

Research on the Innovation of College Physical Education Classroom Teaching Models Based on the Theory of Multiple Intelligences

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Abstract: New models for teaching in physical education classes have been developed based on the theory of multiple intelligences. According to Howard Gardner's theory of multiple intelligences, people have many kinds of intelligence, and students have different levels of these intelligences; thus, teaching can be conducted in various ways to meet the different learning needs of students. Based on the above analysis, this paper explores how to apply the theory in college physical education classes and finds that traditional teaching models focus too much on skill training, fail to leverage students' strengths in other areas, and consequently have low student interest. Teachers can apply the theory of multiple intelligences to organise personalised teaching according to the different strengths of various students and thus inspire them better in class. The paper will also discuss the changing demands of college physical education classes and the need for teaching innovation. It can be used as the foundation for the development of a multi-intelligence-oriented teaching model, intelligent teaching strategies, innovative forms of assessment, etc., all of which aim to promote the personalised and all-round development of students' physical fitness.

Keywords: Theory of Multiple Intelligences, Physical Education Teaching, Classroom Innovation, Personalized Learning, Assessment System

Introduction

With the gradual changes in the global education system, especially for college physical education, the old mode of teaching can no longer meet all the demands of today's students. Physical education should not only improve students' physical fitness and skills but also promote all-round development of students in terms of physical and mental health, teamwork, emotional expression, etc. Since its introduction, the theory of multiple intelligences has been applied in teaching reform across all areas to achieve the goal of personalised learning and differentiated instruction. Although the application of the theory of multiple intelligences in education has been increasing, research on how to implement it in physical education teaching is still relatively scarce. With changes in the educational needs of today's college students, we need to improve the model for teaching physical education. According to the theory of multiple intelligences, this paper will examine the current situation and problems of college physical education classes, put forward specific ways to innovate teaching models, explore improvements in intelligent teaching strategies and evaluation mechanisms, and thus offer theoretical support and practical suggestions for the personalisation and scientific development of physical education.

1. Foundations and Development of the Theory of Multiple Intelligences

1.1 General Introduction to the Theory of Multiple Intelligences

In 1983, Howard Gardner proposed the concept of multiple intelligences and changed the traditional idea of intelligence. It thinks that intelligence is not only about language and logic; there are many other types of intelligence. Gardner believes that intelligence is the capacity of an individual to solve problems or create works of art in a particular culture. He thinks that intelligence is a collection of many abilities that can develop independently. The above include linguistic intelligence, logical-mathematical intelligence, spatial intelligence, bodily-kinesthetic intelligence, musical intelligence, intrapersonal intelligence, interpersonal intelligence and naturalist intelligence, etc. These

intelligences are relatively independent but also cooperate to help people live well and achieve success in life.

The theory of multiple intelligences has provided some theoretical support for the development of new teaching models in the field of education, particularly in physical education. Traditional physical education teaching has focused on developing students' bodily-kinesthetic intelligence and has not paid much attention to the other types of intelligence. Based on the theory of multiple intelligences, physical education teachers can discover the different intelligences of the students and adjust teaching content and methods according to them. Therefore, teachers can organize all sorts of teaching activities and tests to spark students' interest in physical education. The above way can help achieve the goal of personalised and differentiated education better, increase students' interest in learning, and promote all-around development of their physical and mental health^[1].

1.2 Development History and Current Status of the Theory of Multiple Intelligences

Since the beginning of time, people have been exploring and applying the idea of multiple intelligences. The first few studies have focused on classifying and defining intelligence, and have gradually identified eight types: linguistic intelligence, logical-mathematical intelligence, spatial intelligence, musical intelligence, bodily-kinesthetic intelligence, intrapersonal intelligence, interpersonal intelligence and naturalist intelligence. With the development of cognitive psychology, neuroscience and other areas, more and more research has begun to explore the brain basis, educational application and cross-cultural applicability of multiple intelligences. In recent years, more and more scholars have begun to pay attention to the interactive relationship among intelligences and have put forward the idea that intelligences do not exist in isolation but are all parts of a diverse ability network.

At present, the theory of multiple intelligences has been used in many parts of education and has shown good results in individualised teaching and cross-curricular teaching. Many schools have begun applying the theory of multiple intelligences in their teaching to help students learn in various ways according to their different intelligences and enjoy a richer and more colourful school life. Although it has been applied widely in many places, research on the theory of multiple intelligences in the area of physical education, especially in the development of innovative classroom teaching models for physical education, is still relatively scarce. Physical education is also an active subject for students, and they learn by doing. Based on the theory of multiple intelligences, more personalised teaching models can be introduced to help all students develop all kinds of intelligences more evenly and inspire them to explore different concepts in physical education.

1.3 Application of the Theory of Multiple Intelligences in Physical Education

The Theory of Multiple Intelligences has provided theoretical support for the development of new physical education models. In the past, most of the emphasis in physical education teaching has been on fostering students' bodily-kinesthetic intelligence, and the other intellectual abilities of students have been overlooked. According to the theory of multiple intelligences, many types of intelligences in students can be developed through physical education, such as spatial intelligence, musical intelligence and interpersonal intelligence. Physical education in contemporary times is no longer limited to physical exercise; now it aims to help students all-round development in life and form good habits.

