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Enhancing Primary School Students' Social Skills through TGT and STAD Cooperative Learning in Physical Education

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ABSTRACT

This study explores the implementation of cooperative learning in Physical Education, Sports, and Health (PJOK) lessons and its impact on developing social skills among primary school students at SD Kanisius Wonogiri. Using a qualitative descriptive approach, data were gathered through observations, semi-structured interviews, and documentation, focusing on two cooperative models: Team Game Tournament (TGT) and Student Teams Achievement Division (STAD). Findings show that TGT, through structured game rules, ice-breaking activities, ongoing feedback, and post-activity reflections, strengthened teamwork and active engagement. STAD fostered group accountability, peer support, and appreciation of diverse contributions. Across both models, teacher facilitation played a central role by providing scaffolding, modeling collaboration, and resolving group challenges. The use of learning aids and digital tools further enhanced participation and inclusivity. The discussion, grounded in Vygotsky's social constructivism, highlights how peer interaction within structured group activities supports both cognitive and socio-emotional growth. The study emphasizes the Zone of Proximal Development (ZPD) and scaffolding as mechanisms enabling skill transfer beyond the sports context. In conclusion, integrating TGT and STAD into PJOK effectively cultivates communication, empathy, tolerance, responsibility, and leadership among students. The results underscore the dual function of PE as a platform for physical fitness and socio-emotional learning. Policy and practice should incorporate social skills assessment within PE curricula using holistic and diverse evaluation methods to support well-rounded student development.

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1. Introduction

Collaborative learning has emerged as a cornerstone in contemporary pedagogy, significantly enhancing social skill development among primary school students. By fostering communication, teamwork, and empathy, this instructional approach engages learners in active knowledge exchange, collective problem-solving, and conflict resolution. Such processes not only promote essential interpersonal competencies but also cultivate respect for diversity in perspectives and ideas (Kinasih & Ratnawati, 2024; Muti'ah et al., 2021; Usman et al., 2023). Through structured group activities, students gain first-hand experience in articulating their viewpoints, listening attentively to others, and working towards shared goals. These skills are indispensable in both academic and social contexts.

Physical Education (PE) plays a parallel and equally critical role in advancing socio-emotional competencies in children. Participation in physical activities offers a natural context for cooperation, self-esteem building, and emotional regulation (Eliassy et al., 2021; Salum et al., 2024). When PE is intentionally designed to integrate teamwork-based tasks, students not only improve their physical fitness but also learn to negotiate, resolve conflicts, and develop a strong sense of belonging to a group (Wang & Zhang, 2024). This combination of physical and social engagement underscores the potential of PE as a vehicle for holistic child development.

Within the framework of PE, group discussion methods stand out as particularly effective in enhancing communication and empathy. By creating spaces where students can openly share ideas and perspectives, such discussions nurture effective interpersonal communication and active listening skills. This environment of mutual respect enables learners to better interpret emotional cues, thereby deepening their empathetic understanding (Bankar et al., 2024; Sung & Kweon, 2022; Y. Zhou et al., 2021). The benefits extend beyond immediate social gains, equipping students with relational abilities that support long-term personal and academic success.

Cooperative learning models such as Teams-Games-Tournaments (TGT) and Student Teams-Achievement Divisions (STAD) have proven particularly impactful in PE contexts. These strategies prioritize collaboration over competition, fostering supportive learning environments where students work collectively towards shared objectives (Kızıltepe et al., 2023; McNally et al., 2022). Structured to promote equal participation, these models enhance student motivation and engagement by instilling a sense of mutual accountability (Cho & Kim, 2024; Srivastava et al., 2021). Such approaches not only develop technical and physical abilities but also strengthen teamwork, leadership, and social interaction skills, which are key elements of holistic education (Kang et al., 2022).

The integration of social skill training into PE curricula is well-supported by educational theory, particularly constructivist and social constructivist perspectives. TGT and STAD exemplify structured group interactions that drive social skill development through positive interdependence and shared responsibility (Desanti & Juliantine, 2023; Padillah et al., 2020). Empirical studies have confirmed that these models not only bolster interpersonal competencies but also enhance academic performance by fostering environments where peer learning is prioritized (Malinauskas & Malinauskienė, 2021; Nicolosi & Ancona, 2020; Wattanawongwan et al., 2021). Complementary methods such as Role-Playing offer additional benefits, providing students with opportunities to navigate simulated social scenarios that refine emotional intelligence and communicative competence (Budiman et al., 2023).

