



The Effectiveness Of The Massed And Distributed Methods On The Low Pass Skill In Volleyball Game

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Abstract

The aims this reseach to determine the effect of method of massed on the volleyball skills of passing, the effect of distributed of method on the volleyball skills of passing, and to know the difference between the methods of massed and distributed method for passing the volleyball skills. This type of research is a thru experiment with Randomized Group Pretest - Posttest Design. The independent variable is the method of massed and distributed methods while the dependent variable was passing the volleyball skills. The subjects were male students grade 2 SMA Negeri 1 Gangking district Gantarang Bulukumba learning year 2011/2012, as many as 30 people are purposive random sampling. The results showed that there was a significant effect of massed method for passing down skills in the game of volleyball ($p < 0.05$), there was a significant effect of distributed method for passing down skills in the game of volleyball ($p < 0.05$), and better distributed method increases passing down the skills in the game of volleyball than massed method ($p < 0.05$).

Key word: Massed, Distributed, Passing, Volleyball

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A. Introduction

Basic volleyball techniques consist of serving, forearm passing, overhead passing, setting, spiking, and blocking (Naufal Afif Triandi & Khamim Hariyadi, 2021). In relation to that, this study will focus on forearm passing. A new game can run smoothly and orderly if players master the fundamental elements of this game, which apply to every ball game.

Passing is the most crucial basic technique in volleyball (Hadi & Pardijono, 2013). Durwachter (1986) in (Iskandar, 2013) stated that passing is one of the essential skills to be learned in volleyball. Passing plays a supporting role in the success of volleyball, whether it is during an attack or defense. Passing is essentially the key fundamental in a volleyball game, so it is essential for all players to master it.

In receiving the ball, as a receiver, one must take the correct angle, decide where to pass the ball, and then control the pass according to the blink of an eye. Therefore, in learning volleyball skills, beginners must first master the basic forearm passing technique.

Forearm passing can be performed in two ways, from below and from above. Overhead passing can be used when the ball comes above the chest level (Muhaimin & Yusuf, 2018). The technique of forearm passing and overhead passing is significantly different. Generally, forearm passing does not involve the fingers, but the

ball touches the upper part of the wrist and can be done with one or both hands. On the other hand, overhead passing and setting usually involve the fingers.

Passing or ball distribution is used to receive serves, spikes, low balls, and balls that bounce off the net (Sutisna, 2021). Overhead passing is often used to direct the ball to a teammate. Overhead passing also serves as the beginning of an attack. The action of controlling and passing the ball to other players in volleyball can be done using forearm passing or overhead passing. Accurate and swift passing allows the setter to place the ball precisely for the third contact, which is executed by the attacker to complete the attack (Defrizal & Suharjana, 2019).

Forearm passing is used to direct the ball towards the net, to a teammate, or to the opponent's court. Additionally, in emergency situations, forearm passing can be used to provide a set to the attacker. Forearm passing is the most common type of passing used in volleyball, and all players must learn how to perform forearm passing as they rotate through all positions on the court. For serve reception, the defensive stance required is the mid-guard stance, while for spike reception, it is done with a low-guard stance.

Forearm passing is a series of movements involving overhead passing that consists of: (1) Initial phase; (2)

Execution; and (3) Follow-through (Ruslan, 2021). It should be noted that the lack of attention and guidance from teachers can result in incorrect movement patterns and poor mastery of forearm passing technique. It is often observed that teachers are reluctant to use appropriate teaching methods. During physical education classes, students are usually instructed to play volleyball directly. Students are left to play on their own without paying attention to the correct techniques of playing volleyball (Sahabuddin, 2020).

According to Syaruddin (2016), this kind of situation will lead to the failure of learning objectives. To achieve learning goals, a teacher must be creative in presenting learning materials in various ways so that the presented subject matter can be well-received by students.

One variation that can be implemented by teachers is by using the appropriate teaching methods. Teaching methods are an important part that teachers can utilize to deliver lesson content. A teacher must have the ability to present the subject matter in an engaging manner, creating a positive interaction between the teacher and students. Teaching methods can be implemented with various variations, such as using voice, providing time, eye contact, movement of the teacher's position on the

field, and so on (Syaruddin, 2016).

