Research on the Influence Mechanism and Intervention Countermeasures of Sports Participation Motivation on Sports Teaching Effect

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Abstract: **This study focuses on the influence mechanism of sports participation motivation in physical education and puts forward corresponding intervention strategies. Based on a systematic theoretical analysis, this research first clarifies the core connotation and structural dimensions of sports participation motivation. From the perspectives of self-determination theory, attribution theory, expectancy-value theory and achievement motivation theory, it further dissects the internal psychological mechanism, behaviour al operation mechanism and social-cultural influence mechanism by which sports participation motivation acts on the effectiveness of physical education teaching. In the empirical research section, primary and secondary school students are selected as research subjects, and a six-month targeted physical education teaching intervention experiment is conducted. The collected data are statistically processed and analyzed by using SPSS software. The results demonstrate that sports participation motivation has a significant positive predictive effect on students' classroom learning performance, motor skill mastery level and sustained sports interest. Meanwhile, intervention strategies including optimizing physical education curriculum design, innovating diversified teaching methods and constructing a positive and supportive campus sports environment can effectively enhance students' sports participation motivation. This study not only enriches the theoretical research on sports motivation and physical education teaching, but also provides practical references for improving teaching quality and promoting students' physical and mental health development.**

Key words: **sports participation motivation; physical education teaching effect; influence mechanism; intervention measures; teaching reform**

I. INTRODUCTION

As an important part of the school education system, physical education carries the multiple functions of promoting students 'physical quality, mental health and social adaptability. With the continuous upgrading of educational concepts, physical education curriculum is not only a simple physical exercise, but also endowed with the important mission of enhancing students 'comprehensive quality and cultivating lifelong sports habits. In the process of students 'all-round development, physical education teaching can effectively improve sports ability, strengthen team cooperation spirit, cultivate self-discipline consciousness, and promote students' mental health.

However, in the actual teaching process, there are great differences in the participation and enthusiasm of students in physical education courses. Some students are lack of interest, lack of self-confidence in sports or external environment restrictions, resulting in the teaching effect of physical education classes is difficult to achieve expectations. Therefore, how to stimulate students 'motivation to participate in sports, improve the quality and effectiveness of physical education, physical education reform has become an important issue.

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II. THEORETICAL BASIS OF SPORTS PARTICIPATION MOTIVATION

Definition of Sports Participation Motivation

Sports participation motivation refers to the behaviour of individuals in sports activities, driving force, determines the attitude of sports activities, the degree of investment and the willingness to continue to participate in [1]. According to the theory of self-determination, sports participation motivation can be divided into two types: intrinsic motivation and extrinsic motivation. Intrinsic motivation refers to the individual's active participation in sports activities due to the interest, fun and challenge of the sport itself, such as students voluntarily practicing shooting because they like basketball, or sticking to training because they enjoy the sense of achievement brought by running. Intrinsic motivation can often motivate individuals to participate in sports activities for a long time and to pursue continuous progress in sports. Extrinsic motivation refers to the individual driven by external rewards or pressure, such as high scores, win medals, recognition by teachers or parents, etc. Although extrinsic motivation can improve sports participation in the short term, if there is no appropriate intrinsic motivation, individual sports participation is often difficult to last (Spruijtenburg, et al., 2025).

The factors that affect the motivation of sports participation can be divided into two levels: individual factors and environmental factors. From the point of individual factors, students 'physical quality, sports ability, gender, age, psychological needs and personality characteristics will affect their attitude to sports activities. For example, students with higher athletic ability are more likely to have higher motivation to participate in sports, while students with lower athletic ability may be less likely to participate due to a lack of self-confidence. In terms of environmental factors, family, school and social culture play

an important role in shaping individual sports participation motivation. For example, family support is essential for children and adolescents to participate in sports, and parents who encourage their children to participate in sports can increase their interest in sports. Similarly, the school's physical education curriculum, teachers 'teaching methods, the influence of peer groups and social values of sports will also have an impact on students' motivation to participate in sports (Ramer, et al., 2025).