Social interaction in educational settings thus emerges as a linchpin for holistic development. Engagement in collaborative learning cultivates vital soft skills such as teamwork, empathy, adaptability, and effective communication that extend far beyond the classroom (Ali et al., 2021; Usman et al., 2023). Positive peer interactions within cooperative learning frameworks foster inclusivity, reduce behavioral challenges, and significantly enhance emotional well-being (Malinauskas & Malinauskienė, 2021; Navarro-Patón et al., 2022). These interactions lay a robust foundation for students to thrive in future academic, professional, and community-based collaborative environments (Harianto, 2024; Mendo-Lázaro et al., 2022).

In this context, the present study examines the implementation of group collaboration in PJOK lessons at SD Kanisius Wonogiri and its influence on the development of students' social skills. Building on established pedagogical theories and empirical evidence, the research aims to address a critical gap in

the integration of cooperative learning and social skill training within primary school PE. By employing cooperative learning models such as TGT and STAD, the study seeks to demonstrate the dual potential of PJOK as both a platform for physical development and a catalyst for socio-emotional growth. The novelty of this work lies in its systematic focus on structured group interaction within PE to cultivate communication, empathy, responsibility, and leadership skills, offering insights for educators and policymakers to design more holistic and socially enriching learning experiences.

2. Method

This study employed a qualitative descriptive research design to explore the implementation of group collaboration in Physical Education, Sports, and Health (PJOK) lessons and its influence on the development of students' social skills at SD Kanisius Wonogiri. A qualitative descriptive approach was chosen for its ability to provide rich, contextualized accounts of participants' experiences, behaviors, and interactions while presenting findings in a format accessible to educational practitioners.

The research design was informed by three methodological traditions within qualitative inquiry: ethnography, phenomenology, and grounded theory. Ethnography offered a lens for understanding the cultural and social dynamics within the classroom, enabling the observation of shared practices, norms, and routines that shape group collaboration (Schindler et al., 2020). Phenomenology guided the exploration of students' lived experiences in collaborative learning, capturing the meaning they attributed to participation and peer interaction (Jenssen et al., 2023). Grounded theory informed the iterative process of data analysis, generating context-specific insights and patterns that explain how cooperative models influence social skill development (Meijer et al., 2020).

1.1 Research Setting and Participants

The study was conducted at SD Kanisius Wonogiri, a primary school in Central Java, Indonesia, during the 2024/2025 academic year. Participants included students from selected upper-grade classes (ages 10–12) and their PJOK teachers. Purposive sampling was applied to ensure that participants had direct experience with group collaboration in PJOK lessons. Teachers contributed additional insights into the design and facilitation of collaborative activities.

1.2 Data Collection Methods

1.2.1 Observation

Non-participant observations were conducted during PJOK lessons integrating cooperative learning models such as Teams-Games-Tournaments (TGT) and Student Teams-Achievement Divisions (STAD). Observations focused on group interactions, student participation, role distribution, and manifestations of social skills, including communication, empathy, and conflict resolution. Detailed field notes documented both verbal and non-verbal behaviors (Jupri et al., 2024).

1.2.2 Interviews

Semi-structured interviews with students and teachers provided deeper insights into perceptions and experiences of group collaboration. Student interviews examined comfort levels, perceived benefits, and challenges of group work. Teacher interviews explored strategies for structuring tasks, fostering inclusivity, and addressing interpersonal challenges (Chang et al., 2024).

1.2.3 Documentation

Supporting materials such as student work samples (e.g., group activity reports, reflective journals) and lesson plans were collected to corroborate observation and interview data. These artifacts provided evidence of how collaborative processes were structured and how social skills evolved over time (Ferdaus & Novita, 2023).

1.3 Data Analysis

Data analysis followed an iterative process consistent with qualitative principles. Observation notes, interview transcripts, and documents were organized and coded thematically. Inductive coding identified recurring patterns related to communication, empathy, responsibility, leadership, and collaborative strategies. Cross-case comparisons between student and teacher perspectives highlighted both convergences and divergences. A grounded theory-informed approach supported the development of a conceptual framework connecting observed practices to reported improvements in social skills.

1.4 Trustworthiness and Rigor

To ensure trustworthiness, the study applied several strategies. These included triangulating observations, interviews, and documentation to corroborate findings, conducting member checking to validate interpretations, engaging in the field over an extended period to build rapport and capture authentic interactions, and maintaining an audit trail that documented research decisions and analytical steps.

1.5 Ethical Considerations

Ethical approval was obtained from the relevant institutional review board. Participation was voluntary, with informed consent from students' parents or guardians. Anonymity and confidentiality were maintained by assigning pseudonyms and omitting identifying information. All interactions were conducted respectfully, safeguarding participants' dignity and well-being.

By combining ethnographic sensitivity, phenomenological depth, and grounded theory's analytical rigor, this methodology offered a comprehensive understanding of how structured group collaboration in PJOK lessons enhances students' social skills. The integration of multiple data collection methods ensured that both lived experiences and observable behaviors underpinning successful cooperative learning were captured effectively.

