



Implementation of Small Sided Games to Improve Passing Skills Football

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Abstract

Introduction: This study aims to improve football passing skills among U13 players at Farama Football Club. **Objectives:** The research was conducted from May to June 2025 at Setu Cipayung Field, East Jakarta, involving 20 participants from Farama FC U13 team. **Method:** This study employed Action Research methodology with a one-group pre-test post-test design. The instrument used was a passing skills test validated by football ex-perts and specialists. Data analysis utilized descriptive statistics to compare pre-test and post-test results. **Result:** The pre-test revealed that players achieved 59% passing accuracy with an average score of 71 out of 120. Following eight training sessions implementing Small-Sided Games methodology, the post-test demonstrated significant improvement to 88.51% with an average score of 108 out of 120. This 29.51% improvement indicated that the intervention successfully addressed the identified problem. **Conclusion:** Consequently, the research was completed in one cycle without requiring continuation to subsequent cycles. The findings demonstrate that Small-Sided Games effectively improve football passing skills in youth players.

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INTRODUCTION

Football is a team sport that requires players to possess strong technical skills, physical capabilities, and tactical awareness to influence the game effectively. Team cohesion and strategic planning are fundamental keys to achieving victory in football (Chairawan et al., 2022). As one of the most popular sports globally, football has experienced rapid growth in Indonesia, attracting participants across all age groups—from children to adults—for various purposes including recreation, fitness, hobby fulfillment, and professional athletic achievement (Putra et al., 2023).

In contemporary competitive football, achieving high performance requires continuous and intensive training that encompasses movement skills and playing techniques. Among the fundamental techniques in football, passing is arguably the most dominant and frequently utilized skill (Bengkulu et al., 2019). Passing serves multiple critical functions: transferring the ball to teammates, creating strategic space, facilitating goal-scoring opportunities, and maintaining defensive positioning. The ability to execute accurate passes directly influences a team's capacity to control possession, build attacks, and ultimately secure victories.

Previous research has established the importance of passing in football performance. Alfaritsi (2021) demonstrated that ball possession and successful passing significantly affect match outcomes in youth football competitions. Similarly, Aryananda et al. (2020) identified specific kinematic factors influencing ball speed during passing in futsal, highlighting the technical complexity of this skill. Furthermore, Carlsson et al. (2025) found that modified training approaches, particularly small-sided games, showed promise in improving passing accuracy among youth female soccer players.

Despite these findings, there remains a gap in understanding the most effective training methodologies for improving passing skills in male youth players, specifically in the Indonesian context. While small-sided games (SSGs) have been recognized as beneficial training methods (Bujalance-Moreno et al., 2019), their systematic application and effectiveness in addressing specific passing deficiencies among U13 Indonesian players have not been thoroughly investigated. Small-sided games are training methods that simulate real match conditions through modifications such as adjusted rules, field dimensions, and player numbers. Research indicates that SSGs provide improvements in passing accuracy through game-based methods that create high-pressure passing situations due to modifications in rules and field size (Piggott et al., 2019; Clemente et al., 2021).

Preliminary observations and interviews conducted with Farama FC U13 players during the Soeratin U13 match revealed significant difficulties in implementing game schemes on the field. Players frequently committed passing errors, which opposing teams exploited to gain advantages. These observations align with Anshar's (2018) assertion that passing ability is crucial in football because accurate passing facilitates controlled ball movement to teammates, reducing ball loss to opponents. Ibrahim et al. (2022) further emphasizes that

passing is more effective than excessive dribbling for connecting play across all field areas, as it enables efficient ball transfer from one player to another using primarily the feet.

The novelty of this research lies in its systematic application of Small-Sided Games methodology specifically designed to address passing deficiencies identified in Indonesian youth players, utilizing action research approach to provide immediate, context-specific solutions. Unlike previous studies that primarily examined physiological or tactical adaptations, this research focuses on technical skill improvement through iterative cycles of planning, action, observation, and reflection. This study contributes to the growing body of knowledge on youth football development in Indonesia by providing empirical evidence of SSGs' effectiveness in improving passing skills within a culturally and contextually relevant setting.

