

Differences and Integration of K-12 Physical Education in China and the United States

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Abstract: This article takes Nanchang, Jiangxi Province, China and Upper Arlington, Ohio, the United States as the research objects, compares the differences in K - 12 physical education between China and the United States in terms of concepts, systems, and practices, and explores the path of integrated development. Physical education in Nanchang, China, emphasizes knowledge and skills, adopts a class-based teaching system and unified textbooks and assessments; online education improves the quality of teaching through four entry points, and some international characteristic schools focus on personalized teaching and the cultivation of comprehensive qualities. Physical education in Upper Arlington, the United States, emphasizes student-centeredness, focuses on interest and personality development, implements decentralized local management and a multi-disciplinary integrated teaching model, and the design from national core literacy to classroom goals ensures the pertinence and effectiveness of teaching. In the future, we can promote the integration of physical education between China and the United States from the aspects of curriculum integration, reference to teaching methods, exchange in teacher team construction, and student exchange activities, to promote the progress of global physical education.

Keywords: K - 12 Physical Education in China and the United States; Differences; Integration; Curriculum Setting; Teaching Methods; Teacher Team Construction; Student Participation

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1.Introduction

1.1.Research Background

With the continuous advancement of globalization, the exchange and integration of education have become increasingly frequent. As two countries with significant influence in the world, China and the United States present different characteristics in their K - 12 physical education. Upper Arlington, Ohio, in the United States, and Nanchang, Jiangxi, in China, as the research objects, are representative to a certain extent. Ohio has a long history and rich experience in physical education, and its physical education major is renowned globally. Nanchang, as an important city in central China, also has its own characteristics and development path in K - 12 physical education. A comparative study of K - 12 physical education in China and the United States can better understand the advantages and disadvantages of different education systems and promote the development and innovation of physical education.

1.2.Research Purpose

This study aims to explore the multidimensional differences in the concepts, systems, and practices of K - 12 physical education in China and the United States, analyze the characteristics and differences of physical education in the two regions, and explore the path of integrated development. Specifically, we will compare and analyze from aspects such as curriculum setting, teaching methods, teacher team construction, and student participation, in order to provide references and inspirations for China's K - 12 physical education. At the same time, through comparative research, it can also promote exchanges and cooperation between China and the United States in the field of physical education and jointly promote the development of global physical education.

2.Differences in the Concepts of K - 12 Physical Education in China and the United States

2.1.Chinese Physical Education Concept

Taking Nanchang as an example, it emphasizes knowledge and skills, and uses the class - based teaching system for unified teaching.

2.1.1. Physical Education Curriculum Setting in Compulsory Education

In Nanchang, the physical education curriculum setting in the compulsory education stage emphasizes unified textbooks and assessments, and focuses on the importance of knowledge. For example, the "Nanchang Compulsory Education Curriculum Setting Plan (2018 Revision)" issued by the Nanchang Education Bureau requires all primary and secondary schools in the city to fully implement the curriculum standards, offer all courses in full and on time, especially to strengthen physical education classes and extracurricular exercises. The starting grade of the primary school science curriculum is adjusted to the first grade, with 1 class hour per week in grades one and two, and 2 class hours per week in grades three to six. The fixed class hours for reading courses are arranged in the Chinese language curriculum, with 1 class hour per week; the non - fixed class hours are mainly arranged in local and school courses, with no less than 4 class hours per month. One class hour of calligraphy is arranged every week in grades three to six, mainly in Chinese, art, local, and school courses. At the same time, one more music and art class is added in grade eight to effectively improve students' music listening and appreciation abilities, as well as their basic knowledge and appreciation abilities in art. These curriculum settings reflect Nanchang's emphasis on knowledge education.

2.1.2. Entry Points of K12 Online Education

In terms of K12 online education, Nanchang's entry points mainly include classroom teaching, after - class assignments, self - purchased tutoring exercises, and training and tutoring. Through these entry points, the teaching quality is improved. For example, taking physical fitness testing as the entry point, Zuoyebang quietly launched the "Percent Sports" App, positioned as a product that encourages students to exercise. In addition to the main "1 - minute rope skipping" project, Percent Sports also supports a variety of AI sports projects and fun sports, for example, the product can combine AI recognition technology to calculate the number of balls touched by the user, and motivate users to exercise through the gameplay of level - passing, combining games and sports. The APP also adds fun tools such as stickers. Each sports project provides exercise goals, exercise methods, and demonstration videos.

