

Passing and Ball Control Skills through Small-Sided Games in Futsal Learning at Elementary School Students

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ABSTRACT

This study aimed to examine the effectiveness of the Small-Sided Games (SSG) method in improving sixth-grade elementary school students' passing and ball control skills in futsal, together with its contribution to cognitive and affective learning outcomes. A two-cycle Classroom Action Research (CAR) design following the Kemmis and Taggart model was employed, comprising planning, action, observation, and reflection stages. Cycle I engaged students in homogeneous (male-only) groups, whereas Cycle II involved heterogeneous (male and female) groups with increased training variety and intensity. Learning outcomes were measured through cognitive tests (multiple-choice and short-answer items), direct psychomotor performance assessment of passing and ball control, and structured affective observation. Data were analyzed descriptively by comparing mean scores across the pre-cycle, Cycle I, and Cycle II stages against a success criterion of ≥ 80 . Mean scores increased consistently across cycles. Cognitive scores rose from 62.58 (pre-cycle) to 77.58 (Cycle I) and 87.58 (Cycle II); passing scores from 43.10 to 67.24 and 92.24; ball-control scores from 44.82 to 68.96 and 93.96; and affective scores from 46.55 to 63.79 and 87.06. All indicators exceeded the success threshold by Cycle II, with the largest gains observed in the psychomotor domain. The Small-Sided Games method effectively enhanced students' passing and ball control skills as well as their cognitive and affective learning outcomes by creating a more active, enjoyable, and game-contextual learning environment.

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1. INTRODUCTION

Physical education, sports, and health (PJOK) at the elementary school level plays a crucial role in laying the foundation for children's gross and fine motor skills (Azizin et al., 2024; Irvan, 2024; Setyawan et al., 2022). In sixth grade, students begin the transition into early adolescence, during which neuromuscular coordination matures sufficiently for the acquisition of more specific sport-related techniques (Khory et al., 2023; Mardiana et al., 2024). Futsal, one of the most widely taught sports within the

national physical education curriculum, is frequently used as a vehicle for this development (Hudain et al., 2025). In classroom practice, however, achieving proficiency in fundamental techniques such as passing and ball control continues to present a significant challenge for both teachers and students.

Futsal is more than kicking a ball toward a goal; it demands rapid decision-making, precise movement within confined spaces, and coordinated teamwork (Anwar et al., 2023; Madao et al., 2026). Passing and ball control constitute the technical core of the game. Inaccurate passing disrupts the flow of attacking play, while poor ball control causes players to lose possessions easily given the high tempo of futsal and the comparatively small playing area (Hidayat et al., 2026).

For sixth-grade students, mastery of these two techniques is often constrained by monotonous instructional methods. Conventional teaching commonly relies on isolated drills, in which students face one another and pass the ball in a static, repetitive manner (Hidayat et al., 2024; Hudain et al., 2025). Although mechanically useful for rehearsing technique, this approach detaches practice from the contextual demands of an actual match. Consequently, when students encounter real game situations, they tend to have trouble, commit control errors, and fail to deliver accurate passes under pressure (Alfairuzzabady et al., 2025).

Preliminary observations across several elementary schools identified recurring obstacles in futsal instruction, including low student engagement caused by the dominance of a small number of skilled players in full-sided game formats, minimal ball-contact frequency resulting from conventional drill-based training, and limited field facilities. This gap between curricular competency targets and instructional reality underscores the need for a more dynamic, inclusive, and adaptive pedagogical approach. The Small-Sided Games (SSG) method offers a strategic response to this need by comprehensively improving learning effectiveness for all students rather than a select few.

"Small-sided games" refer to modified forms of football or futsal played with a reduced number of players (e.g., 2v2, 3v3, or 3v1) on a smaller pitch. (Lestari et al., 2025; Saputri et al., 2025) The method is grounded in the Teaching Games for Understanding (TGfU) framework, in which students acquire technical skills through understanding of game situations rather than isolated repetition (Abdul Ghani et al., 2023; Morales-Belando et al., 2022). Within Small-Sided Games (SSG), every participant is compelled to remain actively involved; the reduced number of players dramatically increases individual ball-contact frequency compared with full-sided games, thereby generating more frequent passing and ball-control actions under realistic opponent pressure but within a more manageable tactical scale (Purwanto et al., 2026; Peña-Ardila, 2025).