In order to enhance the ability of forearm passing, an approach oriented towards science and technology in training is needed. Therefore, coaching should be directed towards improving performance that aligns with the needs of students, both in physical training and specialized training methods to enhance students' forearm passing skills (Saleh & Malinta, 2020). One aspect that is often overlooked by coaches is providing training methods that lead to the automation of movements for students in directing the ball resulting from forearm passing. The training methods referred to are Massed Practice and Distributed Practice methods.

The massed practice method is a term used by Singer in Sudibyo (2020) to refer to a learning technique where practice is conducted continuously without any rest intervals. On the other hand, Mahardika and Supriyoko (2019) state that it is a form of training where the amount or duration of rest given during the practice is very short or nonexistent, meaning the training is relatively continuous.

Continuous practice, as added by Mahardika and Supriyoko (2019), refers to practice where the amount and duration of rest given during the practice are very short or nonexistent, meaning the training is relatively continuous.

Based on the above opinions, it can be said that the massed practice method is a training method where the duration of movement tasks exceeds the rest time between the relevant tasks, resulting in relatively continuous training without rest. Performing passing drills in volleyball using the massed practice method requires a very short time but can be exhausting.

Distributed practice is a term used by Singer in Sudibyo (2020) to describe a form of training where the practice is divided or interspersed with several rest periods. According to Mahardika and Supriyoko (2019), distributed practice is a form of training where the rest periods provided during the practice are interspersed between the training activities. The rest time is either equal to or longer than the time allocated for performing one part of the training activity.

This training method involves dividing the practice time for the process of practicing movement skills and specific sports. It can pose a serious problem for sports educators, especially because there are usually many skills that need to be learned within a limited time available.

Massed and distributed practice methods are two types of training methods that consider the ratio of work time to rest time (Zulkarnain & Haqiyah, 2018). The presence of rest time is related to the presence of lactic acid in the blood, which can directly affect muscle performance and

athlete's performance (Syahrudin, 2021).

The massed and distributed practice methods are two different methods in their process, but their goals are the same, which is to improve the quality of training (Tarju & Wahidi, 2017). The massed practice method involves the duration of movement tasks being longer than the rest time between the tasks, resulting in relatively continuous training without rest. On the other hand, the distributed practice method involves providing rest time between the movement tasks, with the rest time being longer or the same as the duration of the previous movement task. Performing forearm passing drills in volleyball using the massed practice method requires a very short time but can be exhausting. On the other hand, training using the distributed method takes a considerable amount of time due to the rest periods between practice series or movement tasks, but it is not tiring.

These two methods are among the many training methods commonly used by physical education teachers (Syahrudin & Latuheru, 2019). However, in their implementation, teachers or extracurricular coaches have not found a definitive and scientific answer regarding the advantages of each training method. This has resulted in endless debates without a clear formulation of the strengths and weaknesses of these training methods, as each teacher or coach has different

arguments. Therefore, through this research, a scientific examination will be conducted to find an answer to these differences, ultimately providing guidance for physical education teachers and volleyball coaches.

B. Methods

The research design is a field experiment involving two variables: the independent variables are the massed method (MMs) and the distributed method (MDt); and the dependent variable is the skill of forearm passing (KPB). The research design is a "Randomized Group Pretest-Posttest Design" (Gumanti et al., 2016).

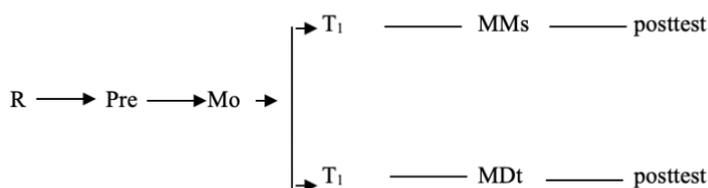


Figure 1. Design Research

The research population consists of all students from SMA Negeri 1 Gangking, Gantarang Bulukumba sub-district. The accessible population is all male students from the 2nd grade of SMA Negeri 1 Gangking, Gantarang sub-district, and a sample of 30 individuals was collected using purposive random sampling.

forearm passing skill in volleyball. The analytical techniques used in testing the research hypotheses are paired and unpaired t-tests with a significance level of 5%.

