

THE IMPACT OF TRADITIONAL GAMES ON THE SOCIAL SKILLS OF ELEMENTARY SCHOOL STUDENTS IS REVIEWED FROM A GENDER PERSPECTIVE

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Abstract

Developing elementary school students' social skills is an important objective of physical education; however, studies examining traditional games while considering gender characteristics remain limited. This study aimed to analyze the effect of traditional games and gender on the social skills of elementary school students. A quasi-experimental study employing a 2×2 pretest-posttest factorial design was conducted involving 52 fifth-grade elementary school students who were divided into four treatment groups based on traditional game type and gender. The treatments were conducted through the traditional games of boy-boyan and bakiak. Data were collected using a social skills questionnaire covering communication, cooperation, assertion, responsibility, empathy, engagement, and self-control. Data analysis was conducted using descriptive statistics, prerequisite tests, and two-way analysis of variance followed by a post hoc comparison test. The results revealed a significant main effect of traditional game type on students' social skills ($F(1,48) = 69.447$, $p = 0.001$, $\eta^2p = 0.591$), indicating that students participating in boy-boyan demonstrated higher social skill scores than those participating in bakiak. Gender also significantly affected social skills ($F(1,48) = 4.506$, $p = 0.039$, $\eta^2p = 0.086$). Furthermore, a significant interaction effect between traditional game type and gender was found ($F(1,48) = 107.694$, $p = 0.003$, $\eta^2p = 0.692$). This study contributes to the literature by providing empirical evidence regarding the interaction between traditional game type and gender in shaping elementary school students' social skills, an area that has received limited attention in previous traditional game research. These findings suggest that traditional games can be effectively integrated into physical education programs to enhance students' social development while considering gender-related characteristics.

Keywords: traditional games; gender; social skills; physical education; elementary school

Abstrak

Mengembangkan keterampilan sosial siswa sekolah dasar merupakan salah satu tujuan penting pendidikan jasmani; namun, penelitian yang mengkaji permainan tradisional dengan mempertimbangkan karakteristik gender masih terbatas. Penelitian ini bertujuan untuk menganalisis pengaruh permainan tradisional dan gender terhadap keterampilan sosial siswa sekolah dasar. Penelitian kuasi eksperimen dengan desain faktorial 2×2 *pretest-posttest* dilakukan terhadap 52 siswa kelas V sekolah dasar yang dibagi ke dalam empat kelompok perlakuan berdasarkan jenis permainan tradisional dan gender. Perlakuan pembelajaran diberikan melalui permainan tradisional boy-boyan dan bakiak. Data dikumpulkan menggunakan angket keterampilan sosial yang meliputi komunikasi, kerjasama, asertivitas, tanggung jawab, empati, keterlibatan, dan pengendalian diri. Analisis data dilakukan menggunakan statistik deskriptif, uji prasyarat, dan analisis varians dua arah yang dilanjutkan dengan uji perbandingan post hoc. Hasil penelitian menunjukkan adanya pengaruh utama yang signifikan dari jenis permainan tradisional terhadap keterampilan sosial siswa ($F(1,48) = 69,447$; $p = 0,001$; $\eta^2p = 0,591$), yang menunjukkan bahwa siswa yang berpartisipasi dalam permainan boy-boyan memiliki skor keterampilan sosial lebih tinggi dibandingkan siswa yang berpartisipasi dalam permainan bakiak. Gender juga berpengaruh signifikan terhadap keterampilan sosial siswa ($F(1,48) = 4,506$; $p = 0,039$; $\eta^2p = 0,086$). Selain itu, terdapat pengaruh interaksi yang signifikan antara jenis permainan tradisional dan gender ($F(1,48) = 107,694$; $p = 0,003$; $\eta^2p = 0,692$). Penelitian ini memberikan kontribusi empiris terhadap pengembangan literatur mengenai interaksi antara jenis permainan tradisional dan gender dalam pembentukan keterampilan sosial siswa sekolah dasar, suatu aspek yang masih relatif jarang dikaji dalam penelitian permainan tradisional sebelumnya. Temuan ini menunjukkan bahwa permainan tradisional dapat diintegrasikan secara efektif ke dalam program pendidikan jasmani untuk meningkatkan perkembangan sosial siswa dengan tetap mempertimbangkan karakteristik terkait gender.