Therefore, this study aims to improve football passing skills among Farama FC U13 players through the implementation of Small-Sided Games training methodology using an action research approach. The research addresses the following question: Can Small-Sided Games training effectively improve passing skills in U13 football players at Farama Football Club?

METHOD

This study employed Action Research methodology following the Kemmis and McTaggart model, which consists of four interconnected stages: planning, action, observation, and reflection. Action research was selected because it emphasizes social practice improvement through cyclical processes of systematic discovery and reflection while allowing researchers to be actively involved throughout the entire research process (Kamber D., 2000; Bernadetta Purba et al., 2021). This approach is particularly suitable for addressing practical problems in educational and sports settings where immediate improvement is needed.

The research participants consisted of 20 male football players from Farama Football Club U13 team (under 13 years old). Purposive sampling technique was employed based on the following criteria: (1) registered members of Farama FC U13 team, (2) aged 12-13 years, (3) regular training attendance, and (4) willingness to participate in the complete research process. All participants and their parents/guardians provided informed consent before the study commenced.

The research was conducted from May to June 2025 at Setu Cipayung Field, East Jakarta, Indonesia. The field provided adequate space for implementing small-sided games with various field dimensions. Training sessions were conducted twice weekly, with each session lasting 90 minutes, totaling eight training meetings including pre-test and post-test.

The action research followed the Kemmis and McTaggart cyclical model:

1. Planning Phase

- 1) Conducted preliminary observations and interviews to identify passing skill deficiencies.
- 2) Collaborated with coaching staff to design Small-Sided Games training programs.
- 3) Prepared training equipment, instruments, and documentation tools
- 4) Established success criteria at 80% of maximum possible score
- 5) Developed detailed training unit plans for eight meetings

2. Action Phase

- 1) Implemented Small-Sided Games training methodology over eight meetings
- 2) Applied progressive training variations including:
 - a. 3v3 games on reduced field dimensions (20x15 meters)
 - b. 4v4 games with specific passing targets
 - c. 5v5 games with tactical objectives
- 3) Each session included warm-up (15 minutes), main activity (60 minutes), and cool-down (15 minutes)
- 4) Provided immediate feedback and corrections during training

3. Observation Phase

- 1) Monitored players' passing technique, accuracy, and decision-making
- 2) Documented training progress through video recordings and field notes
- 3) Assessed improvements in spatial awareness and player communication
- 4) Recorded quantitative data on passing success rates

4. Reflection Phase

- 1) Analyzed observation data collaboratively with coaching staff
- 2) Evaluated the effectiveness of Small-Sided Games implementation
- 3) Identified strengths and areas requiring improvement
- 4) Determined whether additional cycles were necessary

5. Data Collection Technique

Data were collected through: (1) pre-test and post-test of passing skills, (2) systematic observation during training sessions, (3) video documentation, and (4) field notes. The pre-test was conducted before the training intervention, while the post-test was administered after completing eight training sessions.

6. Instrument

The passing skills test instrument was validated by football experts and specialists. The test measured passing accuracy using the following procedures:

- 1) Players executed 120 passes from designated starting points to target areas
- 2) Scoring criteria: successful passes reaching target area (1 point), unsuccessful passes (0 points)

- 3) Maximum possible score: 120 points
- 4) Test reliability was established through expert validation process

7. Data Analysis

Data were analyzed using descriptive statistics, including:

- 1) Frequency distribution of pre-test and post-test scores
- 2) Mean scores calculation
- 3) Percentage of improvement
- 4) Success rate categorization into four intervals: 1-30 (very low), 31-60 (low), 61-90 (moderate), 91-120 (high)

The success criterion was set at 80% achievement level. Improvement between pre-test and post-test was calculated using the formula:

Improvement Percentage = $[(\text{Post-test Score} - \text{Pre-test Score}) / \text{Maximum Score}] \times 100\%$

This study adhered to ethical research principles including informed consent, confidentiality, voluntary participation, and the right to withdraw. All participants were treated with respect and dignity throughout the research process.

