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Enhancing Passing and Dribbling Skills: The Impact of Integrating Small-Sided Games and Speed Endurance Training

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ABSTRACTS

Purpose: This study aims to investigate the impact of combining Small-Sided Game (SSG) and Speed Endurance Training (SET) on the passing and dribbling abilities of football players in the student activity unit (UKM) at Universitas Negeri Surabaya.

Materials and Methods: This study employed a quantitative approach with a Pre-Experiment method and One-Group Pretest-Posttest design, using non-random sampling and no control group. Eighteen soccer UKM members at Surabaya State University participated, completing pre-tests to assess passing and dribbling abilities before a four-week training program combining SSG and SET, conducted three times a week. Post-tests evaluated skill improvements and analyzed the results to determine the training's effectiveness.

Result: The findings showed a significant improvement in passing ability with the right foot (60.38%) and dribbling (1.4%), while the left-foot passing ability decreased by 5.56%. Additionally, a paired sample t-test analysis revealed significant differences in right-foot passing and dribbling skills, demonstrating the effectiveness of the training program.

Conclusion: SSG and SET training effectively enhances passing and dribbling skills, with a more pronounced improvement in right-foot passing. These results suggest the need for further emphasis on left-foot passing in training programs and potentially increasing the frequency or duration of sessions for optimal outcomes.

Keywords: Small-sided game; Speed endurance training; Soccer skills improvement.

INTRODUCTION

Soccer is a popular sport, and developing fundamental skills such as passing and dribbling is crucial for players at all levels, especially at the university level. Passing is essential for team coordination, while dribbling allows players to navigate past defenders and create goal-scoring opportunities (Wijaya et al., 2021). At Universitas Negeri Surabaya, soccer athletes are part of the *Unit Kegiatan Mahasiswa* (UKM), where they develop technical skills and improve their physical fitness to enhance their performance during matches. One effective method for improving technical and physical abilities is through combining Small-Sided Games (SSG) and Speed Endurance Training (SET). SSG enhances technical skills by reducing the number of players and limiting the play area, increasing player involvement, and improving skills such as passing and dribbling (Firmansyah & Widodo, 2020). Meanwhile, SET aims to improve players' physical endurance and speed, essential for maintaining performance throughout a match. The focus on

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passing and dribbling skills in this study is based on their fundamental importance in soccer and the potential for improvement through the chosen training methods. Combining these training methods may provide an optimal solution for improving soccer players' technical and physical aspects (Iaia et al., 2015).

SSG and SET are widely recognized for their individual benefits, yet few studies have examined their combined effect, particularly at the university level. SSG involves reducing player numbers and field size to encourage frequent ball touches, dynamic gameplay, and decision-making, enhancing technical skills like passing and dribbling (Clemente & Sarmento, 2021). On the other hand, SET focuses on improving physical conditioning, specifically endurance, and speed, which are crucial for maintaining performance during matches (Bharlaman et al., 2024; Kusuma, Kusnanik, Pramono, et al., 2024). While most previous research has focused on professional or youth athletes, there is a gap in understanding how these methods can be effectively applied to university athletes, who must balance academic and sports commitments (Pucsok et al., 2021). Additionally, prior studies often explored technical skill development or physical conditioning separately, requiring investigation of their simultaneous enhancement (Saputra et al., 2024). This study addresses this gap by evaluating the impact of combining SSG and SET on soccer players' passing and dribbling skills at Universitas Negeri Surabaya, offering insights into optimizing training for student-athletes with limited time.

This research is important because it addresses the challenges university soccer players face in improving their technical and physical abilities within the constraints of their academic schedules. Given that university students have limited time for training, it is crucial to identify training methods that can efficiently enhance technical skills and physical fitness. The novelty of this study lies in its exploration of the combined use of SSG and SET specifically for university soccer players, a topic that has not been extensively researched in this context. The main objective of this research is to evaluate the effectiveness of this combined training approach in improving passing and dribbling skills in UKM soccer members at Universitas Negeri Surabaya. The expected contributions of this study are both theoretical and practical: advancing knowledge on integrated training methods and providing valuable recommendations for university coaches to design more effective and efficient training programs for student-athletes, thereby enhancing the players' skills and the overall performance of the team.

METHODS

***Study Participants*:** This research involved 18 participants aged 19 to 21, all of whom were active members of the UKM. The selection process employed non-random sampling based on specific inclusion criteria. Participants were required to have been members of the UKM soccer team for at least one year, regularly participate in the university's soccer training program, and have no injuries or medical conditions that could interfere with training.

