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The Effect of 4-1 Small Sided Game Training with Two-Touch and One-Touch Models on Ground Passing Ability in Football

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Abstract

Background: Passing accuracy is fundamental in football, supporting ball possession, team coordination, and effective decision-making through realistic training situations.
Aims: This study aimed to examine the effectiveness of 4–1 small-sided game training using two-touch and one-touch passing models in improving ground passing ability among youth football players and to identify the more effective training approach.
Methods: An experimental design with a matched-subject approach was applied to twenty KU-12 football players from SSB Bina Putra Wonosobo. Participants were divided into two groups based on pre-test performance. The first group received 4–1 small-sided game training with a two-touch passing model, while the second group followed the same format with a one-touch passing model. Ground passing ability was measured using a standardized football passing accuracy test administered before and after the training intervention. Data were analyzed using descriptive statistics and t-test procedures to determine significant differences between pre-test and post-test scores.
Result: The findings indicated that both training models significantly improved players' ground passing ability after the intervention period. However, the one-touch training model demonstrated a greater improvement in passing performance compared with the two-touch model. The restriction of ball touches encouraged faster decision-making, improved ball circulation, and increased passing accuracy during training activities.
Conclusion: The findings indicate that the 4–1 small-sided game format effectively improves ground passing ability in youth football players. Integrating one-touch passing rules provides stronger technical and cognitive stimulation, supporting faster decision-making, improved ball circulation, and more efficient skill development during training.

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INTRODUCTION

Football is one of the most widely practiced sports globally and plays an important role in promoting physical development, teamwork, and tactical decision-making among youth athletes (Ceruso et al., 2026; Yu et al., 2025). Successful performance in football requires the integration of technical skills, tactical awareness, and physical fitness developed through systematic and structured training programs. Among the fundamental technical skills, passing particularly ground passing represents one of the most frequently executed actions during matches and is essential for maintaining ball possession, organizing attacking play, and facilitating team coordination (Gaviria Alzate et al., 2025; Siregar et al., 2026). Studies on match performance analysis indicate that successful teams rely heavily on accurate and rapid passing sequences to create scoring opportunities and control the tempo of play (Naylor et al., 2021; Taheri-Araghi et al., 2025).

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Therefore, improving ground passing ability remains a central objective in youth football training programs.

Review In recent years, small-sided games (SSGs) have become a widely recommended training method in football coaching due to their ability to simulate real match situations while increasing players' technical involvement. SSGs typically involve fewer players and smaller playing areas, creating more frequent ball contacts, decision-making opportunities, and technical repetitions compared with traditional drills. Previous studies have shown that SSG-based training improves technical skills, tactical awareness, and physical performance in youth football players (Baena-Marín et al., 2022). Furthermore, manipulating task constraints such as player numbers, pitch size, and ball-touch limitations can influence players' technical behavior and g dynamics during training sessions (Rumpf et al., 2025).

Another important aspect of SSG design is the use of touch restrictions, such as one-touch or two-touch rules, which can influence passing speed, decision-making, and ball circulation. Research has demonstrated that limiting ball touches encourages faster decision-making and increases passing tempo, which may enhance players' tactical awareness and technical accuracy under game-like pressure (Posthumus et al., 2020). Consequently, integrating touch limited SSGs into youth training programs may provide an effective method for improving passing performance.

Despite the growing body of research highlighting the effectiveness of small-sided games in football training, limited empirical evidence specifically compares different touch-based SSG models for improving ground passing ability in youth players. Most existing studies have examined general SSG formats or focused primarily on physiological and tactical outcomes rather than specific technical skills such as passing accuracy. Comparative investigations examining the effectiveness of one-touch versus two-touch SSG models in a structured 4-1 training configuration remain scarce, especially within the context of youth football development.

