

Application of Massed Practice Method and Motoric Ability to Fencing Martial Skills

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Abstract—This research provides information about the application of massed practice benefits associated with the motoric ability of the students in the fencing learning process. The purposes of this research are to understand the impacts of application of massed practice for the group of high motoric skills and the group of low motoric skills in fencing martial learning process. This research method is an experimental method with pre-test and post-test randomized two-group design. The number of students that used as the samples is 20 students with simple random sampling technique through the motoric skills test. These samples were divided into 2 groups, the group of high motoric skills and the group of low motoric skills, each of these groups consists of 10 students. The data collecting technique uses motoric skills test (throws at target test, the flexibility of ‘togok’ and waist test, long jump without prefix test, face down and wake test, push-up test, the agility of run back and forth test) and fencing test. Data analysis technique in this research uses the statistic of t two independent samples test. The results indicate that 1) there is a significant effect of the application of massed practice learning method to the group of high motoric skills towards fencing martial arts skills, with a probability value of 0.000 ($p < 0.05$), 2) there is a significant effect of the application of massed practice learning method to the group of low motoric skills on fencing martial arts skills, with a probability value of 0.001 ($p < 0.05$), 3) there are significant differences effect of the application of massed practice learning methods in the group of low motoric skills with the group of high skills, with a value t-observation is 2.498 with a probability value of 0.022, ($p < 0.05$).

Keywords—*massed practice, motoric skills, fencing*

I. INTRODUCTION

The learning process of physical education is a learning process that is related to the process of motion; this is a very interesting topic to be studied and discussed. In the learning process of sports education, lecturers always try to find motion learning methods that are suitable to be used, to improve student learning outcomes. Specifically, in the process of physical education, there are two important types of practice. Compacted and distributed practices. Massed practice is a learning method that is implemented without interrupting breaks between specified times. Some limitations on Massed Practice learning methods include the type of learning movement in which individuals or practice groups continue without any alternate activities between trials, in which the amount or duration of rest periods that given is very short or nonexistent [1][2][3].

Fencing martial arts is a sport that is stabbing and fighting, including in open-skills sports which were

competed modernly for the first time at the Olympics in Athens (1896). This sport is the art of managing swords, floret, ‘degen’ and sable for attack and defense. This sport is a combat sport, which is carried out with two opponents, in the confrontation of abilities, reflexes, skills, and techniques, which aim to touch the opponent [4]. Fencing martial is a type of “fighting” sport where every move is not only how to do the right technique, but also how to do it with the right timing, by observing the distance from the opponent's position.

Several important factors in winning the fencing martial arts are strength, mobility, good technique, control, temperament, timing, distance control, and tactics [5]. Attack movements are starting with positioning the full motion to the front of the front foot balanced by the position of the butt that must be stable, together with the arms fully straightened as a straight threat and aiming at the opponent, creating an advanced power with the repulsion of the back leg, so the body moves. Furthermore, this movement begins with a motion that straightens the arm that holds the sword, which reaches with the tip of the sword to aim and stab the opponent in the target area. At the same time as the arm holding the sword, the foot is raised in a straight forward direction to reach full motion, with the heel of the front foot landing on the ground which will eventually fall in the position of full attack. This is in accord with what is explained by Sinclair & Bottoms [6]; Czajkowski [7], “The lunge is an explosive movement that begins from an en-guard position, with the feet shoulder-width apart, where the back foot is 90 degrees to the forward-facing front foot. The fencer then straightens their sword arm and pushes off from their back leg while lifting up and kicking out their front leg for the lunge”. The knowledge of the opponent's movements, distance evaluation, and signal visual concentration are the most useful lessons for a fencer. When a fencer understands about distance, a fencer can prepare the right strategy to understand the opponent's sword position to prepare for an attack. So it is very important to understand the art of fencing so that you can attack your opponent”[8][9].

In carrying out learning activities on fencing martial arts skills, the students conduct a series of attack movements according to those instructed by the lecturer. In this practice, students carry out a series of movements continuously without break time according to the time that allocated by the lecturer. The break time that given to the students should not be too long. In addition, in carrying out the learning process of the skills of fencing martial arts, it is expected that the lecturer will occasionally provide enthusiasm and motivation so that not to cause boredom in learning. This is in accordance with what is explained by Panchuk [10] that

“Massed practice is often viewed negatively because it is thought to lead to boredom or fatigue, but from a practical standpoint, using massed practice may be beneficial for practitioners with limited time to teach skills.”

The massed practice activities are often seen as negative because it is reputed to cause boredom or fatigue, but from a practical point of view, using massed practice learning methods may be useful for practitioners with limited time to teach skills. According to Coker [11], “Massed practice is a practice schedule where the amount of time allocated to rest between sessions or practice attempts is comparatively less than the time that a learner is engaged in practice.” According to Schmidt [12], “Massed practice is a practice schedule in which the amount of rest between practice attempts or between practice sessions is relatively shorter than the amount of time spent practicing.” According to Emery [13], “Massed practice, also known as clustered practice, is when practice is massed into larger, less-frequent sessions of practice.”