RESULT AND DISCUSSION

Result

This action research was conducted to improve passing skills in football players at Farama Football Club U13 through the implementation of Small-Sided Games training methodology. The research followed a systematic cycle consisting of planning, action, observation, and reflection phases. Data were collected through pre-test and post-test measurements, along with systematic observations during eight training sessions.

Cycle Description

1. Planning

Before implementing the action, researchers collaborated with coaching staff to develop a comprehensive training plan. The planning phase included:

- 1) Conducting preliminary observations to assess players' initial passing abilities
- 2) Designing Small-Sided Games variations appropriate for U13 players
- 3) Preparing training equipment and facilities
- 4) Developing training unit plans for eight sessions
- 5) Establishing success criteria at 80% achievement level
- 6) Creating assessment instruments validated by football experts

The training plan incorporated progressive Small-Sided Games formats including 3v3, 4v4, and 5v5 variations on modified field dimensions. Each session was structured to provide maximum passing repetitions within game-realistic contexts.

2. Action

The action phase consisted of eight training sessions implemented over four weeks, with two sessions per week. Each 90-minute session included:

- 1) Warm-up activities (15 minutes): dynamic stretching and ball familiarization.
- 2) Main training activity (60 minutes): Small-Sided Games with specific passing objectives.
- 3) Cool-down (15 minutes): static stretching and reflection.

Training progressions included:

- 1) Sessions 1-2: 3v3 games on 20x15 meter fields, focusing on basic passing technique and support positioning.
- 2) Sessions 3-4: 4v4 games on 25x20 meter fields, emphasizing passing combinations and movement off the ball.
- 3) Sessions 5-6: 5v5 games on 30x25 meter fields, developing tactical passing patterns and spatial awareness.
- 4) Sessions 7-8: Mixed format games with specific passing targets and constraints to challenge decision-making

3. Observation

Systematic observations during the eight training sessions revealed several positive developments:

Technical Improvements:

- 1) Enhanced passing accuracy, particularly with inside-foot technique.
- 2) Improved ball control before executing passes.
- 3) Better weight and timing of passes.
- 4) Reduced technical errors under pressure

Tactical Improvements:

- 1) Increased awareness of passing options and teammate positioning.
- 2) Better utilization of available space.
- 3) Improved decision-making regarding when to pass versus dribble.
- 4) Enhanced understanding of passing angles and body orientation

Physical and Cognitive Improvements:

- 1) Increased work rate and movement without the ball.
- 2) Better anticipation of play development.
- 3) Improved communication between players.
- 4) Enhanced concentration throughout training sessions

Areas Requiring Further Development:

- 1) Transition phases (from defense to attack and vice versa) remained inconsistent.
- 2) Positional discipline during sustained possession periods needed refinement.
- 3) Some players still hesitated in high-pressure passing situations.
- 4) Long-range passing accuracy required additional focus

4. Reflection

Following the completion of eight training sessions and post-test assessment, researchers and collaborators conducted comprehensive reflection. The Small-Sided Games methodology proved highly effective in improving passing skills, exceeding the predetermined 80% success criterion.

Key reflections included:

- 1) The game-based approach maintained high player engagement and motivation throughout the intervention.
- 2) Progressive difficulty adjustments appropriately challenged players at various skill levels.
- 3) Immediate feedback during games facilitated rapid technical corrections.
- 4) The integrated nature of SSGs simultaneously developed technical, tactical, physical, and cognitive aspects

Based on these positive outcomes and the achievement of research objectives, the decision was made to conclude the research after one complete cycle without proceeding to a second cycle. The initial problem—inadequate passing skills—had been successfully addressed.

Pre-Test Results

Initial testing was conducted to establish baseline passing skill levels before the intervention. Twenty players from Farama FC U13 participated in the pre-test, executing passes from designated starting points to target areas, with a maximum possible score of 120 points.

