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Retraction

Retracted: Immersive Virtual Reality Physical Education Instructional Patterns on the Foundation of Vision Sensor

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope
(2) Discrepancies in the description of the research reported
(3) Discrepancies between the availability of data and the research described
(4) Inappropriate citations
(5) Incoherent, meaningless and/or irrelevant content included in the article
(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

In addition, our investigation has also shown that one or more of the following human-subject reporting requirements has not been met in this article: ethical approval by an Institutional Review Board (IRB) committee or equivalent, patient/ participant consent to participate, and/or agreement to publish patient/ participant details (where relevant).

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] X. Zhang, Y. Shi, and H. Bai, "Immersive Virtual Reality Physical Education Instructional Patterns on the Foundation of Vision Sensor," *Journal of Sensors*, vol. 2021, Article ID 7752447, 12 pages, 2021.

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Research Article

Immersive Virtual Reality Physical Education Instructional Patterns on the Foundation of Vision Sensor

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The creation of visual settings using avatar technology is the initial implementation of a voxel in the reporting context. This article is aimed at demonstrating the important role of a virtual reality immersive physical education model in current physical education and analyzing the immersive virtual reality physical education model. Relying on the mature VR virtual reality technology to establish a virtual simulation experiment platform, the application value in the education field is also reflected in the saving of experimental teaching costs. A complete set of VR teaching courseware also satisfies the functions of teaching training and assessment and is used repeatedly to maximize the value of utilization. This research mainly introduces the content of the optimization of the teaching method of the course combined with virtual reality technology. In order to make the data more convincing, reference literature and data in recent years have been referred to around immersive teaching. The first part is the discussion of immersive teaching, which includes the research of virtual immersive classroom teaching. The second part is a separate analysis of virtual reality technology. The third part is the practical exercise based on the first two parts; that is, from the learning effect and attitude of the student as the main body, the theoretical basis of the two parts on visual sensors and immersive virtual reality physical education teaching is transformed into real practice teaching. In the experiment part, in order to demonstrate the effectiveness and support of immersive virtual teaching, on the one hand, we started with the teaching of teachers, and on the other hand, we carried out investigations from the aspects of students' learning. The desktop virtual environment teaching method is compared with the existing classroom teaching methods. The image processing and image analysis of the virtual reality technology are combined with the image gray level of the three-dimensional image to analyze the multitask algorithm of the vision sensor. The feasibility of immersive virtual teaching was verified. Research data shows that the 10 students participating in the experiment gave a score of 7.9 for the target attitude of immersive virtual reality physical education. Students' interest in learning will increase, and efficiency will also be greatly improved. VR can not only provide students with a new learning experience but also be used to strengthen teachers' teaching skills. Because VR can simulate a real teaching environment, teachers can use this set of tools to try new course materials and improve classroom management capabilities.

1. Introduction

Sports is part of the top program in higher education [1]. With the development of social sciences and economics and the dawning of the dotcom industry, society is paying more and more attention to human development. The essence of this concern is the cultivation of the human subject, including human competition, cooperation, and communication capabilities. Because participatory teaching emphasizes the participatory training method of general students and pays attention to the role of the teaching subject in the teaching process, giving full play to the subjectivity has become an important goal of teaching construction. As an integral part of the basic education system, physical education that is being revised has become an inevitable reform and development [2]. In the teaching process, virtual technology can give students a sense of reality, and they can get in touch with more things that cannot be described in words. Especially in physical education, certain data and actions can be more intuitive, which brings more convenience to the classroom.

Immersive virtual reality provides users with a completely immersive experience, allowing people to be in it and become a part of the virtual environment [3]. Immersive virtual reality is a new technology, and its application in the field of education and teaching is also a hot spot that many experts and scholars pay attention to. Incorporating immersive virtual reality technology into the classroom will subvert the existing classroom teaching and present a brand-new VR classroom [4]. Only in this way is it possible to make teaching truly advance with the times and realize the leap-forward development of basic education [5].