***Study Organization*:** This study employed a pre-experimental One-Group Pretest-Posttest Design, meaning no control group existed. Participants were selected using non-random sampling. The main goal was to examine how SSG and SET influence soccer players' passing and dribbling abilities. Before the intervention, participants completed a pre-test to establish baseline skill levels. They then underwent a structured four-week training program incorporating SSG and SET, conducted thrice weekly. Following the intervention, post-tests were administered to assess any performance improvements.

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***Statistical Analysis*:** The pre-test and post-test data were analyzed using a paired sample t-test to determine statistical significance in passing and dribbling improvements. The SPSS software was utilized for this analysis, with a significance level set at 5%. Comparing pre-test and post-test results helped assess the effectiveness of the training program.

***Training Program*:** This training model integrates SSG and SET to enhance physical, technical, tactical, and mental performance. The approach is game-specific but modified for a reduced field area. Participants were divided into three rotating groups, with each match played in a three vs. three format using modified field dimensions to encourage frequent ball control and tactical decision-making. Players performed a 20-meter sprint (SET) before engaging in SSG 1, where the yellow team acted as attackers and the blue team as defenders. The game lasted 18 seconds, allowing free ball touches. Afterward, all players sprinted 20 meters to SSG 2, switching roles, with the blue team attacking and the yellow team defending. This cycle was repeated four times, including four total SETs, maintaining a 1:2 work-to-rest ratio (176 seconds of active recovery). While one group played, the other groups performed paired passing drills outside the play area in preparation for their turn. After completing their session, groups rotated to ensure equal training exposure. Those who finished their round engaged in active recovery before rejoining the training sequence. Pre-test and post-test procedures were conducted to assess the program's effectiveness. The Loughborough Soccer Passing Test (LSPT) evaluated passing speed and accuracy, requiring participants to complete passing sequences under time constraints, with scores based on execution speed and error count. The 20-meter zig-zag dribbling test measured ball control under pressure, recording completion time and applying penalties for mistakes such as touching obstacles or veering off course. The pre-test and post-test procedures remained consistent to ensure reliable data collection. Statistical analysis was performed to determine the effectiveness of the training program in enhancing passing and dribbling skills.

RESULT

Table 1. Description of passing test data

Variable	Min	Max	Mean	Std. Deviation
Pre-test Passing Right	1	15	5.89	3.596
Pre-test Passing Left	0	12	6.00	3.087
Posttest Passing Right	5	15	9.44	2.877
Posttest Passing Left	0	13	5.67	3.308

The analysis showed an increase in the participants' passing ability after treatment. In the pre-test, the average right foot passing was 5.89, while the left foot was slightly higher, with an average of 6.00, indicating a reasonably considerable variation in ability among participants. After treatment, the average right foot passing increased to 9.44, while the left foot decreased slightly to 5.67. A more significant increase occurred in the right foot, indicating the effectiveness of the training given. Although the increase was minor for the left foot, the training still positively impacted the participants' passing ability.

Table 2. Description of dribbling test data

Variable	Minimum	Maximum	Mean	Std. Deviation
Pre-test *Dribbling*	5.14	7.73	6.5044	0.67668
Post-test *Dribbling*	4.65	6.86	5.8811	0.58573

The results of the data analysis showed an increase in the participants' dribbling ability after the treatment. In the pre-test, the average time required to complete the dribbling test was 6.50 seconds, with a standard deviation of 0.68, with a range of 5.14 to 7.73 seconds. After the treatment, the participants' average time decreased to 5.88 seconds, with a standard deviation 0.59.

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This decrease in time indicates an increase in the participants' dribbling speed. Although there was variation between participants, these results indicate that the treatment effectively improved dribbling ability and reduced the time required to complete the test.

Before conducting data analysis with the T-test, a normality test needs to be conducted to ensure that the data meets the requirements for parametric statistical analysis. A parametric test can be conducted if the data meets the requirements; otherwise, a non-parametric statistical test will be used. The results of the data prerequisite test are as follows:

Table 3. Results of Passing the normality test

Variable	*Sig.*
Pre-test right foot passing	0,102
Pre-test left foot passing	0,236
Post-test right foot passing	0,350
Post-test left foot passing	0,144

The normality test results indicate that the Asymp. Sig values for all variables in the pre-test and post-test for the right and left legs exceed 0.05, confirming that the data follow a normal distribution; this suggests that the passing test data for both legs, before and after treatment, adhere to normal distribution patterns. As a result, parametric statistical analysis is appropriate for this dataset. These findings confirm that the data meet the normality requirements and are suitable for further analysis.