2.2. American Physical Education Concept

Taking Upper Arlington, Ohio as an example, it emphasizes student - centeredness.

2.2.1. Interest and Personality Development

The physical education concept in Upper Arlington, Ohio, emphasizes "Interest first, personality development" and focuses on lifelong physical education. For example, the physical education major at The Ohio State University has established the training concepts of academics, cultural sensitivity, experience, personality, social benefits, and social reconstruction, and is committed to cultivating global physical education professionals. The curriculum setting emphasizes the study of general education courses to enhance students' basic cultural literacy; attaches importance to the study of physical education courses to consolidate students' professional foundation in physical education. The overall first - class teacher team is conducive to cultivating high - level future physical education teachers; emphasizes the integration of multiple cultures and has the characteristics of adaptive physical education. By establishing the "Learning to Teaching Physical Education" project, it attaches importance to students' learning of subject content knowledge (Content Knowledge), emphasizes the practical application of physical education curriculum models, and cultivates students' practical experience.

2.2.2. Evolution of Physical Education Goals

The physical education goals in Ohio, the United States, have gone through four stages. In the early and middle of the 19th century, there were almost no formal physical education courses as they are today. Physical activity courses were called "physical training," and the main purpose was military training and physical labor required by schools, which did not reflect the educational value of physical activities. At the end of the 19th century, with the establishment of the public school system in the United States and the emergence of many new sports, the goals of physical education began to expand. German gymnastics and Swedish gymnastics courses were particularly popular, emphasizing students' physical strength, agility, and physical health, but to a certain extent, they still retained the traces of military gymnastics. In the early

20th century, the goals of physical education in American schools continued to expand and were clearly connected with philosophical ideas. Educational developmentism and legislation both had an impact on the establishment of the new public school system. Some educational leaders began to advocate educational developmentism, which broadened the concept of the school and added additional courses and experiential learning. It was recognized that the school is not the only place for learning, and students' learning is not limited to the three R courses. It can be seen that the expansion of goals and the increase in the scope of learning have laid the foundation for the further development of physical education goals in public schools. Since the 21st century, the goals of physical education in the United States have paid more attention to the combination of individual and social values, and cultivated individuals with knowledge, skills, and the ability to enjoy a healthy life and physical literacy.

3. Differences in the Systems of K - 12 Physical Education in China and the United States

3.1. Chinese Physical Education System

In Nanchang, K - 12 education mainly adopts the class - based teaching system, with unified textbooks and assessments.

3.1.1. Arrangement of the Compulsory Education Schooling System

In Nanchang, the nine - year compulsory education in primary and junior high schools adopts the class - based teaching system, which ensures the universality and standardization of education. Each class has a fixed number of students and course schedule, and teaching is conducted according to a unified textbook. For example, primary schools in Nanchang usually offer courses such as Chinese, mathematics, English, physical education, music, and art in accordance with the national curriculum standards. In terms of physical education courses, the primary school stage focuses on cultivating students' basic sports skills and interests in sports, and allows students to exercise in a relaxed and pleasant atmosphere through various sports activities and games. In the junior high school stage, on the basis of the primary school stage, the systematicness and professionalism of physical education teaching are further strengthened, and some specialized physical education courses, such as basketball, football, volleyball, etc., are added to meet the different sports hobbies and development needs of students.

3.1.2. Characteristics of the Online Education Model

Nanchang's K12 online education improves the teaching quality through four entry points: classroom teaching, after - class assignments, self - purchased tutoring exercises, and training and tutoring. In terms of classroom teaching, the online education platform provides rich teaching resources, including video courses, courseware, practice exercises, etc., and students can study independently according to their own learning progress and needs. In the after - class assignment link, the online education platform can automatically correct assignments, provide timely feedback on students' learning situations, help students identify problems and correct them in time. Self - purchased tutoring exercises provide students with more practice opportunities to consolidate the knowledge they have learned. In terms of training and tutoring, the online education platform provides various forms of tutoring courses, such as one - on - one tutoring and small - class teaching, to meet the learning needs of different students.