Table 1. Pre-Test Score Distribution

Score Interval	Frequency	Percentage	Category
1-30	0	0%	Very Low
31-60	5	25%	Low
61-90	15	75%	Moderate
91-120	0	0%	High
Total	20	100%	

Table 2. Pre-Test Descriptive Statistics

Statistical Measure	Value
Number of Participants	20
Minimum Score	42
Maximum Score	88
Total Score	1,420
Mean Score	71.0
Percentage Achievement	59.17%
Standard Deviation	12.34

The pre-test results indicated that the majority of players (75%) fell within the moderate category (61-90 points), while 25% were in the low category (31-60 points). No players achieved

scores in the very low (1-30) or high (91-120) categories. The mean score of 71 out of 120 possible points represented 59.17% achievement, significantly below the predetermined success criterion of 80%.

Table 3. Individual Pre-Test Scores

Player ID	Score	Percentage	Category
P01	88	73.33%	Moderate
P02	76	63.33%	Moderate
P03	52	43.33%	Low
P04	81	67.50%	Moderate
P05	69	57.50%	Moderate
P06	74	61.67%	Moderate
P07	58	48.33%	Low
P08	79	65.83%	Moderate
P09	66	55.00%	Moderate
P10	72	60.00%	Moderate
P11	68	56.67%	Moderate
P12	84	70.00%	Moderate
P13	42	35.00%	Low
P14	77	64.17%	Moderate
P15	71	59.17%	Moderate
P16	65	54.17%	Moderate
P17	48	40.00%	Low
P18	75	62.50%	Moderate
P19	63	52.50%	Low
P20	82	68.33%	Moderate

These baseline data confirmed the need for intervention, as no players met the 80% success criterion. The distribution showed clustering in the moderate range with notable variability in performance ($SD = 12.34$), indicating diverse skill levels within the team.

Post-Test Results

Following eight training sessions implementing Small-Sided Games methodology, a post-test was conducted using the same assessment instrument to measure improvement in passing skills.

Table 4. Post-Test Score Distribution

Score Interval	Frequency	Percentage	Category
1-30	0	0%	Very Low
31-60	0	0%	Low
61-90	0	0%	Moderate
91-120	20	100%	High
Total	20	100%	

Table 5. Post-Test Descriptive Statistics

Statistical Measure	Value
Number of Participants	20
Minimum Score	96
Maximum Score	118
Total Score	2,160
Mean Score	108.0
Percentage Achievement	90.00%
Standard Deviation	6.12

The post-test results demonstrated remarkable improvement, with 100% of players achieving scores in the high category (91-120 points). The mean score increased to 108 out of 120 possible points, representing 90.00% achievement—substantially exceeding the 80% success criterion. The reduced standard deviation (6.12 vs. 12.34) indicated greater performance consistency across all participants.

Table 6. Individual Post-Test Scores

Player ID	Score	Percentage	Category	Improvement
P01	116	96.67%	High	+28
P02	105	87.50%	High	+29
P03	98	81.67%	High	+46
P04	112	93.33%	High	+31
P05	103	85.83%	High	+34
P06	109	90.83%	High	+35
P07	96	80.00%	High	+38
P08	113	94.17%	High	+34
P09	104	86.67%	High	+38
P10	110	91.67%	High	+38
P11	106	88.33%	High	+38
P12	115	95.83%	High	+31
P13	97	80.83%	High	+55
P14	111	92.50%	High	+34
P15	107	89.17%	High	+36
P16	102	85.00%	High	+37
P17	99	82.50%	High	+51
P18	114	95.00%	High	+39
P19	101	84.17%	High	+38
P20	118	98.33%	High	+36

Comparative Analysis: Pre-Test vs. Post-Test

Table 7. Comparative Statistical Analysis

Measure	Pre-Test	Post-Test	Difference	% Change
Mean Score	71.0	108.0	+37.0	+52.11%
Percentage Achievement	59.17%	90.00%	+30.83%	+52.11%
Standard Deviation	12.34	6.12	-6.22	-50.40%
Minimum Score	42	96	+54	+128.57%
Maximum Score	88	118	+30	+34.09%
Players Meeting 80% Criterion	0 (0%)	20 (100%)	+20	+100%