A substantial body of research supports the technical and physiological benefits of SSG in football and futsal contexts. Systematic reviews have shown that SSG formats elicit high-intensity, technically demanding actions that closely replicate competitive match conditions (Clemente et al., 2021; Li et al., 2025; Sarmiento et al., 2018), while comparative studies indicate that manipulating player numbers and pitch dimensions

can be used to target specific technical and physiological outcomes ([Castillo-Rodríguez et al., 2023](#); [Halouani et al., 2014](#); [Köklü, 2012](#); [Rumpf et al., 2025](#)). Nevertheless, most of these studies have examined adolescent or adult, predominantly male, competitive populations, with outcomes centered on physiological load or isolated technical performance rather than on integrated cognitive, psychomotor, and affective learning outcomes within a formal elementary school curriculum.

This study addresses that gap by testing the effectiveness of small-sided games not only in general technical terms but also through a design specifically tailored to the psychomotor characteristics, attention span, and physical capacity of 11–12-year-old elementary school students within the constraints of the PJOK curriculum. A further contribution lies in the intervention design, which simultaneously trains passing and ball-control technique within a single tactical movement chain and progressively shifts group composition from homogeneous to heterogeneous groupings to strengthen inclusivity, ensuring equitable and active participation regardless of students' initial ability level. In addition, the study offers practical value through the modification of equipment and field dimensions to accommodate the limited sports infrastructure commonly found in Indonesian elementary schools, thereby reframing futsal instruction from a performance-oriented model toward a more participatory, educational, and contextually applicable approach.

Building on this rationale, the present study was designed as a Classroom Action Research (CAR) to determine whether, and to what extent, the implementation of Small-Sided Games improves sixth-grade students' passing and ball-control skills in futsal, together with associated gains in cognitive understanding and affective engagement, across two successive instructional cycles. It is anticipated that the findings will contribute theoretically to the development of game-based PJOK pedagogy in elementary education and practically to teachers seeking to design futsal instruction that is simultaneously enjoyable, inclusive, and oriented toward measurable motor-skill achievement.

2. METHOD

This study employed a Classroom Action Research (CAR) design, selected for its established effectiveness in systematically improving the quality of classroom-based instruction. CAR integrates a cyclical process of planning, action, observation, and reflection that allows researchers and teachers to collaboratively design instruction that is directly responsive to students' needs. The study followed the model of Kemmis and Taggart, an extension of Kurt Lewin's original action-research framework, chosen for its structured yet iterative linkage between the four constituent stages. This cyclical structure allows the outcomes of reflection at one stage to directly inform action at the subsequent stage, thereby supporting continuous pedagogical refinement.

The study was conducted at Elementary School 57 Bulu-Bulu Maros, Maros Regency, South Sulawesi Province, Indonesia, over a period of approximately one month (January–February 2026), scheduled to align with the PJOK curriculum and the school's academic calendar. The population comprised all sixth-grade students at the

school who participated in futsal learning activities. The population in this study is understood not merely as a numerical count of subjects but as the complete set of cognitive, psychomotor, and affective attributes relevant to the intervention being investigated.

The research procedure was organized into three main phases. In the preparatory phase, the researchers formulated the research problem, conducted preliminary field observations, obtained the necessary institutional permits, and developed the data-collection instruments. In the implementation phase, two action cycles were carried out, each consisting of two meetings. Cycle I introduced the 3-vs-1 Small-Sided Games format in homogeneous groups (male students only). Building on the reflection outcomes of Cycle I, Cycle II retained the 3-vs-1 format but reorganized students into heterogeneous groups (male and female) and increased the variety and intensity of training. Each cycle followed the four canonical CAR stages of planning, action, observation, and reflection, with classroom observation used to identify performance deficiencies that were subsequently addressed in the following cycle. In the concluding phase, quantitative data from each cycle were compiled, analyzed, and interpreted to formulate conclusions and instructional recommendations.