Given that youth football training emphasizes the development of technical proficiency and rapid decision-making, identifying effective training strategies for improving passing accuracy is essential. The 4-1 small-sided game format provides a structured environment that encourages frequent passing interactions, spatial awareness, and cooperative play among young athletes. By introducing ball-touch restrictions such as one-touch and two-touch passing rules, coaches may be able to manipulate training intensity and cognitive demands, thereby influencing the development of technical skills such as ground passing accuracy. Understanding the comparative effectiveness of these training models is therefore important for optimizing coaching practices and designing evidence-based training programs for youth football players.

Based on the background and identified research gap, this study aims to examine the effect of 4-1 small-sided game training using two-touch and one-touch passing models on ground passing ability in youth football players. Specifically, the study seeks to determine whether both training models significantly improve ground passing performance and to identify which model provides greater effectiveness in enhancing passing accuracy among KU-12 players at SSB Bina Putra Wonosobo.

METHOD

Research Design

This study employed an experimental research design using a matched-subject approach to examine the effect of two variations of small-sided game training on ground passing ability in youth football players. The matched-subject design was used to ensure that participants in both experimental groups had relatively equivalent baseline abilities prior to the intervention. Participants were first assessed through a pre-test to determine their initial ground passing performance. Based on these results, players were paired according to their scores and then assigned to two experimental groups to minimize potential differences in skill level between groups (Fraenkel et al., 2019). Such an approach is commonly applied in experimental sport science studies to enhance internal validity and ensure fair comparison between treatment conditions.

Participants

The participants consisted of 20 male football players registered at SSB Bina Putra Wonosobo in the under-12 (KU-12) category. All participants were actively involved in regular football training

programs and had prior experience in competitive youth football activities. The players were considered suitable research subjects because they were in a developmental stage where technical skill acquisition, particularly passing accuracy, is highly emphasized. Parental and coach consent were obtained before the implementation of the study, and all participants took part voluntarily in the research activities.

Population and Sampling Technique

The population of this study included all KU-12 players registered at SSB Bina Putra Wonosobo during the 2026 training season. Because the total number of players in this age category was relatively small, a total sampling technique was applied, meaning that all members of the population were included as research participants. Following the pre-test assessment, the matched-subject method was used to divide the players into two groups of equal size. One group received the 4–1 small-sided game training with a two-touch passing model, while the second group received the 4–1 small-sided game training with a one-touch passing model.

Instrument

The instrument used in this study was the football passing skill test (La Sawali, 2022). This test has been widely applied in football skill evaluation and is designed to measure the accuracy and consistency of passing performance. The test involves directing the ball toward specific targets using both the dominant and non-dominant foot, thereby providing a comprehensive assessment of a player's ground passing ability

Ground passing ability was measured using a football passing accuracy test that required players to direct passes toward predetermined target zones. The scoring system was based on the number of successful passes reaching the designated targets within a specified time frame. Each successful pass was assigned a score, and the total score represented the player's passing performance. The instrument demonstrated adequate psychometric quality, with a reported validity coefficient of 0.744 and a reliability coefficient of 0.888 (La Sawali, 2022), indicating that the test was suitable for assessing ground passing ability in football training contexts.

Procedures and Time Frame

The research procedure began with a pre-test to assess the initial ground passing ability of all participants. After the baseline measurements were obtained, the participants were divided into two experimental groups based on the matched-subject procedure. The first group participated in a 4–1 small-sided game training program using a two-touch passing model, which allowed players to control the ball before passing. The second group participated in a 4–1 small-sided game training program using a one-touch passing model, which required players to pass the ball immediately after receiving it.

Training sessions were conducted three times per week during the intervention period under the supervision of the team coach and the research team. Each training session followed a structured format that included warm-up activities, the implementation of the small-sided game training model, and a cool-down period. After completing the training program, a post-test was administered using the same passing test instrument to measure improvements in ground passing performance.

Data Analysis

The collected data were analyzed using statistical procedures appropriate for experimental research. Descriptive statistics were used to summarize the pre-test and post-test results of both groups. Inferential analysis was conducted using a t-test to determine whether there were significant differences in ground passing ability before and after the training interventions and to compare the effectiveness of the two training models. The level of statistical significance was set at 0.05.