Kata Kunci: Permainan tradisional; gender; keterampilan sosial; pendidikan jasmani; sekolah dasar

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Introduction

Elementary education plays a strategic role in developing various aspects of student development, including cognitive, affective, psychomotor, and social domains. One important competency to develop from elementary school age is social skills. Social skills are an individual's ability to establish interpersonal relationships effectively, such as communicating, collaborating, showing empathy, being responsible, and controlling oneself in a social environment (Gresham & Elliott, 2008). In elementary school students, social skills develop through various aspects, including communication, cooperation, empathy, responsibility, assertion, involvement, and self-control (Fauzi et al., 2024). Optimal social skill development will help students build healthy social relationships, increase participation in learning, and support academic success and character development (Fauzi et al., 2024; Lynch & Simpson, 2010). Recent studies have highlighted social skills as one of the essential competencies for supporting students' academic achievement, psychological well-being, and successful adaptation to school environments.

One learning environment that has the potential to develop students' social skills is physical education. Physical education is not only oriented towards developing physical abilities and motor skills, but also provides social learning experiences through play activities, group interactions, and collaborative problem-solving (Bailey et al., 2009). Through these activities, students learn to respect rules, cooperate, communicate, and adapt to their social environment.

However, the development of digital technology has changed the play patterns of elementary school-aged children. Children now spend more time playing gadget-based games than actively playing with their peers. This situation has resulted in traditional games being played less frequently and beginning to lose their presence in children's environments. (Permadi et al., 2021) explain that technological advancements have led to the near extinction of traditional games, as children are more interested in modern, technology-based games than traditional play activities. Yet, traditional games are part of the nation's cultural heritage, possessing educational, social, and character-building values that are crucial for children's development. Integrating local cultural elements into learning activities can strengthen students' character, cultural identity, and understanding of local wisdom while simultaneously enhancing learning outcomes (Nur et al., 2025; Saputri et al., 2025).

Traditional games have great potential to support the learning process because they involve physical activity, social interaction, strategy, creativity, and problem-solving. Learning experiences that are active, contextual, collaborative, and meaningful have been recognized as important foundations for developing communication, collaboration, character, and other essential competencies in elementary school students (Marina et al., 2026; Swandewi et al., 2023). Furthermore, traditional games can instill the values of cooperation, responsibility, solidarity, and sportsmanship in students (Latif et al., 2024; Nur et al., 2025). Traditional games can be an effective learning medium for increasing student engagement while strengthening cultural literacy in elementary school-aged children (Miratunnisah, 2024).

In this study, the traditional games used were boy-boyan and clogs. Boy-boyan is a group-based game that requires communication, teamwork, strategy, coordination, and quick

decision-making. Research (Agustin & Nur, 2023) shows that boy-boyan can increase student interest in learning because it involves active interaction and communication between group members. Similar results were also found by (Mustika & Nur, 2022), who stated that boy-boyan has a positive influence on student learning motivation through group activities that require active student involvement.

Meanwhile, clog-walking is a traditional game played in groups using long wooden sandals. This game requires synchronized steps, movement coordination, communication, and responsibility among group members (Aulia et al., 2024; Widjayatri et al., 2023). These characteristics indicate that clog-walking also has the potential to be a learning medium that supports the development of students' social skills through direct interaction experiences.

In addition to game type, gender is also a variable that can influence the development of students' social skills. Differences in characteristics between male and female students, both in emotional, social, and behavioral aspects, allow for different responses in learning activities (Calhoun et al., 2020; Yang et al., 2020). These differences indicate that gender may influence the development of social competence and interpersonal behavior among elementary school students, making it an important variable to consider in social skills research (Hajovsky et al., 2021).

Previous studies have demonstrated the importance of social skills development for children's academic achievement, school adjustment, and interpersonal relationships (Sørli et al., 2021). Research on social-emotional learning has consistently shown that structured educational interventions can improve students' empathy, social competence, emotional regulation, and relationship skills (McCormick et al., 2020; Min et al., 2024; Shi & Cheung, 2022). In addition, learning-through-play approaches have been recognized as effective strategies for fostering social, emotional, and collaborative skills among elementary school students (Cipriano et al., 2024; Parker et al., 2022). Within physical education contexts, traditional games have been reported to enhance motor development, physical activity participation, cooperation, communication, and student engagement (Agustin & Nur, 2023; Latif et al., 2024). Studies on gender have also indicated differences in children's social behavior, communication patterns, and social-emotional competence (Giudice, 2015; Hajovsky et al., 2021). However, these lines of research have generally been investigated independently, leaving limited empirical evidence regarding how different traditional game types and gender interact in shaping elementary school students' social skills.

