

Teaching Style on Learning Outcomes of Dribbling the Ball in Extracurricular Futsal Games in High School

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ABSTRACT

This study differs from field results that many students still struggle with dribbling despite regular PJOK participation. Teachers' incorrect teaching approaches and student learning motivation may contribute to this situation. This study examines how instructional approaches affect futsal dribbling skills and learning motivation in High School 1 Sinjai Utara pupils. This study used a pure experimental method (true experimental design) with a 2x2 factorial design, involving 40 students who were randomly divided into two treatment groups, namely learning with a reciprocal teaching style and a practice teaching style. The research instruments included a futsal dribbling skills test and a learning motivation questionnaire to identify student characteristics. The research procedure was carried out through the pre-test, learning treatment, and post-test stages. The analysis found that (1) there was a significant difference in dribbling skill learning outcomes between the reciprocal teaching style and the practice teaching style; (2) learning motivation significantly influenced learning outcomes; (3) there was an interaction between teaching style and learning motivation; and (4) students with high learning motivation performed better. Thus, a reciprocal teaching style can be an effective futsal learning strategy, especially for students with high learning motivation, because it encourages active participation, mutual feedback, and continuous observation and correction to improve technical skills. This study suggests that PJOK teachers should tailor their teaching techniques to students' traits and motivations for more successful, student-centered skills learning.

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1. INTRODUCTION

Education is the main foundation in forming a quality generation, not only in the cognitive domain but also in the affective and psychomotor domains (Alafnan, 2025; Anand et al., 2024). In the educational process, students are expected to be able to develop their potential optimally through comprehensive and meaningful learning experiences (Hasanah et al., 2022; Hsbollah & Hassan, 2022; Shu & Gu, 2023). One important aspect of national education is physical education, which functions not only to train physical abilities but also to form character values such as discipline, sportsmanship, cooperation, and responsibility (Ahmad & Suryadi, 2024; Salahudin, 2024). Through physical education, students can develop their body, mind, and attitude in a balanced way to achieve well-being (Cerdá et al., 2023; Kliziene et al., 2021).

Learning is the core of all educational activities. Learning is a process of effort made by individuals to obtain behavioral changes through interactions with their environment (Li & Xue, 2023). In line with this view, the behaviorist theory presented by Skinner explains that learning is a process of behavioral change due to the relationship between stimulus and response that is strengthened through experience (Schlinger, 2021; Staddon, 2021; Vargas, 2017). The learning process takes place consciously and is directed at achieving positive changes in students. Furthermore, learning involves all components of an individual's personality, including mental, emotional, and physical, resulting in relatively permanent changes. Behavioral changes that occur through the learning process are reflected in learning outcomes (Martín-Rodríguez et al., 2024). The learning outcomes include cognitive, affective, and psychomotor abilities, which are seen from students' mastery of knowledge, skills, and attitudes. In addition, Helda and Syahrani (2022) states that learning outcomes are an indicator of competency achievement formulated in educational objectives.

In physical education, basic motor skills are one of the main competencies that students must master (Kudinova et al., 2021; Salters & Scharoun Benson, 2022). In futsal, dribbling is a fundamental technique that is very important to master because it plays a role in maintaining ball control, passing opponents, and building attacks (Hudain et al., 2025; Pizarro et al., 2021). However, students' mastery of dribbling skills is often not optimal because it is influenced by several factors such as the learning method, the student's physical condition, motivation, and training intensity (Adhim et al., 2025; Selin et al., 2024). Therefore, physical education teachers must be able to choose appropriate learning strategies to improve students' basic skills. Learning strategies play an important role in achieving physical education goals. Mosston & Ashworth proposed a spectrum of teaching styles that include various learning approaches, ranging from teacher-centered to student-centered approaches (Neu & Liu, 2023; Rohmansyah et al., 2022). Two of these that are relevant in learning motor skills are the practice style and the reciprocal style. The practice style emphasizes intensive repetition of skills to strengthen movement patterns, while the reciprocal style provides opportunities for students to provide feedback to each other based on criteria determined by the teacher (Rohmansyah et al., 2022; Simonton et al., 2025). This approach supports the formation of active student involvement in the learning process, as emphasized by Abidin and Muhammad (2024), which states that effective learning strategies can increase student participation in achieving learning goals. Motivation is also a fundamental factor in achieving learning success (Cook & Artino Jr, 2016).