RESULTS AND DISCUSSION

Results

The results of this study were obtained from pre-test and post-test measurements of ground passing ability among KU-12 players at SSB Bina Putra Wonosobo following two different training interventions, namely the 4–1 small-sided game training using a two-touch model and the 4–1 small-

sided game training using a one-touch model. The analysis aimed to determine the effectiveness of each training model in improving ground passing performance and to compare the relative effectiveness between the two approaches.

Table 1. Ground Passing Ability in Training with the Two-Touch Model

No	Code	Pre-test			Post-test			Gain
		Passing		Total	Passing		Total	
		Right Foot	Left Foot		Right Foot	Left Foot		
1	E1-01	2	0	2	4	3	7	5
2	E1-02	3	0	3	5	2	7	4
3	E1-03	1	2	3	3	3	6	3
4	E1-04	3	1	4	4	3	7	3
5	E1-05	3	1	4	4	2	6	2
6	E1-06	3	2	5	5	4	9	4
7	E1-07	4	1	5	5	4	9	4
8	E1-08	5	1	6	5	4	9	3
9	E1-09	5	1	6	5	4	9	3
10	E1-10	3	5	8	5	3	8	0
	Mean			4,60			7,70	3,10
	Varians			3,16			1,57	1,88

Table 1 presents the pre-test and post-test results of players who participated in the 4–1 small-sided game training with the two-touch model. The data show a consistent improvement in players' ground passing performance after the training intervention. In general, the post-test scores indicate higher passing accuracy compared with the initial measurement. The descriptive statistics further demonstrate that the mean passing performance increased after the training program, indicating that the two-touch small-sided game model contributed positively to the development of ground passing skills among the participants.

Statistical testing also confirmed the significance of this improvement. The t-test results indicate that the difference between the pre-test and post-test scores in the two-touch training group was statistically significant. This finding suggests that the 4–1 small-sided game training using the two-touch model effectively improved the ground passing ability of KU-12 players.

Table 2. Ground Passing Ability in Training with the One-Touch Model

No	Code	Pre-test			Post-test			Gain
		Passing		Total	Passing		Total	
		Right Foot	Left Foot		Right Foot	Left Foot		
1	E1-01	2	0	2	4	4	8	6
2	E1-02	1	2	3	3	4	7	4
3	E1-03	1	2	3	3	5	8	5
4	E1-04	4	0	4	5	5	10	6
5	E1-05	3	1	4	5	5	10	6
6	E1-06	3	1	4	5	5	10	6
7	E1-07	3	2	5	5	5	10	5
8	E1-08	3	3	6	5	5	10	4
9	E1-09	3	4	7	5	6	11	4
10	E1-10	2	5	7	4	7	11	4
	Mean			4,50			9,50	5,00
	Varians			2,94			1,83	0,89

Table 2 shows the results of players who participated in the 4–1 small-sided game training with the one-touch model. Like the two-touch group, the data demonstrate an overall improvement in players' ground passing performance after completing the training program. However, the increase in performance in this group appears more substantial when compared with the two-touch group, indicating that the one-touch training approach may provide stronger stimulation for the development of passing accuracy.

The statistical analysis also revealed a significant difference between the pre-test and post-test scores in the one-touch group. This indicates that the one-touch small-sided game training model had a significant positive effect on players' ground passing ability.

