



## A Construction of Physical Activity Games to Develop Physical Health of Kindergarten Aged 5-6 Years in Tianhe District, Guangzhou City

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### Abstract

**Background and Aim:** Research on children's sports activity and games is an emerging research field in China. Relevant research results show that the development of children's basic physical qualities has not effectively penetrated the field of children's learning. The goal of this study is to establish a set of children's sports activity games, to better promote the healthy growth of children.

**Materials and Methods:** This study adopted the interview method, questionnaire survey method, and children fitness test, through the questionnaire survey of 20 preschool teachers, and 20 kindergarten principals, and the physical health test, established the basic children's sports activity games with 7 experts; interviewed 19 focus group experts, determine the basic sports activity games; after verification by 9 appreciation experts, finally determined the sports activity games. The research process involves organizing the current problems in children's physical education, first establishing children's physical activity games, and then verifying them using focus groups and appreciation groups. The obtained data were processed using EXCELL and SPSS26.0.

**Results:** Established physical activity games for children aged 5-6 years, contains 24 games with 6 qualities. The development of speed quality of the game: paste, eagle catch a chicken, fishing, electricity; The development of sensitive quality of the game is: feet continuous jump, fun to play sheep corner kick, jump bamboo pole, two people three feet; The development of balance quality of the game are: balance beam, everyone together to repair the bridge, single foot standing, play tires; The development of coordinated quality of the game is: standing long jump, bag jump, hopscotch, skipping music; The development of strength quality of the game are: tennis throw far, small bomb, newspaper play more and more, sandbag a thing to play; The development of flexible quality of the game are: sitting body forward bending, flipping pancakes, flipping saw pull big saw, guessing first move.

**Conclusion:** Through the establishment of a children's sports game system, children can develop and improve their sports quality in an all-round way in an interesting and challenging environment. This is of great significance for the practice of preschool physical education and provides a useful reference for future research and practice.

**Keywords:** Physical Activity Games; Physical Health; Kindergarten

### Introduction

In the new era, early childhood education takes games as the basic activity to promote the comprehensive development of children's physical and mental health. "Sports power construction outline" on comprehensively strengthening and improving the new era of school sports work opinion" and other national policy documents have been clear about the infant sports development should strengthen the construction of the physical education curriculum and teaching material system goal, put



forward the pre-school education stage should be suitable for children's physical and mental characteristics, cultivate sports interests, into the coordinated development of sports function. Take children, pay attention to real life, pay attention to the spirit of games, advocate active learning, emphasize the interaction of multi-sensory participation, emphasize children willing to learn, in-depth learning and representation learning, learn to create in games, develop personality, and improve quality in learning. Children's sports should achieve the coordinated development of Fundamental Movement Skills in the way of games. In other words, Motor Skill Learning should be integrated into life-oriented games, so that children can naturally master basic sports skills in the process of enjoying the game. Play activities and the opportunities provided through games determine the richness of young children's daily physical activity.

In February 2022, the Ministry of Education issued the Guidelines on the Quality Assessment of Kindergarten Childcare Education (Education Foundation (2022) No.1). In the Guide, it is proposed that the age characteristics and development rules of children should be respected in the teaching process of early children, adhere to the combination of conservation education, and take games as the basic activities. Wang Liwei, director of the Youth Department of the General Administration of Sport of China, also made it clear that it would build a "basic project for children's sports" and give full play to its basic role in the four major national youth sports projects. The importance of physical education for children has been put on the agenda by the government, and the demand for high-quality physical education courses for children is also imminent.

Early childhood is an important period for the development of human psychology and intelligence, as well as a sensitive period of movement development. The development of movements promotes the development of children's psychological cognitive ability and sensory perception and has a certain impact on the future development of special sports abilities and the formation of sports habits (Jin Jiansheng, 2019).