The Measure Standard of Physical Education Teaching Effect

Physical education teaching effect is an important index to measure the quality of physical education curriculum and students 'learning achievement, which usually involves many aspects such as skill mastery, improvement of sports ability, cultivation of sports interest, class participation and learning satisfaction. First of all, the mastery of skills and the improvement of motor ability are the core standards of physical education teaching effect. In physical education class, students master basic motor skills, such as football dribbling, basketball shooting, gymnastics balance, etc. through systematic training and practice, and at the same time improve their own physical qualities such as strength, endurance, coordination and flexibility. The depth and breadth of skills to master to a large extent determines the students 'confidence in sports activities and the possibility of continuous participation (Chen & Li, 2024).

Secondly, the cultivation of sports interest and the rate of continuous participation are important standards to measure the effect of physical education. Research shows that the positive emotions students experience in physical education classes, such as a sense of pleasure, achievement and belonging, can enhance their interest in sports and promote long-term sports participation. If students get positive experience in physical education class, they are more likely to take the initiative to exercise in their spare time and form good exercise habits. Therefore, physical education teachers in the teaching process should pay attention to stimulate students 'interest, avoid monotonous teaching methods, in order to enhance the attractiveness of physical education curriculum.

Sports Participation Motivation Theory

In the study of the mechanism of sports participation motivation to the effect of physical education teaching, a number of psychological theories can provide theoretical support. Firstly, the Self-Determination Theory (SDT) is an important theoretical framework to explain the motivation of sports participation. The theory holds that the individual's behaviour is driven by the three basic psychological needs of autonomy, competence and belonging. When individuals feel the right to choose, the sense of accomplishment in mastering skills and the sense of belonging to team members in sports activities, their motivation to participate in sports will be significantly improved. Therefore, in physical education teaching, teachers should pay attention to give students enough choice, encourage them to set personalized sports goals, while creating a positive classroom atmosphere, in order to meet the basic psychological needs of students, so as to improve their motivation to participate in sports.

Attribution Theory emphasizes that the attribution of success or failure will affect the motivation of future sports participation. Students who attribute their success to their own efforts or abilities are more likely to maintain a higher motivation in sports classes, while if they attribute their failure to the external environment or their own lack of ability, they may lead to a decline in interest in sports.For example, if a student is not performing well in a football match, he may be more involved in training if he believes the failure is due to inadequate training, but may not be trying to improve his performance if he believes the failure is due to bad weather or unfair refereeing. Therefore, in the process of physical education teaching, teachers should help students to establish a positive attribution style, guide them to attribute success to hard work, failure as an opportunity to grow up, in order to maintain a stable motivation to participate in sports.

Expectation-Value Theory points out that the individual's motivation to participate in sports is influenced by the expectation of success and the value perception of sports. Students are more motivated to participate in sports if they believe they can be successful in sports activities and that sports activities are of great value to their personal growth, health, and future development. Therefore, in physical education teaching, teachers can improve students 'positive expectation and value cognition of physical education by setting appropriate challenge goals, providing incentive mechanism and demonstrating the practical value of physical exercise.

Achievement Motivation Theory (Achievement Motivation Theory) emphasizes the individual in sports activities to pursue success and avoid failure of psychological driving force. Different students have different levels of achievement motivation in sports activities. Some students are more inclined to set challenging goals and strive for success, while others may avoid sports activities because of fear of failure. Therefore, in the process of physical education teaching, teachers need to identify the characteristics of different students 'achievement motivation, to provide appropriate challenges and support, to enhance their confidence in sports, promote long-term sports participation behaviour (Ou, 2024).