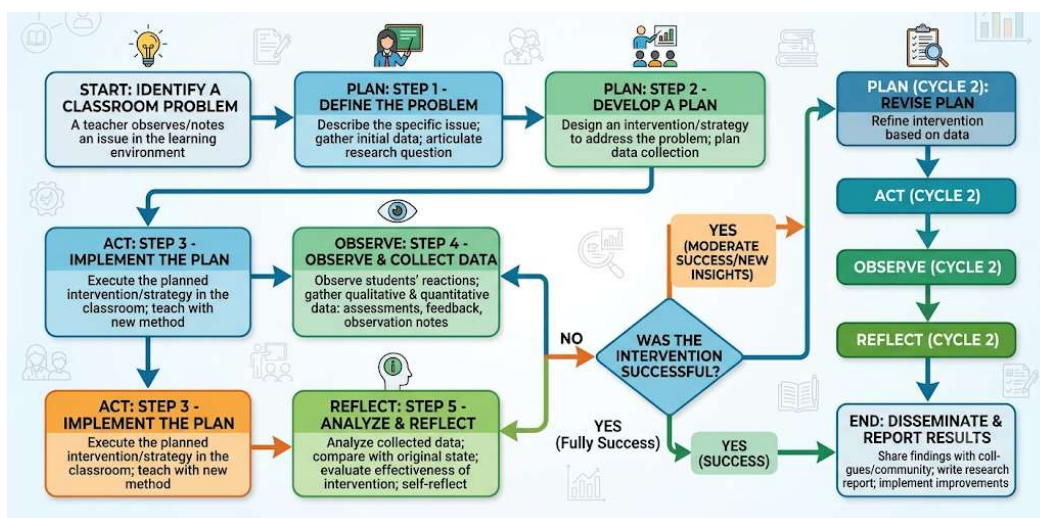


Figure 1. Classroom Action Research (CAR) Design Process

Student learning outcomes were assessed using complementary instruments across three domains. Cognitive achievement was measured through written tests: ten multiple-choice items in Cycle I, expanded to ten multiple-choice and ten short-answer items in Cycle II to capture a broader range of conceptual understanding of small-sided-game concepts. Psychomotor achievement was assessed through direct performance testing of passing and ball-control skills observed during small-sided game situations. Affective development—including cooperation, self-confidence, and sportsmanship—was assessed through structured observation during the learning process. Performance in each domain was converted into a class mean score, and a threshold of ≥ 80 (categorized as "Very Good") adopted a priori as the success criterion for each cycle, consistent with common practice in classroom action research.

Data was analyzed using descriptive statistical techniques, comprising the calculation of mean scores for each assessed domain (cognitive, passing, ball control, and affective) at the pre-cycle, Cycle I, and Cycle II stages, and the examination of score changes between stages against the predetermined success criterion. Because the analysis relied on descriptive comparison of cycle means rather than inferential hypothesis testing, the findings should be interpreted as evidence of practical classroom-level improvement rather than as statistically generalizable effect estimates; this limitation is addressed further in the Discussion section.

3. RESULTS AND DISCUSSION

Results

The implementation of the Small-Sided Games method produced a consistent improvement in students' cognitive, psychomotor, and affective learning outcomes across the pre-cycle, Cycle I, and Cycle II stages. Table 1 and Figure 2 summarize the mean scores obtained in each domain at every stage of the research.

Table 1. Mean Scores of Cognitive, Passing, Ball Control, and Affective Domains across Research Cycles

Domain	Pre-cycle	Cycle I	Cycle II	Gain (pre-cycle → cycle II)
Cognitive	62.58	77.58	87.58	+25.00
Passing	43.10	67.24	92.24	+49.14
Ball Control	44.82	68.96	93.96	+49.14
Affective	46.55	63.79	87.06	+40.51

In the pre-cycle stage, student performance across all four domains remained well below the success criterion, with mean scores of 62.58 for cognitive understanding, 43.10 for passing, 44.82 for ball control, and 46.55 for affective engagement. These baseline results indicate that students' initial technical and conceptual mastery of futsal had not yet developed optimally, consistent with the view that learning outcomes represent behavioral change that has not yet materialized in the absence of sufficiently active instructional involvement.

Following the first cycle of intervention — the 3-vs-1 Small-Sided Games format implemented in homogeneous (male-only) groups—mean scores improved substantially across all domains: cognitive achievement increased to 77.58, passing to 67.24, ball control to 68.96, and affective engagement to 63.79. Cognitive gains were reflected in students' improving understanding of the 3-vs-1 small-sided-game concept, while psychomotor gains were evident in more accurate passing and more controlled ball handling. Increased active involvement in the game format was also associated with observable gains in affective indicators such as cooperation and self-confidence. Although the improvement in Cycle I was clear, none of the four domains yet reached the ≥ 80 success threshold, indicating that students were still in the process of adapting to the new instructional method.