As the basic concepts and basic implementation methods of VR technology have been initially formed, satisfactory application effects have been achieved in many fields, providing information technology support for its development. A large number of research examples have also emerged in teaching at home and abroad. Dacombe and Morrow pointed out in their research that innovative teachers of physical education often go beyond the limitations of traditional teaching methods to better adapt students to the needs of the subject. They contributed to the literature by describing the development of simulations using immersive theater principles, which are designed to maximize participation while encouraging students to think critically about sports training concepts and ideas [6]. López Ríos et al.'s research proposes another approach to current teaching methods, dedicated to using Visual Experience (VR) as an educating instrument and its dedication to the forthcoming capstone of innovation, through what we call Future Engineer (IE) interaction education. Facebook's Oracle Xeon Oculus Rift architecture and hardware provide real-time capabilities for virtualization using the most up-to-date VR capabilities. Through this method, we strive to improve students' "professional knowledge" by training students to master the practical skills required for technological innovation in the ever-evolving labor market [7]. The design of the learning environment supported by iVR technology should be based on the evidence-based education model and the unique functions of iVR. Therefore, Mulders et al. provide a framework for the use of iVR in the learning environment based on the Multimedia Learning Cognitive Theory (CTML). It outlines how to design the iVR learning environment according to the current knowledge of multimedia learning research [8]. The Jagger et al. study evaluated the effectiveness of visual case exercises provided to undergraduates in two British universities in the form of 3D immersive games as part of the mandatory business ethics module. Using a hybrid method to evaluate the effectiveness of the game, the measurement technique accepts the identified and adapted constructs in the model. The results show that students find that games are conducive to their learning ethics and develop knowledge and skills applicable to the real world, and because of game elements, they participate in this process [9]. Behzadan et al. described the design, development, and implementation of two independent classroom experiments using mobile augmented reality (AR) to teach abstract topics to undergraduates majoring in architecture at two universities in the United States. The first project described in this article is an architectural AR magic book, in which the general course textbook is enhanced by superimposing multimedia content such as images, videos, 3D models, and other visual effects on the top of the book's printed graphics and diagrams [10]. The use of more interactive and immersive digital games (IDG) in the classroom is often sporadic, depending on the enthusiasm and originality of individual teachers. The model established by Stieler-Hunt and Jones is summarized by analyzing in-depth, semi-structured interviews with 13 educators who have used digital games in the classroom. Implementing this model can help teachers develop the attitudes and skills necessary for meaningful use of interactive IDG in the classroom [11]. Balzotti and Rawlins use three areas in the literature to position the Arisoph case study: first, it discusses the work done on customer-based projects and the problems and challenges that researchers found when incorporating these projects into the classroom. Second, it discusses a new kind of simulation model of the workplace, with special attention to the work done by Fisher and Russell. Third, the psychological theory of attribution and reattribution was discussed, which laid the foundation for us to carry out the Arisoph case study [12]. Although these studies are focused on the students' sense of experience in the classroom, they have found that these studies have no evidence of actual teaching. Therefore, the feasibility of these studies remains to be demonstrated, and these experiments still lack data support.

On the basis of the combination of visual sensors and modern cognitive education concepts, the focus is on how to integrate immersive virtual reality technology into classroom teaching and design immersive virtual classrooms to simulate real learning scenarios and explore the advantages of immersive virtual classrooms. Immersive virtual reality (IVR) technology can enrich the teaching and learning environment, but its use is usually technology-driven and lacks teaching concepts. From this perspective, using various research methods such as the literature method and induction method, this article discusses in detail the development and importance of immersive virtual reality technology in educational technology, as well as its development direction in future teaching. It also analyzes the feasibility of the immersive virtual reality classroom and its design in detail to provide scientific and technical support for the immersive virtual reality classroom teaching.

2. Virtual Reality Technology and Immersive Teaching

2.1. Immersive Virtual Classroom Teaching. Psychology believes that emotional conditions have a direct stimulating effect on people, and education and knowledge are the basis of situational behavior [13]. Learning environment is an important research field, which is a combination of knowledge, intelligence, emotion, behavior, and social development in a specific learning environment [14]. Immersive education believes that the teaching process is that teachers

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use all available factors to give full play to the role of many learning elements, so that students are in the best learning environment, fully enjoy the fun of education, and get the best learning experience. The embedded visual reception system is a pioneering approach that incorporates modern applications of technology and educational concepts. It inherits the short-form, large-scale, free, and open characteristics of existing online education; combined with immersive virtual reality technology and virtual reality courses, a strong sense of immersion, interaction, and thinking will be introduced [15, 16].

With the increasing growth of computer equipment and equipment as a platform, interactive art has developed into a variety of forms of expression as virtual reality technology crosses the boundary between fantasy and actuality and fuses seamlessly with interaction art [17]. With the development of multimedia computer technology and network technology, many virtual desktop programs have appeared in the learning environment. In this regard, China has many digital campuses, such as the virtual campuses of Tsinghua University and Shanghai Jiaotong University. There are also some information request programs, such as the virtual campus program developed by Shenzhen University. Virtual training programs for distance learning have appeared in some foreign universities, such as George Washington University in the United States and the University of Melbourne in Australia. In recent years, a wide range of reality and conference procedures have emerged, often used for machine learning training. At present, the most common course applications include open virtual environment, digital campus for distance learning, VR laboratory for participating in scientific experiments, and virtual training room for skill training [18].

