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The Effect of Practise Method and Motor Ability on Improving Complex Motor Skills in Football Games

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Abstrak

Penelitian ini bertujuan mengetahui interaksi metode latihan (distributedpractise dan massed practise) dan motor ability terhadap complex motor skill dalam sepakbola. Penelitian ini menggunakan metode eksperimen dengan rancangan faktorial 2x2. Sampel penelitian berjumlah 28 orang. Teknik pengambilan data motor ability dengan menggunakan barrow motor ability test dan keterampilan compelx motor skill sepakbola menggunakan Wall volley-Test. Teknik analisis data enggunakan analisis varian (anava) rancangan 2 jalur dan pengujian hipotesis dilakukan dengan uji tukey pada taraf signifikansi α=0,05. Hasil penelitian dapat disimpulkan sebagai berikut terdapat pengaruh interaksi yang signifikan antara metode latihan dan motor ability terhadap peningkatan keterampilan complex motor skill dalam sepakbola yaitu: 1) Atlet yang memiliki motor ability tinggi lebih cocok jika mendapat latihan distributed practise, dan 2) Atlet yang memiliki motor ability rendah lebih cocok jika mendapat latihan massed practise.

Abstract

This study was aimed at determining the interaction of training methods (distributed practice and massed practice) and motor ability on complex motor skills in soccer. This study used experimental method with factorial design 2X2. The research samples were 28 people. The motor ability data were obtained by using the motor barrow ability test. To measure complex motor skills, the Wall Volley-Test was used. Data analysis technique used variance analysis (anava) 2 way design and hypothesis testing was conducted by using tukey test at the significance level α = 0.05. The results of the study conclude that there was a significant interaction effect between training methods and motor abilities on increasing complex motor skills in soccer. Athletes who have high motor abilities are better to have distributed practice exercises. Meanwhile, athletes who have a low motor ability is better to get training in massed practice

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INTRODUCTION

The difference in the number of rest time at each exercise interval has gained much attention (Trimac, 2007; Sea Brook et al. 2005; Schmidt 1999). Some researchers claim that the distributed practice method is better than the massed practice method. Meanwhile others believe that the distributed practice method does not make any significant difference than the results of the distributed practice method (Trimac, 2007).

Practicing using the distributed method showed a significant increase in skill mastery (Sea Brook et al., 2005). The distributed practice method is very effective in the motor performance. The reduction of rest time during practice sessions results in a considerable variation in motions due to frequent generation, especially in lower levels, and strengthens learning a certain task so that the negative effect of fatigue is compensated. And related to the reduction of rest time during drill practice sessions can strengthen technical practice, so that the negative effects of fatigue can be compensated. (Schmidt, 2005).

In other hand, the effects of massed and distributed practice on the learning of typing skills (Lee & Genivese, 1988). Their findings revealed that massed practice method improved performance in terms of accuracy and memorization levels in the steps performed. Whereas, in the golf sport, found that individuals who practice using the distributed practice method showed better results in terms of putting golf than those who practice using the massed practice method (Dail et al., 2004) . However, there were no significant differences between the two groups on retention tests. Another study conducted by Garcia et al. (2008), who compared the effects of the massed and distributed practice method, found that the distributed method was better in terms of accuracy, while, the use of the massed practice method was better if the test was postponed (retention).

Study that discussed the massed and distributed practice method in complex motor skills and simple motor skills in volleyball, used simple motor skills with topspin service techniques while complex motor skills with jump service techniques (Ahmadvand, 2016). Ahmadvand's findings stated that both practice methods helped improve the subject of the exercise. Better improvement can be seen in simple motor skill using massed practice method and complex motor skills using distributed practice method. The purphose of this study is determining the interaction of training methods (distributed practice and massed practice) and motor ability on complex motor skills in soccer.

METHODS

The Based on the variables and objectives to be achieved in the study, experiments type of research was chosen. Field experiments are studies in a real situation by manipulating one or more independent variables in conditions that are carefully controlled by the researcher as far as the situation allows. The samples of this study were 28 students who took part in football extracurricular activities in SMP 3 Jatinangor, ranging from 12 to 14 years old, which can be categorized as junior age level. At this age, they have the ability to learn quickly and are the best period to learn skills (Nishimura et al., 2010; Ono, 1998; Ono et al., 2007). Furthermore, the experts agreed that the skill of playing soccer requires a period of learning at all levels of age; starting from the pre-golden age, golden age, and the period follows. In each of these periods, different treatment in terms of methods and effects of training is needed.

