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Research on the Current Status and Strategies of Cooperative Behavior in Young Children During Play

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Abstract: This study examines cooperative behavior in young children during play, exploring its value and significance for early childhood development. Based on existing challenges in cooperative behavior, it analyzes the influence of family factors, educational approaches, game design, and teacher roles on such behavior, proposing corresponding strategies. Findings indicate that positive educational approaches, and well-designed games all contribute to fostering cooperative behavior in young children, laying a foundation for their social development. Using construction play as a case study, this paper examines the value, current status, and influencing factors of cooperative behavior through literature review and survey data analysis. Building on this foundation, it proposes recommendations including game design principles, and teacher engagement strategies to promote the healthy development of cooperative behavior in young children.

1. Introduction

Early childhood is a critical period for social development. Cooperative behavior, as a vital component of social development, profoundly influences children's social skills, moral formation, emotional regulation, and other non-cognitive factors. The Ministry of Education's Guidelines for Learning and Development of Children Aged 3-6 state: "Children's development and social learning in social life is a process requiring gradual refinement and the establishment of a sound foundation for individuality[1]." Play, as the primary activity of young children, promotes their multifaceted development. Research indicates that cooperative behavior is particularly evident and evolves through construction play. Therefore, this study uses construction play as a case study to examine the current state of cooperative behavior in play and its influencing factors. This analysis aims to provide insights for kindergarten teaching practices and to foster children's comprehensive development.

The 2022 Guidelines for Evaluating Kindergarten Care and Education Quality state: Teachers should create favorable living and learning environments for children, continuously cultivate their collective living skills, build harmonious teacher-child partnerships and child-child cooperative relationships, and steadily enhance children's cooperative awareness[2]. The Ministry of Education's “Guidelines for Kindergarten Education (Trial)” explicitly requires kindergartens to cultivate children's willingness to interact with others, learn mutual assistance, cooperation, and

sharing, and develop virtues such as empathy[3]. In recent years, increasing numbers of scholars and educators have focused on the role of play in fostering cooperative behavior among young children. Activities serve as vital vehicles for the emergence and development of children's psychology. As the primary activity for young children, play positively promotes their physical and mental development. Constructive play, in particular, can promote the development of cooperative behavior in young children. Therefore, conducting in-depth research on the current state of cooperative behavior in constructive play and its influencing factors holds significant theoretical and practical importance.

This study primarily employs literature review and questionnaire survey methods. It aims to investigate the current state of cooperative behavior in young children during constructive play, analyze existing issues based on the survey data, and propose effective strategies to promote the development of cooperative behavior in young children.

2. Theoretical Value Research and Related Concepts

2.1. Theoretical Research

2.1.1. Domestic Research

Cooperative behavior tends to emerge more readily during play. Driven by emotions, young children select appropriate cooperative skills to negotiate, communicate, and coordinate with others, ultimately achieving shared goals through a series of behavioral manifestations. This constitutes positive social interaction[4]. The behavioral characteristics and patterns ultimately exhibited by young children during development primarily stem from their interactions with others and the environment, representing the outcome of multiple interrelated factors[5]. Throughout the construction of play, teachers serve as facilitators, and the effectiveness of this facilitation relies on the teacher's sufficient emphasis on children's cooperative behaviors. Domestic research has predominantly focused on educational elements within early childhood settings. By improving play environments, teacher guidance, and child development, scholars have explored strategies to enhance cooperative behavior. This has enriched domestic understanding of cooperative behavior in young children and provided theoretical guidance for educational practice.

The above research enriches domestic understanding of young children's cooperative behavior and provides certain theoretical guidance for educational practice. However, existing studies mainly focus on describing and analyzing the current state of young children's cooperative behavior, with insufficient research on how to effectively enhance children's cooperation, stimulate cooperative tendencies during play, and the specific strategies teachers should adopt.

2.1.2. International Research

International scholars investigating cooperative behavior in young children place greater emphasis on the influence of individual differences, personality factors, and social cognition. For instance, Rogoff (1998) noted that personality differences may influence cooperative outcomes, while Siegler (2002) demonstrated that self-confidence and extroversion significantly impact cooperative effectiveness. Brownell and Carriger (1990) investigated from a social cognitive perspective, finding that children's self-awareness levels play a crucial role in peer cooperation[6]. International research has explored the formation mechanisms and influencing factors of young children's cooperative behavior from diverse angles. The diversity and depth of these findings provide rich insights and methodologies for promoting cooperative behavior in young children.

In summary, domestic and international research offers abundant theoretical resources. However,

existing studies primarily remain at the descriptive and analytical stage regarding the current state of young children's cooperative behavior. They also face issues such as inappropriate methodological choices, limitations in sample selection, and insufficient theoretical frameworks. Therefore, this paper will further investigate the current state and influencing factors of cooperative behavior in young children, proposing more effective educational strategies and intervention measures.