Motivation is a driving force that provides direction, encouragement, and perseverance in learning. When students are highly motivated, they will exhibit enthusiasm, perseverance, and passion in their learning endeavors (Agger & Koenka, 2020). This point is reinforced by the self-determination theory proposed by Deci & Ryan, which states that intrinsic motivation develops when students' basic needs for competence, autonomy, and social connectedness are met (Gagné et al., 2018; Ryan & Deci, 2024). Previous research findings by Amran et al. (2024); Liu and Lipowski (2021); Yang et al. (2021) show that students with high levels of learning motivation

tend to achieve better sports skill results than students with low motivation. Thus, the success of learning dribbling skills in futsal is influenced by a combination of the use of the right teaching style and the level of student learning motivation. Physical education teachers need to design learning that is not only effective in improving motor skills but also able to stimulate students' intrinsic motivation (Carriedo et al., 2023; Sevil-Serrano et al., 2022).

Numerous studies have generally explored the correlation between teaching styles and sports learning outcomes (Bessa et al., 2021; Chiva-Bartoll & Fernández-Rio, 2022; Franco et al., 2023; García-Hermoso et al., 2021). Nonetheless, research specifically examining the comparative efficacy of diverse teaching styles on futsal dribbling—utilizing precise outcome metrics such as speed and accuracy—remains scarce, particularly within the realm of extracurricular activities in Indonesia. Most extracurricular futsal programs still use the Traditional Teaching Style (Command/Technical Style), which is based on direct instruction and drill repetition without real game context. This approach often fails to develop students' decision-making skills when dribbling under match pressure.

This study not only measures general dribbling mastery but also explicitly measures two vital components: dribbling speed (measured by time covered over a certain distance) and dribbling accuracy (measured by successfully clearing obstacles or targets). This research was conducted in an extracurricular environment, which has different student dynamics and motivations compared to compulsory subjects. This paper provides new insights into the application of pedagogy in non-curricular contexts. Building on this foundation, this study aims to analyze how reciprocal teaching styles and training styles influence students' learning outcomes in dribbling skills, particularly in relation to their level of motivation.

2. METHOD

This study used a quantitative approach with a 2x2 factorial quasi-experimental design, designed to thoroughly test the effectiveness of reciprocal teaching styles and practice teaching styles on improving students' futsal dribbling skills, considering the role of learning motivation levels as a moderating variable. This design was chosen based on the characteristics of physical education research that involves different learning treatments in naturally formed student groups, making a full experimental approach impossible. Through this design, the study was able to examine the main effect of each teaching style, the influence of learning motivation, and the interaction between the two on dribbling skill learning outcomes. The study population included all students taking physical education lessons at the elementary school level at the study site. The sample was determined using a cluster random sampling technique, where classes were randomly selected to be the experimental groups.

		Independent Variable 2	
		Level 1	Level 2
Independent Variable 1	Level 1	Dependent Variable	Dependent Variable
	Level 2	Dependent Variable	Dependent Variable

Figure 1. 2x2 Factorial Quasi-Experimental Design

The study participants were divided into four treatment groups based on the factorial design: one group learned using a reciprocal teaching style with high motivation, another group learned using a reciprocal teaching style with low motivation, a third group learned using a practice teaching style with high motivation, and a fourth group learned using a practice teaching style with low motivation. This division aims to obtain a more complete comparative picture of the effectiveness of learning strategies based on students' motivational characteristics. The research instruments included a learning motivation questionnaire and a dribbling skills test. The motivation questionnaire was compiled based on student learning motivation indicators that include aspects of attention, interest, perseverance, internal drive, and active participation in the learning process. This instrument has undergone expert validation and pilot testing to ensure reliability, internal consistency, and measurement accuracy. Meanwhile, dribbling skill mastery was measured using a zigzag dribbling test, which is commonly used in sports research because it has a high level of validity and reliability in assessing ball control, movement speed, and motor coordination. This test was conducted on a school futsal field with assessments based on speed and quality of ball control while passing obstacles.

