

A study of the effects of strategies for conducting cooperative games in kindergartens on the establishment of peer relationships in preschool children

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Abstract. This study examines the effects of cooperative play strategies in kindergartens on developing peer relationships among preschool children. Through a systematic review of domestic and international literature, the research demonstrates that structured cooperative play interventions significantly enhance preschoolers' social-emotional competencies, including communication, empathy, and teamwork. Key findings reveal that cooperative play facilitates peer acceptance and friendship-building by providing opportunities for shared goals and emotional expression. However, effectiveness varies based on individual differences, teacher facilitation quality, and balanced integration with non-cooperative play. The study proposes evidence-based strategies for designing age-appropriate games, optimizing teacher roles, and addressing implementation challenges. Grounded in Vygotsky's sociocultural theory and Bandura's social learning theory, the results highlight cooperative play's dual function as a platform for peer-to-peer learning and adult-guided social reinforcement. Practical guidelines emphasize inclusive design, reflective practice, and psychological safety to maximize long-term benefits for children's social development.

1 Introduction

As parents and kindergartens pay more and more attention to the physical and mental health development of young children and are driven by both the deepening reform of basic education and the needs of society, research on the mental health of young children has gradually become a hot topic. Research focuses on the core areas of young children's emotional development, social adaptability and peer relationships. Especially for small children who have just left the family environment and entered group life, they often show difficulties adapting to the teachers' group and many peers and generally have weak peer interaction skills, which has become a developmental issue of key concern in the field of pre-school education. Therefore, it has become an important task to consciously cultivate young children's peer interaction ability and promote the development of their social interaction ability. Co-operative play, on the other hand, is a common form of activity in early childhood

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education and is of great significance in promoting the establishment of peer relationships among pre-school children. Some studies have shown that cooperation is the main way in which preschool children interact with their peers [1]. In this way, how to coordinate the rotation and frequency of cooperative and non-co-operative games to make them more scientific and reasonable in assisting young children in learning peer relationship-building skills has emerged as a crucial research concern. Therefore, the study of strategies for conducting interactive games in kindergartens aims to optimise game teaching and provide a better peer interaction environment for young children. Through systematic literature analysis, this study conducted a systematic review of relevant domestic and international studies to investigate the impact of kindergarten collaborative play intervention strategies on the formation of peer relationships in preschool children. The analysis reveals that structured collaborative play interventions significantly enhance preschoolers' peer relationship formation. Evidence-based strategies with calibrated intensity demonstrate dual benefits in fostering social-emotional competencies: (a) cultivating prosocial behavioral patterns through reciprocal interaction, and (b) developing essential relationship-building skills through guided peer engagement. This study provides important theoretical support and practical guidance for kindergarten education practice. The study shows that kindergarten cooperative play strategies have a significant effect on the establishment of preschool children's peer relationships. It is expected that the rational design of kindergarten play strategies can play an important role in promoting the healthy development of young children and achieving educational goals.

2 Literature review

Domestic scholars' research on young children's peer interactions and peer relationships started late but has gradually gained attention in recent years. Among them, peer relationships are interpersonal relationships developed by young children of the same or similar age through common activities, resulting in interactions and collaboration, mainly including peer acceptance and friendship [2]. Co-operative play refers to altruistic play activities in kindergarten in which two or more peers cooperate with each other for a common goal and abide by certain game rules [2]. Meanwhile, play strategy refers to the deliberate selection of various types of games by teachers to cater the education needs of young children [3].

Foreign research on young children's peer relationships and interactive play not only started earlier but also developed a more comprehensive theoretical system. Foreign scholars generally believe that games are an important way for young children's social skills development, and different types of games have different effects on young children's peer relationships [4]. In terms of educational strategies, foreign scholars emphasise that teachers should flexibly adjust their game strategies according to the developmental characteristics of young children and the needs of the game in order to maximise the promotion of young children's peer relationships [5]. For example, Brown's foundational research demonstrates that structured teamwork tasks in cooperative games significantly enhance preschoolers' social skills and peer acceptance [6]. This finding becomes particularly impactful when examined alongside Johnson's framework of teacher roles, which argues that educators' active participation as guides and conflict mediators substantially amplifies the social benefits identified by Brown [7]. The social competence improvements observed through peer collaboration appear further enhanced when teachers implement Johnson's recommended strategies of timely intervention and relational scaffolding [6,7]. By emphasizing the dual mechanisms of peer interaction dynamics and adult-guided social reinforcement, these complementary studies collectively suggest that cooperative gaming achieves optimal developmental outcomes through both horizontal (peer-to-peer) and vertical (adult-child) social learning dimensions. In addition, Williams' study found that verbal

communication and emotional expression in co-operative play had a significant impact on young children's friendship building, and teachers should encourage more verbal interactions and emotional sharing during play [8].