2.2. Conceptual Clarification

2.2.1. Cooperative Behavior

The Dictionary of Psychology defines cooperation as: "The joint completion of a behavior by two or more individuals toward a common goal, representing the highest level of coordination between individuals[7]". In early childhood, cooperative behavior primarily involves collaboration, mutual assistance, resource sharing, and responsibility-sharing among individuals to achieve common goals, requiring children to coordinate with others and work collectively.

2.2.2. Game

The Encyclopedia of Education defines play as: an activity suitable for children's self-regulation, non-realistic, and capable of delivering pleasurable experiences. Play is an autonomous and voluntary activity for young children, arising from their spontaneous and self-directed needs[8]. Play activities are diverse and can be categorized by various criteria. From an educational perspective, Chinese scholars classify kindergarten play into types such as creative play (role-playing, construction play, dramatic play), rule-based play (physical games, intellectual games, musical games), and recreational play[9].

Constructive play, also known as structural play, is defined in the Dictionary of Early Childhood Education as"children's activities involving the construction of objects through manipulating various materials (building blocks, plastic building blocks, metal construction materials, sand, snow, pebbles, etc.)[10]". Essentially, constructive play refers to children creatively building various objects using plastic building blocks, wooden blocks, natural materials, discarded materials, etc., based on their own interests and needs.

Based on preschoolers' social development, play styles can be categorized into solitary play and cooperative play[11]. As this study investigates children's cooperative behaviors, it focuses on multi-player cooperative construction play. Construction play that can be completed by a single child falls outside the scope of this research.

3. Current Status Survey

3.1. Survey Participants

This study surveyed 86 teachers from four kindergartens in Zhoukou City and the preschool children encountered during the author's teaching practicum.

3.2. Analysis of Factors Influencing Preschoolers' Cooperative Behavior

3.2.1. Task Difficulty and Duration of Cooperative Behavior

Table 1 indicates that the duration of cooperative behavior correlates with task difficulty (quantity of construction materials). When fewer construction materials were provided, cooperative

behavior lasted shorter periods. This may stem from overly simple tasks lacking challenge, enabling children to complete them quickly and thereby reducing opportunities and time for collaboration. When the number of construction materials is moderate, cooperative behavior lasts the longest. This indicates that within this difficulty range, the task offers sufficient challenge without being overly complex, thereby promoting cooperation among children. However, when the number of construction materials increases to 8 or more, the duration of cooperative behavior actually shortens. This may suggest that excessively high task difficulty exceeds children's problem-solving abilities, leading to frustration or confusion and consequently reducing opportunities and time for cooperation.

Table 1: Comparison of Intelligent Supply Chain Optimization Performance

Task Difficulty (Number of Construction Materials)	Duration of Cooperative Behavior
8 or more	5–10 minutes
5–8 types	20–30 minutes
2–4 types	10–20 minutes
1 or none	Less than 5 minutes

3.2.2. Relationship Between Play Frequency and Cooperation Occurrences

Table 2: Statistical Analysis of the Effect of Construction Play Frequency on the Number of Cooperative Behaviors

Frequency	Number of Cooperative Behaviors	Proportion
1–2 times	15	17.44%
3–4 times	20	23.26%
5–6 times	32	37.21%
6 times or more	19	22.09%

Table 2 shows that cooperation occurrences generally increase with higher construction play frequency. A significant upward trend is evident from the 1-2 times per week frequency range to the 5-6 times per week range. This indicates that as the frequency of constructive play increases, the number of cooperative behaviors among children also increases. However, in the frequency range of 6 or more times, although the number of cooperative behaviors remains relatively high, it shows a decline compared to the 5-6 times range. This may suggest that excessively high frequency does not necessarily always lead to more cooperative behaviors.

3.2.3. Methods of Initiating Cooperative Behaviors Among Children

Table 3: Statistical Table of Methods for Initiating Cooperative Behaviors among Children

Method	Number of Participants	Proportion
Teacher involvement	40	46.51%
Occurred naturally	29	33.72%
Direct invitation from peers or oneself	17	19.77%

As can be seen from Table 3, teacher intervention accounts for the highest proportion at 46.51%, indicating that teachers play a very important role in promoting cooperative behavior among young children. Spontaneous formation naturally accounts for 33.72%, which suggests that when children share similar interests or tasks, they may voluntarily form cooperative relationships. Direct

invitation from peers or themselves accounts for 19.77%, indicating that children have a certain degree of initiative and social skills to establish cooperative relationships.