Young or junior age level (ages 13-14) have significant hormone secretion which encourage the rapid development of muscle fibers (Nishimura et al, 2010) . Therefore, it is urgent to practice skills at this age in order to develop and master teaching material faster. The 28 students were then grouped into 4 groups with ordinal sampling technique. The design used in this study was 2x2 factorial (Sudjana, 2002). Data collection technique used was test and measurement of several variables: 1) The data of required level of students' motor ability was collected using the Barrow Motor Ability Test, which consists of 6 test items (Jonson & Nelson, 1986), namely: a) Standing broad jump, b) Soft ball throw, c) zig-zag run, d) Wall pass, e) Medicine ball-put, f) The 60 yard dash. 2) Complex motor skill data used was the Wall-volley test (Vanderford et al: 2004). The data analysis technique used for hypothesis testing was the analysis of variance (Anova) with two-way design. Hypothesis testing was done with $\alpha = 0.05$

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level of significance and if the F0 is significant, then the analysis is continued with the Newman Keeuls range test (Sudjana, 2005). To meet the assumptions in the Anova technique, a Normality Test (Lilliefors Test) and Variance Homogeneity Test (Bartlet Test) were conducted.

RESULT

Based on the data analysis results of the analysis of variance (ANAVA), the value of F 21.311 probability Sig. (2 tailed) of 0,000 was acquired because the probability value of Sig. (2 tailed) 0,000 <0.05. This means that there was a difference in complex motor skills improvement between the massed practice method and the distributed practice method. Generally, the group practicing with the distributed method performed better than the group practicing with the massed practice method, since the average score of the distributed method group was 7.29, while the average score of the massed practice method was 7.00.

The value of interaction acquired from the practice method with motor ability using the Tukey test showed that the result of F count was 31.670 and the sig value was 0,000. Since the probability value of Sig. is 0,000 <0.05. The result of the Tukey test calculation showed that the F count value of 17.673 probability Sig. (2 tailed) of 0.001 was acquired, because the probability value of Sig. (2 tailed) 0.001 <0.05. This showed a significant difference in the results of complex motor soccer skills performance for athletes who have high motor abilities, who are trained in massed and distributed methods. The distributed practice method had an average value of 9.571 better than the massed practice method which had an average value of 7.00.

The result of the Tukey test calculation showed that the F count value was 14.00, probability Sig. (2 tailed) of 0.001. since the probability value of Sig. (2 tailed) is 0.001 <0.05. This showed a significant difference in the results of complex motor soccer skill for athletes who have low motor abilities, who were trained in the massed and distributed methods. The massed practice method had an average value of 7.00 which was better than the distributed method which has an average value of 5.00.

DISCUSSION

Based on the calculations and analyzes results that have been carried out on the overall data, the writer concluded that there are differences in the results of complex motor skills between the distributed practice methods and the massed practice methods. Training approach with distributed practice, in terms of the ability of the body, resulted effectively, because learning interspersed with rest time will be able to prepare the body's condition for further movement activities. In accordance with the opinion of Giriwijoyo (2007), adequate rest time is not a waste of time, it is actually an important part in the process of learning movements to obtain enough recovery to avoid excessive fatigue. Santosa further argues that accuracy and preciseness are related to the ability of coordinating neuro-masculine functions appropriately and achieving the required reflex level. Thus, fatigue will cause a decrease in the quality of conditional reflexes experienced by athletes when doing training with massed practice method.

In accordance with Burdick (1977) who explained that distributed training methods is the most efficient method in maximizing learning and motor skills performance. This opinion is in line with several other related early studies (Carron, 1969; Digman, 1972; Singer, 1965). From the description above, it can be concluded that the distributed practice method gives more influence compared to the massed practice method on increasing complex motor skills

From the results of data calculation, it can be noticed that there is an interaction between the training methods and motor abilities on increasing complex motor skills. This means that the second hypothesis is tested. Thus, it can be explained that the results of the complex motor soccer skills, in addition to being influenced by the training methods used, are also influenced by the contribution of other internal factors, including the athlete's motor ability factors. The effectiveness of the training methods used is influenced by whether the motor abilities possessed by athletes are high or low. The statement is in accordance with the opinion of some experts on the importance of motor abilities on the ability of athletes to perform motion tasks. According to the singer (1975), motor abilities indicate the ability of athletes. This gives credits to individuals to be able to perform in various motor skills. Furthermore, Mutohir and

Gusril (2004) explained that a child who has a good basic motion will be easily to be given special motion tasks at a higher education level. The training process will not be separated from the application of appropriate training methods as well as motor abilities as an indicator of the extent to which athletes can quickly increase the performance results. When a trainer chooses a training method, the trainer must notice athlete's motor abilities in order to increase his motion performance.

From the results of data calculations and analysis, it is discovered that there are differences in the results of complex motor skills between the massed practice method and the distributed practice method for athletes who have high motor abilities. In this case, the group trained with the distributed method gives a better influence than the group trained with the massed method in the results of complex motor soccer skills for athletes who have high motor abilities.

CONCLUSION

From the results of calculations and data analysis, it can be seen that there are differences in the results of complex motor skills between the massed method and the distributed method for athletes who have low motor abilities. In this case, the group trained using the massed method gives a better influence than the group trained with the distributed method on the results of complex motor soccer skills for athletes who have high motor abilities. The conclusions refer to the goal with maximum proportion of 10%. Avoid conclusions in the form of points, numbers, and bullets. It is recommended to describe conclusions in the form of simple sentences that conclude the results of the study.

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