Table 4. Results of the dribbling normality test

Variable	*Sig.*
Pre-test Dribbling	0,545
Pre-test Dribbling	0,749

The normality test results reveal that the Sig. The value for the dribbling pre-test is 0.545, while the post-test is 0.749, both exceeding 0.05; this confirms that the dribbling test data, both before and after treatment, follow a normal distribution. Consequently, parametric statistical tests can be applied for further analysis.

After meeting the prerequisite tests, the next step is to conduct a statistical test using a paired sample t-test. This method evaluates the effectiveness of the treatment by comparing the difference in the average before and after treatment.

Table 5. Results of passing t-test

Variable	*Sig.*
Pretest right foot passing - *Postest* right foot passing	0,005
Pretest left foot passing - *Post test* left foot passing	0,640

The t-test results show that the Sig for the pre-test and post-test variables of right-footed passing. The value is 0.005, which is smaller than 0.05; this indicates a significant difference between the right-footed passing ability before and after treatment; this means that the training given successfully improved the right-footed passing ability. On the other hand, for the pre-test and post-test variables of left-footed passing, the Sig. The value is 0.640, which is greater than 0.05; this shows no significant difference between the left-footed passing ability before and after treatment, which means that the training does not significantly affect the left-footed passing ability.

Table 6. Results of the dribbling t-test

Variable	*Sig.*
Pre-test Dribble - Post-test Dribble	0,000

The t-test results show a Sig. The value of 0.000 for the dribbling pre-test and post-test variables is smaller than 0.05. This indicates a significant difference between dribbling ability before and after treatment. Thus, it can be concluded that the applied training successfully improved the participants' dribbling ability.

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DISCUSSION

This study aimed to evaluate the impact of combining SSG and SET on improving passing and dribbling skills in 18 members of the football UKM at Universitas Negeri Surabaya. SSG focuses on creating small, dynamic game situations that allow players to frequently engage with the ball, enhancing technical skills such as passing and dribbling under fast-paced conditions (Beato et al., 2023; Bujalance-Moreno et al., 2019; Fitriyah et al., 2024; Halouani et al., 2014). SET, on the other hand, targets physical conditioning, emphasizing endurance and speed improvements (Fahrudin et al., 2024; Kusuma et al., 2025; Kusuma, Kusnanik, Lumintuarso et al., 2024; Warni et al., 2017). The two methods were hypothesized to complement each other in developing technical and physical aspects of the players' abilities.

The findings revealed a significant improvement in right foot passing skills, with an increase of 60.38%, demonstrating the effectiveness of the combined training. However, left-foot passing skills showed a 5.56% decrease, likely due to players' preference for their dominant foot, suggesting a need for more balanced training emphasis. Dribbling skills improved by 1.4%, reflecting the potential of SSG and SET to enhance technical execution under game-like conditions. These results align with previous research by Nugroho and Kusuma (2022), who found that high-intensity interval training and SSG significantly improved aerobic endurance in futsal players. Similarly, Sabri (2023) reported superior dribbling improvements among students trained with SSG compared to conventional methods. These findings highlight the significance of combining technical and physical training to optimize player performance, particularly in university-level soccer programs.

A deeper analysis of the decline in left-foot passing suggests that most players naturally favor their dominant foot, leading to less engagement with the non-dominant foot during training. Research by Koral et al. (2018) emphasized that training programs targeting weaker limbs through specialized drills can significantly improve overall technical balance. Future training programs should incorporate specific drills focusing on non-dominant foot usage, such as passing circuits, one-touch passing exercises, and controlled scrimmages requiring players to use their weaker feet. The training structure should be modified to encourage a more balanced development of skills on both feet, helping to minimize such discrepancies.

This study underscores the practical value of integrating SSG and SET in soccer training programs, particularly in developing dominant foot passing and overall dribbling skills. Coaches can utilize this approach to create more dynamic and physically demanding training sessions replicating real-game scenarios. However, some limitations must be considered, including the small sample size and the relatively short four-week training duration, which may impact the generalizability of the findings. Future research should involve larger sample sizes and diverse player levels to validate these findings further and explore their applicability to amateur and professional soccer teams. Extending the training period may provide more conclusive insights into long-term skill development and performance improvements.

CONCLUSION

This study concludes that the combination of SSG and SET effectively improves soccer players' technical skills, particularly right-foot passing and dribbling. The significant increase in right-foot passing performance demonstrates the efficacy of this training method. In contrast, the minor improvement in dribbling and a decrease in left-foot passing highlight the need for more balanced

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and targeted approaches in future training programs. These findings provide valuable insights for optimizing soccer training methods to enhance technical and physical performance.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest in this matter.

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