



Improving Futsal Learning Outcomes through TaRL Based on Small-Sided Games

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Abstract

Futsal learning in schools is often hampered by students' low mastery of basic techniques and the wide variation in individual skill levels. This study aims to enhance learning outcomes by integrating the Teaching at the Right Level (TaRL) approach with Small-Sided Games (SSG). Classroom Action Research was conducted in two cycles involving 36 grade XI students. Data were collected using the Game Performance Assessment Instrument, observation sheets, and documentation, then analyzed through descriptive statistics, the Shapiro-Wilk normality test, paired sample t-test, effect size calculations, and percentage of learning completeness. The findings indicated a substantial improvement in student performance, with the average score increasing from 63.31 in the first cycle to 77.72 in the second cycle. The paired sample t-test confirmed a statistically significant increase ($p < 0.001$). Moreover, the effect size values, ranging from large ($d = 1.91$) to very large ($d = 3.39$), demonstrate the strong impact of the intervention. Learning completeness also rose markedly from 13.89% to 86.11%. These results affirm that combining TaRL with SSG is an effective instructional strategy to address ability gaps and improve futsal learning outcomes in school settings.

How to Cite

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INTRODUCTION

Futsal is one of the sports that is increasingly popular in the educational environment because of its dynamic nature, demands technical skills, and can be played in a limited space so it is very suitable for school learning (FIFA, 2023). At the secondary level, futsal contributes to the development of motor skills, decision-making, and teamwork, thereby supporting PE learning outcomes according to the latest curriculum (Kementerian Pendidikan, Kebudayaan, Riset, Dan Teknologi, 2022). Futsal learning also contributes to improving students' physical fitness and active involvement in school activities, so it is one of the recommended activities for the development of students' movement competencies (Clemente et al., 2021).

Students' futsal learning outcomes in practice are still not optimal, which is characterized by low mastery of basic techniques and uneven participation in the classroom (Rusydy et al., 2024). The difference in students' initial abilities causes some students to lack confidence and tend to be passive, especially when learning still uses a uniform approach without considering individual needs (Suharjana, 2021). In addition, the still uniform teaching approach causes the learning time to be ineffective, as teachers have to repeat the material for some students while the rest of the group waits without adequate learning stimulation (Tas & Baki Minaz, 2024). This impact not only affects motor learning outcomes, but also students' motivation, confidence, and perception of PE learning at school (Li et al., 2023).

These problems show the need for a learning strategy that is able to adapt the learning process to the actual abilities of students so that all students have the opportunity to develop gradually (Mustafa et al., 2024). Teaching at the Right Level (TaRL) is a differentiation approach that groups students based on competency level and assigns learning tasks according to their readiness, proven to increase the equitable distribution of learning outcomes in various educational contexts (Banerjee et al., 2021). Previous research findings indicate that the application of the Teaching at the Right Level (TaRL) approach contributes significantly to improving student learning outcomes, the study reported an increase in the percentage of learning completeness which shows that the Teaching at the Right Level (TaRL) strategy is able to accommodate the diversity of students' abilities through adaptive and structured learning

mechanisms (Wahyudi et al., 2024). This approach has proven to be effective in improving basic skills in various fields of education and is in line with the principles of the independent curriculum which gives teachers the freedom to adjust learning methods to the needs of students (Firman syah et al., 2024). In physical education, an adaptive approach such as Teaching at the Right Level (TaRL) can help teachers provide an inclusive learning experience, especially on game-based sports skills such as futsal (Hamid et al., 2024).

The effectiveness of Teaching at the Right Level (TaRL) is increasing when combined with the Small-Sided Games (SSG) game model, which is a form of modification of the number of players and size of the field that allows for more touch of the ball, active engagement, and decision-making (Clemente et al., 2021). Futsal learning based on Small-Sided Games (SSG) has been proven to be able to improve basic technique skills, physical activity intensity, and tactical understanding compared to traditional training models (Ilham & Azandi, 2025). The combination of the Teaching at the Right Level (TaRL) approach with the Small-Sided Games (SSG) model in the context of futsal learning in high school, an integration that has not been studied in detail. Previous research has shown that Teaching at the Right Level (TaRL) is only in the context of cognitive or academic learning such as mathematics or thinking skill development, and only a small percentage apply it in more general physical education (Hanafi et al., 2024). Meanwhile, research focusing on Small-Sided Games (SSG) tends to examine its impact on improving students' basic futsal technique skills such as passing and dribbling (Kejaora et al., 2024). This research offers a new perspective by combining the two approaches to produce more adaptive, interactive, and equitable learning. Therefore, the researcher wanted to see if the Teaching at the Right Level (TaRL) approach through the Small-Sided Games (SSG) model has the potential to be an effective solution in improving futsal learning outcomes evenly in the learning environment.

