mahatma* breathing, one's emotion can be restrained. For example, ill-tempered and sensitive person can change into patient person. Stress can be eliminated and change into confident feeling. There are some exercises that are correlated with physical fitness. The training consists in warming up, such as run, push up and scout jump. Each movement has the component of physical fitness, namely power. Besides, *mahatma* breathing teaches the management of breath to expedite the function of organ for example lungs (Grattan, 1994).

There are so many benefits from karate for physical. First, it benefits the coordination of body muscles. This can be trained easily in young age. Second, it is useful for balance. A good body posture is able to decrease the risk of diseases. Besides, karate forms strong mental and excellent confidence. A person who applies karate using bushido can have discipline, confidence, strong and healthy. The components of physical fitness in karate are power, speed and endurance.

In the comparison of *mahatma* breathing and karate, both of them have significant influence towards students' physical fitness. The difference is in *mahatma* breathing, the implementation of breathing management is applied in each movement; meanwhile, in karate the breathing management is only applied in certain movement. It makes *mahatma* breathing has more significant influence towards students' physical fitness.

### Conclusion

This research proved that low physical fitness can be avoided by implementing some treatments for example *mahatma* breathing and karate. By applying *mahatma* breathing, the students are able to control their emotional well. On the other hand, karate creates good coordination of muscles when doing activity. Overall, it is found that *mahatma* breathing gives more significant influence because in implementing *mahatma* breathing, the students are asked to apply breathing in every movement. If an athlete applies breathing exercise, he is able to build-up his stamina, physic, tactic and technique. Further research needs to be carried out the other variables besides physical fitness.

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