In early childhood, the learning and development process of nourishing physical literacy begins with games. The correct way to open children's sports is "game" so that children can achieve the coordinated development of basic sports skills in the way of games. The basic motor skills and overall health status required to participate in multiple games and physical activity constitute the "ability" dimension of physical literacy. Games can provide rich situations, rules, motivation, and resources for the cultivation of children's sports habits. Through physical education, every child can also improve their physical literacy (Corbin.2016). In the Guangzhou Tianhe district preschool physical education teachers personnel serious shortage, the children's physical education curriculum is not clear, and children's physical quality is to strengthen the realistic background, such as the study adopts the method of mass sampling, selection of Guangzhou Tianhe district 4 kindergarten as the research object, for 5-6 years old children to establish a set of children sports games, hope this study for the development of preschool physical education curriculum and promotion, to improve children's physical quality to provide some help.

## Objectives

To construct physical activity games to develop the physical health of kindergarten-aged 5-6 years.





## Literature Review

### 1. Research on young children's sports activities and games

This study studies Piaget's basic theory of cognitive development game theory, recent development zone theory, critical period theory, and action development model theory. The representative figure of the cognitive development theory of games is the famous Swiss psychologist and the founder of the school of cognitive development (Piaget). He tried to examine children's games from the general framework of children's cognitive development, arguing that the game itself is not a special form of activity, it is only an aspect of intellectual activity. The most recent development zone was proposed by the Russian psychologist Lev Vygotsky, who sees games as the main source of development for preschoolers, and he believes that games create a "zone of proximal development" for children. Vygotsky is interested in the potential of child development, not the level of child development at a particular point. Critical period refers to the human or animal in some particular reaction or a certain behavioral mutation has a certain time stage if given appropriate benign stimulation, will promote its better development, can also be understood in a certain stage, through the environmental stimulus experience, the most likely to develop a particular behavior(Jin,2019).

Zhou Ying (2019) believes that the reasons for children's lack of interest in sports are: single teaching form; imperfect physical education equipment; and lack of personalization in sports; the above reasons, she proposed to stimulate children's interest in sports, diversified teaching forms, diversified teaching equipment, prominent personalization in activities, and situations in sports activities. Zhang Yichao (2018) of the Beijing Sea area children's sports facilities and children use community equipment research of Beijing Haidian District 18 survey, found that each kindergarten will have differences in facilities, also exist the teachers 'professional ability, affect the use of sports equipment, and to reduce the ability of children's physical education children, and equipment there is certain safety hidden trouble.

From the above review, it can be seen that the activity form of children's physical education is single, sports equipment is not perfect, and children's physical activities lack personalized. China's preschool physical education should also pay attention to the cultivation of students' personalities and interests, constantly enrich the sports items, implement the development of preschool physical education according to local conditions, and seek the diversification of children's sports items.

#### International research

As early as the 19th century British philosopher Locke discussed the importance of preschool physical education, physical health is an important foundation of children's physical education but also allows children to get physical quality exercise, lets children realize the concept of "collective", and let them get the collective team spirit, for children's physical and mental development to pave the way; the famous French thinker Rousseau said in his book "Amy": "If you want to cultivate children's intelligence, then you should cultivate the physical strength controlled by intelligence"(Li,2018).

In the 2019 Preschool Sports High-level Forum, Bruce Wexler Professor has pointed out the importance of exercise for young children's development, Children can promote the development of their concentration during exercise, the faculty of memory, and implementation capacity; Dr. Arja Kaarina Saakslanti of Finland proposed that in the early childhood education in Finland, She advocates for support for children, Focus on the children, She believes that the bad situation plays an important role in the development of children, The environmental environment (physical and social and emotional





environments) should be fully utilized to promote early childhood development, Games can bring curiosity to children, problem-solving ability, fancy, Heart flow experience. Daily free games are written into the Finnish preschool curriculum syllabus (Guo,2022).

It can be seen that as early as the 19th century and the mid-20th century, foreign countries began to do a lot of research on early childhood education, and this research data shows that early physical education is one of the essential links to children's growth.

## 2. Children's physical activity and game principles

The establishment of children's physical activity games should follow the safety principle, fun principle, scientific and effectiveness principle, and comprehensive principle.

The safety principle is the priority for children's sports activities. The safety principle means that children's activity content, activity organization, site facilities, equipment, and other factors should ensure children's safety in the process of participating in activities (Jin,2019).

