

The Development and Implications of Somatic Games in Early Childhood Physical Education Curriculum

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Abstract

Through the use of new generation technology, the organic combination of electronic games and physical exercise in the physical education curriculum can realize the physical exercise of young children in the process of playing games. By combining the current situation of the physical education curriculum for young children and analyzing sports physical games, this paper puts forward the ideas of optimizing physical education for young children from the perspectives of contextualizing physical education, optimizing physical game teaching and strengthening the competitive nature of physical education.

Keywords

Somatic games; early childhood; physical education curriculum; curriculum.

1. Introduction

In recent years, with the progress of science and technology, sports physical games have gradually come into people's lives. Sports physical games are the product of the combination of electronic technology and sports, this very interesting electronic games, through technical means to capture human movements, complete the interaction between people and electronic devices, so that people through the body movement behavior to complete the game settings. Many people do not love sports, but it is human nature to love games, and games can make people have pleasant experiences. Through the combination of electronic games and sports, it can fully mobilize people's enthusiasm for sports and let people finish physical exercise in happy games. From this perspective, the teaching of early childhood physical education classroom also needs to draw on the advantages of sports physical games, to better play the efficacy of game-based physical education, to better guide students to carry out physical education learning and physical exercise, and to promote the improvement of students' physical quality^[1].

A large number of studies have confirmed that somatic interactive sports games have significant positive effects on improving the skeletal muscle function of young children, increasing their endurance level as well as losing weight and lowering fat, strengthening cardiorespiratory endurance and other exercise abilities. However, most of the current development of physical education games in China still remains in the process of teachers' demonstration in class and students' learning, while there is less research on the development of somatosensory games. Therefore, the development of a game-based physical education software meets the requirements of the development of the current education information era, and also conforms to the laws of children's development. It is believed that the organic combination of somatic games and children's physical education curriculum can truly achieve the highest level of "teaching for fun" that the education industry is eager to achieve.

2. The impact of sports physical games on the physical health of young children

2.1. Cardiopulmonary function

Cardiorespiratory fitness as a key ability that shows the level of children's physical fitness and determines children's exercise ability. The application of somatic interactive exercise games can improve the cardiorespiratory endurance of young children^[2], which has obvious effect on the cardiorespiratory function of young children and so on.

In order to address the current situation of inadequate physical activity of primary and secondary school students, reduce the risk of disease and improve the cardiorespiratory endurance function of primary and secondary school students, a study has been conducted in 208 primary and secondary school students in different grade groups, the intervention group of primary and secondary school students three times a week 30min physical interactive exercise games, the control group no requirements, 1 year later, by comparing the two groups of primary and secondary school students, the intervention group students After 1 year, the students in the intervention group showed a significant increase in cardiorespiratory endurance, which verified the significant effect of somatosensory interactive exercise games in improving students' cardiorespiratory capacity.

2.2. In terms of athletic ability

Motor ability is a fundamental expression of children's physical fitness, and studies have shown that somatic interactive movement games can promote children's motor development and have a positive effect on children's balance ability.

In order to investigate the effect of somatic interactive movement games on students' strength, jumping and flexibility, 100 students were divided into a somatic intervention group and a control group. 50 students in the somatic intervention group performed 40 min of somatic interactive movement games two days a week. The results of this study showed that the interactive movement games had a positive effect on the students' strength, jumping and flexibility.

2.3. Obesity and overweight

Overweight and obesity are major causes of heart disease, diabetes and other high-risk conditions in young children, and sustained physical activity can reduce the risk of obesity and overweight-related morbidity. Numerous scientific studies have shown that physical interactive movement games have a significant effect on reducing obesity and increasing physical activity in young children.

In another study, 46 overweight or obese primary and secondary school students were recruited for a trial to investigate the effectiveness of a home based interactive movement game intervention for weight loss in primary and secondary school students. The intervention group had significantly higher systolic blood pressure, diastolic blood pressure and total cholesterol than the control group, indicating that the interactive exercise game significantly improved the BMI, cardiometabolism and physical activity of the primary school students. Sports physical game attractiveness analysis

3. Analysis of the appeal of sports-based physical games

In the process of teaching physical education to young children, physical exercise is often not carried out effectively for various reasons, and teachers who want to better and fully implement gamification in physical education can explore the inspiration for implementing teaching in the

fun nature of physical games. After research, the reasons for the fun and attractiveness of physical games can be categorized as follows.

3.1. Contextualization

In the physical game, the interaction between people and the game is often carried out in a certain context. Whether it is a big screen or 3D glasses, people will be immersed in the atmosphere of the game as much as possible, and some venue effects will be added to the game screen as the scene of the game, so that people can get a better gaming experience. This contextualization is very helpful to enhance the fun of the game. For example, in a basketball game, the standard basketball court is set as the game site, and the basketball game is set as a real scenario, and then the "real audience" and their cheers are added to the audience, and the corresponding scoreboard and other props, so as to create a better competitive atmosphere for players, so that players can experience the fun of physical games. Accordingly, teachers can also create a situation and atmosphere in physical education, so that children can better integrate into the physical education classroom, thus improving their positive type and making them actively participate in physical exercise.