The research procedure was carried out in three systematic stages. The first stage was preparation, including the preparation of learning materials, dissemination of research procedures to teachers and students, and initial data collection in the form of measuring learning motivation. The second stage was the implementation of the learning, in which the teacher applied a reciprocal teaching style to the first group and a practice style to the second group over several meetings. In the reciprocal style, students were provided the opportunity to provide feedback to each other based on predetermined criteria, resulting in collaborative learning that facilitated independence and self-analysis. In contrast, in the practice style, students were directly guided by the teacher to intensively repeat dribbling techniques, with a focus on strengthening basic movement, consistency, and accuracy of execution.

The final stage was evaluation, which was conducted through a dribbling test to measure learning outcomes after the treatment was administered. The research data were analyzed statistically through several stages. Prerequisite tests for analysis included normality and homogeneity of variance tests to ensure that the data met the basic

assumptions of using parametric analysis. Thereafter, a two-way analysis of variance (ANOVA) was conducted to identify the significant influence of teaching style, learning motivation level, and the interaction between the two variables on dribbling learning outcomes. If significant differences were found, a post-hoc test was conducted as a comparative procedure to determine which group had the most significant differences. Through this analytical approach, the study not only provides an overview of the effectiveness of each teaching style but also highlights how learning motivation plays a crucial role in optimizing students' motor skills in futsal. With this comprehensive methodological tool, the study is expected to make a strong scientific contribution to the development of learning models in physical education, particularly in improving basic futsal technical skills. Furthermore, the research results are also expected to serve as a reference for educators in designing more adaptive, participatory, and psychologically based learning strategies to achieve optimal learning outcomes.

3. RESULTS AND DISCUSSION

Results

The results of this entire series of research were obtained through a learning program of 12 meetings with two teaching style methods, namely reciprocal teaching power and practice teaching style, which were followed and implemented by the sample. The data obtained in this study consisted of student learning motivation data obtained from a motivation test using a questionnaire conducted at the beginning of the research process and data on learning outcomes in dribbling the ball. The analysis carried out on the obtained data included a normality test using the Lilliefors test, a homogeneity test using the Levene test, and hypothesis testing.

Descriptive analysis

Results of descriptive analysis of learning motivation

In this study, motivation data was obtained through a learning motivation questionnaire. Students' learning motivation was divided into two categories: high learning motivation and low learning motivation in the reciprocal teaching style group and the practice teaching style group. The distribution of students in each group can be seen in the following Table 1.

Table 1. Number of Students for Each Cell Group

Motivation to Learn	Teaching Style		Total
	Reciprocal	Exercise	
High	5	5	10
Low	5	5	10

Table 1 above shows that each group has the same distribution of students, specifically 5 students in each group with high learning motivation and 5 students in each group with low learning motivation. This distribution is based on a normal distribution curve, where 27% of students are classified as having high learning motivation and 27% as having low learning motivation.

Descriptive Analysis Results of Learning Outcomes of Dribbling the Ball

In this study, learning outcome scores were obtained using a dribbling test. Table 2 presents the descriptive analysis of the learning outcomes for students in the reciprocal teaching style compared to those taught using the drill teaching style.

Table 2. Statistics of students' ball dribbling learning outcomes scores

Description	Reciprocal force	Practice teaching style
Maximum score	96	91
Minimum score	80	81
Number of samples	10	10
Mean score	88.20	86.20
Standard deviation	6.697	3.360

The results of the descriptive analysis of the learning outcomes for dribbling the ball show that students taught with the reciprocal teaching style have a minimum score of 80, a maximum score of 96, an average of 88.20, and a standard deviation of 6.697, while students taught with the practice teaching style have a minimum score of 81, a maximum score of 91, an average of 86.20, and a standard deviation of 3.360.