Despite growing evidence regarding the benefits of traditional games and gender-related differences in children's social development, limited studies have simultaneously examined the interaction between traditional game type and gender in influencing elementary school students' social skills using a factorial experimental design. Most previous studies have focused on the independent effects of traditional games or gender-related characteristics, without investigating how both factors jointly contribute to students' social skill development. Therefore, this study aims to analyze the effects of traditional game type, gender, and their interaction on elementary school students' social skills.

Therefore, this study aims to examine (1) the effect of traditional game type on elementary school students' social skills, (2) the effect of gender on students' social skills, and (3) the interaction effect between traditional game type and gender on students' social skills. The novelty of this study lies in integrating traditional game-based learning and gender perspectives within a 2×2 factorial experimental design to examine both the main and interaction effects on elementary school students' social skills.

Research Methods

This study employed a quasi-experimental method with a quantitative approach using a 2×2 factorial pretest-posttest design (Fraenkel et al., 2012). The design was intended to examine the main effects of traditional game type and gender, as well as the interaction effect between these variables on elementary school students' social skills. The independent variables consisted of traditional game type, namely boy-boyan (A1) and bakiak/clogs (A2), and gender, categorized as male (B1) and female (B2). The dependent variable was students' social skills.

Pendekatan Pembelajaran Gender	Per. Boy-boyan A1 > A2	
	Per. Bakiak A2	
Laki-Laki B1	A1B1 > A2B1	
Perempuan B2	A1B2 < A2B2	

Figure 1. 2×2 Factorial Design

The research was conducted in the even semester of the 2025/2026 academic year in two elementary schools in Tasikmalaya Regency, namely SDN 2 Sukaraja, Rajapolah District, and SDN 2 Cigombong, Ciawi District. The selection of research locations was carried out using a cluster random sampling technique based on the area of elementary schools that met the research criteria. The population in this study were all fifth grade elementary school students in the research area. Cluster random sampling was conducted in two stages. First, elementary schools within the selected research area were grouped based on geographical location. Second, schools that met the predetermined research criteria, including having comparable student characteristics, implementing a similar physical education curriculum, and demonstrating willingness to participate in the study, were randomly selected from each cluster. Based on this procedure, SDN 2 Sukaraja and SDN 2 Cigombong were selected as the research sites. Subsequently, fifth-grade students from the selected schools were assigned into four groups according to traditional game type and gender: male boy-boyan, female boy-boyan, male bakiak, and female bakiak groups. The number of samples in this study was 52 students, which were then divided into four treatment groups, each consisting of 13 students, namely: (1) the male boy-boyan group, (2) the female boy-boyan group, (3) the male clog group, and (4) the female clog group.

The research procedure was carried out through several stages. The first stage was determining the population and sample. The second stage was grouping research subjects based on the type of traditional game and gender. The third stage was implementing physical education learning treatments through traditional boy-boyan and clog games according to each group, in accordance with the learning program description in Table 1. The fourth stage involved measuring students' social skills during both the pretest and posttest phases using the SSIS-RS questionnaire. The final stage was data processing and analysis to test the research hypothesis.

Table 1. Learning Program

Sunday Meeting	Group	Treatment	Material
1	A and B	Pretest	Completing the Social Skills Questionnaire (SSRS), explanation of the experimental procedures
2	A	Boy-boyan (X1)	Introduction to basic rules & techniques, throwing-catching & building towers
	B	Clogs (X2)	Introduction to rules, checkerboard techniques & playing turns
3	A	Boy-boyan (X1)	Attacker-defender strategy training, teamwork coordination
	B	Clogs (X2)	Strategy practice choosing holes & predicting opponent's moves
4	A	Boy-boyan (X1)	3-round game simulation, evaluation of sportsmanship & emotional control
	B	Clogs (X2)	In-class pair rotation match
5	A	Boy-boyan (X1)	Advanced strategies & role redistribution
	B	Clogs (X2)	Fast paced strategy & tactical communication game
6	A	Boy-boyan (X1)	Internal mini tournament (qualifying stage)
	B	Clogs (X2)	Internal mini tournament (qualifying stage)
7	A	Boy-boyan (X1)	Determination of internal champions, observation of peak social skills by teachers
	B	Clogs (X2)	Determination of internal champions, observation of peak social skills
8	A and B	Posttest + Reflection	SSRS completion after treatment & discussion of social experiences during play

The instrument used in this study was a social skills questionnaire adapted from the Social Skills Improvement System–Rating Scale (SSIS-RS) developed by (Gresham, 2016; Gresham & Elliott, 2008). This instrument measures students' social skills based on seven indicators: communication, cooperation, assertion, responsibility, empathy, involvement, and self-control. Prior to use, the instrument underwent validation and reliability testing based on the characteristics of the research subjects.