Children's sports games must be interesting and entertaining so that children can experience joy and a sense of achievement in the game activities. In the process of children's learning, practice, and play, give full play to children's subjective initiative, and pay attention to the game process, so that the game becomes a children's game(Guo,2022).

Scientific effectiveness refers to keeping children's basic actions correct and effective, is in the selection and design of children's sports activities children's basic movement skills walking, running, jumping, climbing, throwing, and other basic activities as the foundation, based on simplified operation and join fitness and entertainment factors, the amplitude and strength of action do not do specific requirements, for children to display space (Li,2018).

The principle of comprehensiveness means that the design and selection of the game should be based on the children's age, size, facilities, and equipment, fully considering their age, physical quality, and actual ability, and the content, methods, and rules of the game should be reasonably arranged. To be very practical, it can be organized in any scene and only needs to use the most basic facilities and less equipment(Guo,2022).

## 3. Children's physical activity and game construction

In this study, children's physical activity game is an educational practice process that endows teaching objectives and content to children's physical activity games and conducts the organization, implementation, and evaluation of game teaching systematically and scientifically. In this process of educational practice, it is not to simply change the physical activity games into the traditional process of emphasizing "teaching and learning", but to build an intersection area between games and courses, and the educational value is realized together by the organization of teachers and children's exploration and experience.

The development of children's sports activity games is based on physical and psychological development, which not only reflects the achievements of physical and mental development but also is an effective method to promote physical and mental development. Children's sports activity games are the best way for children to express and develop themselves and innovate themselves ( Jin, 2019). It is also an indispensable condition for children to achieve all-round development. Therefore, to carry out sports activities suitable for children of all ages, we should first understand the basic rules and characteristics of children's physical and mental development.



Review literature summary, early childhood education is the starting point of education and the foundation of education. Physical activities are an important form to promote children's physical and mental development, but in the current preschool physical education in China, there is no perfect physical education curriculum (Xiang,2022).To better promote the development of children's basic physical skills, this study designed targeted sports activity games suitable for the development of their basic movements, to provide support for children's physical health, mental health, and social adaptation level.