3 The Impact of Cooperative Play on Preschool Children's Peer Relationships

3.1 The role of cooperative play in enhancing social skills

Cooperative play is a vital mechanism for fostering social skills in preschool children, as it provides a structured yet flexible environment for practicing and internalizing key interpersonal abilities. The progression from individual to collaborative activities within cooperative play allows children to gradually develop complex social competencies through three distinct stages: interaction, integration, and internalization. Initially, cooperative play creates opportunities for basic social interactions through shared activities. When children engage in group games or collaborative projects, they naturally encounter situations requiring turn-taking, resource sharing, and simple communication. These fundamental interactions serve as building blocks for more sophisticated social skills, as children learn to navigate basic social exchanges through direct experience and adult guidance. As children become more comfortable with basic interactions, cooperative play facilitates the integration of higher-level social skills. Through sustained collaborative activities, such as building block structures together or participating in role-playing games, children develop empathy by understanding different perspectives, practice teamwork by coordinating actions toward common goals, and enhance problem-solving skills by resolving conflicts and overcoming challenges collectively. This integration phase is crucial as it transforms isolated social behaviors into interconnected skill sets. The internalization stage represents the culmination of this developmental process, where children begin to independently apply their learned social skills across various contexts. The foundational skills developed through cooperative play - empathy, communication, and collaboration - directly influence children's ability to form and maintain successful peer relationships. Specifically, these skills enable children to initiate interactions more confidently, respond appropriately to social cues, and navigate complex social situations, such as joining ongoing play or resolving disagreements. By progressing through these stages within the context of cooperative play, children not only acquire discrete social skills but also develop the ability to adapt and apply these skills flexibly in different social situations. This developmental trajectory underscores the unique value of cooperative play as a comprehensive social learning platform that supports children's transition from parallel play to fully interactive, cooperative social engagement. Research in developmental psychology highlights that cooperative play significantly enhances prosocial behaviors in preschool children, such as helping, sharing, and comforting peers, which are essential for building trust and mutual understanding. The effectiveness of cooperative play depends on factors like age, game type, and teacher involvement. Younger preschoolers (ages 3-4) develop basic trust through simple activities like turn-taking, while older preschoolers (ages 5-6) build more complex understanding through collaborative tasks like group art projects. Role-playing games foster empathy, while physical games emphasize teamwork. Teacher facilitation, such as modeling prosocial behaviors and mediating conflicts, is crucial for positive outcomes [9]. Without guidance, unstructured play may reinforce negative behaviors. However, cooperative play's effectiveness varies. While it benefits many children by improving communication and conflict resolution, those with social anxiety or autism may find such activities overwhelming. Tailored, low-pressure interactions are more effective for these children [10]. Proper guidance is essential to prevent exclusion or reinforcement of

negative behaviors. In summary, cooperative play fosters social skills, but its success depends on individual needs and supportive environments.

3.2 The influence of cooperative play on peer acceptance and friendship building

Cooperative play bridges social skills development and friendship building by providing opportunities for children to apply their emerging social abilities in real interactions. As children collaborate toward common goals, they practice communication, sharing, and empathy, which naturally transition into stronger peer bonds. This process fosters a sense of belonging and mutual respect, reducing feelings of isolation and helping children feel more integrated into their peer group. By working together, children build trust and emotional connections, laying the foundation for lasting friendships. This shared experience helps children feel valued and accepted by their peers, reducing feelings of isolation or exclusion. Additionally, cooperative play provides opportunities for children to identify shared interests and build emotional connections, which are essential for forming lasting friendships. Studies have shown that children who frequently engage in cooperative play are more likely to be well-liked by their peers and develop deeper friendships. However, the formation of friendships is also influenced by other social factors, such as communication skills, empathy, and shared interests. Cooperative play enhances these social skills by promoting interaction and teamwork, thereby working alongside other factors to help children build stronger and more meaningful relationships.