Table 2. Research Instrument Grid

No	Indicator	Description	Item No.	Amount
1	Communication	Respond well, speak in an appropriate tone, take turns in conversation, use polite expressions	1, 2, 3, 4, 5	5
2	Cooperation	Follows directions, is active in activities, obeys rules, completes tasks without being disruptive	6, 7, 8, 9, 10	5
3	Assertion	Expressing opinions, defending yourself, conveying problems, defending others	11, 12, 13, 14	4

No	Indicator	Description	Item No.	Amount
4	Responsibility	Respecting others' property, taking responsibility for actions, behaving well without supervision	15, 16, 17, 18, 19, 20	6
5	Empathy	Comforting, forgiving, showing concern and kindness	21, 22, 23, 24, 25	5
6	Engagement	Actively participate, interact, start conversations, work in groups	26, 27, 28, 29, 30, 31	6
7	Self-Control	Managing conflict, accepting criticism, maintaining attitude, responding appropriately	32, 33, 34, 35, 36, 37	6
Total				37 items

In this study, the researcher used the SSIS-RS instrument which had been adapted to the research context and referred to the adaptation carried out by (Mulyana et al., 2024) with validity values ($r_{\text{count}} > r_{\text{table}}$) and reliability values through Cronbach alpha ranging from 0.888 - 0.893 indicating adequate internal consistency.

Data collection was conducted twice, namely before and after the intervention. During the pretest phase, students completed the Social Skills Improvement System–Rating Scale (SSIS-RS) questionnaire to obtain baseline data on their social skills. Following the implementation of the traditional game-based learning program, the same instrument was administered as a posttest to measure changes in students' social skills. The questionnaires were completed under the supervision of researchers and teachers to ensure that all students understood the instructions properly. The research data were analyzed using descriptive statistics to obtain a general overview of the data. Subsequently, prerequisite tests were conducted, including the Shapiro–Wilk normality test and Levene's Test of homogeneity. After meeting the statistical assumptions, hypothesis testing was performed using Two-Way Analysis of Variance (ANOVA) at a significance level of 0.05 to determine the effects of traditional game type, gender, and their interaction on students' social skills. To identify specific differences between groups, the analysis was followed by Tukey's HSD post hoc test.

Results and Discussion

The results of the descriptive analysis show that the social skills of students who participated in learning through the traditional boy-boyan game had a higher average than students who participated in learning through the clog game.

Table 2. Descriptive Statistics of Social Skills Gain Scores

Gender	Boys and girls			Bakian		
	Mean	Standard Deviation	N	Mean	Standard Deviation	N
Man	28.38	5,485	13	10.08	1.891	13
Woman	16.15	2,544	13	18.15	3.105	13
Total	22.27	7,513	26	14.12	4.828	26

In the boy-boyan game group, male students obtained an average score of 28.38, while female students obtained an average score of 16.15. Meanwhile, in the clog game group, male students obtained an average score of 10.08, and female students obtained an average score of 18.15. In

general, the group of male students who participated in the boy-boyan game showed the highest social skills scores compared to the other groups.

The research data obtained will then go through the analysis prerequisite test stages first, namely the normality test and the data homogeneity test.

Table 3. Data Normality Test Results

A_Per_Traditional	Shapiro-Wilk			B_Gender	Shapiro-Wilk		
	Statistics	df	Sig.		Statistics	df	Sig.
Boys and girls	0.96	26	0.384	Man	0.989	26	0.991
Clogs	0.974	26	0.734	Woman	0.984	26	0.944

Based on the results of the analysis prerequisite test in Table 3, it is known that the results of the normality test using Shapiro-Wilk show that all data groups have a significance value greater than 0.05. For the traditional game type variable, the boy-boyan group obtained a significance value of 0.384, while the clog group obtained a significance value of 0.734. Meanwhile, for the gender variable, the male group obtained a significance value of 0.991, and the female group obtained a significance value of 0.944. These results indicate that all research data is normally distributed.