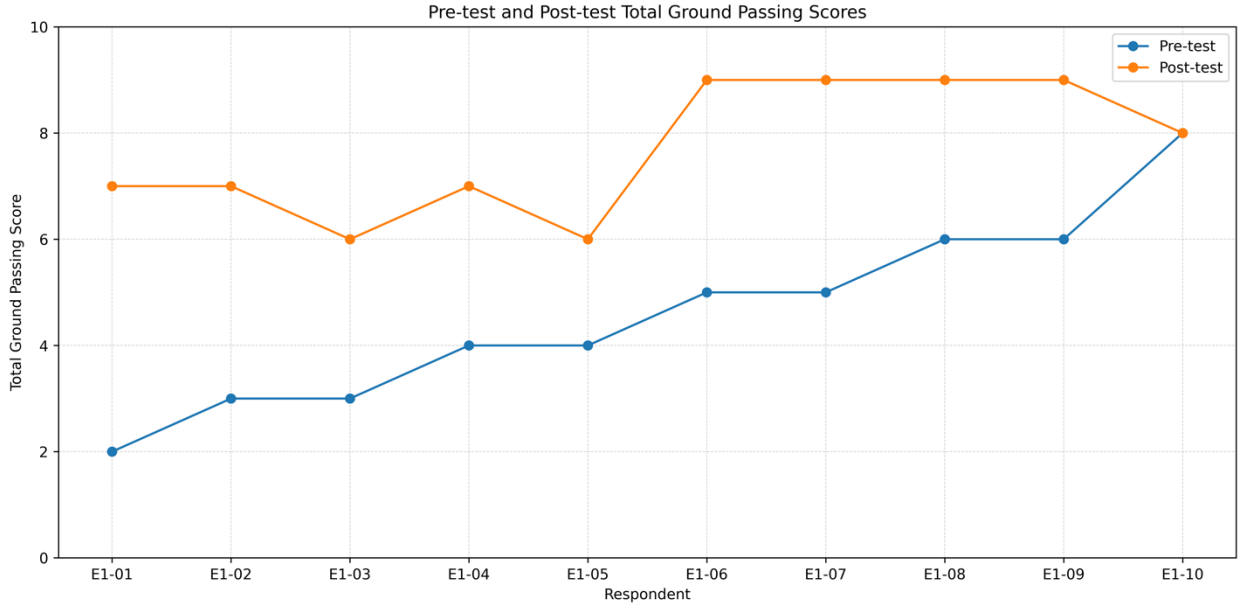

Figure 1. Improvement in Ground Passing After Participating in Training with the Two-Touch Model

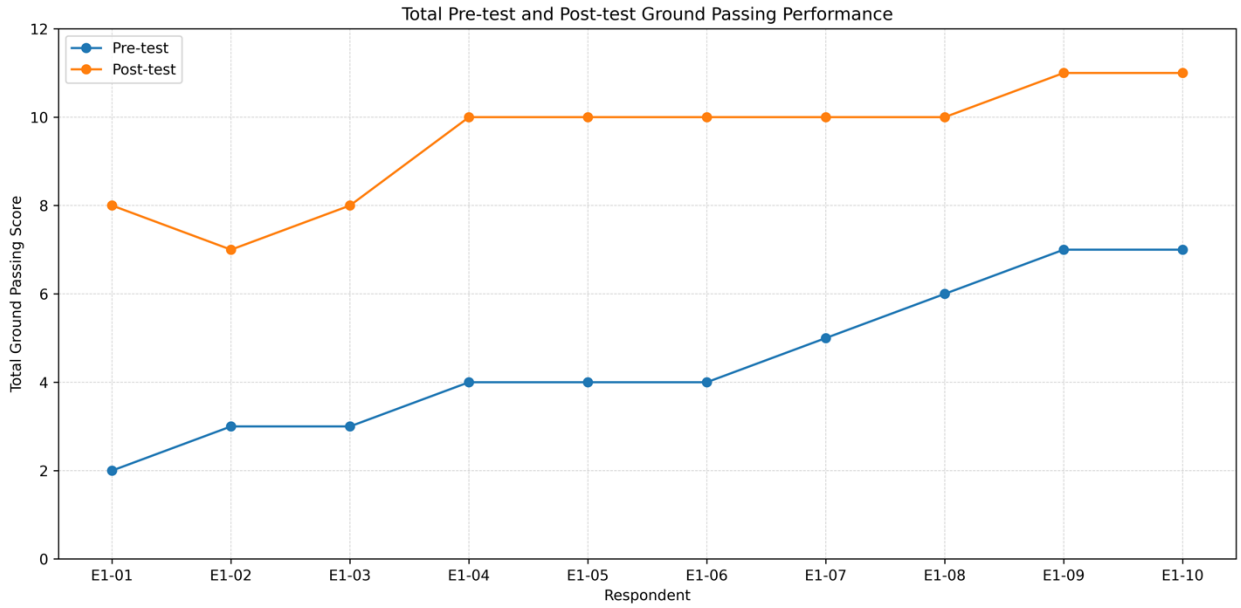

Figure 2. Improvement in Ground Passing After Participating in Training with the One-Touch Model