3.2. American Physical Education System

In Upper Arlington, Ohio, there is decentralized management and multiple teaching models.

3.2.1. Characteristics of Decentralized Local Management

In Ohio, the United States, education is managed in a decentralized manner, and each state can determine its own educational policies and curriculum settings according to its actual situation. In terms of physical education, each school district in Ohio can independently choose the physical education curriculum model, including traditional physical education classes, outdoor sports courses, sports clubs, etc. This decentralized management model makes physical education more flexible and diverse, and can better meet the individual needs of students. For example, in some schools in Ohio, students can choose to join different sports clubs according to their interests, such as basketball clubs, football clubs, tennis clubs, etc. These clubs are guided by professional coaches, and students can learn more professional sports skills and knowledge in the clubs.

3.2.2. Integrated Teaching Model of Multiple Subjects

Physical education in Ohio pays attention to the participation of multiple subjects and conducts integrated teaching with other subjects. For example, in physical education courses, teachers can combine the knowledge of mathematics, science, history, and other subjects to allow students to learn the knowledge of other subjects during physical activities. For example, in a basketball game, teachers can ask students to calculate the shooting percentage and analyze the game tactics, combining mathematics and science knowledge with physical activities. This integrated teaching model can not only increase students' interest in learning but also cultivate students' comprehensive literacy and interdisciplinary thinking ability. At the same time, physical education in Ohio also focuses on the cultivation of students' independent learning and inquiry abilities. Teachers will guide students to explore physical education knowledge and skills independently in teaching, and let students learn and grow in practice through group cooperation, project - based learning, and other methods.

4. Differences in the Practices of K - 12 Physical Education in China and the United States

4.1. Physical Education Practice in Nanchang, China

Taking Limai Chinese American School as an example, it offers rich sports and art courses.

4.1.1. Physical Education Curriculum in International Characteristic Schools

Limai Chinese American School, as an international characteristic school, has unique ideas in its physical education curriculum setting. In addition to traditional sports projects, the school also offers special courses such as golf. The golf course can not only exercise students' physical coordination and endurance but also cultivate their concentration and gentlemanly demeanor. In the teaching process, teachers adopt personalized teaching methods and formulate exclusive teaching plans according to each student's physical conditions and interests. For example, for students with better physical coordination, teachers will focus on cultivating their swing techniques and hitting power; for students with weaker concentration, teachers will use some small games and training methods to improve their concentration. Through this personalized teaching, students can better play to their advantages, improve their sports skills, and also cultivate their comprehensive qualities.

4.1.2. The Role of Physical Education in the Cultivation of Comprehensive Quality

Physical education plays an important role in the cultivation of comprehensive quality in Limai Chinese American School. Through physical education courses, students can not only exercise their bodies but also cultivate teamwork spirit, competitive consciousness, and perseverance. For example, in collective projects such as basketball and football, students need to cooperate and coordinate with each other to win the game. In this process, they learn how to communicate and coordinate with others, improving their teamwork ability. At the same time, competition in sports competitions can also stimulate students' fighting spirit and make them work harder to improve their skills. In addition, physical training often requires students to invest a lot of time and energy. In this process, they learn to persist and endure, cultivating perseverance. These qualities are not only crucial in the field of sports but also have a positive impact on students' study and life.

4.2. Physical Education Practice in Upper Arlington, Ohio

Taking Upper Arlington as an example, it focuses on the refinement of goals and unit teaching.

4.2.1. From National Core Literacy to Classroom Goal Design

In Ohio, the United States, physical education starts from the national core literacy and gradually refines it into state - level benchmarks and unit goals to ensure the pertinence and effectiveness of teaching. For example, the latest version of the "National Physical Education Curriculum Standards and Learning Outcomes for Each Grade Level in Primary and Secondary Schools" in the United States in 2013 proposed the overall goal of the physical education curriculum of "cultivating individuals with physical literacy who have knowledge, skills, and can enjoy a healthy life." Ohio refined this core literacy into the "Ohio Physical Education Assessment Benchmark," and further refined the five core literacy of physical education into benchmarks according to the school stage, with each core literacy of the subject refined into two benchmarks, and each school stage corresponding to 10 state - level benchmarks, and the target areas corresponding to the benchmarks were clarified. On this basis, the unit learning goal is the core of the unit teaching plan. The formulation of

the unit goal is based on the national core literacy of physical education and the state - level benchmark, combined with the content requirements in the national curriculum standards to determine the target elements, and finally the target elements are stated in the way of "Students can (TSWBAT)". This design process from national core literacy to classroom goals ensures the systematicness and continuity of physical education teaching.