Table 3. Statistics on Learning Outcomes for Dribbling the Ball Based on Category

Motivation to learn	Group		
	Reciprocal	Exercise	
High	Number of samples	5	5
	Maximum score	93	87
	Minimum score	96	91
	Mean score	94.20	89.00
	Standard deviation	1.304	1.581
	Variance	1.700	2.500
Low	Number of samples	5	5
	Maximum score	80	81
	Minimum score	86	85
	Mean score	82.20	83.40
	Standard deviation	3.033	1.817
	Variance	9.200	3.300

Table 3 above shows that for high learning motivation, the average score for dribbling learning outcomes for students taught using the reciprocal teaching style was 94.20, and for those taught using the practice teaching style, the average score was 89.00. The data above indicates that the average score for high learning motivation among students taught using the reciprocal teaching style was higher than that of students taught using the practice teaching style. For low learning motivation, the average score for dribbling learning outcomes among students taught using the reciprocal teaching style was 82.20, and for those taught using the practice teaching style, the average score was 83.40. These data indicate that the average score for low learning motivation among students taught using the practice teaching style was higher than that of students taught using the reciprocal teaching style.

The standard deviation obtained from Table 3 shows that for high learning motivation among students taught using the reciprocal teaching style, the standard deviation was 1.304, while the standard deviation for students taught using the practice teaching style

was 1.581. The largest variance for high motivation was found in students taught using the practice teaching style, namely 1,700, compared to students who learned using the reciprocal method, namely 2,500.

For low learning motivation, the average dribbling score for students taught using the reciprocal teaching style was 82.20, while the average score for students taught using the practice teaching style was 83.40. These data indicate that the average score for low motivation among students taught using the practice teaching style was higher than that of students taught using the reciprocal teaching style.

The standard deviation obtained in Table 4.3 shows that low learning motivation among students taught using the reciprocal teaching style was 3.033, while the standard deviation for students taught using the practice teaching style was 1.817. The largest variance for low motivation was found among students taught using the reciprocal teaching style, at 9.200, compared to 3.300 for students taught using the practice teaching style.

Inferential analysis

Testing of analysis prerequisites

Before conducting hypothesis testing, basic analysis tests are first performed, including normality and homogeneity tests. The normality test uses a statistical test, where data is considered normal if the points on the normal probability plot follow the diagonal line. This test is performed by observing the probability value or asymp. sign. (2-tailed). If the asymp. sign. The value of the (2-tailed) value is <0.05, then the residual data is normally distributed. If the asymp. sign. (2-tailed) value is >0.05, then the residual data is normally distributed. This test can be seen in the following Figure 2.

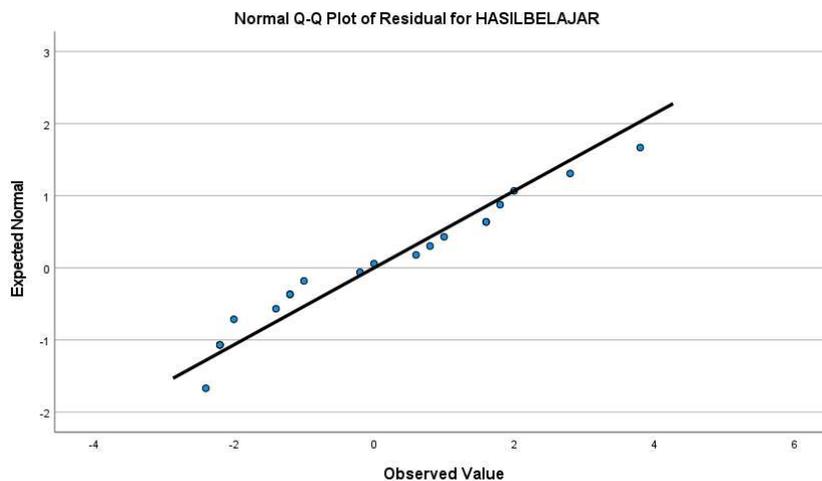


Figure 2. Normality Test Results

Figure 2, the normality test for data from both teaching style groups in this study, indicated a significant value greater than $\alpha=0.05$, thus concluding that the data are normally distributed. Furthermore, the results of the normality test in the graph indicate that the data are normally distributed because the points on the normal probability plot

follow the diagonal line. Next, a homogeneity test was conducted to determine whether the obtained data were homogeneous. Homogeneity testing was conducted using Levene's test. The analysis using the Levene's test yielded a significant value of $0.110 > \alpha=0.05$, thus concluding that the data came from a homogeneous variance.