### Conceptual Framework

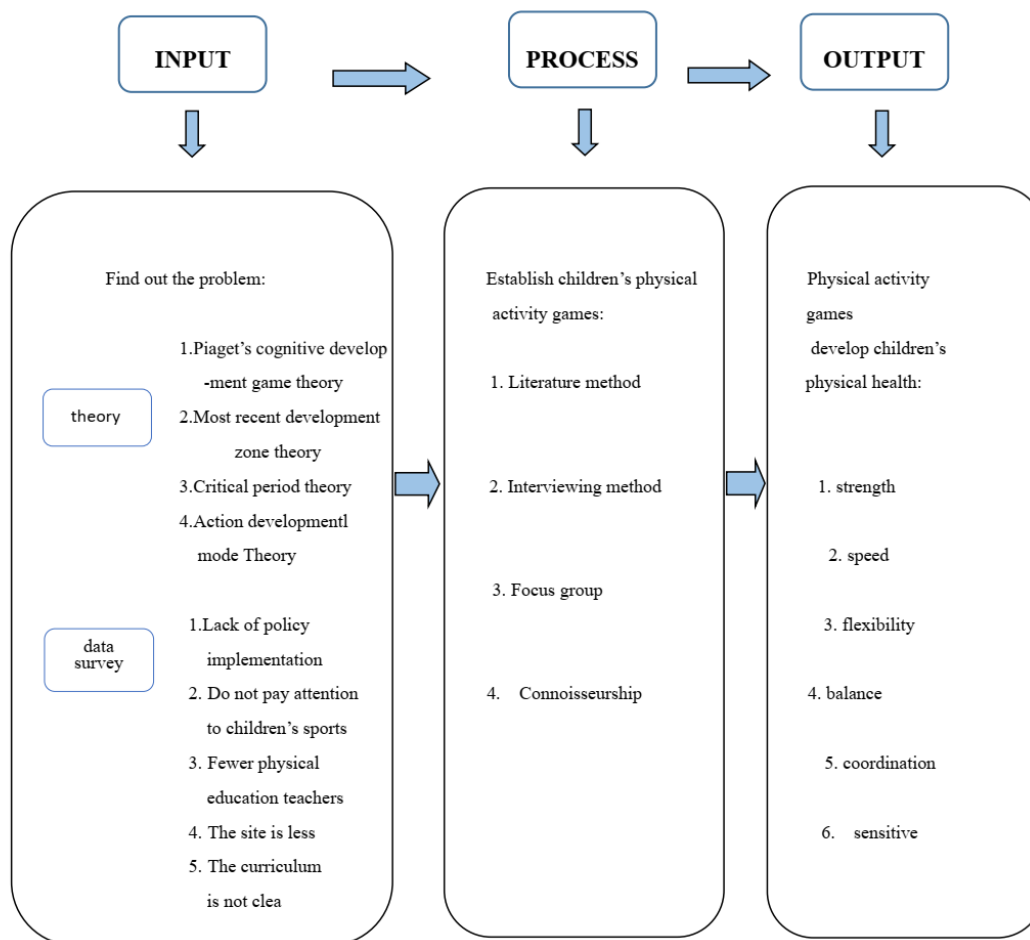


Figure 1 Conceptual Framework

### Methodology

#### Population and sample

Population: In this study, 20 preschool teachers, 20 administrators, and 800 children aged 5-6 years in kindergartens, a total of 840 people. Sample: 800 individuals were sampled by the Taro Yamane method. To keep the sampling error within the 95% confidence level, the test sample of 262 young children was reasonably determined. The ages of these children are 5-6 years old.

#### Research tools

1. Interview form, Interview with professors, associate professors, and other experts majoring in early childhood education and early childhood physical education. The first step is to interview 7



experts, and in the second step, interview 19 focus group experts to determine the content of the children's sports games; in the third step, ask 9 appreciation group experts to verify the sports games.

2. Questionnaire, a questionnaire survey was conducted for kindergarten teachers and kindergarten principals in Tianhe District, Guangzhou city.

3. Performance measurement form. Form to record the results of physical fitness tests for children aged 5-6 years.

4. Physical fitness test. According to the National Physical Fitness Measurement Standard Manual (Children Part) issued by the General Administration of Sport of the People's Republic of China, 262 children aged 5-6 in 4 kindergartens in Tianhe District, Guangzhou were tested for physical fitness. According to the test results, problems in the physical quality of children aged 5-6 were found.

**Collecting data process:** (1) Physical fitness data were collected for young children aged 5-6 years. (2) Seven experts were interviewed, and the interviews were analyzed and organized. (3) Establish physical activity games, and analyze the game content specifically. (4) Ask 19 experts to have a discussion on the content of sports activities and games, and sort out the discussion content. And (5) Nine members of the connoisseurship discussed and summarized the data from the expert interview connoisseurship discussion through content analysis.

**Data Analysis:** Data were collected using the EXCEL tables and analyzed using SPSS26. The results of physical and mental health-related indicators of children aged 5-6 years were analyzed using SPSS26.0 software. Among them, the physical fitness test results and the data of the questionnaire survey were described in mean and standard deviation.

## Results

According to the investigation of the current situation of kindergartens in Tianhe District, the existing problems are analyzed. Based on the theory of cognitive development game, recent development zone, critical period, and motion development model, this study established physical activity games for children aged 5-6 years, including 6 qualities and 24 games. The establishment of games can provide more specific guidance for children's sports activities.