3. Result

3.1 Implementation of Cooperative Learning Models in PE Lessons

The implementation of the Team Game Tournament (TGT) model in primary school Physical Education (PE) at SD Kanisius Wonogiri revealed several practices that contributed to its effectiveness. Teachers began sessions with clear explanations of the game rules, ensuring that all students understood the objectives and guidelines. These rules were designed to balance friendly competition with collaboration, encouraging students to communicate and coordinate strategies (Hayati et al., 2023). Ice-breaking activities at the start of lessons strengthened rapport and team cohesion, enhancing students' willingness to participate actively (Pla-Pla et al., 2024). Throughout the tournaments, teachers monitored student engagement closely, providing constructive feedback to reinforce teamwork and address emerging behavioral issues in real time (Endrawan & Aliriad, 2023). Reflection sessions held after each tournament allowed students to discuss strategies, challenges, and interpersonal experiences, deepening their understanding of effective teamwork (Ekowati et al., 2024; Hayati et al., 2023). These debriefings were essential for translating in-game collaboration into broader social skills.

The Student Teams Achievement Divisions (STAD) model fostered a supportive classroom culture where students worked collectively toward shared academic and physical goals. Teachers emphasized group accountability, motivating students to assist peers and ensuring that all members contributed effectively (Setiyaningsih & Sujarwo, 2023). Observations indicated that this structure encouraged active participation, strengthened peer support networks, and fostered inclusivity within teams (Böke et al., 2025). Regular performance assessments, combined with recognition of group achievements, reinforced the value of collective success. This reinforcement contributed to an increased sense of belonging and mutual respect, with students showing greater willingness to share ideas and take responsibility for outcomes (Desnita et al., 2021; Setiyaningsih & Sujarwo, 2023).

3.2 Development of Social Skills through Group Collaboration

PE lessons incorporating team-based activities provided rich opportunities for verbal and non-verbal communication. Students engaged in strategizing, offering feedback, and expressing encouragement during activities, which fostered clarity in self-expression and active listening (Vicario et al., 2024). These structured interactions enabled students to negotiate roles, articulate needs, and demonstrate mutual support, all critical components of interpersonal competence (Horne & Rakedzon, 2024; Ji et al., 2022). As students navigated team dynamics, they developed confidence in sharing ideas, even in competitive settings. Teachers observed that communication skills honed in PE often carried over to other classroom activities, suggesting a transfer of social competencies beyond the sports context (Ghani et al., 2021; Lladó et al., 2020).

The cooperative nature of TGT and STAD required students to acknowledge and value diverse perspectives, promoting empathy and tolerance (Amat et al., 2023; Love et al., 2022). Group activities created scenarios where students offered assistance to peers struggling with specific tasks, fostering understanding of individual needs and capabilities (Jacobs et al., 2022; Mandel et al., 2020). Furthermore, the emphasis on shared responsibility instilled a sense of accountability for the group's performance. Students learned that their contributions had direct consequences for team success, reinforcing the importance of reliability and inclusivity in group settings (Chen et al., 2024; Jacobs et al., 2022).

3.3 Factors Influencing the Effectiveness of Group Collaboration

Teachers acted as central figures in shaping the collaborative environment. By establishing clear goals and ground rules, they provided a structured framework that supported effective group work (Slingerland et al., 2021). Teachers modeled respectful communication and conflict resolution while guiding discussions that encouraged sharing of perspectives and problem-solving (Castillo et al., 2020). Active monitoring allowed for immediate intervention when conflicts arose, and positive reinforcement highlighted examples of successful teamwork. This responsive facilitation enhanced group cohesion and ensured productive collaboration (Magill et al., 2023).

The provision of diverse and well-structured learning materials played a significant role in sustaining student engagement. Physical resources such as balls, markers, and instructional guides facilitated task clarity and encouraged participation (Poolkrajang & Papanai, 2024). The integration of technology, such as gamified learning platforms, further increased motivation, making PE activities more interactive and accessible (T. Zhou et al., 2023). Aligning resources with varied learning styles ensured that all students could contribute effectively, thereby enhancing both participation rates and the quality of group collaboration (Howley et al., 2021; Kalir et al., 2020).