Figures 1 and Figure 2 provide a visual representation of the improvement in passing performance following the implementation of both training models. Figure 1 illustrates the

progression of ground passing scores among players in the two-touch training group, while Figure 2 depicts the improvement observed in the one-touch training group. The graphical trends indicate that both groups experienced noticeable performance gains after the training program. However, the improvement pattern in the one-touch group appears more pronounced, reflecting the higher level of passing performance achieved after the intervention.

Overall, the findings indicate that both small-sided game training models significantly enhanced ground passing ability among KU-12 football players. Nevertheless, the one-touch model demonstrated a greater improvement compared with the two-touch model. This suggests that restricting players to a single touch during small-sided games may encourage faster decision-making, improve ball circulation, and enhance passing accuracy, thereby providing a more effective training stimulus for developing passing skills in youth football.

Discussions

The present study aimed to examine the effectiveness of 4–1 small-sided game training using two-touch and one-touch passing models on ground passing ability among youth football players. The findings demonstrated that both training models significantly improved players' passing performance, as evidenced by the increase in post-test scores in both experimental groups. However, the improvement observed in the one-touch training model was greater than that achieved through the two-touch model. These results indicate that manipulating ball-touch constraints within small-sided games can influence the development of technical performance in youth football.

The improvement observed in both groups confirms the effectiveness of small-sided games as a training approach for developing technical skills. Small-sided games are widely recognized as an ecological training method that simultaneously stimulates technical execution, tactical awareness, and decision-making under match-like conditions. Because players are involved in frequent ball interactions within a reduced playing area, they experience a greater number of passing repetitions and decision-making opportunities compared with traditional drill-based training. Empirical evidence suggests that such training environments enhance technical performance and tactical behavior in youth football players (Afonso et al., 2025; Hegedüs et al., 2025).

The greater improvement observed in the one-touch training model may be explained by the increased cognitive and perceptual demands associated with restricted ball contact. When players are limited to a single touch, they must process environmental information more rapidly and execute passing decisions immediately after receiving the ball. This constraint accelerates perceptual-motor processing and encourages players to anticipate teammates' movement patterns more effectively. According to ecological dynamics theory, task constraints such as touch limitations can shape players' decision-making behavior and enhance technical execution under time pressure (Ramsey et al., 2025; Rumpf et al., 2026). Consequently, one-touch training may promote faster ball circulation and improved passing accuracy during game situations.

Another possible explanation for the superior improvement in the one-touch group relates to the development of tactical awareness and spatial perception. One-touch passing requires players to scan the environment before receiving the ball, thereby increasing their ability to anticipate defensive pressure and identify passing options. Research has shown that training tasks that impose time and space constraints can significantly improve players' perceptual skills and technical efficiency in football (Ceruso et al., 2025; de Joode et al., 2023). In this context, the one-touch model may function as a tactical stimulus that encourages players to make faster and more precise decisions when distributing the ball.

In contrast, the two-touch training model also demonstrated significant improvement, although to a lesser extent. The additional ball control phase allowed players to stabilize the ball before executing a pass, which may benefit beginners who are still developing fundamental technical coordination. Two-touch play provides slightly more time for motor control and adjustment before executing the passing action, thereby supporting technical accuracy for players with lower levels of perceptual-motor skill. Previous research suggests that progressive constraint manipulation in small-sided games can help players gradually develop both technical proficiency and tactical awareness (Clemente et al., 2021; Machado et al., 2022).

Overall, the findings of this study support the growing body of literature emphasizing the importance of constraint-based training in football skill development. By manipulating rules such as

the number of ball touches, coaches can design training tasks that increase players' involvement, improve decision-making speed, and enhance technical performance. The results suggest that incorporating one-touch passing rules within small-sided games may be particularly beneficial for improving ground passing ability in youth football players.