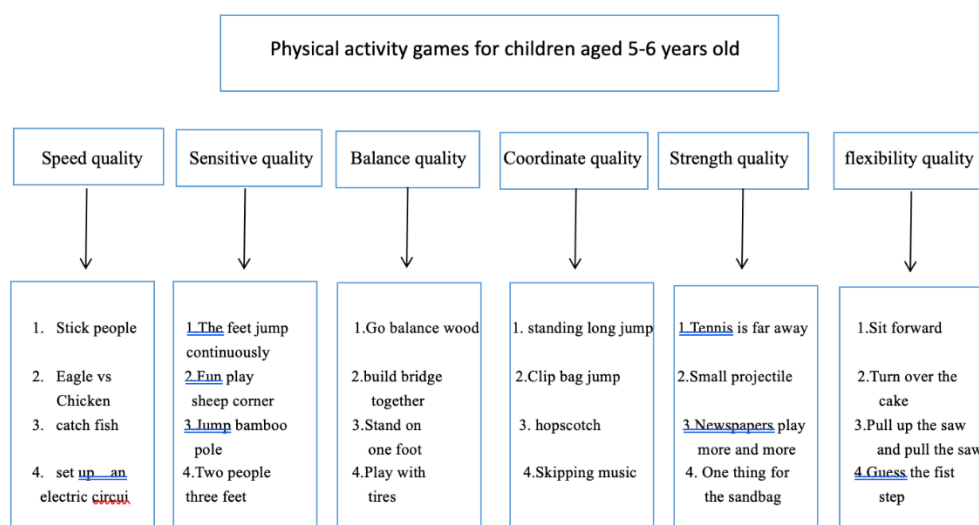


Figure 2 Physical activity games for children aged 5-6 years



Children's physical activity games are established from the six dimensions of developing children's physical quality: speed quality, sensitivity quality, balance quality, coordination quality, strength quality, and flexibility quality. Children in early childhood are in the stage of continuous growth and improvement of the body, which is the golden period of shaping a healthy body and mind. Through game practice, not only helps children develop good exercise habits and living habits, but can also through the children's strength, cardiopulmonary fitness, speed, endurance, and sensitivity quality, promote the growth of children's nervous system and body organs, exercise children's agile thinking and reaction ability, strengthen children's neuromuscular, and improve children's control of the body. It also contributes to the development of children's psychological and emotional aspects and lays a solid foundation for children's healthy development in the future.

## Discussion

### 1. Exercise for speed

Bai Jinsong (2008) mentioned in the "Brief Analysis of Children's Speed Quality Training" that speed quality is a kind of physical quality, and is also one of the important physical qualities that each project must have. The sensitive period of children's speed quality development is generally 4-6 years old. And different speed types have their development characteristics. Deng Huayuan (1998) showed in the Sensitive Period of The Growth of Children's Speed Quality that speed quality, as an important indicator of evaluating physical quality, scientific physical education, and sports training are of great significance to the early training of children. The improvement of physical quality can also improve children's self-protection ability, adaptability, and psychological adjustment ability. Children's physical fitness training is an important part of children's development, which has an important impact on children's future study, life, and work.

### 2. Strength training

The most important basic ability in physical fitness is strength. Through, games can exercise children's strength and ability. Ji Ping, fan six younger sisters (2011) in the five to six years old children's muscle strength development research through experimental studies proves that the development of children's muscle strength exercise content to increase children's physical quality is feasible, and put forward opinions, in the kindergarten education program in part of sports content, can increase the development of physical education content, as long as starting from children's physiological and psychological characteristics, scientific, exercise, pragmatic, the content of children's sports activities can further enrich the development. According to the physiological characteristics of children and adolescents, follow the basic rules of the development of children's physical quality, attach importance to the basic role of strength training in the training process, and lead children to carry out strength training in the game.

### 3. Flexible training

Domestic scholar Fang Mingjun (2016) believes that flexibility quality represents the stretching ability of human joints and tissues, including the range of joint activity, and the stretching ability of muscles, ligaments, tendons, and other tissues. Flexibility is lower with the increase of age, so it is necessary to grasp the flexibility of children before the age of 7 and strive to develop their flexibility before the age of 12. Considering the interest of the class, the flexibility exercise is generally not used as the main practice part of the class but is arranged at the end of the class. On the one hand, it can





promote children's muscle fatigue to be quickly recovered, and on the other hand, it can make children's flexibility better developed. In early childhood, bone elasticity is good, and joint ligament extension is large. At this time, preschool physical education teachers should conform to the law of children's physical development and timely develop flexibility quality, to provide a strong guarantee for improving the physical quality.