4. Discussion

4.1 Application of Vygotsky's Social Constructivism in Cooperative Learning for PE

The findings of this study align strongly with Vygotsky's social constructivism, which posits that learning occurs through socially mediated interactions within a cultural context (Higgins et al., 2020). In the context of Physical Education (PE), cooperative learning models such as TGT and STAD provide authentic opportunities for students to engage in collaborative interaction, share strategies, negotiate roles, and co-construct knowledge. These peer-to-peer exchanges not only enhance technical proficiency in sports but also develop essential cognitive and social abilities (Schulze & M, 2022). The principle of the Zone of Proximal Development (ZPD) is particularly evident in group-based PE activities, where students with higher skill levels support peers with less experience, enabling collective progress beyond individual capabilities (Ghimire et al., 2024; Nafis & Nasri, 2024). Such peer-assisted learning fosters both competence and confidence, with more skilled students reinforcing their own mastery through teaching, while less skilled students benefit from accessible, relatable guidance. Scaffolding also emerged as a critical element in this study's context. Teachers provided structured, temporary support to guide students through complex tasks, gradually withdrawing assistance as competence increased (Erbil, 2020). In PE, scaffolding ranged from breaking down physical skills into manageable steps to modeling effective teamwork behaviors. This facilitated not only skill acquisition but also the development of empathy, patience, and collaborative problem-solving (Chong et al., 2022).

4.2 Policy Implications: Integrating Social Skills Assessment into PE Curricula

To leverage the dual role of PE in fostering both physical and socio-emotional growth, policy reform should align with Vygotsky's principles and emphasize structured assessment of social skills. A holistic assessment framework that evaluates communication, empathy, and teamwork alongside physical performance is essential (Bandeira et al., 2022). Methods such as peer assessment and self-reflection can provide nuanced insights into group dynamics and individual contributions. Alignment with teaching models that emphasize personal and social responsibility (TPSR) is also recommended, ensuring that life skills are explicitly taught, practiced, and assessed (Jacobs et al., 2022). To operationalize this effectively, professional development for PE educators must be prioritized, equipping them with the tools to design, facilitate, and assess social skill outcomes (Opstoel et al., 2022). Furthermore, curriculum reform should

embed clear guidelines for incorporating collaborative learning strategies that foster community-building among students (Trask et al., 2023). A diversity of assessment methods, including observational rubrics, group projects, and collaborative challenges, will provide a comprehensive view of student growth in socio-emotional domains (Sprow et al., 2021).

4.3 PE as a Dual Platform for Physical Fitness and Socio-Emotional Learning

This study reinforces the idea that PE is uniquely positioned to address both physical and socio-emotional learning (SEL) goals. By integrating structured cooperative learning, PE lessons become platforms where students engage in meaningful teamwork, communication, and mutual support, skills that extend beyond the sports field (Barco et al., 2023; Malinauskas & Malinauskienė, 2021). Incorporating SEL frameworks within PE enables students to practice empathy, resilience, and social responsibility in real-world contexts (Luna et al., 2021; Martins et al., 2022). Reflection activities following group challenges provide valuable opportunities for students to analyze interpersonal successes and setbacks, fostering self-awareness and adaptive social behaviors (Konukman et al., 2022). The use of innovative teaching methods such as game-based learning, blended instruction, and cooperative teaching further enhances engagement while targeting SEL outcomes (Howley et al., 2022). Designing physical activities that require problem-solving under pressure and emotional regulation bridges the gap between fitness and emotional well-being (Cocca et al., 2020; Condello et al., 2021).

4.4 Implications for Practice

The research suggests that PE teachers should integrate cooperative learning models with explicit social skill objectives, apply scaffolding techniques to support progressive skill mastery, employ diverse assessment tools to capture both physical and socio-emotional growth, and facilitate structured reflection to promote metacognition and empathy. By positioning PE as a domain for holistic education, where physical activity serves as a medium for developing interpersonal competence, schools can foster well-rounded learners equipped for both academic and social success.

5. Conclusion

This study demonstrates that structured group collaboration within Physical Education, Sports, and Health (PJOK) lessons can significantly enhance the social skills of primary school students. The integration of cooperative learning models such as Team Game Tournament (TGT) and Student Teams Achievement Division (STAD) was found to foster communication, empathy, tolerance, social responsibility, and leadership. Observations revealed that these models create supportive environments in which students engage in active participation, mutual support, and collective problem-solving, aligning closely with the principles of Vygotsky's social constructivism.

Teacher facilitation emerged as a critical factor in guiding group dynamics, modeling effective collaboration, and providing scaffolding to support both physical and socio-emotional growth. The use of learning aids and technology further enriched the learning environment, enhancing inclusivity and engagement.

The implications of this research extend beyond the PJOK context, positioning Physical Education as a dual platform for promoting both physical development and socio-emotional learning. Embedding cooperative learning and structured social skill assessment into PE curricula can help schools nurture well-rounded students equipped with both fitness and interpersonal competencies. Future research should investigate the long-term impacts of these pedagogical approaches on students' academic performance, emotional well-being, and life skills across diverse educational settings.

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