Table 4. Data Homogeneity Test Results

	Levene Statistics	df1	df2	Sig.
Based on Mean	2.792	3	48	0.063

Furthermore, based on the homogeneity test results in Table 4 using Levene's Test, a significance value of 0.063 was obtained, which is greater than 0.05. This result indicates that the variance between the research groups is homogeneous. Thus, all research data has met the assumptions of normality and homogeneity, making it suitable for hypothesis testing using two-way analysis of variance (AVA).

Table 5. Two-Way ANOVA Test Results

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2260.692 ^a	3	753.564	60.549	0.000	
Intercept	17.209.923	1	17.209.923	1.382.822	0.000	
A_Per_Traditional	864.308	1	864.308	69.447	0.001	0.591
B_Gender	56.077	1	56.077	4.506	0.039	0.086
A_Traditional * B_Gender	1.340.308	1	1.340.308	107.694	0.003	0.692

The results of the Two-Way Analysis of Variance (ANOVA) showed that traditional game type had a significant effect on students' social skills, $F(1.48) = 69.447$, $p = 0.001$, $\eta^2p = 0.591$. The effect size indicates a large practical effect of traditional game type on students' social skills. These findings suggest that there were significant differences in social skills between students who participated in the boy-boyan game and those who participated in the bakiak game. Based on the mean scores obtained, students in the boy-boyan group demonstrated higher social skills

scores than students in the bakiak group, indicating that the boy-boyan game was more effective in promoting students' social skill development.

These findings indicate that game characteristics influence the quality of social interactions formed during the learning process. Boy-boyan is a group game that requires active communication, coordination, decision-making, strategy, and teamwork in a competitive atmosphere. These characteristics provide students with broader opportunities to interact socially, express ideas, build group solidarity, and resolve conflicts directly. Theoretically, play activities involving group interactions enable children to learn to develop interpersonal skills, such as the ability to communicate, cooperate, show empathy, and adapt behavior to the social context. Social skills develop optimally when children have the opportunity to engage in real and repeated social interactions with peers, because through these experiences, children learn to build healthy and adaptive social relationships (Tedjawidjaja & Kuntoro, 2020). The results of this study are consistent with the learning-through-play framework proposed by (Parker et al., 2022), which emphasizes that play-based activities create authentic opportunities for communication, collaboration, and social problem-solving among children. Similarly, research on social and emotional learning has demonstrated that structured interactive activities can strengthen students' social competence, interpersonal relationships, and emotional regulation (McCormick et al., 2020; Min et al., 2024; Shi & Cheung, 2022).

The results of this study are in line with the findings of (Afrina & Yulsyofriend, 2020), who reported that traditional games can improve children's cooperation, communication, responsibility, and social interaction skills. Similar findings were reported by (Riswanda et al., 2025), who found that game-based learning in physical education enhanced students' cooperation, communication, empathy, emotional regulation, and overall social-emotional skills through active and collaborative learning experiences. These findings are also supported by (Irmansyah et al., 2020), who showed that traditional sports games in physical education learning can foster communication, social responsibility, cooperation, and caring among students through group activities involving intensive social interaction. Furthermore, (Sari et al., 2022) found that boy-boyan games can increase student engagement and improve the quality of social interactions during learning activities. From a physical education perspective, game-based physical activities in elementary schools have also been shown to provide social and emotional benefits through peer interaction, self-confidence development, and group solidarity (Dollaway et al., 2024; Li et al., 2023; Sanjaya et al., 2025). Thus, the high social skills observed in the boy-boyan group in this study can be explained by the characteristics of the game, which create a rich and dynamic social learning environment while requiring the active participation of each group member.

In addition to the type of game factor, the analysis results also showed that gender had a significant effect on students' social skills, $F(1,48) = 4.506$, $p = .039$, $\eta^2p = .086$, indicating a small-to-moderate effect size. Descriptively, male students obtained a mean score of 19.23, whereas female students obtained a mean score of 17.15. These findings indicate that gender characteristics influence students' social interaction patterns during game-based learning activities. Such differences may be associated with variations in social and emotional development between boys and girls during elementary school years, which can shape how students respond to and engage in social learning environments.