Research hypothesis testing

Two-Way Analysis of Variance (ANOVA) Test

Hypothesis testing in this study aims to determine whether there are differences in the influence of learning models and learning motivation on learning outcomes and interactions. Hypothesis testing uses a two-way (2x2) analysis of variance (ANOVA) with the SPSS 20 application (Two Way ANOVA) with a significance level of $\alpha = 0.05$. If the significance value of α is ≥ 0.05 , then H_0 is rejected, meaning there is a difference or an interaction. To facilitate hypothesis testing in this study, a two-way analysis of variance (ANOVA) worktable is created with the following data in Table 4.

Table 4. ANOVA test

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	458.400 ^a	3	152.800	36.599	.000
Intercept	152076.800	1	152076.800	36425.581	.000
Motivation	387.200	1	387.200	92.743	.000
Teaching Style	20.000	1	20.000	4.790	.044
Motivation * Teaching Style	51.200	1	51.200	12.263	.003
Error	66.800	16	4.175		
Total	152602.000	20			
Corrected Total	525.200	19			

a. R Squared = .873 (Adjusted R Squared = .849)

Table 4 indicated the results of the data analysis using a two-way Analysis of Variance (ANOVA), revealing a significant difference between the learning outcomes of dribbling skills for students taught using the reciprocal teaching style and the practice teaching style. This difference is indicated by the following significant values:

- The teaching style factor was $p < 0.05$, indicating a significant effect of the teaching style applied on student learning outcomes. Therefore, it can be concluded that the teaching style used by teachers plays a significant role in improving students' dribbling skills.
- The analysis showed a significant difference between students with high and low learning motivation in learning outcomes in dribbling skills. The significance of learning motivation, $p < 0.05$, indicates that motivation significantly influences learning outcomes. Students with high learning motivation tend to perform better than those with low learning motivation because their strong internal drive makes them more focused and persistent in the learning process.
- The analysis also showed a significant interaction between teaching style and learning motivation on dribbling skills learning outcomes, with a significance value of $p < 0.05$. This finding indicates that the influence of teaching style on

learning outcomes depends on students' level of learning motivation. This means that the effectiveness of a teaching style varies depending on the student's motivational state. For example, a reciprocal teaching style is more effective for students with high learning motivation because it encourages active participation and shared responsibility, while a practice teaching style tends to be more appropriate for students with low motivation because it provides repeated practice and direct guidance from the teacher.

Thus, the results of this study confirm that both teaching style and learning motivation, as well as their interaction, contribute significantly to improving students' dribbling skills learning outcomes. Therefore, physical education teachers need to consider students' motivational characteristics when selecting the appropriate teaching style to achieve optimal learning outcomes.

Discussion

The results of this study indicate that teaching style significantly influences the learning outcomes of dribbling skills in students at High School 1 Sinjai Utara. Specifically, students who learn using a reciprocal teaching style achieve higher results compared to students who learn through a practice style. This finding confirms that students' active involvement in providing feedback and reflecting on their motor skills promotes a more effective learning process. This is in line with motor learning theory, which emphasizes the importance of feedback and social engagement in improving motor skills (Diekfuss et al., 2021; Kaefer & Chiviacowsky, 2021). In the context of physical education, a reciprocal style provides students with opportunities to develop cognitive, affective, and psychomotor aspects simultaneously through observation, communication, and peer evaluation (Angal & Losañes, 2025). These results are also consistent with Vygotsky's social constructivism perspective, which states that effective learning occurs through social interactions within the zone of proximal development (ZPD) (Xi & Lantolf, 2021). In a reciprocal style, students with higher abilities can assist their peers, thus accelerating the process of elaborating knowledge and correcting movements (Carey et al., 2023). Conversely, although the drill style is also effective in developing motor skills through repetition, the learning process tends to be more individualized, so movement reflection and error correction are not as intensive as in the reciprocal style.