From a practical perspective, these findings highlight the value of structured small-sided game formats in youth football coaching. Coaches are encouraged to integrate both one-touch and two-touch training models depending on the developmental stage and technical level of players. While two-touch training may help build technical control in early stages, one-touch play appears to be more effective for enhancing passing speed, tactical awareness, and overall ball circulation within team play. Consequently, a progressive training approach that combines both models may provide the most effective pathway for developing passing skills in young football players.

Implications

The findings of this study provide several important implications for football coaching practice, particularly in the development of technical skills among youth players. The results demonstrate that the implementation of 4–1 small-sided game training can significantly enhance ground passing ability in young football athletes. This indicates that training environments designed to replicate real game situations while maintaining high player involvement can effectively facilitate technical skill acquisition. Coaches are therefore encouraged to integrate small-sided game formats into regular training sessions as a strategy to increase ball contacts, decision-making opportunities, and cooperative play among players.

Furthermore, the greater improvement observed in the one-touch training model highlights the importance of manipulating task constraints to stimulate faster cognitive processing and technical execution. Restricting players to a single ball touch requires them to anticipate passing options and make decisions more rapidly, which ultimately contributes to improved passing accuracy and ball circulation during gameplay. From a pedagogical perspective, these findings suggest that coaches may progressively introduce one-touch passing rules after players develop basic ball control through two-touch training formats. Such a progressive training structure may help balance technical stability and tactical responsiveness during youth development.

Research Contribution

This study contributes to the existing body of knowledge in sport science by providing empirical evidence regarding the comparative effectiveness of two small-sided game training models in improving ground passing ability among youth football players. While previous studies have generally examined the broader physiological or tactical benefits of small-sided games, the present research focuses specifically on technical skill development, particularly passing accuracy.

Additionally, this study offers practical insights into how simple rule modifications within training tasks can influence technical outcomes in youth football training. By comparing two-touch and one-touch training approaches within a structured 4–1 small-sided game format, the research highlights the role of task constraints in shaping technical behavior and decision-making processes. The findings therefore contribute to the growing literature on constraint-based coaching approaches and ecological dynamics in sport training, particularly within the context of youth football development.

Limitations

Despite the valuable findings obtained in this study, several limitations should be acknowledged when interpreting the results. First, the relatively small sample size limits the generalizability of the findings to broader populations of youth football players. The participants were drawn from a single football academy, which may reflect specific training conditions and player characteristics that differ from other youth football programs.

Second, the duration of the training intervention was relatively short, which may not fully capture the long-term effects of different small-sided game training models on technical skill development. Technical proficiency in football typically develops through prolonged and consistent training exposure. Therefore, longer intervention periods may provide a more comprehensive understanding of how touch-based constraints influence skill acquisition over time.

Another limitation concerns the focus on a single technical skill variable, namely ground passing ability. Football performance is multidimensional and includes other important components such as dribbling, shooting, tactical decision-making, and physical performance. Future studies should therefore consider integrating multiple performance indicators to provide a more holistic understanding of training effectiveness.

Suggestions

Future research is encouraged to expand the scope of investigation by including larger and more diverse samples of youth football players across different training academies and competitive levels. Such an approach would enhance the external validity of the findings and provide a more comprehensive understanding of how small-sided game training influences technical development in different football contexts. Additionally, longitudinal research designs are recommended to examine the long-term impact of touch-restricted training formats on technical and tactical performance. Monitoring players over extended training periods may help identify how progressive manipulation of training constraints influences skill acquisition and game performance.

Further studies may also explore the interaction between small-sided game design and other training variables, such as pitch dimensions, player numbers, and defensive pressure. Understanding how these factors interact with touch limitations could provide deeper insight into optimizing training environments for youth football development. Ultimately, integrating evidence-based training strategies into coaching practice will support the systematic development of technical skills and decision-making ability among young football players.