3.3 The relationship between cooperative play and emotional expression in young children

Emotional expression is a crucial aspect of peer interaction, and cooperative play provides a safe and supportive environment for children to express their feelings. Through cooperative games, children learn to recognize and articulate their emotions, as well as respond to the emotions of others. This emotional exchange strengthens their ability to empathize and connect with peers more deeply. Furthermore, cooperative play often involves role-playing and imaginative scenarios, which allow children to explore and express complex emotions in a controlled setting. Teachers can facilitate this process by encouraging children to verbalize their feelings and providing guidance on managing conflicts or misunderstandings that may arise during play. By fostering emotional expression, cooperative play helps children build stronger, more resilient peer relationships.

4 Strategies for Implementing Cooperative Play in Kindergarten Settings

4.1 Designing age-appropriate cooperative games for preschoolers

Designing effective cooperative games for preschoolers requires carefully matching the game's structure to the child's developmental stage. Younger preschoolers (ages 3-4) thrive in simple, repetitive interactions that emphasize turn-taking, imitation, and shared movement, such as passing a ball in a circle or moving together like a train. These activities reinforce basic social skills like joint attention and waiting. For older preschoolers (ages 5-6), games should incorporate more complex collaboration, requiring communication, role assignment, and shared problem-solving. Activities like building a group structure with assigned builder and helper roles, or creating a story where each child contributes a new sentence, challenge

them to negotiate, plan, and adapt—key skills for deeper peer relationships. By aligning game demands with emerging social and cognitive abilities, cooperative play becomes both engaging and developmentally meaningful. Games should be tailored to the developmental stage of the children, ensuring they are neither too challenging nor too simplistic, to maintain engagement and promote meaningful social interactions.

4.2 Teachers as facilitators and mediators: encouraging engagement and resolving conflicts in cooperative play

Teachers play a pivotal role in maximizing the benefits of cooperative games, and their facilitation strategies should evolve with children's developmental needs. For younger preschoolers (ages 3-4), research shows that active modeling of prosocial behaviors—such as explicitly demonstrating sharing or verbalizing turn-taking—helps establish foundational social skills. Teachers may need to provide more hands-on guidance, physically assisting children in cooperative interactions while using simple, concrete language. Studies suggest that for older preschoolers (ages 5-6), a gradual shift toward indirect facilitation yields better outcomes. Rather than directly solving conflicts, teachers can scaffold children's emerging social competencies by asking open-ended questions ("How can we make this fair?") or subtly suggesting compromise strategies. This approach encourages autonomy while still providing support. Importantly, longitudinal research indicates that children whose teachers adapt their support levels to match developing abilities show greater gains in cooperation and problem-solving skills over time. The most effective teachers flexibly employ both direct and indirect strategies, recognizing when to step in to prevent frustration and when to step back to allow peer negotiation. This balanced approach, grounded in Vygotsky's zone of proximal development, helps children internalize cooperative behaviors while maintaining engagement in play. Current evidence emphasizes that teacher sensitivity to group dynamics and individual differences is just as crucial as the choice of activity itself in fostering meaningful social growth. Effective facilitation includes setting clear rules, encouraging inclusive participation, and offering verbal prompts to guide children's interactions. For example, teachers can use open-ended questions to encourage communication or demonstrate how to share resources fairly. When conflicts arise, teachers should act as mediators, helping children express their feelings and find mutually acceptable solutions. This guidance not only resolves immediate issues but also teaches children valuable conflict-resolution skills that they can apply in future interactions.

4.3 Balancing cooperative and non-cooperative play for optimal peer interaction

A well-rounded play environment thoughtfully integrates both cooperative and non-cooperative experiences to support comprehensive social-emotional development. Cooperative play cultivates essential skills like collaboration and perspective-taking, while non-cooperative play serves distinct developmental purposes. Individual activities, such as block building or drawing, allow children to develop concentration, autonomy, and a sense of personal competence. Moderate competitive elements, like relay races or simple board games, provide valuable opportunities to practice emotional regulation, learn sportsmanship, and develop resilience in facing challenges. Developmental psychology research emphasizes that children need varied social contexts to build adaptive skills. Mild competitive experiences help children understand fair play and cope with frustration, while solitary play fosters independent problem-solving. Teachers can create a balanced play curriculum by intentionally sequencing different play types and guiding children to reflect on their experiences in each mode. This balanced approach ensures children develop both the

interpersonal skills for working with others and the self-confidence to function independently, preparing them for the complex social world they will navigate as they grow. A balanced approach ensures that children have opportunities to practice both collaborative and independent skills. For instance, a daily schedule might include a mix of group activities like building blocks together and individual activities like drawing or solo puzzles. This balance helps children develop a diverse set of social and emotional competencies.