For example, students with a strong sense of space can organise themselves better and are good at learning in team sports; students with a good sense of music can increase the speed at which they learn through music. Bodily-kinesthetic intelligence and interpersonal intelligence are the two necessary conditions for teaching in physical education; the former can be observed in students' physical fitness and motor skills, and the latter is required for teamwork and competitive communication, etc. According to the theory of multiple intelligences, physical education teachers can design personalised teaching activities based on the various intellectual strengths of students to fully realise their potential and increase their interest and participation in physical education classes^[2].

According to the theory of multiple intelligences, education should consider all kinds of intelligences in children, so physical education should be inclusive. According to the theory of multiple intelligences, physical education can introduce new types of teaching that are not only based on traditional skill training but also better promote the all-around physical and mental development of students.

2. Current Situation and Problems of College Physical Education Classroom Teaching

2.1 Limitations of Traditional Physical Education Teaching Models

The traditional model of classroom teaching for college physical education mainly focuses on teaching sports skills and physical fitness, and the way of teaching is teacher-centered; students are generally passive recipients of information in the classroom. This model generally has a fixed way of teaching, and it does not consider the individual differences or interests of the students; therefore, some students are less enthusiastic and less participatory in the physical education classes. The traditional model gives too much weight to group activities and team competition and ignores the all-round development of students in terms of learning, emotions and personality.

The teaching methods employed by physical education teachers in the traditional model are often too simple and fail to meet the learning needs of all students. Students have different physical abilities, so it is not feasible for all students to be exercised and educated at the same time in the same way in the classroom. At this time, teachers tend to use only words and examples in their teaching, and do not plan various ways to meet the different intelligences of the students. Therefore, the effect of the classroom tends to be "homogenisation", and the superior intelligences of some students are not fully realised and utilised, and the personalisation and diversity of physical education are not well represented.

2.2 Needs and Development Trends of College Students in Physical Education Classrooms

With the changes in society and the updates of educational ideas, the physical education needs of college students are becoming more diverse and individualised. Today's college students are more concerned about their own physical health and have also gained some awareness of mental health. Students need to exercise their bodies and learn how to be a good team player; at the same time, they hope to build self-discipline, reduce the pressure of study, and improve their mental health through physical education classes. Therefore, physical education is no longer just a place for teaching students skills; instead, it should be a good environment to help students improve their physical and mental health, personality and social skills, etc.^[3]

The first direction for the future of college physical education classrooms is to expand and diversify teaching content. With the continuous development of sports activities and exercise methods, students can choose various sports to learn and train according to their own interests and physical conditions. Secondly, the teaching methods will be personalised and differentiated; based on the different intellectual qualities of the students, specific teaching activities will be designed so that every student can find a good way to learn and improve in class. At the same time, information technology will also be employed to change the model of physical education teaching; data-driven teaching evaluation and dynamic monitoring of students' sports interests and participation will be new trends in classroom management.

2.3 Analysis of the Need for Innovation in Classroom Teaching

With the continuous development of concepts in physical education, the old teaching model can no longer meet all the needs of today's college students. There is now a lack of new teaching ideas. First of all, people want more personalised classes nowadays. Students have different intellectual strengths, interests and learning styles, so teachers should use all kinds of teaching methods in class. Physical education teaching should no longer be uniform; instead, according to the different strengths and needs of the students, differentiated instruction will be employed. It is necessary to strengthen the flexibility of the Design of physical education curricula and the organisation of classroom types.

Secondly, people no longer want to improve their physical fitness only through school sports; they are also hoping to develop other qualities in sports activities, such as self-awareness, cooperation and emotional regulation. Therefore, the design of teaching content should move away from simple skill training towards the all-round development of students. For example, this could be to add some music that interests students in sports, to encourage them to cooperate and compete, or to help them manage their emotions better under pressure to boost self-confidence^[4].

Finally, there will be changes in the form of assessment under the new teaching model. The old ways of judging students in physical education mainly focus on their physical health and skills. At the same time, the evaluation of students' all-round development in modern physical education classes should also consider aspects such as cooperation with others, mental qualities and new ideas. Therefore,

in addition to the objective indicators of physical fitness, teachers should also consider all kinds of other information about students' emotions, interests and social skills to build an all-encompassing assessment system for these areas.

To meet the new requirements of teaching, we will explore all kinds of intelligent-map-based teaching forms. Based on the different intellectual strengths of the students, teachers can better arouse their interest and potential in learning, thus achieving innovation and breakthroughs in physical education teaching.

3. Innovative Paths for Physical Education Teaching Models Based on the Theory of Multiple Intelligences

3.1 Framework Design for Teaching Models Based on the Theory of Multiple Intelligences

The foundation of innovating the physical education teaching model in line with the theory of multiple intelligences is to build an adaptable and differentiated teaching system. Therefore, the teaching materials and methods employed by teachers should be varied in line with the different strengths and advantages of students' intelligences. In other words, the goals of physical education classes should be to improve students' physical health and skills, as well as to nurture all-round development of their minds. For example, students with strong bodily-kinesthetic intelligence can be given teaching tasks that involve competition or physical challenges to help improve their motor skills and physical fitness; students with a good sense of music can learn about rhythm and musical elements in their sports classes to enhance the fluency and coordination of their movement; students with a strong sense of space can learn about space and strategy in class, work in a team, organise in a space, and improve their athletic performance on the field^[5].