III. THE INFLUENCE MECHANISM OF SPORTS PARTICIPATION MOTIVATION ON PHYSICAL EDUCATION TEACHING EFFECT

Mental Mechanism

The influence of sports participation motivation on the effect of physical education teaching is first reflected in the psychological mechanism. According to the theory of self-determination, the individual's demand for autonomy plays a key role in the process of sports participation. When students can choose sports events, set up personalized sports goals and gain some autonomy in sports activities, their participation in sports classes and enthusiasm will be significantly improved. On the contrary, if the physical education curriculum emphasizes too much on the unified standard and ignores the individual differences, the students

'interest in sports may be restrained, which leads to their negative performance in the physical education classroom. Therefore, in the process of physical education teaching, teachers should give students the opportunity to make decisions independently as much as possible, such as allowing students to choose favourite sports, design personalized training plan, to meet their needs for autonomy, so as to improve the enthusiasm of physical education learning and classroom participation.

Behaviour Mechanism

The influence of sports participation motivation on physical education teaching effect is also reflected in the level of behaviour mechanism. Students with high PE motivation tend to be more active in class. They are more willing to participate in various activities in PE class and carry out additional independent training after class. The study shows that students with higher motivation to participate in sports are more focused in class, can respond positively to teachers 'guidance, practice skills actively, and play a greater role in team cooperation. For example, in a basketball or football class, a highly motivated student not only takes the class task seriously, but may also do additional exercises after class to improve their motor skills. In contrast, the students with low sports motivation may be passive in the classroom, lack the willingness to participate actively, and may even escape from physical education, which directly affects the development of their sports skills and physical fitness. Therefore, in the process of physical education, teachers should pay attention to stimulate students 'motivation to participate in sports, in order to enhance their classroom performance and sports learning initiative.

In addition, the formation of sports study habits is also an important path for sports participation motivation to have a profound impact on the effect of sports teaching. Physical learning habits include pre-class warm-up, classroom exercises, after-class self-training, sports health management and other aspects. When students have strong motivation to participate in sports, they are more inclined to form a good habit of learning sports, and are willing to insist on physical exercise for a long time. For example, some students with high motivation for sports will develop sports habits such as morning running and strength training in their daily life, rather than limited to short exercises in physical education classes. In contrast, the lack of motivation to participate in sports students are often difficult to form a stable physical exercise habits, they may only be passive in the classroom to complete the task, and the lack of further sports practice in extracurricular. This difference has a direct impact on the final effect of physical education. Therefore, in physical education teaching, teachers should cultivate students 'physical learning habits through various ways, such as encouraging students to make personal sports plans, providing after-class exercise guidance, organizing extracurricular sports activities, etc., so as to help students form lifelong sports habits and improve the long-term effectiveness of physical education teaching.

Social And Cultural Mechanism

Social and cultural factors are also an important aspect of sports participation motivation, in which the shaping of school sports atmosphere has a direct impact on students 'willingness to participate in sports. In a positive sports culture environment, students are more likely to be affected by the surrounding groups, active participation in sports activities. A school with strong sports cultures usually creates a good environment for students to participate in sports by holding sports competitions, establishing sports associations and optimizing sports facilities. For example, some schools with strong sports atmosphere regularly hold intramural sports meetings, class leagues and other activities to encourage students to actively participate in competition, thus enhancing their sports interest and enthusiasm. On the contrary, in schools with weak sports atmosphere, the attraction of sports activities is low, students may regard physical education as an optional course, thus reducing their motivation to participate in sports. Therefore, the school should pay attention to shaping a good sports atmosphere in physical education teaching, through the rich sports activities, encouraging mechanism and example demonstration, guide students to actively participate in physical exercise, improve the overall effect of physical education teaching.