#### **4. Coordination training**

The research results of Wang Xiaoyang (2010) in the Enlightenment of Physical Fitness Development Law of 3-6 years old Children in Shanxi Province show that the annual growth rate of standing long jump for male and female children aged 3-4 is 20.80%, and the annual growth rate of standing long jump for male and female children aged 4-5 is 19.50%. At the same time, the results showed that 3-4 and 4-5 years old were the age groups with the largest increase in jumping ability. Paying attention to the cultivation of children's coordination ability, can effectively promote the development of children's brain function, make children's physical activities more natural, help children to save effort, and coordinate smooth contact with the environment. At the same time, flexibility is the basis of coordination. Good flexibility can ensure the coordination of active muscles and antagonistic muscles when working, making the movements coordinated and beautiful, which is a necessary condition for completing a variety of advanced complex motor skills.

#### **5. Sensitivity training**

Chinese scholar Duan Baoli (1999) pointed out that children aged 5 to 6 are in a sensitive period for the development of physical fitness such as flexibility, sensitivity, and coordination. The improvement of sensitivity quality can comprehensively develop children's physical and mental abilities, intelligence, and sports abilities. Scholar Yang Xiaoping (2004) showed in the Research on the sensitive Quality Training of Children's Basketball Players that the sensitive quality is the comprehensive performance ability of people's sports skills and various qualities in the process of sports. Zhao Qian (2010) found through research that sensitive quality is the comprehensive performance ability of people's motor skills and various qualities in the process of exercise. Childhood is the golden period for the development of sensitive quality. At this time, the increasingly perfect function of children's nervous system provides a physiological basis for the development of sensitive quality. Children's improved sensitivity quality is conducive to the development of children's brain nerves, improved thinking ability, and the ability of hands and feet. Children's space perception and action ability in early childhood are gradually improved, but the fine movements are not perfect. Sensitive exercise also helps to enhance children's ability to control the body and improve the nervous system's ability to judge complex changes in human activities.

#### **6. Balance training**

Luo Aiqing (2011) said in the Cultivation of Balance Ability in Children's Sports Activities that balance ability is the foundation of human action. Wang Xiaoyang (2010) in the enlightenment of the Physical Quality Development Law of 3-6 years old Children in Shanxi Province shows that the period of 3-6 years old is the best age for male and female children to develop the balance ability. Paying attention to the balance ability training of children in this age group can achieve twice the result with half the effort. Children's sports games are interesting, so they can satisfy children's curiosity, but also can improve children's enthusiasm for sports activities so that children can develop movement skills in the process of playing, and promote their physical health level. Sports games also have a positive impact







on the development of children's psychological quality, which can help them overcome tension, anxiety, and other emotions, get rid of the narrow meaning of self-centeredness, and cultivate a lively, cheerful, and sociable personality.

## Recommendation

"Kindergarten education Guidelines" points out that: cultivating children's interest in sports activities is an important goal of kindergarten sports, according to the characteristics of children to organize vivid and interesting, various forms of sports activities, to attract children to take the initiative to participate in sports activities. In the long run, it still needs the support of the national system and policy level, to form a more systematic and perfect parenting environment, and promote the positive development of children's physique and health to a greater extent. Based on this, this paper makes the following suggestions:

1. The country should pay more attention to the role and influence of preschool physical education on the development of everyone's life, so it is necessary to consider the reform of children's physical education on the agenda as soon as possible.
2. The level and ability of teachers are closely related to the healthy growth of children. Given the current situation of the low overall level of physical education of preschool teachers, preschool normal colleges and early childhood education and training institutions need to increase the intensity of physical education and training for teachers, to improve the teaching ability of teachers' physical education on the whole.
3. The level and ability of teachers are closely related to the healthy growth of children. Given the current situation of the low overall level of physical education of preschool teachers, preschool normal colleges and early childhood education and training institutions need to increase the intensity of physical education and training for teachers, to improve the teaching ability of teachers' physical education on the whole.
4. The educational concept and attitude of kindergarten managers largely determine the physical and healthy development of kindergarten children, and more attention should be paid to the overall training of managers.
5. Game fitness curriculum has certain effectiveness and economy, which can not only promote the development of children's physical and mental health and cultivate children's interest in sports but also play an important role in the development of children's overall physical quality. Game fitness curriculum should be widely promoted in kindergartens.

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