METHOD

This research was carried out at Senior high school 1 Ciparay, Bandung Regency, with the research subject in the form of grade XI students for the 2025/2026 school year. The research sample consisted of 36 students, namely 18 male students and 18 female students, with an

average age of 16–17 years academic year with a sample of 18 male students and 18 female students with a total of 36 students. This study uses a quantitative method with the design of Kemmis and McTaggart's Model Class Action Research (PTK), which includes four stages: (1) planning, (2) implementation of actions, (3) observation, and (4) reflection and is carried out in at least two cycles, each cycle consisting of two meetings. (Prihantoro & Hidayat, 2019).

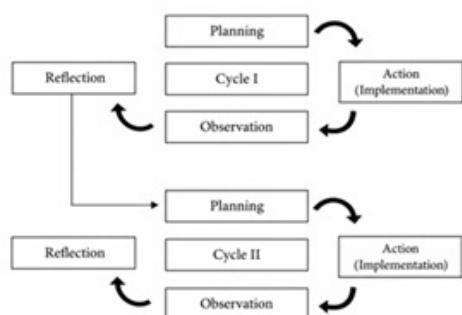


Figure 1. Kemmis and McTaggart Method PTK Cycle

Key data is collected through the Game Performance Assessment Instrument (GPAI) in the pretest and posttest to assess decision-making, skill, and support in the game, and supported by observation and documentation during the learning process. Data in the form of quantitative scores were analyzed through the Game Performance Assessment Instrument (GPAI) indicator (Oslin, Mitchell, & Griffin, 1998).

This study uses systematic and mutually supportive data analysis. First, descriptive statistics are used as an overview of the initial grades and the development of students' abilities at each stage of measurement (Sa'idah et al., 2024). After that, a normality test is carried out to ensure that the data meets the assumptions of parametric analysis (Kim, 2017). Because the data is normally distributed, the paired sample t-test is used to see the significance of improving students' abilities from pretest to each posttest (Ayu Rahmani et al., 2025). To find out the magnitude of the influence of the learning action, the calculation uses Effect Size (Cohen's d) (Fajarwati & Ninawati, 2023). Meanwhile, the effectiveness of competency achievement was analyzed through the percentage of completeness based on the KKM with a score of 75. This combination of analysis provides a complete picture of how far the Teaching at the Right Level (TaRL) and approaches are able to meaningfully improve students' futsal playing skills.

RESULTS AND DISCUSSION

The results showed that the increase occurred gradually from the pretest stage to the posttest cycle II, which showed that the material was adjusted to the student's ability level and packaged in the form of a game that described the development of students' futsal playing ability based on the Game Performance Assessment Instrument (GPAI) component had a positive effect on the learning process and outcomes.

The results of statistical descriptive analysis of student learning outcomes in the pretest, posttest cycle I, and posttest cycle II are presented in **Table 1**.

Table 1. Descriptive Statistics

	min	max	mean	Std Deviation	N
Pretest	50	79	63,31	7,123	36
Posttest1	56	84	69,08	6,930	36
Posttest2	63	87	77,72	5,251	36

The results of **Table 1** can be seen that each cycle of students' average scores has progressed, where in the pretest stage the average score of 63.31 rose to 69.08 in the posttest stage of cycle 1. This shows an increase of 9.11%, then rose again to 77.72 in the posttest cycle 2, this shows an increase of 12.51%, and seen from the pretest to the posttest cycle 2 the increase in score is 22.76%, in addition to the average score that increases the standard deviation value is also getting smaller, meaning that the ability gap between students is reduced. This result is in line with the principle of the Teaching at the Right Level (TaRL) approach which places students in appropriate learning groups based on their abilities so that less proficient students are not left behind and proficient students continue to receive appropriate challenges or learning so that performance improvement occurs evenly.