3.2.4. Individual Temperament Types and Frequency of Cooperation

Table 4: Statistical Chart of Temperament Types' Influence on Cooperation Frequency

Temperament Type	Number of Children	Number of Cooperative Interactions
Choleric	20	10
Phlegmatic	20	12
Sanguine	20	16
Depressive	20	5

In psychology, based on Hippocrates' four humoral theory, human temperaments are classified into four types: choleric, phlegmatic, sanguine, and melancholic. Data from Table 4 shows that the average number of cooperative episodes among children, from highest to lowest, is: sanguine, phlegmatic, choleric, melancholic. This indicates that children's temperament types significantly influence their cooperative behavior.

4. Problem Analysis and Countermeasure Research

4.1. Problem Analysis

4.1.1. Environmental Design Inconsistent with Children's Temperament Types

Table 4 indicates that individual temperament significantly influences cooperative behavior. An unsuitable game environment is a major factor disrupting children's cooperative activities. Choleric children experience rapid and intense emotional responses. In an unsuitable environment, they may become irritable and impulsive, unable to concentrate, leading to disrupted cooperation. Phlegmatic children are typically quiet, well-behaved, and reserved. An uncomfortable environment may make them even more sluggish and reluctant to express themselves, lacking the initiative to participate in cooperative activities. Phlegmatic children, lively, cheerful, and active, may become restless and anxious in unsuitable environments, resulting in low cooperative efficiency or an inability to engage effectively. Melancholic children exhibit heightened sensitivity to details and issues during cooperation; an unreasonable environment may cause them to become emotionally low or resistant to collaboration.

4.1.2. Improper Teaching Methods by the Teacher and Insufficient Grasp of Student Engagement

Table 3 shows that young children are highly dependent on teachers, and the teachers' methods and degree of involvement affect whether children can complete tasks with their peers.

Teachers play a crucial role in fostering cooperative behavior among young children, and their teaching methods directly influence the development of children's cooperation skills. If a teacher's methods are too strict, rigid, or lack fairness, it may increase tension and competition among children, leading to more reporting or tattling behaviors. Additionally, if teachers adopt overly uniform or coercive teaching approaches, it may limit children's imagination and creativity, making it difficult for them to coordinate their ideas and differences in cooperative activities, ultimately resulting in the termination of cooperation.

Teacher involvement directly impacts children's cooperative performance: insufficient

involvement may prevent children from effectively resolving collaborative challenges, leading to low efficiency. Conversely, excessive involvement fosters over-reliance, depriving children of opportunities for autonomous exploration and decision-making with peers, thereby hindering task completion.

4.1.3. Game Design Influences Children's Cooperative Behavior

Table 1 indicates that the difficulty level of game tasks often affects children's cooperative behavior. When tasks are too easy, children may find them uninteresting or lacking in challenge, reducing their motivation to cooperate and leading to more isolated and passive cooperative behaviors. Moderately challenging tasks, however, stimulate children's enthusiasm and willingness to cooperate, providing them with a sense of challenge and accomplishment, thereby increasing their desire to collaborate with others to complete tasks. Conversely, overly difficult tasks that exceed children's capabilities may lead to frustration and defeatism, potentially causing anxiety, resistance, or avoidance of cooperation.

Table 2 indicates that both excessive and insufficient weekly construction play sessions negatively impact children's cooperative behavior. When sessions are too infrequent, children have fewer opportunities to engage in cooperative play. Without sufficient exposure to construction play, their chances for mutual collaboration also diminish. Conversely, when sessions are too frequent, children experience fatigue and distraction. They lack the energy and interest to sustain cooperative behavior or become easily distracted, leading to a decline in the quality of cooperation.

4.2. Countermeasure Research

4.2.1. In Terms of Teacher Guidance

Teachers should skillfully employ verbal guidance strategies. Before play begins, teachers must explain game rules and task requirements to help children understand objectives and duties. Teachers should provide necessary prompts, encouragement and praise based on the children's play context, offering timely verbal feedback. During the construction game planning stage, teachers should intentionally prepare construction materials or tasks that require cooperation to complete, such as building blocks or collaborative puzzles. Teachers should encourage children to participate in team games, allowing them to experience the joys of division of labour and cooperation through play. Additionally, cooperative construction activities can be organized regularly, such as "Little Architects" or "Puzzle King," allowing children to proactively learn negotiation and coordination during the building process. Simultaneously, teachers create opportunities for cooperation by encouraging participation in team games, allowing children to experience the joy of working together through division of labour. Teachers should adeptly stimulate children's willingness to cooperate and foster a positive cooperative play atmosphere.

Teachers must accurately gauge their level of intervention in the game. They should have a basic understanding of the game and the children, observing whether there is a significant gap between the game's difficulty and the children's ability to handle it. Based on this gap, they should adjust their level of intervention. Teachers should provide personalized support and assistance according to the different characteristics and needs of the children. For example, for children with weaker cooperative skills, teachers can offer more help and encouragement to boost their confidence in completing tasks and guide them to accomplish cooperative tasks.