CONCLUSION

This study was conducted to examine the effectiveness of 4–1 small-sided game training using two-touch and one-touch passing models in improving ground passing ability among youth football players. The objective formulated in the introduction, namely to identify whether both training models could enhance passing performance and to determine the more effective approach for developing passing accuracy among KU-12 players, was successfully addressed through the empirical findings of this research.

The results demonstrate that both training models significantly improved the ground passing ability of the participants after the intervention period. The improvement observed in the post-test scores indicates that structured small-sided game training provides an effective learning environment for developing technical skills in youth football. However, the findings further reveal that the one-touch training model produced a greater improvement in passing performance compared with the two-touch model. This suggests that limiting ball contact during small-sided games can stimulate faster decision-making, enhance perceptual awareness, and encourage more efficient ball circulation, thereby contributing to higher levels of passing accuracy among young players.

These findings reinforce the importance of applying game-based training approaches that integrate technical execution with tactical decision-making in realistic playing situations. The 4–1 small-sided game format, combined with task constraints such as ball-touch limitations, appears to be a practical and effective strategy for improving passing performance in youth football training. Consequently, coaches are encouraged to incorporate structured small-sided game variations into regular training programs as part of a progressive skill development framework.

In terms of future development, this study provides a foundation for further investigations into the optimization of small-sided game design for youth football training. Future research may explore longer intervention periods, larger and more diverse player populations, and additional performance variables such as tactical behavior, decision-making speed, and game performance indicators. Expanding research in this direction will contribute to the development of more evidence-based coaching practices and support the systematic improvement of technical and tactical competence in young football players.

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AUTHOR CONTRIBUTION STATEMENT

AR, MY contributed to the conceptualization and design of the study. AR conducted the data collection, organized the training intervention, and performed the initial data analysis. MY supervised the research process, validated the statistical analysis, and provided critical revisions to improve the scientific quality of the manuscript. AR and MY collaboratively interpreted the results, prepared the manuscript draft, and approved the final version of the article for publication.

REFERENCES

Afonso, P., Forte, P., Branquinho, L., Ferraz, R., Garrido, N. D., & Teixeira, J. E. (2025). Shaping Training Load, Technical–Tactical Behaviour, and Well-Being in Football: A Systematic Review. *Sports*, *13*(8), 244. https://doi.org/10.3390/sports13080244

Baena-Marín, M., Rojas-Jaramillo, A., González-Santamaría, J., Rodríguez-Rosell, D., Petro, J. L., Kreider, R. B., & Bonilla, D. A. (2022). Velocity-Based Resistance Training on 1-RM, Jump and Sprint Performance: A Systematic Review of Clinical Trials. *Sports*, *10*(1), 8. https://doi.org/10.3390/sports10010008

Ceruso, R., D'Isanto, T., Sannicandro, I., Tessitore, A., & D'Elia, F. (2025). Effects of Integrating Football eSports into an Ecological–Dynamic Approach on the Development of Linear Speed in Young Soccer Players. *Sci*, *7*(4), 142. https://doi.org/10.3390/sci7040142

Ceruso, R., Esposito, G., Aliberti, S., D'Isanto, T., & D'Elia, F. (2026). Training Decision-Making in Youth Football: A Comparative Study of Traditional, Ecological Dynamics Approach, and Hybrid eSport-Based Protocol. *Applied Sciences*, *16*(5), 2407. https://doi.org/10.3390/app16052407

Clemente, F. M., Ramirez-Campillo, R., Sarmento, H., Praça, G. M., Afonso, J., Silva, A. F., Rosemann, T., & Knechtle, B. (2021). Effects of Small-Sided Game Interventions on the Technical Execution and Tactical Behaviors of Young and Youth Team Sports Players: A Systematic Review and Meta-Analysis. *Frontiers in Psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.667041

de Joode, T., van der Kamp, J., & Savelsbergh, G. J. P. (2023). Examining the effect of task constraints on the emergence of creative action in young elite football players by using a method combining expert judgement and frequency count. *Psychology of Sport and Exercise*, *69*, 102502. https://doi.org/10.1016/j.psychsport.2023.102502

Fraenkel, J., Wallen, N., & Hyun, H. (2019). *How to Design and Evaluate Research in Education* (10th ed.). McGraw-Hill Humanities/Social Sciences/Languages.