Table 2. Shapiro-Wilk Normality Test

		Statistics	df	. Sig
Pretest	P	,932	19	,188
	L	,907	17	,090
Posttest1	P	,969	19	,752
	L	,938	17	,291
Posttest2	P	,90,7	19	,066
	L	,951	17	,466

The normality test is carried out as a prerequisite for parametric statistical analysis. The normality of the data in this study was tested

using the Shapiro-Wilk test on student learning outcome data at the pretest, posttest cycle I, and posttest cycle II stage. The results of the data normality test are presented in **Table 2**.

Based on **Table 2** the entire significance value shows that the probability value (asympt.Sig.) > 0.05. This indicates that the data is normally distributed, so that further analysis can be carried out using paired t-tests to test the differences in student learning outcomes before and after treatment with the application of the TaRL approach and the SSG game model.

After the data is declared to be normally distributed, the analysis is continued with a paired sample t-test to find out the difference in student learning outcomes before and after being given treatment. The results of the paired sample t-test are presented in **Table 3**.

Table 3. Paired Sample T-Test

	t	Df	Sig.(2-tailed)
Pretest-Posttest1	-10,928	35	,000
Posttest1-Posttest2	-14,548	35	,000
Pretest-Posttest2	-20,573	35	,000

Based on **Table 3**, the results of the paired t-test showed a significant difference between before and after treatment. This can be seen from the increase in the t-value which is getting higher from 10.928 to 20.573. The p-value on the entire test was 0.000, which is statistically significant. These results support the idea that treatment is the cause of learning outcomes and not just coincidence, but the result of the treatment given. A greater improvement in cycle II showed that continuous learning provided time for students to adapt to the learning model and mature their futsal skills, especially in the aspects of decision-making, skill implementation, and support for teammates.

To find out the effect of the treatment practically, an analysis was carried out effect size using Cohen's d. Analysis results effect size presented in **Table 4**.

Table 4. Effect Size Results

Comparison	Effect Size (Cohen's D)
Pretest → Posttest 1	1.91
Posttest 1 → Posttest 2	2.38
Pretest → Posttest 2	3.39

Table 4 shows the results of the analysis effect size shows a comparison of Pretest to Posttest 1 results in Cohen's d The category of great influence, this indicates that the actions

in the first cycle are already able to encourage a significant increase in capabilities. Furthermore, the effect size increased on Posttest 1 to Posttest 2 shows a very large influence and indicates that the improvement of actions in the second cycle further strengthens learning outcomes. Overall, the change from Pretest other Posttest 2 resulted in a value of 3.39, which was categorized as a very large influence, so it can be concluded that the set of actions applied was effective and was able to produce a very strong increase in abilities throughout the research process.

The analysis of the percentage of student learning completeness was carried out to see the achievement of student learning outcomes based on the Minimum Completeness Criteria. The results of the analysis of the percentage of student learning completeness are presented in **Table 5**.

Table 5. Student Completion Percentage

Stages	Mean	Completion	Number of Passes
Pretest	63,31	13.89%	5
Posttest 1	69,08	19.44%	7
Posttest 2	77,72	86.11%	31

The results of **Table 5** show the results of the analysis of the percentage of student completeness with a consistent increase in learning outcomes at each stage of action. The results of the pretest show that most students have not reached the Minimum Completeness Criteria at the initial stage. The first cycle action showed an increase in average scores, although learning completeness was still relatively low. This suggests that the initial action is starting to have a positive effect, although it is not yet optimal. Cycle II showed significant improvement, with most students achieving and exceeding the Minimum Completeness Criteria. The increase in average grades and a high percentage of completeness showed that the learning applied was able to improve students' futsal playing ability as a whole and evenly. These findings confirm that the learning interventions carried out are effective in improving student learning outcomes.