4.2.2. Environmental Design

The environment exerts a subtle and permeating influence on young children. Teachers should,

based on thorough observation and understanding of the children, create a play environment that meets their developmental needs and promotes the development of their cooperative abilities. Different environmental creation requirements need to be applied for children with four different temperament types. This section will explore the impact of constructing play environments on the cooperative behavior of children with the four temperament types and provide corresponding recommendations.

Different environmental design requirements apply to children with four distinct temperament types. For choleric children, the environment should emphasize positivity and activity. Teachers should provide a variety of building materials and encourage children to collaborate with their peers. However, throughout this process, educators must carefully regulate the collaborative environment to prevent conflicts from disrupting cooperation, while simultaneously minimising external stimuli that may overstimulate the children. For phlegmatic children, the environment should prioritize harmony and stability. Games with strong cooperative elements and high team coordination, such as puzzles or building blocks, can be introduced to help them experience mutual support and encouragement through collaboration. Simultaneously, ample time and space should be provided without excessive intervention or demands for performance, allowing them to gradually learn to express their thoughts and needs in a secure environment. For sanguine children, the environment should emphasize liveliness and enjoyment. For these children, the environment should offer diverse activities and learning materials to satisfy their curiosity and desire to explore. Establishing some rules can help them learn persistence and focus. For melancholic children, the environment should emphasize meticulousness and stability. Activities requiring patience and thought, such as large-scale puzzle games, can be set up to allow them to unleash their creativity through play.

4.2.3. Game Design Aspects

The goal of constructing the building zone environment should connect with children's existing life experiences, sparking their intrinsic interest and desire for cooperation. Specific objectives for building games should be prioritized, allowing observable changes in cooperative behavior after implementation. Game design should ensure each construction activity has clear shared objectives and tasks requiring children to collaborate for completion. Goals must be well-defined, explicit, and structured with clear progression levels.

When selecting construction-themed game content, teachers should consider whether children's interests align with the curriculum objectives. While ensuring the integrity of the activity, educators must also prioritise engagement and enjoyment. Content design should offer diversity and flexibility, allowing children to select different cooperative approaches based on varying contexts and needs, including tasks of different types and difficulty levels. Teachers are advised to organize construction games within a frequency range of 5-6 sessions to maximize the promotion of cooperative behavior among children. However, excessive frequency should be avoided to prevent diminishing the effectiveness of cooperative behavior.

5. Conclusions

This paper has conducted an in-depth study and exploration of young children's cooperative behavior from multiple perspectives. Such behavior exerts a significant influence on their social development. Cooperative behavior is not only a vital component of young children's social development but also promotes their cognitive and emotional growth. Through cooperation, children learn to communicate, coordinate, and solve problems with others, thereby cultivating teamwork spirit and self-management skills. Research findings indicate that game design, and teacher involvement all exert significant influence on children's cooperative behavior. Appropriate

game design and teaching implementation strategies can all contribute to fostering the healthy development of cooperative behaviour in young children. Moving forward, cooperative behavior in children's play will receive more scientific and natural guidance and nurturing, laying a solid foundation for their long-term collective adaptation and social integration.

References

[1] Zhu Zhixian. Dictionary of Psychology [M]. Beijing Normal University Press, 1989.

[2] Chen Qin. A Study on the Cognitive Characteristics of 4-6 Year Old Children Regarding the Essence of Cooperation [J]. Preschool Education Research, 2004(05).

[3] Hu Na. A Study on Cooperative Behavior in Zone Activities Among 3-6 Year Old Children [D]. Nanning Normal University, 2019(01).

[4] Song Jiayu. Practical Research on Cultivating Cooperative Behavior in Young Children Through Play [D]. Tianshui Normal University, 2021.

[5] Han Chao. Action Research on Cultivating Cooperative Behavior in Middle-Class Preschoolers Through Constructive Play [D]. Hebei Normal University, 2023:1-3.

[6] Hu Nan. A Study on Cooperative Behavior in Senior Kindergarten Children During Constructive Play [D]. Nanning Normal University, 2023:4.

[7] Li Min. Action Research on Support Strategies for Cooperative Behavior in Senior Kindergarten Children During Block Play [D]. Shaoxing University, 2023.

[8] Ministry of Education of the People's Republic of China. Learning and Development Guidelines for Children Aged 3–6 [M]. Capital Normal University Press, 2012.

[9] Liu Xinyue. A Study on the Developmental Characteristics and Influencing Factors of Cooperative Behavior in Young Children [D]. Anshan Normal University, 2018.

[10] Gao Wenrou. A Study on Cooperative Behavior in Block Play Among 5-6 Year Olds with Different Temperament Types [D]. Sichuan Normal University, 2020.

[11] Hong Mengxue. Problems and Countermeasures in Preschoolers' Cooperative Behavior During Construction Zone Activities in Senior Kindergarten Classes [D]. Changchun Normal University, 2022.