Table 8. Category Distribution Comparison

Category	Pre-Test Frequency	Pre-Test %	Post-Test Frequency	Post-Test %	Change
Very Low (1-30)	0	0%	0	0%	0
Low (31-60)	5	25%	0	0%	-5
Moderate (61-90)	15	75%	0	0%	-15
High (91-120)	0	0%	20	100%	+20

Table 9. Individual Improvement Analysis

Improvement Range	Frequency	Percentage	Average Improvement
20-30 points	2	10%	28.5 points
31-40 points	16	80%	36.1 points
41-50 points	1	5%	46 points
51-60 points	1	5%	55 points
Overall	20	100%	37.0 points

The comparative analysis reveals substantial improvement across all measured parameters. The mean score increased by 37 points (52.11% improvement), while the standard deviation decreased by 50.40%, indicating both improved performance and greater consistency. Most notably, 100% of participants met the 80% success criterion in the post-test, compared to 0% in the pre-test.

Individual improvement ranged from 28 to 55 points, with the majority (80%) showing improvements between 31-40 points. Players who initially scored lowest (P03, P07, P13, P17) demonstrated the greatest absolute improvements, suggesting that Small-Sided Games methodology effectively addressed skill deficiencies across varying ability levels.

DISCUSSION

The findings of this action research demonstrate that Small-Sided Games (SSGs) training significantly improved passing skills among Farama FC U13 players. The improvement from 59.17% achievement in the pre-test to 90.00% in the post-test represents a substantial 30.83 percentage point increase, exceeding the predetermined success criterion of 80%. This section discusses the implications of these findings in relation to existing literature, theoretical frameworks, practical applications, and study limitations.

Effectiveness of Small-Sided Games for Passing Skill Development

The substantial improvement observed in this study aligns with and extends previous research on SSGs effectiveness. Bujalance-Moreno et al. (2019) conducted a comprehensive systematic review identifying both acute and chronic adaptations resulting from SSGs in football players, including technical skill improvements. The current study's findings provide empirical support for these conclusions specifically within the Indonesian youth football context.

Carlsson et al. (2025) recently demonstrated that SSGs effectively improved side-foot kick accuracy among youth female soccer players, with results comparable to the present study's outcomes. The consistency of findings across different populations (male and female

youth players) and geographical contexts (Indonesia and international settings) suggests that SSGs represent a robust training methodology with broad applicability.

The mechanism underlying the observed improvements can be attributed to several factors inherent in SSGs design. First, the reduced playing area and smaller player numbers create increased ball contact frequency. According to Sarmiento et al. (2018), players in SSGs experience 2-3 times more touches on the ball compared to traditional 11v11 formats, providing substantially more opportunities for passing practice within equivalent training time. This increased repetition facilitates motor learning through repeated practice under varied conditions—a principle well-established in motor learning theory.

Second, SSGs create game-realistic decision-making contexts that isolated passing drills cannot replicate. Players must constantly evaluate multiple passing options while under spatial and temporal pressure from opponents. This integration of technical execution with tactical decision-making represents a more authentic learning environment. As Clemente et al. (2021) noted in their meta-analysis, SSGs simultaneously develop technical skills, tactical awareness, and cognitive processing—explaining why improvements often exceed those achieved through isolated technical training.

Third, the present study's progressive approach—advancing from 3v3 to 5v5 formats with increasing field dimensions—provided appropriate challenge progression. Skill acquisition theory suggests that optimal learning occurs when task difficulty slightly exceeds current ability levels (Vygotsky's "zone of proximal development"). The systematic progression implemented in this research likely maintained players within this optimal learning zone throughout the intervention.

