

The significance of exercise method on forehand and backhand groundstroke skills improvement in tennis

by Budi Didik Rilastiyo

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Pengaruh metode latihan terhadap peningkatan hasil pukulan *forehand* dan *backhand* tenis lapangan

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The significance of exercise method on forehand and backhand groundstroke skills improvement in tennis

Didik Rilastiyo Budi¹, Muhamad Syafei², Mohammad Nanang
Himawan Kusuma³, Topo Suhartoyo⁴, Rohman Hidayat⁵, & Arfin Deri
Listiandi⁶

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^{1,2,3,4,5} Faculty of Health Sciences, Universitas Jenderal Soedirman, Jl. Profesor DR. HR
Boenjamin No.708, Dukuhbandong, Grendeng, North Purwokerto District, Banyumas
Regency, Central Java Province, 53122, Indonesia.

Abstrak

Tenis lapangan merupakan jenis olahraga permainan yang memiliki tingkat kompleksitas keterampilan yang sangat tinggi, oleh karena itu penguasaan keterampilan teknik pukulan penting untuk ditingkatkan, terutama pada teknik pukulan *forehand* dan *backhand groundstroke*. Tujuan dari penelitian ini yaitu untuk mengkaji tingkat keterampilan 10 pukulan *forehand* dan *backhand groundstroke* tenis lapangan mahasiswa Pendidikan Jasmani, Kesehatan dan Rekreasi (PJKR), Fakultas Ilmu-Ilmu Kesehatan (FIKES), Universitas Jenderal Soedirman (UNSOED), dengan menggunakan metode latihan *block* dan *random practice*. Penelitian ini menggunakan metode eksperimen. Sampel penelitian adalah mahasiswa putra program studi PJKR, FIKES, UNSOED tahun 2017 dengan menggunakan teknik *purposive random sampling*. Instrumen penelitian menggunakan *Dyer Tennis Test*, dengan nilai validitas 8 besar 0,85 dan nilai reliabilitas sebesar 0,90. Analisis data menggunakan uji normalitas dan uji homogenitas serta pengujian hipotesis menggunakan uji t dengan signifikansi 0.05. Hasil penelitian menunjukkan bahwa metode *random practice* memiliki pengaruh yang lebih baik dibandingkan dengan metode *block practice* untuk meningkatkan pukulan *forehand* dan *backhand groundstroke* tenis lapangan pada mahasiswa.

Kata kunci: metode latihan, *forehand*, *backhand*, tenis lapangan.

Abstract

Tennis is a sport that has a high level of skill complexity. Therefore, increasing mastery of punch techniques especially the *forehand* and *backhand groundstroke* and the *backhand groundstroke* techniques is essential. The purpose of this study is to 1 examine the level of *forehand* and *backhand groundstroke* skills of students of Physical Education, Sport, Health and Recreation (PJKR) department, Health science Faculty, Jenderal Sudirman University (UNSOED), using *block* and *random practice* training method. Research employs experimental methods. The research sample is 2017 class male students of PJKR FIKES UNSOED using the *purposive random sampling* technique. The research instrument employs *Dyer Tennis Test*, with a validity of 0.85 and a reliability of 0.90. Moreover, data analysis uses a prerequisite test consisting of normality and homogeneity tests and hypothesis testing applies t test with a significance of 0.05. The results is *random practice* method has better effect compared to *block practice* method in improving the students *forehand groundstroke* and *backhand groundstroke* technical skills.

Keywords: *backhand*, *forehand*, tennis, training method.

INTRODUCTION

Tennis is a type of sports with fast characteristics that require agility, coordination, power and endurance. Tennis game can be played by two people or four people; according to [\(Syafei et al., 2019\)](#) Tennis is a game that can be done individually or double. The most important principle in playing tennis is to hit the ball over the net and enter the opponent's playing area.

Tennis is a very complex sport and has a variety of basic techniques that must be mastered. [Sukadiyanto \(2005\)](#) explains that the basic techniques of tennis consists of (a) service, (b) forehand and backhand groundstrokes, (c) volley, (d) lob and (e) smash. One of the important basic techniques becoming the main stroke in the game is groundstroke.

Groundstroke is a basic stroke technique carried out from under the ball, after the ball is bounced once; the groundstroke can be from the right side or forehand and from the left side or backhand. Forehand and backhand groundstrokes are important technique in playing tennis, because forehand and backhand groundstroke can defend and kill the ball from the opponent. Forehand groundstroke is a shot taken to the right of the body after the ball bouncing on the field [\(Safitri & Masykur, 2017\)](#). Whereas Backhand groundstroke is a blow done by using the back of the hand or the ball is hit while on the left side of the body [\(Safitri & Masykur, 2017\)](#).