In Cycle I, students focused on improving fundamental futsal skills through modified games. The advanced group played 2 vs 2 + 1 joker with a target of six passes before scoring, emphasizing quick ball circulation and scanning ability. The intermediate group played 2 vs 2 keep ball, focusing on first touch and maintaining spacing, while the beginner group played 2 vs 1, emphasizing ball control, basic passing, and simple attacking-defending situations. The first cycle action showed an increase in average scores, alt-

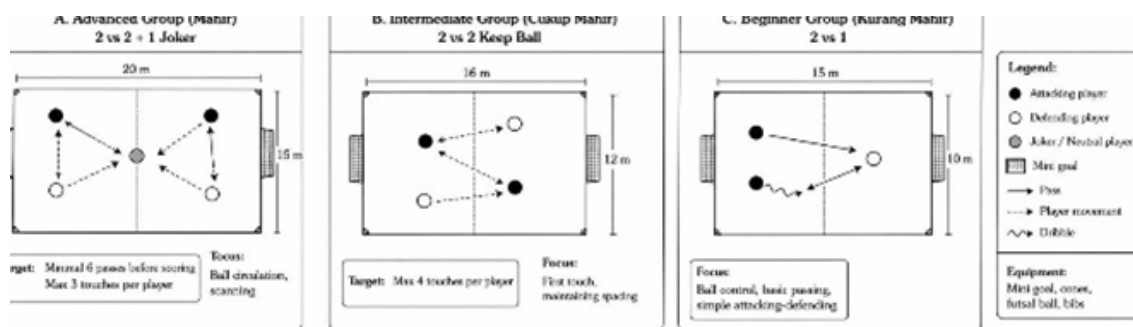


Figure 2. Small-Side Games Design in Cycle I.

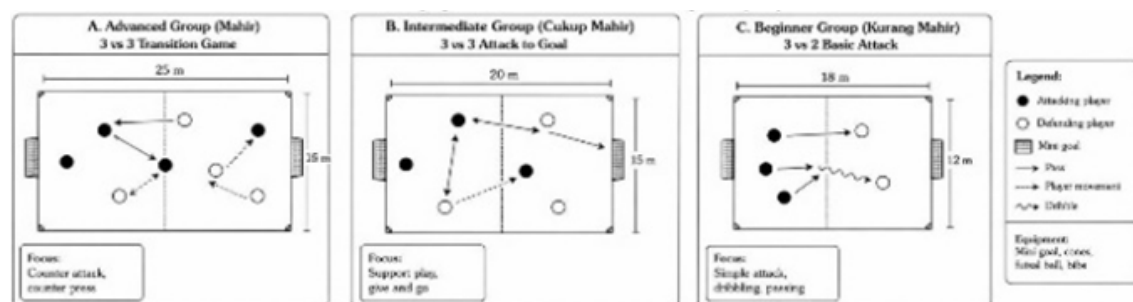


Figure 3. Small-Sides Games Design in Cycle II.

though learning completeness was still relatively low. This suggests that the initial action had begun to produce a positive effect, although it was not yet optimal.

In Cycle II, the activities were progressed into more tactical game situations. The advanced group played 3 vs 3 transition game, emphasizing counter attack and counter press. The intermediate group played 3 vs 3 attack to goal, focusing on support play and give-and-go combinations, while the beginner group played 3 vs 2 basic attack, focusing on simple attacking patterns, dribbling, and passing. Cycle II showed significant improvement, with most students achieving and exceeding the Minimum Completeness Criteria. Students demonstrated better cooperation, faster decision-making, and more effective technical performance during play.

The increase in average scores and the high percentage of completeness indicate that the learning intervention was able to improve students' futsal playing ability as a whole and evenly. The progressive modification of Small-Sided Games from Cycle I to Cycle II contributed to consistent improvement in students' futsal learning outcomes. These findings confirm that the learning interventions carried out were effective in improving student learning outcomes.

The increase in average scores and the depreciation of standard deviation from pretest

to posttest cycle II show that students' abilities develop gradually and more evenly. This pattern of improvement illustrates that the Teaching at the Right Level (TaRL) approach really makes room for each student to learn at his or her level of readiness. This principle is in line with the idea of Proximal Development Zones which emphasizes the importance of providing learning support at the right level of challenge so that students do not feel pressured or left behind (Mustafa et al., 2024). At the same time, the application of Small-Sided Games (SSG) provides game situations rich in interaction and repetition techniques thus strengthening the motor schema, as described in Schmidt's theory of motor learning which emphasizes the role of exercise variations in accelerating the consolidation of movement skills (Clemente et al., 2021).