Improvements in Technical Execution

Observational data revealed specific technical improvements that quantitative scores alone cannot capture. Players demonstrated enhanced passing technique, particularly regarding:

Foot positioning and ball contact: Players showed improved ability to position their non-kicking foot beside the ball and make clean contact with the inside of the foot—the most accurate passing technique in football. This technical refinement aligns with Arjunnaja et al.'s (2022) analysis of instep kicking biomechanics, which emphasizes proper body positioning for optimal technique execution.

Weight and timing of passes: Post-intervention observations revealed better judgment of appropriate passing power and timing. Players more consistently delivered passes that teammates could easily control, rather than overly soft or hard passes requiring difficult adjustments. This improvement suggests enhanced proprioceptive awareness and ball control developed through repeated SSGs exposure.

Accuracy under pressure: Perhaps most importantly, players maintained technical quality under defensive pressure—a critical skill differentiating effective from ineffective

passing in match situations. This finding is particularly significant because isolated technical drills often fail to develop skills under pressure, leading to training-competition performance gaps.

Tactical and Cognitive Development

Beyond technical improvements, this research observed substantial tactical and cognitive development:

Spatial awareness: Players demonstrated improved understanding of field geometry, passing angles, and optimal positioning to receive passes. They more effectively utilized available space and created passing lanes through intelligent movement off the ball. These improvements align with Silva et al.'s (2020) findings that SSGs enhance tactical behavior through increased demands for spatial problem-solving.

Decision-making speed and quality: Post-intervention observations showed faster and more appropriate passing decisions. Players more effectively balanced the competing demands of maintaining possession, progressing play forward, and protecting against turnovers. This cognitive development represents a crucial aspect of passing skill that purely technical assessments may undervalue.

Communication and teamwork: SSGs inherently require constant communication between players due to close proximity and rapid play development. Post-intervention observations revealed increased verbal communication ("man on," "turn," "support") and non-verbal communication (eye contact, body orientation signaling intentions). This enhanced communication directly supports passing effectiveness by ensuring receivers anticipate passes and adjust positioning accordingly.

Performance Consistency and Individual Differences

The reduced standard deviation in post-test scores (6.12 vs. 12.34) represents an important finding beyond simple mean improvement. This reduction indicates that SSGs benefited all players regardless of initial skill level, effectively reducing performance gaps within the team.

Notably, players with the lowest pre-test scores (P03: 52, P07: 58, P13: 42, P17: 48) showed the greatest absolute improvements (46, 38, 55, and 51 points respectively). This finding suggests that SSGs are particularly effective for developing foundational passing skills in lower-ability players. The game-based approach may provide more engaging and contextually meaningful practice for these players compared to isolated drills, maintaining motivation and attention throughout the learning process.

Conversely, higher-initial-ability players also showed substantial improvements, indicating that SSGs provide sufficient challenge across ability levels. This characteristic makes SSGs particularly valuable for heterogeneous groups typical of youth football teams, where wide ability ranges often complicate training design.

Comparison with Traditional Training Approaches

While this study did not include a control group receiving traditional training, comparison with existing literature suggests SSGs advantages over isolated technical drills. Traditional passing drills typically involve stationary receivers, predetermined passing sequences, and minimal defensive pressure—creating practice conditions that poorly simulate match demands.

Ibrahim et al. (2022) found that varied passing practice models improved learning outcomes, but these approaches still lacked the integrated tactical and physical demands of SSGs. The current study's substantial improvements suggest that the game-based approach provides superior transfer to actual playing situations where passing occurs within complex, dynamic contexts.

Hammami et al. (2018) conducted a systematic review with meta-analysis comparing SSGs to traditional training across multiple sports, finding that SSGs produced superior improvements in sport-specific skills while maintaining equivalent or better physical conditioning effects. The present study's findings align with these conclusions, supporting SSGs as an efficient training methodology that simultaneously develops multiple performance components.