Thus, groundstroke is very important to learn and develop by novice players, because groundstroke is the dominant stroke technique in playing tennis. [Larson & Guggenheimer \(2013\)](#) explain that Groundstroke is the most dominant type of stroke used in tennis.

Backhand and forehand are the two types of groundstrokes in tennis as the most important punches after serving in modern tennis games (Genevois et al., 2014). Forehand and backhand groundstroke have three main characteristics stages namely racquet preparation, acceleration, and follow through (Mark, Sperling, & Cor-dasco, 2001 in Ratnasari & Suntoda, 2018). Based on this theory, the forehand and backhand groundstroke is the main basic technique in playing tennis and must be trained.

The results of observations that have been made on the 2017 class of students of ¹Physical Education, Sport, Health and Recreation (PJKR) Department, Health science Faculty (FIKES), Jenderal Sudirman University (UNSOED), who take tennis class revealed several facts; most students' strikes produce balls that do not cross the net, balls that are off the field line, and inaccurate punch results. Based on this, training methods that can help students mastering the forehand and backhand groundstroke techniques need to be done.

The application of appropriate training methods is one of ways to assist students in mastering basic tennis techniques quickly and in a measurable manner. Syafei et al. (2019) states that appropriate teaching or training techniques are needed to help students or novice athletes achieve success in mastering basic techniques in tennis.

Research of Sahan A et al., (2018) shows that training methods improve skills in close skills sports like tennis. Hence, to improve the tennis basic technical skills like forehand and backhand groundstroke, the training methods that can be developed and applied are block and random practices. An article in American Journal of Sports Science (2019) identifies that the most frequently studied and used methods in training are random and block practices (Medina, 2019). Furthermore, training methods that have a strong effect on maximizing skills training are block and random practices (Kaipa & Mariam Kaipa, 2018).

In addition, some previous studies have shown the various results. Zetou et al. (2007) in (Sadri et al., 2013) suggests that the results of the

block and random group skills have no dissimilarities, while the study of Wright & Shea (2001) in [Kaipa et al. \(2017\)](#) compare random and block practices in motoric learning which obtain results that random practice is better than block practice. Based on the results of previous studies and theories, the block and random practice methods in tennis which is one of the new materials for students need to be studied intensively. Mastery of new motor skills, in general, is done in two methods, random or centralized (block) ([Merbah & Meulemans, 2011](#)).

Block practice, also called a centralized method, is a learning method by exercising one technique type repeatedly, whereas Random practice is a training method that implements various techniques in training and is carried out randomly during the training process ([Edward, 2011](#)). Furthermore, [Decaprio \(2013\)](#) states that centralized training concentrates on completing one skill before carrying out another skill, while random training is an exercise that provides opportunities to perform various skills at the same time, without being separated by the type of skills. Both of these training methods need to be reviewed because they have their respective strengths and weaknesses and are training methods that develop in the community, so it is important to know which suitable training methods to be applied in the beginner level of student training programs. The study conducted by [Wati et al. \(2018\)](#) shows that the application of the centralized and random practice methods hve a significant influence in improving the basic technical skills of basketball of health Polytechnic students. Block and random practice methods can be applied not only in sports games, but also in sports focusing on precision and accuracy. [Aiken & Genter's](#) research ([2018](#)) shows that the block and random practice methods have a significant effect on improving golf chip shoot skills in athletes.

Various researches on block and random practice methods have been widely studied; but, this study is different compared to the previous ones. High school students and athletes are commonly selected to be

subjects of studies and researches. However, this research uses PJKR FIKES Unsoed students who are in the beginner level in tennis.

Another difference with previous studies lies in the type of sport studied. The previous studies examined the block and random practice methods in basketball and golf which are sports emphasize on the accuracy, and this research is in the net game sport, namely tennis.

On the basis of literature review, research results and retrieved data, it is necessary to have an in-depth study of the Effects of Block and Random Practice Training Methods on PJKR FIKES Unsoed Students' Forehand and Backhand Groundstroke Skills in Tennis. It is as a way to introduce appropriate training methods to improve the basic technical ability of forehand and backhand groundstroke. In addition, this study hopefully make a real contribution to coaches and athletes to provide appropriate training for beginners and advanced athletes in tennis based on the exercise methods.