In addition, the teaching plan should be flexible; based on students' feedback and learning outcomes, we can modify the content and ways of teaching. Flexibility should be displayed in the selection of teaching activities, as well as in changes to teaching methods, task difficulty and the pace of instruction. Through class interaction and frequent feedback, teachers can quickly learn about how well the students are learning and adjust their teaching according to the various needs of the students. Through all kinds of individualised adjustments, every student will be given enough exercise and progress in the teaching model that suits them better, and thus the "one-size-fits-all" problem of the old way will be avoided. The teaching framework should promote the development of students' autonomy and have them participate in and express themselves in class. With the help of the group, the students can learn from and support each other; thus, they will be motivated to study independently and develop a spirit of lifelong learning.

3.2 Application and Implementation of Intelligent Teaching Strategies

In order to carry out intelligent teaching, teachers should apply the theory of multiple intelligences and use modern information technology to identify the diverse intellectual strengths of students and provide individualised teaching support accordingly. The basis of this way is intelligent technology and data analysis; one can observe all kinds of students' performance in various sports activities in real time and thus develop individualised study plans for all the students. For example, in the field of physical fitness training, intelligent devices can be employed to collect data on students' exercise activities, such as speed, heart rate, exercise frequency, etc., and then data analysis systems can be used to perform quantitative analysis and obtain real-time information about the students' physical condition. Based on the above data, teachers can quickly find out the strengths and weaknesses of students in particular sports, then adjust their training plans and teaching methods accordingly, and thus provide individualised teaching support for different students. Early warning can help us discover any problems with teaching in time and correct them; thus, we will be able to motivate the students more effectively.

Integration of various subjects is now also a typical attribute of intelligent teaching. Teachers can use the knowledge of biomechanics and sports psychology to add new content to athletic training and provide students with an all-round theoretical foundation in sports. Teachers can use biomechanics to help students learn about the mechanical laws of sports skills, and they can apply theories of sports psychology to help students better control their emotions and concentrate during training. Intelligent Tools can collect students' exercise data in real time, and based on the analysis of motor skills, emotions, physical condition, etc., help students gain a better understanding of themselves during sports. The integration of various disciplines and intelligent technologies has changed physical

education from its original focus on physical fitness and skill training to a new kind of learning environment that also includes knowledge from sports science and psychology, thereby expanding the level and scope of teaching.

3.3 New Forms of Assessment and Feedback

Based on the theory of multiple intelligences, the evaluation system for physical education classes will be all-encompassing and cover the achievements of students in all areas of intelligence. Traditional physical education classroom assessment mainly focuses on students' scores in physical fitness and learning of motor skills, but it does not consider other areas of growth, such as cooperation skills, emotional regulation, creativity, etc. A new type of assessment should be introduced that considers all aspects of students, such as their health and mental health, emotions, teamwork, etc. Based on the above general assessment, teachers can pinpoint the strengths and weaknesses of the students more precisely to offer personalised feedback and support^[6].

The first reason for the above assessment mode is prompt and flexible feedback. Teachers should observe and record students' development in physical fitness and skills through classroom observation and data analysis, but they should also pay attention to other areas of intelligence, such as strategic thinking in team sports and communication skills during cooperation with others. At the same time, teachers should change their teaching methods based on the feedback from students and pay attention to the learning paths and progress of all students. With the construction of an all-encompassing evaluation system, the progress of students will be judged not only by the standards of good physical fitness but also by many other attributes, such as general ability, creativity and emotional expression, etc., reflecting the all-around nature of physical education education.

In the new mode of evaluation and feedback, teachers can also increase the level of class participation by having students self-assess and provide feedback to each other. Through self-assessment and observation of others, students can gain some awareness of their own deficiencies and be motivated to improve. Students will be evaluated in many ways and at different times, and at the same time, their interest in sports will also be sparked. Finally, the new assessment system will improve the quality of teaching in the classroom and promote the all-round development of students in physical education.

Conclusion

New forms of teaching in physical education classes based on the theory of multiple intelligences can help solve many problems in college physical education today. Based on the theory of multiple intelligences in physical education teaching, teachers can design individualised teaching plans according to the different intellectual strengths of students and thus motivate more students to learn better in physical education classes. At the same time, intelligent teaching strategies can help teachers change their teaching methods flexibly according to the analysis of real-time data and feedback to meet all kinds of learning needs of students. New ways to assess and give feedback have been introduced, and now a comprehensive, multi-dimensional assessment system for students' physical and mental development as well as social skills aims to improve the quality of teaching. In the future, with the continuous development of educational technology and the wide application of intelligent tools, the physical education teaching model based on the theory of multiple intelligences will be further optimised and enhanced to provide more personalised and flexible physical education for all students and promote the all-round development of their abilities.

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