The present results align with those of Giudice (2015), who explained that male students tend to be more active, expressive, and competitive in social activities involving physical challenges and group work, while female students tend to exhibit more communicative, cooperative, and interpersonal-oriented interaction patterns. These findings are reinforced by

research (Hajovsky et al., 2021), which shows that the development of elementary school children's social skills differs based on gender. This research explains that gender differences are not only seen in the level of social skills but also in the development of self-regulation, the ability to cooperate, and social adjustment in the school environment. These findings are also supported by (Sørli et al., 2021), who reported that social skill development during middle childhood is influenced by individual characteristics and school-related factors. Their findings suggest that boys and girls may demonstrate different developmental trajectories in communication, cooperation, self-regulation, and social participation, which can contribute to variations in social skill outcomes.

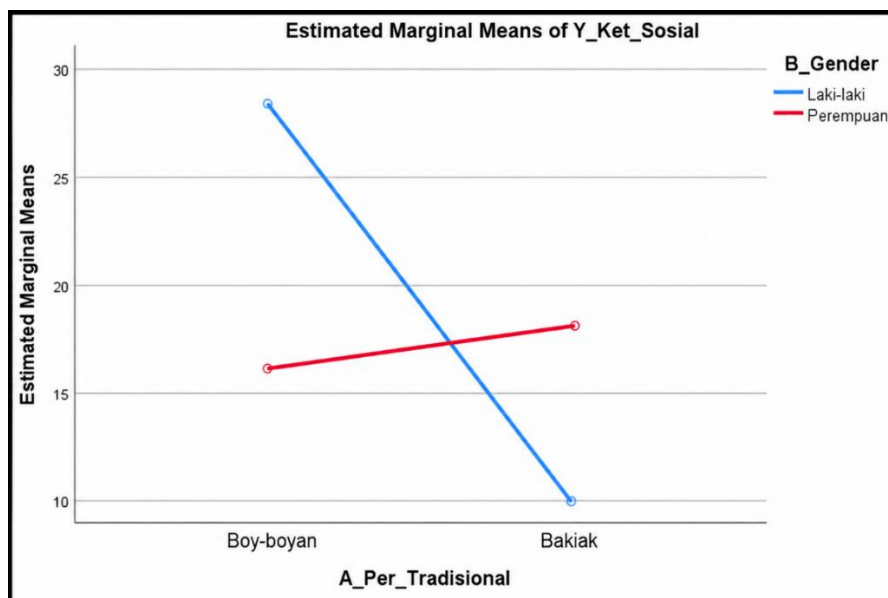


Figure 2. Interaction of Traditional Games with Gender on Social Skills

Furthermore, research (Ar & Hardiansyah, 2022) shows that elementary school students' prosocial behavior is also influenced by gender, particularly in aspects of helping friends, collaborating, sharing, and social engagement in group activities. This finding aligns with research (Sitorus, 2023) which shows that gender differences contribute to the development of students' social and emotional skills, particularly in aspects of communication, empathy, and adaptability in social environments.

In the context of physical education learning, gender differences can influence how students participate, build relationships, and respond to group activities. Game-based physical activities provide opportunities for students to express their social characteristics through communication, competition, and teamwork (Al Hadiq et al., 2025; Dollaway et al., 2024). Furthermore, the analysis revealed a significant interaction effect between traditional game type and gender on students' social skills, $F(1,48) = 107.694$, $p = .003$, $\eta^2p = .692$, indicating a large effect size. These findings suggest that the effectiveness of traditional games in promoting social skills differed according to students' gender characteristics. Based on the interaction graph, a crossover interaction pattern was observed, where male students demonstrated the highest social skills scores in the boy-boyan group, whereas female students obtained relatively higher scores in the bakiak group. This crossover pattern demonstrates that the effectiveness of traditional games is not uniform across genders, highlighting the importance of considering learner characteristics when designing physical education activities. The findings indicate that each traditional game provides distinct social learning experiences and that the effectiveness of game-

based learning may vary according to students' gender characteristics. This finding aligns with previous studies indicating that learning outcomes derived from collaborative and play-based activities may differ according to learner characteristics, including gender, social preferences, and interaction styles (Hajovsky et al., 2021; Parker et al., 2022). From a social learning perspective, students construct social competencies through reciprocal interactions between individual characteristics and learning environments. Therefore, different traditional games may provide distinct social affordances that are experienced differently by male and female students. The relatively higher social skills scores of female students in the *bakiak* group may be associated with the cooperative and synchronized nature of the game. Unlike *boy-boyan*, which emphasizes competition, strategy, and rapid decision-making, *bakiak* requires participants to coordinate movements, maintain communication, and work collectively to achieve a shared goal. These characteristics encourage mutual support, interpersonal communication, and group cohesion throughout the activity. Previous studies have suggested that female students tend to demonstrate stronger tendencies toward cooperative interaction, relationship-oriented communication, and collaborative problem-solving, which may facilitate more effective participation in activities requiring synchronization and collective coordination (Giudice, 2015; Hajovsky et al., 2021). Consequently, the social learning experiences provided by *bakiak* may be more compatible with the interaction patterns commonly exhibited by female students, thereby contributing to higher social skills outcomes within this group.