METHOD

This research uses quasi-experimental research method which consists of two groups with different treatments. According to [Arikunto \(2013\)](#), experimental research is a research to determine whether there is an influence of something given to the subject. The design used is the two group pretest-posttests design, according to [Arikunto \(2013\)](#) "two group pretest-posttest design is an experiment carried out on two comparison groups".

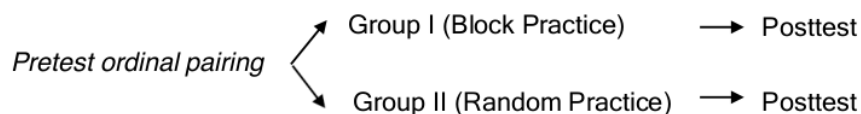


Figure 1. *Two Group Pretest-Posttests Design*

The treatment in this study is in the form of block and random practice training methods given to 2017 class students of PJKR FIKES UNSOED. The pretest was conducted to determine the ability of students' forehand and backhand groundstroke before they were given training.

After that, they were treated with block and random practice training methods. The posttest was conducted to find out whether there is an increase in forehand and backhand groundstroke skills.

¹ The population of this research is the 2017 class students of Physical Education, Sport, Health and Recreation (PJKR) department, Health science Faculty, Jenderal Sudirman University (UNSOED), who are taking tennis class. Particularly, the samples are 40 male students in tennis class which is chosen by purposive random sampling technique. Purposive random sampling is a sampling technique by determining samples based on certain criteria, such as male, age 18-20 years and taking tennis class. Then, the samples are divided into two treatment groups namely block practice and random practice, using ordinal pairing technique.

Ordinal pairing is done by dividing groups of students by rank. The first student is on the left, the second is on the right, the third is below the second, the fourth is below the first. This technique is carried out until all samples are divided into two equal groups. Thus the two groups have almost the same criteria.

Data collection instrument employs Tennis Dyer Test with validity of 0.85 and reliability of 0.90 (Hewitt, 1965). This research was conducted 3 times a week, according to the practice principle echoed by Harsono (2017) which states that technical training should be done three times a week to be able to see an improvement in the results of the exercise. The steps are carried out as follows: (1) the preliminary test (pretest), (2) the implementation of the treatment for 16 meetings, and (3) the final test (post-test).

Preliminary tests (pretests), which was done with a series of skills test, was conducted to determine students' skill level of forehand and backhand groundstrokes basic techniques before given the training treatment, to find out pretest scores.

The study was conducted for 16 meetings with a composition; one preliminary test meeting (pretest), 14 treatment meetings and one meeting

for the final test (posttest). The number of treatments referred to Bayraktar's study (2011) which declares that gymnastic learning has an influence on increasing academic values, attitudes, and motor skills after being carried out for 12 meetings or more.

In the final test (posttest), the samples underwent the last test of performing forehand and backhand groundstroke basic skills. Then, the results are analyzed to observe the increase in training results.

The measurement data will be analyzed using SPSS 22 software, with the following procedures:

1. Data Normality Test with the provisions that if the significance of the data is greater than 0.05, the data will be declared normal.
2. Data homogeneity test with the provisions that if the significance of the data is greater than 0.05, the data is declared homogeneous and can be continued to the next test.
3. The statistical test is carried out using the t-test. To determine the effect of each variable, this study employs paired samples t-test, while to determine the difference in effect between two variables, this study applies independent sample t-test.

RESULTS

1. Data Description

The following are the results of the skills test obtained by the two sample groups.

Table 1. Result Description of Forehand and Backhand Groundstrokes

Training Methods		Pretest	Posttest	Gain
<i>Block Practice Method group</i>	n	20	20	20
	\bar{X}	12,47	21,95	9,47
	Sd	4,25	6,05	3,31
<i>Random Practice Method group</i>	n	20	20	20
	\bar{X}	12,58	24,21	11,63
	Sd	3,48	5,48	2,45

Based on table 1, the group using block practice method has an average final test of 21.91 which is smaller than the average of group

employing random practice method which is 24.21. As for the increase of score (gain) in block practice group is 9.47 which is smaller compared to random practice group which is 11.63.