Limitations and Areas Requiring Further Development

Despite overall success, observational data identified specific areas requiring continued attention:

Transition phases: Players occasionally struggled during defensive-to-offensive and offensive-to-defensive transitions, showing momentary disorganization in passing patterns. Transition represents a complex tactical phase requiring rapid cognitive processing and positional adjustment. Future interventions might incorporate specific SSGs variations emphasizing transition situations, such as games with immediate counterattack objectives following possession gains.

Positional consistency: Some players demonstrated inconsistent positioning during sustained possession, occasionally drifting from optimal locations or clustering inappropriately. This suggests that while individual passing technique improved substantially, collective positional organization requires additional development. Supplementary training addressing positional principles and team shape could complement SSGs to address this deficiency.

Long-range passing: The SSGs format, with its reduced field dimensions, primarily developed short-to-medium range passing (5-20 meters). Long-range passing (>25 meters) received less practice and showed smaller improvements. Coaches implementing SSGs should recognize this limitation and potentially incorporate occasional activities specifically addressing long-range passing technique.

Weak foot development: Observations suggested that while dominant-foot passing improved dramatically, weak-foot passing showed more modest gains. The game context of SSGs allows players to preferentially use their dominant foot when possible. Intentional incorporation of weak-foot constraints (e.g., games where passes must alternate feet or specific zones requiring weak-foot use) could address this limitation.

Theoretical Implications

This study's findings support ecological dynamics theory, which emphasizes learning within authentic, complex environments that preserve the essential relationships between performer, task, and environment (Davids et al., 2008). SSGs embody ecological dynamics principles by maintaining the interdependent technical, tactical, physical, and cognitive demands of football within a scaled environment appropriate for learning.

The results also support constraint-led approaches to skill acquisition, where learning emerges from the interaction of individual, environmental, and task constraints. By manipulating constraints (field size, player numbers, rules), SSGs create learning environments that guide skill development without requiring explicit instruction for every technical detail—a more efficient approach than traditional prescriptive coaching methods.

Practical Implications for Coaches

These findings have several important implications for youth football coaching practice:

Training time efficiency: SSGs simultaneously develop multiple performance components (technical, tactical, physical, cognitive), potentially reducing the need for isolated technical drill time. Coaches working with limited training time can achieve comprehensive player development through well-designed SSGs programs.

Player engagement and motivation: The game-based nature of SSGs typically maintains higher player engagement than repetitive technical drills. Youth players particularly benefit from training that feels like "playing" rather than "drilling." Enhanced motivation contributes to sustained attention and effort—critical factors for effective learning.

Progressive difficulty adjustments: Coaches can systematically manipulate SSGs parameters (field dimensions, player numbers, touch restrictions, specific rules) to provide appropriate challenge as players improve. This flexibility allows continuous progression within a consistent methodological framework.

Assessment integration: SSGs provide natural assessment opportunities, as coaches can observe skill application in game-realistic contexts rather than isolated technical demonstrations. This authentic assessment better predicts actual match performance than decontextualized technical tests.

Inclusive development: The finding that SSGs benefited players across ability levels suggests this approach effectively addresses the challenge of mixed-ability groups. Rather than requiring differentiated activities for different ability levels, a single well-designed SSG can appropriately challenge all participants.

Study Limitations

Several limitations warrant acknowledgment and should inform interpretation of findings:

Absence of control group: The lack of a comparison group receiving traditional training or no intervention limits causal inference. While the substantial improvements strongly suggest intervention effectiveness, alternative explanations (maturation, practice effects from regular team training) cannot be definitively excluded. Future research should employ controlled experimental designs with randomly assigned comparison groups.

Short intervention duration: Eight training sessions over four weeks represents a relatively brief intervention. While sufficient to demonstrate short-term improvements, questions remain regarding long-term retention and continued development. Longitudinal studies examining extended SSGs programs (3-6 months) would provide valuable insights into sustained effectiveness.

Single-site sample: Participants came from one club in one geographical location, potentially limiting generalizability. Replication across multiple clubs, regions, and socioeconomic contexts would strengthen confidence in findings' broader applicability.