The results of the Tukey HSD further test showed that the male group of boys had a significant difference with all other groups, with a significance value of 0.000 ($p < 0.05$). Meanwhile, the female group of boys and female clogs did not show a significant difference with a significance value of 0.478 ($p > 0.05$). These findings indicate that game characteristics that emphasize strategy, active communication, and group competition tend to have a greater influence on male students. Conversely, clogs games that emphasize motor coordination, step synchronization, interpersonal communication, and group cohesion provide a relatively more appropriate social experience for female students.

Table 6. Tukey HSD advanced test results

No	Group (I)	Group (J)	Mean Difference	Sig.	Information
1	Boys	Boys and Girls	12.23	0.000	Significant
2	Boys	Men's Clogs	18.31	0.000	Significant
3	Boys	Women's Clogs	10.23	0.000	Significant
4	Boys and Girls	Men's Clogs	6.08	0.000	Significant
5	Boys and Girls	Women's Clogs	-2.00	0.478	Not Significant
6	Men's Clogs	Women's Clogs	-8.08	0.000	Significant

Theoretically, the findings of this study align with social learning theory, which explains that individual behavior develops through a reciprocal interaction process between personal factors, behavior, and the social environment (Nabavi & Bijandi, 2015). Through this process, students acquire knowledge, skills, and social behavior through observation, imitation, direct experience, and reinforcement from their surroundings. These findings are also supported by systematic studies showing that gender contributes to the social development, emotional regulation, and learning engagement of elementary school students, thus influencing how students interact and adapt in the learning environment (Amelia et al., 2024). In the context of

this study, the type of traditional game acts as a social learning environment that provides a space for real interaction, while gender represents students' personal characteristics that influence how individuals respond to social situations in learning.

The interaction between these two factors results in different social experiences for each group of students, thus influencing the development of social skills during the physical education learning process. This finding is also supported by research (Irmansyah et al., 2020; Nur et al., 2025), which shows that traditional game activities in physical education learning can develop communication, cooperation, responsibility, and social awareness in students through intensive group interactions. In addition, collaboratively designed physical education learning has been shown to improve social skills, self-confidence, and the quality of interpersonal relationships between students (Dollaway et al., 2024). Similar results were also shown by (Hadiq Al et al., 2025), who found that traditional games can increase student engagement, strengthen social interactions, and provide more meaningful learning experiences in the context of basic education.

Thus, the results of this study confirm that the use of traditional games in physical education learning can effectively improve students' social skills. These findings are consistent with evidence from social-emotional learning research showing that meaningful interaction, cooperation, and active participation contribute significantly to children's social competence development (McCormick et al., 2020; Min et al., 2024; Shi & Cheung, 2022). Furthermore, the findings reinforce the learning-through-play perspective that play-based educational experiences can simultaneously promote social, emotional, and interpersonal development in elementary school students (Parker et al., 2022). These findings also highlight the importance of considering learner characteristics, particularly gender, when selecting traditional games as instructional strategies in physical education settings.

Conclusion

This study aimed to examine the effects of traditional game type, gender, and their interaction on elementary school students' social skills. The findings demonstrate that traditional game-based learning can serve as an effective pedagogical approach for fostering students' social skill development within physical education settings. More importantly, the study provides empirical evidence that the effectiveness of traditional games is not uniform across learners but is influenced by gender characteristics. The significant interaction effect found in this study highlights the importance of considering learner characteristics when selecting and implementing traditional games in physical education programs.

The contribution of this study lies in extending the literature on traditional game-based learning by integrating a gender perspective within a factorial experimental design. The findings suggest that traditional games may be utilized not only as cultural heritage activities but also as instructional strategies to support students' social development in elementary schools. These results provide practical implications for physical education teachers in designing learning experiences that are both culturally relevant and responsive to student characteristics.

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