Gaviria Alzate, S. J. O., Higuita, D. A., Jaramillo, A. F., & Machado, J. A. (2025). Impact of the Tactical Critical Thinking Program (TPCT) on ball control and passing accuracy in U-8 football players: A quasi-experimental study. *International Journal of Sports Science & Coaching*, *20*(5), 1972–1986. https://doi.org/10.1177/17479541251335229

Hegedüs, P., Csala, D., Tóth, J., & Tóth, J. (2025). Age-Related Effects of Physical Performance on Technical and Tactical Outcomes in Youth Soccer. *Sports*, *13*(6), 162. https://doi.org/10.3390/sports13060162

La Sawali. (2022). The impact of target shooting exercise on passing accuracy in soccer games. *Jurnal SPORTIF : Jurnal Penelitian Pembelajaran*, *7*(4), 27–37. https://doi.org/10.29407/js_unpgri.v7i4.16880

Machado, J. C., Góes, A., Aquino, R., Bedo, B. L. S., Viana, R., Rossato, M., Scaglia, A., & Ibáñez, S. J. (2022). Applying Different Strategies of Task Constraint Manipulation in Small-Sided and Conditioned

Games: How Do They Impact Physical and Tactical Demands? *Sensors*, *22*(12), 4435. https://doi.org/10.3390/s22124435

Naylor, L. H., Spence, A. L., Donker, S. C. M., Thijssen, D. H. J., & Green, D. J. (2021). Is there an athlete's artery? A comparison of brachial and femoral artery structure and function in male strength, power and endurance athletes. *Journal of Science and Medicine in Sport*, *24*(7), 635–640. https://doi.org/10.1016/j.jsams.2021.02.010

Posthumus, L., Macgregor, C., Winwood, P., Darry, K., Driller, M., & Gill, N. (2020). Physical and Fitness Characteristics of Elite Professional Rugby Union Players. *Sports*, *8*(6), 85. https://doi.org/10.3390/sports8060085

Ramsey, H., Miller-Dicks, M., Reddy, V., & Hope, L. (2025). Decision-making in action: How international-level professional football players gain an advantage. *Psychology of Sport and Exercise*, *76*, 102722. https://doi.org/10.1016/j.psychsport.2024.102722

Rumpf, M. C., Jäger, J., Clemente, F. M., Altmann, S., & Lochmann, M. (2025). The effect of relative pitch size on physiological, physical, technical and tactical variables in small-sided games: a literature review and practical guide. *Frontiers in Sports and Active Living*, *7*. https://doi.org/10.3389/fspor.2025.1592536

Rumpf, M. C., Jäger, J., Uthoff, A., & Lochmann, M. (2026). Man-marking, pressure on the ball, and offside and their effect on physiological, physical, technical and tactical parameters during small-sided games. *Frontiers in Sports and Active Living*, *8*. https://doi.org/10.3389/fspor.2026.1733632

Siregar, I., Siregar, Y. I., Mahmuddin, M., Pradana, B., Bangun, S. Y., Saparia, A., & Mudayat, M. (2026). The Effect of Passing Exercise Variations on Soccer Passing Performance: An Experimental Study among Physical Education Students. *International Journal of Human Movement and Sports Sciences*, *14*(1), 12–19. https://doi.org/10.13189/saj.2026.140102

Taheri-Araghi, S., Ghadimi, M., & Del Coso, J. (2025). Comparative Analysis of Passing, Possession, and Goal-Scoring Trends in Euro 2024 and Copa America 2024. *Sports*, *13*(10), 357. https://doi.org/10.3390/sports13100357

Yu, W., Liao, W., Zhong, Y., & Guan, Y. (2025). International youth football research developments: A CiteSpace-based bibliometric analysis. *Heliyon*, *11*(1), e41663. https://doi.org/10.1016/j.heliyon.2025.e41663