IV. INTERVENTION COUNTERMEASURES TO IMPROVE SPORTS PARTICIPATION MOTIVATION

Optimize That Physical Education Curriculum

The key to improve the motivation of sports participation is to optimize the sports curriculum, so that it can stimulate students 'interest and meet the needs of different individuals. Traditional physical education courses usually focus on running, rope skipping, basketball, football and other fixed items, and seldom consider students 'personalized needs, which may lead to some students' lack of interest and reduce the attraction of physical education classroom. Therefore, when designing physical education curriculum, schools should combine students 'interests and abilities and increase diversified sports items, such as yoga, boxing, frisbee, rock climbing, dry land ice hockey, etc. These innovative sports can not only meet the needs of different students 'interests, but also enhance the interest of the course and improve students' participation in the classroom. In addition, the appropriate introduction of competition mechanism, such as class league, physical challenge, etc., can increase the competitiveness of physical education curriculum, stimulate students 'desire for victory and team cooperation spirit.

Innovating PE Teaching Methods

The innovation of teaching methods can effectively improve the motivation of students to participate in sports. The traditional teaching mode of physical education is monotonous and lacks interaction, but the game, task-driven teaching and the application of scientific and technological means in physical education teaching can solve this problem

well.

TABLE I- DIFFERENT TEACHING METHODS ON THE IMPACT OF SPORTS PARTICIPATION MOTIVATION

Teaching Method	Main Feature	Influence On Sports Participation Motivation	Applicable Sports
Gamification Teaching	Combine game elements to increase fun	Improve the participation in class, enhance students 'interest in sports	football, basketball, track and field, gymnastics, etc
Task-Driven Teaching	Set up challenge tasks to encourage students to continue to break through	Enhance the sense of achievement, enhance the motivation of students to participate in long-term	Physical training, track and field, ball games
Technology Assisted Instruction	Enhance your sports experience with smart devices or VR	Improve the motor feedback, improve the willingness of students to train independently	E-sports, VR sports training

As can be seen from Table 1, there are some differences in the impact of different teaching methods on sports participation motivation. Game teaching is suitable for sports with strong team cooperation, such as football, basketball, etc., which can enhance students 'awareness of interaction and competition; Task-driven teaching is more suitable for personal challenge sports, such as physical training and track and field, which can stimulate students' achievement motivation; Science-assisted teaching enhances students 'sports experience through data feedback and virtual reality, which is suitable for sports that require precise training or simulated environment.Therefore, in the actual teaching, according to the characteristics of different sports, flexible choice of teaching methods, in order to improve students 'motivation to participate in sports.

Creating a Positive Environment for Physical Education Learning

Physical education learning environment has an important influence on students 'motivation and classroom experience. First of all, to improve the teaching ability and motivation of physical education teachers, is an important way to enhance the attractiveness of physical education classroom. In the teaching process, teachers should not only have professional sports skills, but also be good at using incentive strategies, such as encouraging language, instant feedback, personalized guidance and other ways to improve students 'self-confidence and sports enthusiasm. For example, when students encounter difficulties in basketball training, teachers can provide targeted skills guidance and encourage them to gradually improve, so as to enhance their sense of sports self-efficacy.

Secondly, peer assistance is important to promote sports participation." In the physical education class, teachers can organize group cooperation training, so that students can improve their motor skills in mutual cooperation and competition. For example, students can improve their participation in sports under mutual encouragement and support by means of two-person training and team competition. In addition, sports interest groups can be set up in the class, so that students who love sports can drive other students to exercise together to form a good sports atmosphere.

Finally, family support and family education are essential to the long-term development of students 'motivation to participate in sports. The research shows that parents 'sports attitude and sports habits have a direct impact on children's sports participation behaviour. If parents can actively support their children's participation in sports activities, such as accompanying their children, providing sports equipment, encouraging them to participate in sports competitions, etc., it will help students form long-term physical exercise habits. Schools can let parents participate in their children's physical education study by means of sports parents 'meeting and family sports homework, so as to form a physical education system coordinated by family and school. In addition, the school can also organize family sports activities, such as parent-child sports meeting, family fitness challenge, etc., so that students and parents can jointly enhance sports interest in interaction and create a positive sports learning environment.