Furthermore, this study also found that learning motivation significantly influenced dribbling learning outcomes. Students with high motivation demonstrated better results than those with low motivation. These results reinforce the self-determination theory by Deci and Ryan, which states that intrinsic motivation drives students to develop skills through internal drives, such as the desire to be capable or achieve (Ryan et al., 2021; Vallerand, 2021). This is also supported by McClelland's achievement motivation theory, which explains that individuals with a high achievement drive tend to be more persistent and active and demonstrate greater perseverance in motor learning (Brunstein & Heckhausen, 2025).

This research finding is intriguing because there is an interaction between teaching style and learning motivation. Students with high motivation achieved the best results when taught using the reciprocal style, while students with low motivation were more helped by the drill style. Pedagogically, this condition indicates that the effectiveness of teaching styles is not universal but depends on student characteristics. The reciprocal style offers increased challenge and autonomy, catering to the needs of highly motivated students, whereas the drill style is more appropriate for students with low motivation due to its clearer exercise structure and direct teacher supervision. These results support the view of [Pill et al. \(2024\)](#) in the Spectrum of Teaching Styles that the success of learning depends on the suitability between teaching style, student characteristics, and learning objectives.

Practically, these findings have implications that physical education learning, especially dribbling skills, will be more effective if teachers apply a reciprocal style for highly motivated students and a drill style for students with low motivation. Physical education teachers need to be flexible in choosing learning strategies and be able to combine various approaches so that learning runs effectively across all groups of students. Teachers also need to design learning activities that encourage motivation, such as providing positive feedback, exercise variations, and challenges that suit students' needs. Thus, learning not only improves technical skills but also builds responsibility, cooperation, and self-reflection in students. In general, this study shows that the way students learn motor skills is affected by both the way they are taught and their own psychological factors. The integration between the right learning approach and high learning motivation will result in a learning process that is more meaningful and efficient and has an optimal impact on improving students' sports skills.

4. CONCLUSION

Teaching style and learning motivation contribute significantly to improving learning outcomes in dribbling skills at High School 1 Sinjai Utara. In general, a reciprocal teaching style proved more effective than a practice-based teaching style in improving students' dribbling abilities. This indicates that learning strategies that actively involve students in providing feedback, conducting peer observation, and reflecting on movement processes can create a more meaningful, collaborative learning process and be oriented towards reinforcing concepts and motor skills. Furthermore, learning motivation also proved to be a dominant factor influencing learning outcomes. Students with high learning motivation demonstrated a higher level of dribbling skill mastery than those with low learning motivation. These findings reinforce the understanding that motivation plays a crucial internal role that influences students' active participation, persistence in practice, willingness to accept feedback, and commitment to perfecting their motor skills. Thus, the results of this study confirm that the success of motor skills learning is determined not only by the teaching method but also by the psychological readiness and internal drive of the students.

This study also revealed a significant interaction between teaching style and learning motivation, indicating that the effectiveness of a learning method depends on the

students' motivational state. Highly motivated students achieve the best results when taught using a reciprocal style, as this style provides space for reflection, learning autonomy, and the opportunity to evaluate their peers' and their own performance. Conversely, low-motivated students learn more effectively through a practice style that provides more structured direction, controlled repetition, and direct teacher supervision. The implications of these findings emphasize the importance of implementing a flexible, differentiated learning approach tailored to students' motivational characteristics. Overall, this study confirms that successful learning of dribbling skills in physical education requires a combination of appropriate teaching strategies and increased student internal motivation. Physical education teachers need to be able to select and vary teaching styles according to student needs while creating a learning climate that supports the development of student motivation, active participation, responsibility, and reflective abilities. Thus, learning objectives should not only focus on improving technical skills but also on character development, learning independence, and student collaborative abilities in the context of physical education.

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