4.2.2. Correspondence between Physical Education Assessment Benchmarks and Target Areas

The physical education assessment benchmarks in Ohio refine the benchmarks by school stage and correspond to the target areas. Among them, the two benchmarks under Standards 1, 2, and 3 correspond to the motor skill domain, the cognitive domain, and the physical activity / physical fitness domain, respectively, while the four benchmarks under Standards 4 and 5 collectively correspond to the affective domain. Taking grades 3 - 5 as an example, according to the orientation of "movement skills, non - movement skills, and manipulation skills" for motor skills, the state - level assessment benchmark refines the subject core literacy "Standard 1" into "Benchmark A and Benchmark B". Benchmark A focuses on "movement skills and non - movement skills", and Benchmark B focuses on "basic manipulation skills", and corresponds to the target design in the motor skill domain. This correspondence ensures that the learning goals at each level can cover all aspects of student development and promote the comprehensive development of students in the cognitive, affective, motor skill, and physical activity / physical fitness domains.

5. Conclusion and Outlook

5.1. Summary of Research Conclusions

Through the multidimensional exploration of the differences in the concepts, systems, and practices of K - 12 physical education in China and the United States, we can clearly see that there are significant differences and respective characteristics in physical education between the two regions.

In Nanchang, China, physical education focuses on the imparting of knowledge and skills, adopts the class - based teaching system, and uses unified textbooks and assessments to ensure the universality and standardization of education. In the compulsory education stage, Nanchang strictly implements the curriculum standards, offers all courses in full and on time, and provides students with comprehensive knowledge education. K12 online education improves the teaching quality through four entry points, enriching teaching resources and learning methods. At the same time, some international characteristic schools in Nanchang, such as Limai Chinese American School, have unique ideas in the setting of physical education courses, offering rich sports and art courses, and focusing on personalized teaching and the cultivation of comprehensive qualities.

In Upper Arlington, Ohio, the United States, physical education emphasizes student - centeredness and focuses on interest and personality development. Education implements decentralized local management, making physical education more flexible and diverse to meet the individual needs of students. The integrated teaching model of multiple subjects focuses on the participation of multiple subjects and cultivates students' comprehensive literacy and interdisciplinary thinking ability. In addition, the design process from national core literacy to classroom goals ensures the pertinence and effectiveness of teaching and promotes the comprehensive development of students in various fields.

5.2. Outlook for Future Research Directions

In order to promote the integration of physical education between China and the United States, we can make efforts in the following aspects:

1). Curriculum Integration: Draw on the rich and diverse curriculum content and flexible curriculum setting methods in American physical education, and combine the actual situation of Chinese physical education to develop more distinctive physical education courses to meet the different interests and hobbies of students. For example, some popular sports in the United States, such as baseball and football, can be introduced, and at the same time, traditional Chinese sports such as martial arts and Tai Chi can also be promoted in American schools.

2). Teaching Method Reference: Learn the teaching methods that focus on the cultivation of students' independent learning and inquiry abilities in American physical education, and guide students to learn and grow in practice. At the same time, traditional Chinese teaching methods, such as demonstration teaching and explanation teaching, can also be

combined to improve the teaching effect.

3).Teacher Team Construction Exchange: Strengthen the exchange and cooperation between physical education teachers in China and the United States, share teaching experience and teaching resources. Teacher training, academic seminars, and other methods can be held to improve the teaching level and professional quality of physical education teachers.

4).Student Exchange Activities: Organize sports exchange activities between Chinese and American students to allow students to learn different sports cultures and skills during the exchange, and enhance mutual understanding and friendship. For example, Sino - US student sports friendship competitions and sports culture exchange activities can be held.

In short, by comparing and studying the differences in K - 12 physical education between China and the United States, we can learn from each other's strengths to promote the development and innovation of physical education. In the future, we can further strengthen exchanges and cooperation between China and the United States in the field of physical education and jointly promote the progress of global physical education.

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