Based on the opinion above, massed practice is to practice a series of movements on the skills of attack fencing martial arts, continuously without rest periods. In this case, the students must make a move in relation to the instructions from the coach or instructor until the specified time limit is up. Repeating the attack movements is a feature of this training method. Motoric ability is as a capacity of a person that is related to physical implementation that can carry out a movement or can also be defined as the appearance capacity of a person to perform various motion tasks [14]. According to Burdukiewicz et al. [9], “The capacity to learn new motoric skills is fundamental for our daily activities and our ability to adapt to challenging environments throughout life.” Maas et al. [15], “Motoric skill learning is facilitated by a number of factors pertaining to the structure of practice.” In a motoric learning process, a learner is expected to be able to master motoric skills, namely the ability of a person to perform motion tasks to the maximum limit according to his abilities [12]. The higher a person's motoric skills mean, the easier of him to master the new movements.

One of the main differences of each individual in developing a motion task is in the ability to move. According to Honeybourne [16], “Motoric skills these are basic skills learned at a young age, usually through play. If learned thoroughly, they can be adapted or refined to form all or part of specific sports skills”. This is in accordance with what is explained by Barnett et al. [17], “motoric skills must be mastered before development of more sport-specific skills.” Kawashima et al. [18] also said that “Motoric skill learning is defined as a change in motoric performance with practice and includes a number of aspects such as increasing the repertoire of motoric behavior and maintenance of acquired behavior over a period of time.” According to Honeybourne [16], “A beginner who is trying to learn a motoric skill requires only a low level of arousal. This is thought to be because the learner of a motoric skill must fully attend to what is going on and high arousal will distract him or her from that task. According to Luft & Buitrago [19], “ Motoric skills are learned slowly over several training sessions. Once a skill is mastered, it is retained for long periods of time”.

II. RESEARCH METHOD

The research method used in this research is the experimental method. The samples in this research were the

students of the Faculty of Sports Science, UNM, who had learned the fencing courses program. The number of students that used as the samples is 20 students with the simple random sampling technique through tests of motoric ability. The samples were divided into two groups, namely the group of high motoric skills and the group of low motoric skills, each group consists of 10 students. The data collecting technique uses motoric skills test (throws at target test, the flexibility of ‘togok’ and waist test, long jump without prefix test, face down and wake test, push-up test, the agility of run back and forth test) and fencing test. The data analysis technique in this study uses t-test statistics with a significant level of $\alpha = 0.05$. Before the data is analyzed, the analysis requirements test is first carried out which includes the tests of normality and homogeneity.

III. RESULT AND DISCUSSION

Based on the results of the research, it was found that:

- There is a significant effect of the application of massed practice learning method to the group of high motoric skills towards fencing martial arts skills, with a probability value of 0.000 ($p < 0.05$)
- There is a significant effect of the application of massed practice learning method to the group of low motoric skills on fencing martial arts skills, with a probability value of 0.001 ($p < 0.05$)
- According to the result of data analysis, the t-observation value is 2.498 with a probability value of 0.022, ($p < 0.05$) and the mean difference value is 8.30, there are significant differences effect of the application of massed practice learning methods in the group of low motoric skills with the group of high skills. From the average value of the final test, the group of high motoric skills showed a higher increase in the learning outcomes of fencing martial skills compared to the group of low motoric skills.

TABLE I. THE IMPACT OF MASSED PRACTICE LEARNING METHOD AND MOTORIC SKILLS ON FENCING MARTIAL ARTS SKILLS

Group	Average	Variant Homogeneity Test	Average Equality Test	
		Sig.	t-count	Sig.
High motoric	114.90	0.568	2.498	0.022
Low motoric	106.60			

Implementation of learning using the massed practice method, in principle leads to an ability increase of fencing skills because of training with repetitive movements without any rest periods. This condition allows students to master the movements of the skills of attack fencing martial arts so that the students' achievement can be maximized. Every time a fencer do a movement that is repetitive (continue), it will be indirectly recorded into a long term memory of the player. By repeating the motion continuously (massed practice), the movement will be stored in memory for a while and will disappear for a long time. Before the memory is lost, the player is expected to make more moves so that the concept of the movement of the fencing martial arts skills will be more accurate. Long term memory can also provide feedback

to players when doing exercises so that mastery of the movements can be perfect.

With the presence of the students that having motoric skills, it is expected that these students have a fast ability and also able to learn new motion skills. This includes movements in the attack of fencing martial arts, where the process involves observing movements to understand the principles, movements, imitating, then trying to do the movements repeatedly, so that the students can complete the task effectively and efficiently, including the ability to do a series of movements of fencing martial.