3.2. Strong feedback

The most interesting aspects of the game focus on two aspects, one is the sense of expectation and the other is the strong feedback. The sense of anticipation is when a person plays a game, makes an action or gives a command within the rules of the game, and then expects the result to happen. For example, soccer and basketball are popular all over the world mainly because the thrown basketball and kicked soccer ball possess uncertainty, and both players and spectators have a strong sense of expectation whether they can score a goal or not. Strong feedback means that people are able to receive timely and specific feedback when they make instructions and actions during the game. This feedback can boost the human brain. If the feedback is successful, it will bring a certain sense of pleasure to people. If the feedback fails or is not received, people quickly develop resistance to the results and process and lose interest. This provides some ideas for teaching physical education to young children, especially when implementing gamification, the first thing teachers need to address is to enhance the feedback and sense of anticipation in physical education games to make them more interesting and more appealing to children's attention. Student physical exercise

3.3. Novelty

Although the market for sports games is still immature and there is not much game software that can be loaded onto various physical gaming devices, novel games are emerging to meet people's gaming and entertainment needs, and at the same time can guide users to exercise in a variety of ways. This is reflected in the gamification of early childhood sports. Teachers should need to continuously optimize the design of physical education games and use novel game forms and game contents to motivate students to participate in physical activities, further enhance students' interest in physical exercise and improve the quality of physical education.

4. Strategies for Integrating Somatic Games into Early Childhood Physical Education Curriculum

In traditional physical education for young children, it is difficult to make full use of information-based teaching methods due to the limitations of physical education venues and teaching forms. Sports physical games can combine electronic games and sports well, allowing students to play games in the process of physical exercise and related knowledge, which can give full play to the advantages of information-based teaching, enrich the content of students'

physical education classes, innovate the teaching mode, and better improve the teaching efficiency of physical education classes.

4.1. Using sports physical games to develop students' sports hobbies

Because the games are fun and not limited by the venue, sports games can make students try more sports in a gamified context, so that they can be better engaged in the exercise situation and promote the cultivation of their interest in physical exercise. Teachers can grasp the characteristics of sports-based physical games to encourage students to try more of their favorite sports, and then guide them to gradually shift their interests from sports-based physical sensory to realistic sports, which better cultivates students' interests in sports and promotes sports skills. How to make students change their interest is a crucial issue, and teachers can use gamified contextual teaching to complete the process of "sports-like physical games - gamified sports - sports and practice of sports". In this process, in order to better stimulate students' interest in physical education, teachers can follow the contextualized design of sports games to create some classroom environment and create a suitable teaching atmosphere to motivate students to participate. For example, to teach basketball, teachers can organize students to participate in a basketball game, where they take turns to play and other students act as "spectators". In this process, the teacher acts as a "referee" and can not only instruct students on the action and the rules of basketball, but also explain basketball-related knowledge to other students, thus creating an atmosphere for sports competitions and stimulating students' competitive spirit to enhance students' enthusiasm for participation.

4.2. Using sports-based physical games to improve students' physical skills

Although students' mastery of sports skills is influenced by talent and physical fitness, repetitive practice is essential, especially in sports like table tennis and badminton, which are great tests of students' reflexes. Teachers can use sports-based physical games to exercise students' reflexes and motor skills. For example, physical games generally have motion capture systems and equipment, teachers can use these technologies to design sports-related action imitation games for students to imitate, and exercise students' reaction ability by controlling the switching rate of the imitated action, and exercise students' ability to control their body muscles through the design of the action, while in the process can effectively exercise students' physical fitness. Specifically in physical education, such as in the teaching of gymnastic movements, students always have a poor grasp of the action of "horizontal extension of the arms", especially the students themselves feel that there is a big difference between the actual situation, students feel that the arms are horizontal, but from the teacher's point of view, the student's arms are either up or down tilt. Therefore, teachers can design gymnastic exercises through the motion capture in the gymnastic game, and let students follow the requirements of the display device to make gymnastic movements, so that students can clearly know whether their movements are standard through the feedback information, and at the same time, improve students' body control ability in the process of fast switching movements, so as to better guide students' learning.

4.3. Using physical games to strengthen the competitive nature to develop students' sports specialties

The competitive nature of sports physical games is very strong. Unlike the competitive nature of normal games, the competitive nature of sports physical games is more of a self-comparison, i.e. players in most cases will repeatedly compete to get a better score. And in the process, they exercise their bodies. In early childhood physical education, this form of competition should also be introduced. On the one hand, it is necessary to enhance students' competition with each other. With the help of competitive sports, students can compete with each other and use the competitive spirit of young students to motivate them to persevere. On the other hand, students

can be required to make exercise plans. With the help of making a plan to further enhance their own stimulation, and with the help of the comparison before and after exercise, students are encouraged to actively participate in physical exercise and have a good physique. Teachers can rank students' performance in physical exercise games in order to motivate students to participate in physical exercise and stimulate them to participate. For example, teachers can organize a continuous long jump competition contest in which each student performs three long jumps in a row to see who has the best overall score. By comparing students with each other, the competition of physical education can be enhanced and the communication between students can be further enhanced, so that students can further improve their long jump and leg strength skills by "competing" and encouraging each other. Teachers can also create report cards for students and give them quizzes from time to time, mainly physical fitness tests. Often, after passing three tests, scores can be aggregated and ranked, and then sent to each student - allowing them to see if their athletic performance has improved further. Also, from a game perspective, this is a positive feedback message. Data-based feedback on fitness improvement can better strengthen students' belief in participating in physical activity and better develop a lifelong sense of exercise.

5. Conclusion

By analysing the fun, attractiveness and ways in which games and physical activity can be integrated, the author argues that they can be an effective aid to the development and innovation of early childhood physical education curricula, particularly in the context of a game-based physical education model that can be used to develop students' interests in physical education. To this end, teachers should pay attention to the game's contextualisation, timely feedback and novelty, and on this basis guide the design and implementation of physical games for sports, and innovate teaching methods according to students' realities, in order to better stimulate students' interest in physical exercise and develop good habits of physical exercise.

References

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