Sepak Sila Skills in Sepak Takraw Games using the Massed Practice Learning Method

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ABSTRACT

This study aims to determine the effect of the Massed Practice learning method on improving sepak takraw skills in university students. This study used an experimental method with a one-group pretest-posttest design. This study involved 20 students of the Physical Education, Health, and Recreation (PJKR), Makassar State University who took the Sepaktakraw game course. Sepak takraw skills were measured twice, namely before (pretest) and after (posttest) the application of the Massed Practice learning method. The instrument used in this study was a sepak takraw skills test that included accuracy and ball control. Data were analyzed using a t-test to determine differences in results before and after treatment. The results showed a significant increase in sepak takraw skills after the application of the Massed Practice method (0.000 <0.05). Thus, this method is effective for use in the process of learning basic sepaktakraw techniques, especially to improve students' sepak takraw skills.

AUTHORS' CONTRIBUTION

A. Conception and design of the study;
B. Acquisition of data;
C. Analysis and interpretation of data;
D. Manuscript preparation;
E. Obtaining funding

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INTRODUCTION

Sepaktakraw is a team sport that emphasizes technical skills, agility, coordination, and high ball control. One of the most important basic techniques in this game is sepak sila, which is the movement of kicking the ball with the inside of the foot to control, pass, or attack (Aryadi, 2023). Mastering the sepak takraw technique is the foundation for building overall sepak takraw playing ability, because with this skill players can perform various attacks and defenses well (Kala'Lembang, 2023). Sepaktakraw is a traditional Southeast Asian sport that requires high motor skills, coordination, agility, and mastery of basic techniques such as sepak sila, which serves as one of the main skills in controlling the ball and maintaining play. Sepak sila skills are greatly influenced by footwork coordination, body balance, and consistent, repeated practice to achieve precision and speed of movement (Anwar & Rahman, 2018). However, observations at

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several universities indicate that students' ability to perform sepak sila is still relatively low. This is due to a lack of training frequency, suboptimal learning methods, and limited time in sports practice lectures (Yudanto, 2024). Therefore, a learning approach is needed that can quickly and efficiently increase the effectiveness of basic motor training, one of which is using the Massed Practice learning method. The Massed Practice method is a training strategy carried out with a dense training time and minimal rest breaks. This approach has been shown to accelerate the movement adaptation process by increasing the frequency of repetitions, thereby improving consistency and motor control (Dutra et al., 2025).

Several international studies have found that training with a massed practice pattern can improve short-term motor learning, especially in simple skills that require repeated coordination such as the cross-legged kick (Ghanamah et al., 2022; Luz et al., 2022). In the context of sports, this method can strengthen neuromuscular connections and biomechanical efficiency of movement, resulting in more stable skill results (Retos, 2024). Furthermore, local research also shows that paired training and variations in intensive training positively impact students' sepak takraw skills (Kala'Lembang, 2023; Fardi & Gunawan, 2022). However, research specifically examining the effectiveness of Massed Practice in the context of learning sepak takraw techniques at the university level is still limited. Students are prospective sports teachers or coaches who need to master efficient learning methods for future application to their students. Based on the description above, this study aims to determine the effect of the Massed Practice learning method on students' sepak takraw skills. The results of this study are expected to contribute to the development of effective and applicable sports learning models in the context of physical education in higher education.

METHODS

This study uses a quasi-experimental method with a One Group Pretest–Posttest Design. This design is used to determine the effect of the application of the Massed Practice learning method on improving students' soccer skills. In this design, the research subjects were given a pretest to measure their initial abilities, then given treatment in the form of training with the Massed Practice method, and finally a posttest was conducted to determine the increase in abilities after the treatment. This study uses a quasi-experimental method with a One Group Pretest–Posttest Design. This design is used to determine the effect of the application of the Massed Practice learning method on improving students' soccer skills. In this design, the research subjects were given a pretest to measure their initial abilities, then given treatment in the form of training with the Massed Practice method, and finally a posttest was conducted to determine the increase in abilities after the treatment.

This research design used an experimental model with a pre-test and post-test design for one group (one-group pretest-posttest design). In this design, the experimental group was first given a sila soccer ability test before treatment (O_1), then received treatment in the form of massed practice (X), and then received a sila soccer

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ability test after treatment (O_2). This design aligns with the experimental model in motor skills learning described by Sugiyono (2019) and is supported by research in the journal SPORTIF showing that the pretest-posttest design is effective for assessing the influence of training methods on sports skills (Setiyawan & Supriyadi, 2020).

The population in this study was all students of the Physical Education, Health, and Recreation (PJKR) Study Program taking the Sepaktakraw course at Makassar State University in the even semester of the 2024/2025 academic year. The sample was selected using purposive sampling with the following criteria:

1. Active students taking the Sepaktakraw course,
2. Not yet optimally mastering Sepak Takraw techniques (based on initial observations),
3. Willing to participate in the entire training series.

The sample size was 20 students. This number was considered sufficient for a simple experimental study in physical education (Arikunto, 2013).