Table 2. Cycle II Improvements and Performance Results

Category	Aspect / Parameter	Description / Score
Learning Process Refinement	Format	Retained 3-vs-1 Small-Sided Games format
	Student Grouping	Reorganized into heterogeneous groups (combined male and female students)
	Training Adjustments	Increased training variety and intensity
	Assessment Method	Expanded cognitive assessment to include short-answer items alongside multiple-choice questions
Outcome Scores (Cycle II)	Cognitive Score (Mean)	87.58
	Passing Score	92.24
	Ball Control Score	93.96
	Affective Engagement Score	87.06
Key Findings	Benchmark Criterion	All 4 domains exceeded the ≥ 80 success criterion by Cycle II
	Largest Gain Domain	Psychomotor Domain (Passing and Ball Control)
	Absolute Growth	Increased by more than 49 points from the pre-cycle baseline

In Cycle II, the learning process was refined by retaining the 3-vs-1 Small-Sided Games format while reorganizing students into heterogeneous groups (combining male and female students) and increasing training variety and intensity; the cognitive assessment was also expanded to include short-answer items alongside multiple-choice questions. These adjustments were associated with a further, more pronounced improvement: mean cognitive score rose to 87.58, passing to 92.24, ball control to 93.96, and affective engagement to 87.06. All four domains exceeded the ≥ 80 success criterion by Cycle II, with the largest absolute gain observed in the psychomotor domain (passing and ball control), each increasing by more than 49 points from the pre-cycle baseline.

Overall, three patterns emerge from descriptive analysis. First, mean scores increased consistently and substantially at every stage across all four domains, indicating internal consistency between the cognitive, psychomotor, and affective instruments. Second, no domain showed a decline between successive stages, suggesting that the corrective actions implemented after Cycle I were effective. Third, all four domains reached the "Very Good" category (≥ 80) by Cycle II, satisfying the predetermined success indicator for the intervention.

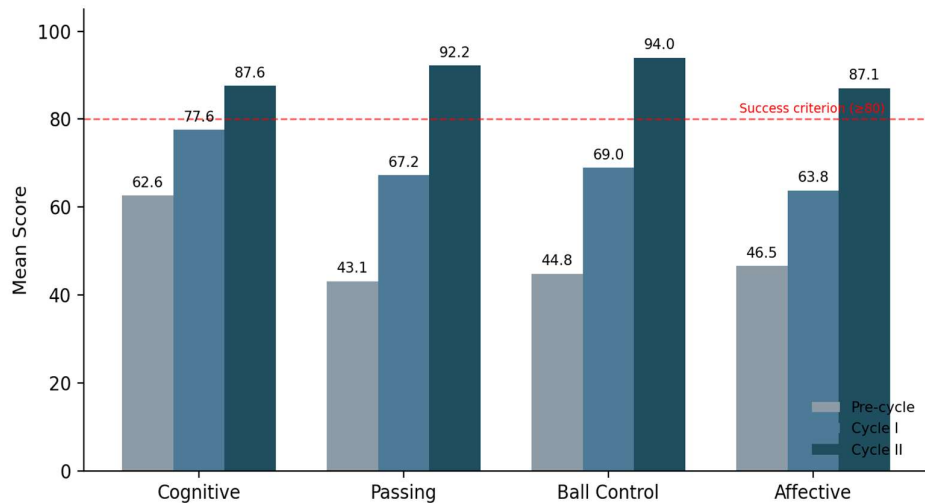


Figure 2. Mean scores of cognitive, passing, ball control, and affective domains across the pre-cycle, Cycle I, and Cycle II

Discussion

The results of this study indicate that the implementation of Small-Sided Games (SSG) in futsal learning substantially improved students' passing ability and ball control, evident in the gradual increase in both accuracy and technical quality observed from the pre-cycle stage through Cycle I and Cycle II. The improvement in passing ability can be attributed to the fact that small-sided games provide students with substantially more opportunities to interact with the ball. Because each student is actively and continuously involved in game play, they can rehearse passing repeatedly within a realistic, opponent-pressured context rather than in an isolated drill. This finding is consistent with [Hidayat et al. \(2022\)](#), who reported that technical skills such as passing improve most effectively through repeated practice embedded in game-like situations rather than through static repetition alone.

The improvement in ball control can similarly be attributed to the defining characteristics of small-sided games, which require players to control the ball within confined spaces and under active opponent pressure. These conditions place sustained demands on coordination, concentration, and the ability to control the ball quickly and accurately. This finding aligns with [Halouani et al. \(2014\)](#), who found that small-sided games enhance players' technical performance, including ball control, because of the format's high intensity and the active involvement it demands from every participant. It is also consistent with broader evidence that manipulating player numbers and space constraints in SSG formats intensifies technical and decision-making demands relative to full-sided play ([Peña-Ardila et al., 2025](#); [Pizarro et al., 2021](#)).