The research instrument used is a test of

**C. Result and Discussion
Result**

Table 1. Summary of Data Description of the Pretest and Posttest of CDE in the MMs Group (A) and the MDt Group (B)

Statistic	Group			
	MMs (A)		MDt (B)	
	T ₁	T ₂	T ₁	T ₂
N	15	15	15	15
Average	26.47	38.20	25.6	40.73
Standart Deviation	2.722	2.484	2.823	2.840
Total Value	397	573	384	611
Makximum	31	42	30	46
Minimum	22	35	21	37

Based on Table 1, it can be stated that
 a) The MMs group with the initial KPB test data has an average value of 26.47, standard deviation of 2.722. The minimum value is 22, the maximum value is 31. The total value is 397 from a sample of 15 individuals. The final KPB test data has an average value of 38.20, standard deviation of 2.484. The minimum value is 35, the maximum value is 42. The total value is 573 from a sample of 15 individuals. b) The MDt group with the initial KPB test data has an average value of 25.6, standard

deviation of 2.823. The minimum value is 21, the maximum value is 30. The total value is 384 from a sample of 15 individuals. The final KPB test data has an average value of 40.73, standard deviation of 2.840. The minimum value is 37, the maximum value is 46. The total value is 611 from a sample of 15 individuals.

Before conducting paired and unpaired t-tests, the analysis requirements were tested, namely (1) normality test, and (2) population homogeneity test.

Table 2. Data Normality Test of KPB Test Group MMs (A) and MDt Group (B)

	Group	
	Massed (A)	Massed (A)
N	15	15
Statistic	0.105	0.115
sign	0.200	0.200

Based on Table 2, both KPB skills normally distributed ($p > \alpha 0.05$).
 in the MMs group and MDt group are

Table 3. Data Homogeneity Test

Levene Statistik	df1	df2	Sig.
0.013	1	28	0.909

Based on Table 3, the results of the KPB data homogeneity test with the Levene Test are 0.013 with a probability value of 0.909 ($p > \alpha 0.05$) which is homogeneous.

Table 4. Paired t-test results

Exercise	Variable	t _{hit}	df	Sign
MMs (A)	Pre – Post	22.149	14	0.000
MDt (B)	Pre – Post	38.930	14	0.000

Based on Table 4, the results of analysis of CDE data with paired t-test in the MMs group = 22.149 ($p < \alpha 0.05$) or there is a significant effect of the massed method. Meanwhile, the results of paired KPBuji-t data analysis in the MDt group =

38,930 ($p < \alpha 0.05$) or there is a significant influence of the distribute method.

Table 5. Unpaired t-test data analysis

Variable	t _{-hitung}	df	Sign
MMs Difference Value (A) - MDt Difference Value (B)	-2.600	28	0.015

Based on table 5, it can be stated that the difference in CDE with the unpaired t-test between MDt and MMs was -2,600 ($p < \alpha 0.05$) or there was a significant difference in CDE between the MDt and MMs groups. The mean value for MDt = 40.73 is greater than the mean value for MMs = 38.20.

Discussion

1. There is a Significant Effect of the Massed Method on Passing Bawah Skills

Based on the research results, it was found that there is a significant effect of the massed method on passing bawah skills ($p < 0.05$).

The massed training method (MMs) in learning motor skills involves continuous practice without any rest intervals (Sudibyo, 2020). MMs have an impact on endurance, and the continuous practice intensity improves movement control when performing a series of passing bawah movements. To improve passing bawah skills (KPB) using MMs, both technique and physical training can be conducted. Passing bawah training with manipulation of distance and bounce media is an easier

form of skill training that can gradually progress to more difficult stages by adjusting the passing distance and bounce media.

The MMs method will result in faster automatic movements because it affects the adaptation of muscles to the given stimulus, making the muscles accustomed to repetitive activities and eventually automating the movements.

MMs learning can enhance the feeling, which in turn improves the ability to perform movements. To achieve a good level of KPB, students must engage in repetitive movements during training. The more repetitions of the learned material, the more effective and efficient the automation of movements becomes.