Someone who has the low motoric skills in doing exercises will show the course of teaching and the movements that performed look less than perfect, so teaching becomes more necessary to master the movements of the fencing martial arts skills.

If the motoric skills of the students are still low, it will have an impact on mastering the motion of fencing martial arts skills. Furthermore, motoric skills will also make athletes easier to carry out movements in the attack of fencing martial arts. Based on it, motoric skill is very influential on the skills of attack fencing martial arts. The students that have the low motoric skills must be supported by good learning methods so that the students can be easier to master the skills of attack fencing martial arts. The massed practice learning method is a way of providing learning methods that prioritize the integrity of the learning skills. The players demonstrate the movements of fencing martial arts skills and are done repeatedly. The use of massed practice learning methods is very helpful for students who have low motoric skills in mastering the movements of attack fencing martial arts. It is because, in massed practice learning, students are given repetitions of movements with high intensity. This learning method is very helpful for students in mastering the movements.

IV. CONCLUSION

Based on the result of the data analysis above, we can conclude that there is a significant difference impact on the massed practice learning method to the group of low motoric skills and the group of high motoric skills. From the average value of the final test, the group of high motoric skills showed a higher increase in the learning outcomes of fencing martial skills compared to the group of low motoric skills.

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REFERENCES

- [1] R. Magill, *Motor learning and control*. McGraw-Hill Publishing, 2010.
- [2] W. H. Edwards, *Motor learning and control: from theory to practice*. Cengage Learning, 2010.
- [3] B. Studer, S. Koenke, J. Blum, and L. Jäncke, "The effects of practice distribution upon the regional oscillatory activity in visuomotor learning," *Behav. Brain Funct.*, vol. 6, no. 1, p. 8, 2010.
- [4] A. Elfateh, "EFFECTS OF TEN WEEKS OF INSTABILITY RESISTANCE TRAINING (BOSU BALL) ON MUSCULAR BALANCE AND THE LEARNING LEVEL OF FENCING BASICS.," *Ovidius Univ. Ann. Ser. Phys. Educ. Sport. Mov. Heal.*, vol. 16, 2016.
- [5] E. Retivov, "Swordplay," *Psyche Sport.*, pp. 110–135, 1994.
- [6] T. R. Sinclair, "Soybean," in *Water-Conservation Traits to Increase Crop Yields in Water-deficit Environments*, Springer, 2017, pp. 17–26.
- [7] Z. CZAJKOWSKI, "TACTICS IN FENCING-PREPARATORY ACTIONS.," *Stud. Phys. Cult. Tour.*, vol. 16, no. 4, 2009.
- [8] M. M. K. Hijazi, "Attention, visual perception and their relationship to sport performance in fencing," *J. Hum. Kinet.*, vol. 39, no. 1, pp. 195–201, 2013.
- [9] A. Burdukiewicz, J. Pietraszewska, J. Andrzejewska, and A. Stachoń, "Morphological optimization of female combat sports athletes as seen by the anthropologists," *Anthropol. Rev.*, vol. 79, no. 2, pp. 201–210, 2016.
- [10] D. Panchuk, M. Spittle, N. Johnston, and S. Spittle, "Effect of practice distribution and experience on the performance and retention of a discrete sport skill," *Percept. Mot. Skills*, vol. 116, no. 3, pp. 750–760, 2013.
- [11] C. A. Coker, *Motor learning and control for practitioners*. Routledge, 2017.
- [12] R. A. Schmidt, T. Lee, C. Winstein, G. Wulf, and H. Zelaznik, *Motor Control and Learning, 6E*. Human kinetics, 2018.
- [13] R. B. Emery, "Spaced Versus Massed Practice in L2 German Listening Comprehension," 2017.
- [14] D. R. Collins and P. B. Hodges, *A comprehensive guide to sports skills tests and measurement*. Scarecrow Press, 2001.
- [15] E. Maas *et al.*, "Principles of motor learning in treatment of motor speech disorders," *Am. J. Speech-Language Pathol.*, 2008.
- [16] J. Honeybourne, *Acquiring skill in sport: an introduction*. Routledge, 2006.
- [17] L. M. Barnett, E. Van Beurden, P. J. Morgan, L. O. Brooks, and J. R. Beard, "Childhood motor skill proficiency as a predictor of adolescent physical activity," *J. Adolesc. Heal.*, vol. 44, no. 3, pp. 252–259, 2009.
- [18] S. Kawashima *et al.*, "Changes in striatal dopamine release associated with human motor-skill acquisition," *PLoS One*, vol. 7, no. 2, p. e31728, 2012.
- [19] A. R. Luft and M. M. Buitrago, "Stages of motor skill learning," *Mol. Neurobiol.*, vol. 32, no. 3, pp. 205–216, 2005.