From a pedagogical perspective, small-sided games also appear to have increased students' engagement and motivation ([Ridwan et al., 2022](#)). Students demonstrated greater enthusiasm and reduced boredom, as learning was delivered through enjoyable, interactive, game-based activity rather than repetitive isolated drills. This is consistent with the broader game-based learning literature, which emphasizes learning by doing,

whereby students construct knowledge and skill through direct, situated experience rather than decontextualized instruction (Bado, 2022). It also reinforces the theoretical premise of Teaching Games for Understanding (TGfU), which positions tactical understanding developed through modified game play as a foundation for, rather than a consequence of, technical skill acquisition (Ortiz et al., 2023).

The pattern of improvement across cycles further indicates that the effectiveness of small-sided games in elementary-level physical education is not immediate but develops progressively with exposure. In Cycle I, gains were evident but had not yet reached the success criterion, plausibly reflecting an adaptation period during which students were still becoming familiar with the small-sided format. In Cycle II, more substantial gains were observed as students grew more accustomed to the game pattern and were able to apply passing and ball-control techniques more effectively and consistently under match-like conditions. This trajectory is consistent with reviews indicating that the technical benefits of SSG are sensitive to task familiarity, format, and accumulated exposure (Coito et al., 2022; Sarmiento et al., 2018).

Beyond the instructional method itself, the success of the intervention appears to have been reinforced by the teacher's role in managing the learning process, providing clear instructions and conducting reflection and evaluation at the close of each cycle. This is consistent with the core principles of classroom action research, which emphasize continuous, evidence-informed improvement through iterative cycles of planning and reflection (Riedy et al., 2023). In this study, the results of Cycle I were used explicitly as evaluative input to refine Cycle II, including adjustments to training intensity, time management, group composition (from homogeneous to heterogeneous), and instructional clarity—refinements that appear to explain the more pronounced gains observed in Cycle II relative to Cycle I.

The shift from homogeneous to heterogeneous grouping between Cycle I and Cycle II also merit attention. Rather than diminishing performance, mixed-gender grouping coincided with the largest gains recorded in the study, suggesting that carefully structured heterogeneous small-sided games can support inclusive participation without compromising—and potentially reinforcing—technical development, consistent with the inclusive, cooperative-learning orientation associated with game-based physical education (Casey & Goodyear, 2015; Pereira Ribeiro et al., 2024).

Taken together, these findings reinforce the broader body of evidence that small-sided games constitute an effective pedagogical tool for developing fundamental football and futsal skills (Sarmiento et al., 2018), while extending this evidence base to an elementary school setting in which cognitive and affective outcomes were assessed alongside psychomotor performance and where the method was deliberately adapted to accommodate the developmental characteristics of 11–12-year-old learners and the infrastructural constraints typical of Indonesian elementary schools.

Several limitations should be acknowledged when interpreting these findings. First, the study was conducted at a single school with one intact class across two cycles, without a comparison or control group; consequently, the observed improvements, while consistent with the intervention, cannot be fully isolated from maturation,

practice, or testing effects. Second, the analysis relied on descriptive comparison of cycle means rather than inferential statistical testing, limiting the extent to which the magnitude of improvement can be generalized beyond the studied context. Third, the cognitive instrument differed slightly between cycles (the addition of short-answer items in Cycle II), which may have contributed marginally to the observed cognitive gain independent of the instructional intervention itself. Future research employing larger, multi-site samples, a comparison-group or quasi-experimental design, standardized and psychometrically validated instruments across cycles, and inferential statistical analysis would strengthen the external validity and causal interpretability of these findings.

4. CONCLUSION

The implementation of the small-sided games method in futsal learning can lead to the conclusion that this method is effective in improving sixth-grade elementary school students' passing and ball-control skills, together with associated gains in cognitive and affective learning outcomes. Improvements were observed progressively across cycles: mean scores rose from 62.58, 43.10, 44.82, and 46.55 (cognitive, passing, ball control, and affective, respectively) in the pre-cycle stage to 77.58, 67.24, 68.96, and 63.79 in Cycle I, and further to 87.58, 92.24, 93.96, and 87.06 in Cycle II, exceeding the predetermined ≥ 80 success criterion for all four domains.

These results demonstrate that the Small-Sided Games method is able to create a more active, enjoyable, and contextually realistic learning environment, enabling students to more readily grasp instructional content while improving their futsal playing skills. Practically, teachers seeking to improve technical outcomes in futsal instruction may consider progressively restructuring small-sided formats — from homogeneous to heterogeneous groupings and from lower to higher training intensity — across successive lessons rather than relying on a single static instructional format. Theoretically, the findings extend the applicability of the Teaching Games for Understanding framework to elementary-level, curriculum-embedded futsal instruction under the resource constraints typical of Indonesian schools. Given the limitations noted above, future studies are encouraged to employ comparison-group designs and inferential statistical analysis to further verify and extend these findings.

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