According to Lutan Rusli (1988:163) in (I Ketut Budaya, 2015), intensive training has advantages, such as the presence of short-term memory, which is a memory system that functions to store a large amount of information received during a short period of time. This means that after performing passing bawah, the athlete's short-term sensory store records it in short-term memory. What has just been done is

still conceptually and temporarily stored in memory, and that memory will fade after a while. Therefore, the MMs method leads to an improvement in the students' memory capacity because they engage in continuous training, thus influencing their memory of how to perform good KPB. This research aligns with the findings of a study conducted by (Asnaldi, 2016) which showed that the massed practice training approach has an influence on the accuracy of lob shots.

In line with that, from the activities performed, MMs has a system that is relatively similar to the aerobic energy system. Each activity is performed without rest. This means that it depletes glycogen as an energy reserve and ultimately leads to fatigue.

However, MMs are more suitable for use at the beginning of training sessions and for trained students. MMs create adaptation to the continuous and repetitive motor tasks being performed.

2. There is a Significant Effect of the Distributed Method on Passing Bawah Skills

Based on the research results, it was found that there is a significant effect of the distributed method on passing bawah skills ($p < 0.05$).

The distributed practice method (MDt) is a form of training activity that involves dividing or interspersing practice sessions

with several rest periods (Sudibyo, 2020). Consistent with this opinion, the practice sessions have rest periods between trials. MDt involves organizing the movements to be performed a certain number of times, followed by a rest period, and then repeating the movements. MDt is relatively similar to interval training. The timing of the learning process is closely related to how many repetitions of the skill movements the students should perform in order to achieve proficiency in passing bawah.

When related to motor intelligence (movement coordination), MDt is a suitable choice for learning motor skills such as passing bawah. In terms of energy systems, MDt is more appropriate because it can optimize the energy required, allowing passing bawah tasks to be performed over a relatively long period of time and repeatedly. This research is supported by the findings of a study by (Asnaldi, 2016), which showed that the Distributed Practice training approach has an influence on the accuracy of lob shots.

3. The Distributed Method is Better for Improving Passing Bawah Skills Than the Massed Method

Based on the research results, it was found that there is a difference between the massed method (MMs) and the distributed method (MDt). MDt is better at improving passing bawah skills compared to MMs.

The influence on both groups is due to the seriousness of the participants in receiving the material presented by the researcher, leading to a significant improvement over a certain period of time.

MDt allows for interval breaks for participants to rest for a few minutes before receiving the next set of materials from the researcher, unlike the massed method which involves continuous practice without breaks, leading to fatigue and boredom among the research participants. This is consistent with the findings of a study by Kwon et al. (2015) which showed that distributed training can enhance the effectiveness of sequential motor learning in both one-day and two-day learning formats compared to massed training.

The timing of the learning process is closely related to determining how many repetitions of the skill movements each student should perform in order to achieve mastery of the movements. When students learn passing bawah, the more repetitions of passing bawah they perform, the greater their skill improvement.

In the research, MMs and MDt were arranged based on similar intensity and duration of the learning process, with the only difference lying in the rest intervals.

This research is in line with the findings of a study conducted by Muhajirin & Purwanto (2021), which showed that in

improving dribbling skills in football, distributed practice is better than massed practice for individuals aged 12-17. It is also supported by Asri et al. (2017), who found that multiball distributed practice has a better effect than multiball massed practice. Additionally, Safari & Saptani (2019) found that distributed practice is more effective in improving sidespin service in table tennis compared to massed practice, with a minimum of three relevant articles supporting these research findings. From the relationship between these findings, a new theory or discovery can be concluded from the research.

D. Conclusion

Based on the hypothesis testing and the discussion of the research results presented, the conclusions of this study are as follows: 1) There is a significant influence of MMs on passing bawah skills in volleyball ($p < 0.05$), 2) There is a significant influence of MDt on passing bawah skills in volleyball ($p < 0.05$), and 3) MDt is better at improving passing bawah skills in volleyball compared to MMs ($p < 0.05$).

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F. Conflict of Interest

There is no conflict of interest in this research.

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