The instrument used was a Sepak Takraw ability test developed based on the Sepak Takraw Basic Skills Test guidelines (PB Persesi, 2018). The test involved participants performing Sepak Takraw for 1 minute to measure the following aspects:

1. Accuracy (direction of the ball towards the target)
2. Ball control (bounce stability and rhythm)
3. Consistency of movement (number of correct touches).

The total score is obtained from the average score of these three aspects. The validity and reliability of the instrument have been tested in previous research (Rahman, 2021) and were deemed suitable for use in measuring basic sepak takraw technical skills.

The research was conducted in three main stages:

1. Preparation Stage
   a. Conducting initial observations of students' sepak takraw skills.
   b. Developing a training schedule for 4 weeks (12 sessions).
   c. Preparing test instruments and equipment (takraw balls, nets, stopwatches).
2. Implementation Stage (Treatment)
   a. Students were given sepak takraw training using the Massed Practice method.
   b. Each training session lasted 90 minutes with minimal rest periods.
   c. Training was performed repeatedly at high volume, focusing on motor coordination, ball control, and directional accuracy.
   d. This approach aligns with the principles of Massed Practice, which emphasize high frequency of training in a short period of time (Magill & Anderson, 2017).
3. Final Stage (Evaluation and Final Test)
   a. A posttest was conducted using the same instrument to assess improvement in sepak sila skills.
   b. The results of the pretest and posttest were analyzed to determine the effect of the training method on skill improvement.

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RESULTS AND DISCUSSION

Result

This study involved 20 students in the Physical Education, Health, and Recreation (PJKR) Study Program who were taking the Sepak Takraw course. Sepak Takraw ability was measured twice: before (pretest) and after (posttest) the implementation of the Massed Practice learning method. The test was conducted by counting the number of correct and controlled sepak takraw moves performed within 1 minute.

Table 1.
Data Description of Students' Sepak Takraw Ability

Column 1	Mean	Max	Min	Std. dev	variance
Pre-test	20.05	23	17	1.905	3.629
Post-test	30.15	35	26	2.700	7.292

Descriptive statistical analysis showed that the pre-test score had an average of 20.05, with a maximum score of 23 and a minimum score of 17. The standard deviation of 1.905 and variance of 3.629 indicated that the data distribution in the pre-test phase was relatively homogeneous and not highly variable. In the post-test, the average score increased to 30.15, with a maximum score of 35 and a minimum score of 26. The standard deviation of 2.700 and variance of 7.292 indicated an increase in data variation compared to the pre-test.Overall, the increase in the average score from 20.05 to 30.15 indicates a positive change after the treatment or intervention was administered. This indicates that the intervention had an impact on improving the measured outcomes.

The Kolmogorov–Smirnov normality test showed that the data were normally distributed ($p > 0.05$). A paired sample t-test was then performed to determine significant differences between the pretest and posttest results.

Table 2.
Results of Paired t-Test on Improving Students' Football Technique Skills

	T value	Sig. (2-tailed)	t table 0,05
Paired t-test	17.84	0.000	2,093

The results of the paired sample t-test showed a calculated t value of 17.84 with a significance value (p) of 0.000 (<0.05). Because the calculated t value is greater than the t table (2.093), there is a significant difference between the pre-test and post-test scores. This indicates that the treatment or intervention provided has a statistically significant effect on the measured results.

Discussion

The results of this study indicate that the Massed Practice method significantly improved students' sepak takraw technical skills. This improvement occurred because the intensive and repeated training without long breaks strengthened leg coordination, balance, and ball control. These results support the findings of Setiyawan & Supriyadi (2020) that stated high-frequency training in a short period of time can significantly improve basic technical skills in sports games. Similarly, research by Magill & Anderson (2017) confirmed that Massed Practice is effective for simple to intermediate motor skills

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because it accelerates the formation of automatic motor programs in the nervous system. Furthermore, these results align with the motor learning theory proposed by Schmidt (2019), which states that successful motor skill learning depends on a significant number of repetitions and training conditions that support movement consistency.

Shorter inter-trial intervals in training contribute to improved consolidation and learning of motor memory (Dutra et al. 2025). Massed practice, where repetitions are performed close together without long breaks, resulted in better performance consistency compared to distributed practice on retention tests. These findings indicate that reducing the time interval between training sessions can strengthen long-term motor information storage and accelerate the formation of stable movement patterns (Dutra et al. 2025).

In this context, students have more opportunities to correct technical errors during intensive training, thereby improving movement quality. Thus, the application of the Massed Practice method has been proven to improve sepak takraw skills in sepak takraw and can be recommended as an alternative learning method for Physical Education students.

CONCLUSION

Based on the research results and data analysis, it can be concluded that:Students' sepak takraw skills were in the adequate category before implementing the Massed Practice method and improved to the good category after implementing the Massed Practice method. The t-test results showed a p-value of $0.000 < 0.05$, indicating a significant effect of the Massed Practice method on improving students' sepak takraw skills.Therefore, the Massed Practice learning method is effective in the sepak takraw learning process for improving basic technical skills, particularly sepak takraw.

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