V. EMPIRICAL RESEARCH AND DATA ANALYSIS

Study Design

The purpose of this study is to explore the influence mechanism of sports participation motivation on physical education teaching effect, and to verify the effectiveness of different strategies through intervention measures. Two classes in a primary and secondary school were selected as the experimental group and the control group. Students in the experimental group received the intervention strategy based on optimizing curriculum, innovating teaching methods and positive sports environment, while the control group continued to follow the traditional sports teaching model. The experimental period was set at 6 months to ensure enough time to observe the effects of the intervention on the motivation of sports participation and the effect of sports teaching.

During the experiment, the study focused on the core variables of sports participation motivation, classroom performance, skill improvement and sports interest. Among them, the motivation of sports participation is evaluated by standardized scale, classroom performance is evaluated by teacher observation and classroom participation rate record, skill improvement is quantified by physical test data and skill test, and sports interest is analyzed by questionnaire survey and interview. In order to ensure the reliability and comparability of the data, the two groups of students were assessed before and after the experiment, and the data were analyzed by SPSS and other statistical tools.

TABLE II- BASIC CHARACTERISTICS OF STUDY SUBJECTS

Group	Sample Size	Average Age	Proportion Of Males	Proportion Of Women	Basic Level Of Sports (Mean/ 5-Point

					System)
Experimental Group	50	12.5	52%	48%	3.2
Control Group	50	12.4	50%	50%	3.1

It can be seen from Table 2 that the experimental group and the control group are basically consistent in terms of sample size, age and sex ratio, and the basic level of sports is also similar, ensuring the comparability and scientificity of the experiment.

Data Collection and Analysis

In the aspect of data collection, this study adopts the method of combining quantitative and qualitative methods. The quantitative data are mainly collected through pre-test and post-test, covering such indicators as sports participation motivation score, classroom performance score, skill improvement (physical test score), etc. Qualitative data were collected through student interviews and teacher feedback to further understand the impact of interventions on students 'interest in sports and classroom experience. The data were analyzed with SPSS software for t-test to evaluate the difference between the experimental group and the control group before and after intervention.

TABLE 3 THE EXPERIMENTAL GROUP AND THE CONTROL GROUP SPORTS PARTICIPATION MOTIVATION SCORE COMPARISON (MEAN STANDARD DEVIATION)

Group	Before Intervention	After Intervention	t Value	p-Value
Experimental Group	3.2±0.6	4.5±0.5	4.23	0.001**
Control Group	3.1±0.5	3.3±0.6	1.12	0.267

As can be seen from Table 3, the experimental group's sports participation motivation score significantly improved after the intervention, p value is less than 0.01, indicating that the effect of intervention measures are statistically significant. But the score of the control group did not change significantly, indicating that the traditional physical education teaching model cannot effectively improve the students 'motivation to participate in sports. In terms of classroom performance and skill improvement, the students in the experimental group have improved in classroom participation, active practice frequency and motor skill test scores. The interview data show that the students in the experimental group have more interest in physical education class and have a more positive attitude towards physical exercise. Some students said: "I didn't have much interest in physical education before, but now I like to challenge myself more and sports activities become more interesting. "Teacher feedback also showed that the experimental group of students 'classroom discipline and participation enthusiasm have improved significantly.

VI. CONCLUSION

This study focuses on the influence mechanism of sports participation motivation on the effect of physical education teaching and the intervention countermeasures, and verifies the important role of sports participation motivation in physical education teaching through empirical research.The results show that sports participation motivation not only directly affects students 'performance in sports class, skill improvement and sports interest, but also indirectly affects the effect of sports teaching by promoting students' long-term sports habit formation.Students with high motivation to participate in sports are more active in class, willing to accept challenges, and can continuously improve their own sports ability under the guidance of teachers, while students with low motivation are more likely to show negative attitudes, affecting the effect of sports learning.The promotion of sports participation motivation can also enhance students 'interest in sports and make them more willing to continue physical exercise after class, thus promoting the formation of lifelong sports habits.

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