2. Data Normality Test

Data on the basic technical skills of forehand and backhand groundstroke in tennis are normally distributed if the sig value > 0.05, the results can be seen in table 2:

Table 2. Normality Testing

Groups	Value (Sig)	Descriptions
Pretest Block Practice	0.089	Normal
Pretest Random Practice	0.193	Normal
Posttest Block Practice	0.074	Normal
Posttest Random Practice	0.123	Normal

Based on the table 2, the pretest and posttest data on the basic technical skills of forehand and backhand groundstroke in tennis are normally distributed.

3. Data Homogeneity Test

This test is carried out to determine the results of pretest and posttest of tennis basic technical skills of forehand and backhand groundstroke is homogeneous or not. Data is homogeneous if sig. > 0.05, as in table 3:

Table 3. Homogeneity Test

Groups	Value (Sig)	Descriptions
Pretest Block-Random Practice	0.419	Homogenous
Posttest Block-Random Practice	0.308	Homogenous

The above table shows all the pretest and posttest data for tennis basic technique skills of forehand and backhand groundstroke are homogeneous.

4. Hypothesis Testing

In research data testing, paired Sample Tests are conducted to determine the effect of each exercise method and independent Sample Tests are employed to compare the improvement of blocks and random

practice groups. The following is the results of Paired Sample Tests of forehand and backhand groundstroke:

Table 4. Analysis of Paired Sample Tests of Forehand and Backhand Groundstroke

Paired Differences	Sig. (2-tailed)
Pretest-Posttes Block Practice	.000
Pretest-Posttes Random Practice	.000

In table 4. the ⁴significance value is 0,000, and smaller than 0.05, it means block and random practice methods have effect on the success of students' forehand and backhand groundstrokes.

To find out the difference or comparison of the effect of block and random practice method on the success of the forehand and backhand groundstroke, the Independent Sample Tests are performed and the results are as follows:

Table 5. Analysis of Independent Sample Tests of Forehand and Backhand Groundstroke

	Sig. (2-tailed)
The improvement of Block-Random Practice	.030

Based on table 5, the Independent Sample Tests of the two groups shows a value of 0.030 and smaller than 0.05, it can be concluded that there is a difference in the effect of block and random training methods to the success of the forehand and backhand groundstroke.

DISCUSSION

Block and random practice methods improve forehand and backhand groundstroke skills because those practices are applied based on appropriate training principles. A study states that endurance and control of a range of movements can be increased if the exercises are programmed (Safitri & Masykur, 2017). Moreover, Arifin (2018) explains that training has an important role in increasing motoric skills, so that transformations in the skills can be obtained as a result of practice.

The pattern of practices, either block or random practice, is able to provide significant changes to the students' success of the forehand and backhand groundstroke technique in tennis, which is proven by the improvement of groundstroke skill in the final test. This is in accordance with another study that explains basic basketball skills can be improved by applying the block, serial and random practice methods (Riyan, 2017).

Block practice method is able to establish a significant impact on the forehand and backhand technique because its practice and method focus on the mastery of one skill. Block practice method applies a training scheduling, where during that scheduled time, students are taught the same and repetitive tasks (Ratnasari & Suntoda, 2018).

The pattern of random practice provides students the opportunity to learn different skills in each exercise, so they will be able to develop the ability of forehand and backhand groundstrokes in almost same time. A study mentions that random practice method, which is described as performing a variety of skills in a training program, provides increased learning outcomes in volleyball skills (Arifin, 2018).

Random and block practice methods have an effect in increasing forehand and backhand groundstroke skills in tennis. However, Random practice group has greater result compared to block practice group, because the pattern of random practice method is more suitable to be applied to the game sports. The results show that during learning or training the skills in sports like tennis, which involve complex tasks and require a high level of performance, random practice method improves the performance more compared to constant (block) practice (Sahan A et al., 2018).

Wilde et al. (2005) shows the results that block practice group performs a series faster than random practice group, but in subsequent repetitions the performance of random practice group increases, while the performance of block practice group does not increase. This finding indicates that random practice improves general performance better than block group (centralized). Based on previous relevant theories and

research, this research supports and reinforces existing theories and research.

CONCLUSION

Block and random practice methods can improve the skills of forehand and backhand groundstroke in tennis for PJKR students. This is because applying the proper training methods will increase the training results. In addition, random training methods are better than block or centralized training methods. This is caused by the characteristics of different training patterns. With random practice patterns, students can learn more than one movement at a time to stimulate critical thinking and perform tasks better.

RECOMMENDATION

Random Practice method shows better results than Block Practice method in improving tennis forehand and backhand groundstroke skills. It is recommended that students be trained using of Random Practice method.

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