4.4 Challenges and limitations in implementing cooperative play strategies

Implementing cooperative play strategies in kindergarten settings is not without challenges. One major limitation is the varying developmental levels and social skills among children, which can make it difficult to design activities that suit everyone. Children with social anxiety or autism may find cooperative play overwhelming, requiring tailored interventions to ensure their participation. Additionally, inadequate teacher training or lack of resources can hinder effective implementation. To address these challenges, kindergartens should invest in teacher training programs, provide inclusive game designs, and ensure adequate resources are available to support diverse learning needs.

5 Theoretical and Practical Implications for Kindergarten Education

5.1 Theoretical frameworks supporting cooperative play in early childhood education

Cooperative play is supported by several theoretical frameworks in early childhood education. Vygotsky's sociocultural theory explains how cooperative play scaffolds learning: when children collaborate, they engage in shared problem-solving within their zone of proximal development, with more capable peers or adults providing guidance. This interaction bridges gaps in understanding, as seen when children negotiate roles in pretend play or jointly build structures. Bandura's social learning theory complements this by highlighting how cooperative settings create opportunities for observational learning. For example, when a teacher models turn-taking or a child demonstrates conflict resolution, peers internalize these behaviors. Together, these theories show that cooperative play fosters cognitive growth and social skill acquisition through dynamic peer interactions and modeled behaviors. These frameworks collectively affirm that cooperative play is a powerful tool for fostering social and emotional development in young children.

5.2 Practical guidelines for optimizing game-based learning in kindergartens

To maximize the benefits of game-based learning, kindergartens should implement a balanced approach that combines structure with adaptability. The research underscores the importance of designing inclusive activities that accommodate varying developmental levels and interests, as this promotes engagement while reducing frustration [11]. Clear, age-appropriate instructions are critical—studies show that when teachers verbalize rules and demonstrate gameplay, children exhibit better comprehension and cooperation [12]. Post-play reflection, where children articulate their experiences and emotions, reinforces learning by helping them process social and cognitive takeaways [13]. Teachers should also systematically observe interactions to identify skill gaps or conflicts, adjusting games in real-time to scaffold emerging needs. Finally, cultivating a psychologically safe environment—where mistakes are normalized and encouragement is consistent—has been empirically

linked to greater risk-taking and creativity in play [14]. This multifaceted strategy, grounded in developmental theory, ensures games are not just enjoyable but pedagogically transformative.

5.3 Long-Term benefits of cooperative play on children's social and emotional development

The long-term benefits of cooperative play extend beyond kindergarten, influencing children's social and emotional development throughout their lives. Children who engage in cooperative play are more likely to develop strong communication skills, emotional intelligence, and the ability to work effectively in teams. However, benefits aren't universal - some children may struggle with unequal power dynamics or social exclusion during group play. The quality of facilitation and inclusion of diverse participation styles are crucial for ensuring all children benefit from cooperative experiences. These skills are essential for academic success, positive peer relationships, and future professional collaboration. Moreover, cooperative play fosters resilience and adaptability, enabling children to navigate social challenges with confidence. Research suggests that incorporating developmentally appropriate cooperative play into early education can help foster important social-emotional skills like communication, empathy and teamwork. When properly facilitated, these collaborative experiences may contribute to children's emerging ability to form positive relationships and regulate emotions - competencies associated with long-term wellbeing. However, cooperative play should be implemented as part of a balanced approach that includes other types of play and learning experiences to support holistic development.

6 Conclusion

This study underscores the transformative potential of well-designed cooperative play in fostering preschool children's peer relationships. The analysis confirms that cooperative games, when tailored to developmental stages and facilitated by trained educators, effectively cultivate prosocial behaviors and emotional skills critical for peer acceptance and friendship. However, success depends on addressing three key dimensions: (1) balancing cooperative and non-cooperative play to support diverse social competencies, (2) adapting teacher mediation strategies from direct modeling to scaffolded autonomy, and (3) accommodating individual differences through inclusive designs. While limitations exist—particularly for children with social anxiety or atypical development—the integration of theoretical frameworks with practical interventions offers a robust roadmap for kindergarten educators. Future research should explore longitudinal impacts and culturally adapted implementations. These findings advocate for cooperative play as an intentional, rather than incidental, component of early childhood curricula to nurture socially skilled and emotionally resilient learners.

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