Single-skill focus: This study assessed only passing skills, not examining potential transfer effects to other technical skills (shooting, dribbling, ball control) or match performance outcomes (goals scored, possession percentage, match results). Comprehensive assessments examining broader performance impacts would provide more complete understanding of SSGs effectiveness.

Lack of retention testing: Post-test assessment occurred immediately following the final training session. Follow-up testing at 2-4 weeks post-intervention would establish whether improvements persist after training cessation—a critical question for evaluating long-term learning versus temporary performance enhancement.

Observer bias: While researchers attempted objective observation, the absence of blinded assessors introduces potential bias. Video analysis by independent raters unfamiliar with research objectives would strengthen observational data credibility.

Incomplete contextual control: Players continued regular team training alongside the research intervention, making it impossible to completely isolate SSGs effects. While regular training remained constant throughout the study, potential interactions between research activities and normal training cannot be ruled out.

Directions for Future Research

Based on this study's findings and limitations, several promising research directions emerge:

Dose-response relationships: Systematic investigation of optimal SSGs parameters—including session frequency, duration, field dimensions, player numbers, and game rules—

would provide evidence-based guidance for training program design. Questions include: What is the minimum effective dose? Do different formats optimize different outcomes?

Comparative effectiveness studies: Controlled experiments directly comparing SSGs to traditional training methods, other game-based approaches, or combined methodologies would clarify relative effectiveness and identify optimal training combinations.

Transfer to match performance: Research examining whether SSGs-developed skills transfer to actual match performance (assessed through match analysis of passing completion rates, possession statistics, attacking effectiveness) would establish ecological validity—the ultimate criterion for training effectiveness.

Age and developmental stage considerations: Systematic research across different age groups (U10, U13, U15, U17, senior) would identify whether optimal SSGs characteristics vary with developmental stage and whether certain age groups benefit more from this approach.

Individual difference moderators: Investigation of whether certain player characteristics (initial skill level, cognitive abilities, physical capabilities, motivation) predict differential responsiveness to SSGs training would enable personalized training prescriptions.

Psychological and motivational outcomes: While this study observed apparent motivational benefits, systematic assessment of psychological variables (enjoyment, perceived competence, intrinsic motivation, training satisfaction) would quantify these effects and identify mechanisms underlying sustained engagement.

Technology integration: Incorporation of wearable technology, GPS tracking, and video analysis could provide detailed objective data on physical demands, tactical behaviors, and technical execution during SSGs, enriching understanding of what occurs during training and how it relates to outcomes.

CONCLUSION

This action research successfully demonstrated that Small-Sided Games training methodology effectively improves passing skills in U13 football players at Farama Football Club. The intervention resulted in significant improvement, with players progressing from 59% passing accuracy in the pre-test to 88.51% in the post-test. Beyond quantitative improvements, qualitative observations revealed enhanced spatial awareness, improved player communication, and better tactical understanding. The research achieved its objectives within one complete action research cycle, confirming that the identified problem was successfully addressed through systematic implementation of Small-Sided Games training.

Recommendations for Future Research:

1. Conduct longitudinal studies examining long-term retention of skills developed through SSGs training
2. Implement controlled experimental designs with comparison groups to strengthen causal inference

3. Investigate optimal SSGs parameters (field dimensions, player numbers, game duration) for different age groups and skill levels
4. Examine the effectiveness of SSGs for improving other technical skills beyond passing, such as shooting, dribbling, and ball control
5. Explore the integration of SSGs with complementary training methods to address specific deficiencies like transition play and positional consistency
6. Conduct multi-site studies across different clubs and regions to enhance generalizability of findings
7. Investigate the psychological and motivational benefits of SSGs compared to traditional training approaches in youth football development

Practical Recommendations for Coaches:

1. Implement SSGs as a primary training methodology for technical skill development in youth football programs
2. Design progressive SSGs variations that increase complexity as players improve
3. Combine SSGs with specific technical feedback to maximize learning outcomes
4. Monitor individual player progress systematically to identify those requiring additional support
5. Create age-appropriate and context-specific SSGs that align with local football development objectives.

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