The results of the t-test showed that the improvement that occurred at each stage was not just a coincidence, but was actually the result of a learning intervention. In the perspective of the taxonomy of learning outcomes developed by Benjami Bloom, that the increase reflects developments in three main domains: cognitive, psychomotor, and affective (Mahmudi et al., 2022). The decision making aspect in the Game Performance Assessment Instrument (GPAI) shows cognitive development, skill execution represents the psychomotor realm, while support is related to affective development such as

cooperation and responsibility during play (Oslin, Mitchell, Griffin, et al., 1998). This pattern of findings is consistent with Gagné's theory that effective learning requires a clear structure, the provision of learning instructions, and meaningful practice opportunities are all fulfilled through a combination of Teaching at the Right Level (TaRL) and Small-Sided Games (SSG) (Warsita, 2018).

The findings of effect size that are in the large to very large category show that interventions have a strong practical impact on students' abilities. This can be explained through Thorndike's behavioristic principles, especially the Law of Exercise and the Law of Effect, which state that repeated practice and positive experiences during the learning process will significantly strengthen students' abilities (Fajarwati & Ninawati, 2023). The Small-Sided Games (SSG) model provides students with the opportunity to practice in the context of real games so that they gain more touch of the ball, quick decision-making, as well as hands-on experience in reading game situations (Kejaora et al., 2024). Thus, the magnitude of the effect size indicates that students not only experience an increase in score, but also a stable improvement in the quality of play.

The increase in the percentage of completeness from 13.89% to 86.11% shows that learning not only succeeds in improving technical skills, but also touches the psychological aspects and motivation of students. These findings are in line with Rogers' humanistic theory, which emphasizes the importance of a sense of acceptance and safety in the learning process so that students can show their best potential (Ode Annisa Maharani et al., 2024). Teaching at the Right Level (TaRL) helps students with low abilities feel more comfortable because they do not need to be compared directly with more proficient peers and are able to improve students' game learning outcomes in line with research (Muda et al., 2025). Meanwhile, Small Sided Games (SSG) creates a fun, interactive, and healthy learning atmosphere, resulting in strong intrinsic motivation (Li et al., 2023). The combination of these two approaches results in a significant increase in completeness as students not only learn cognitively and motorly, but also engage emotionally in the learning process.

Overall, the research findings show that Teaching at the Right Level (TaRL) and Small Sided Games (SSG) complement each other and offer a learning approach that is not only academically effective but also pedagogically and humanistically relevant. Game-based Teaching at the Right Level (TaRL) is effective in improving

learning outcomes. The similarity of these results suggests that the principle of TaRL is contextual and can be applied to various sports of the game, including futsal, especially when combined with a game-based learning model that encourages active student engagement. Teaching at the Right Level (TaRL) guarantees that all students have equal access to education, and Small Sided Games (SSG) improves the quality of the learning experience through authentic play. The findings suggest that this approach can be considered an effective method for teaching futsal in secondary schools.

CONCLUSION

Based on the results of the research, it can be concluded that the learning outcomes of futsal students in grade XI of Senior high school 1 Ciparay have been improved by using the Teaching at the Right Level (TaRL) approach with Small Sided Games (SSG). This approach allows students to learn according to their ability level, so that the learning process takes place more optimal.

The findings of this study indicate that implementing the Teaching at the Right Level (TaRL) approach in combination with the Small-Sided Games (SSG) model has contributed positively to the improvement of students' futsal learning outcomes. Throughout the learning process, students demonstrated gradual development not only in their technical abilities such as passing, dribbling, and ball control but also in their confidence and decision-making during game situations. These changes reflect a shift from merely performing isolated skills to applying them more effectively within meaningful game contexts.

Moreover, the adaptive nature of TaRL allowed learning activities to align with students' varying levels of ability. This enabled students who initially experienced difficulties to participate more actively and make steady progress, while more advanced students remained engaged through appropriately challenging tasks. As a result, the learning environment became more balanced and inclusive, with students showing more consistent performance and improved collaboration within their groups.

Taken together, these findings suggest that integrating TaRL with SSG provides a pedagogically sound approach to achieving the intended learning objectives in futsal. By combining level-based instruction with game-oriented activities, this model not only enhances technical skill acquisition but also supports the development of

game understanding and equitable participation. Therefore, it can be considered a relevant and effective strategy for improving futsal learning outcomes in senior high school.

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