2.2. Virtual Reality Technology. Along with the speedy growth of hardware and computer science, technology of digital graphics and processing has matured and was virtually invented and rapidly expanded [19]. The computer 3D virtual world can connect different users in different places and participate in a virtual space at the same time, providing users with the simulation of sight, hearing, and even tactile senses, making the users feel like they are in the environment, as shown in Figure 1. From the perspective of user experience in the virtual world, virtual reality application systems should have the characteristics of immersion, interaction, and association. The leading role of users is emphasized in virtual reality application systems. In contemporary education, the technology of traditional virtual reality can deliver a crystal vivid and life-like teaching environment for students. Pupils can be involved in visual surroundings to act out their role, stimulate children's imagination, and play a role in demonstrating, cracking the priorities, and developing pupils' health. It has a positive effect, so the effect of this teaching and training is obvious. Therefore, when used in teaching, students, as the main users, should focus on analysis. The key to the generation of the virtual reality system is the modeling of the virtual scene—the construction of the virtual environment. Existing virtual assembly technology mostly uses desktop virtual environment, which presents three-dimensional graphics based on a plane, and the contrast of the gray scale of the graphics makes the human eye have a fuzzy visual effect, so the two-dimensional screen display is regarded as a three-dimensional image. In essence, this is still a 2D-level virtual assembly. The image-based visualization method is to combine panoramic images of the same view of each image directly shot by a camera or a video camera to create a virtual image. The sense of absorption is a yardstick for gauging the properties of the statistical experience of a virtual reality network and is considered to be an important characteristic that enables virtual reception to be considered independent of other applications [20]. It allows the participant to fully perceive himself as the primary agent in the virtual surroundings while using it, thus enabling the creation of an immersal type of observation. Visual immersion is based on a two-dimensional virtual experiment, enhancing a level to become a three-dimensional virtual experiment, with the help of the use of virtual experimental equipment, to further realize the purpose of real experience [21].

The real image is preprocessed. Assuming that the three-dimensional coordinates of a certain point in the real image are recorded as (a, b, c), for the first step of transforming into a panoramic image, this three-dimensional coordinate needs to be converted into two-dimensional coordinates:

$$\begin{cases} x = t \otimes \delta\left(\frac{a}{c}\right) + \delta \cdot \rho, \\ y = b + \frac{L}{2}, \end{cases} \quad (1)$$

$$\rho = \frac{lfov}{2} = \delta\left(\frac{c}{2t}\right). \quad (2)$$

Combining equations (1) and (2) can get

$$x = t \cdot \delta\left(\frac{x' - c/2}{t}\right) + t * \delta\left(\frac{c}{2t}\right), \quad (3)$$

$$y = \frac{t\left(y' - L/2\right)}{\sqrt{\left(x' - c/2\right)^2 + t^2}} + \frac{L}{2}. \quad (4)$$

C is the height of the real image, and l is the length of the real image. δ is the pixel of the imagination. The corresponding points on the obtained image are registered, and the correlation function between the two points can be expressed as

$$Q_{(x,y)} = \sum_x \sum_y f(a, b) l(a - x, b - y). \quad (5)$$

When x and y change, all values of the function of the two images will change accordingly. When $Q_{(x,y)}$ is the largest, the registration between the two points is the best. This image template matching method has the characteristics of high accuracy. At this time, the two images have the same amplitude. The surrounding pixels at this point in the image are calculated as

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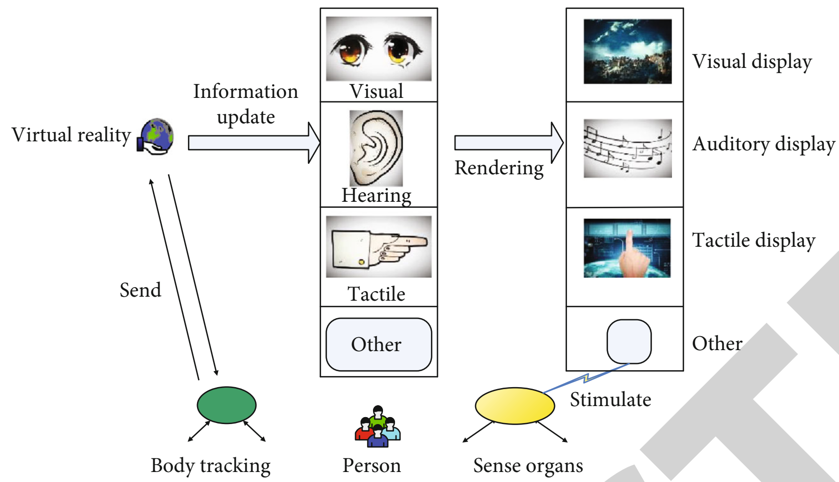

Figure 1: Conceptual model of virtual reality system.

$$I^{(tl_x+tl_y)} = \frac{H_1(a,b)H_2 * (a,b)/|h_1(a,b)h_2(a,c)|}{\delta}, \quad (6)$$

$$I_m(u,v) = \sum_m \sum_{m-1}^{i} c(m,n)I_{m-1}. \quad (7)$$

$I^{(tl_x+tl_y)}$ is the interaction rate, and I_m is the pixel definition of the Mth layer. $\sum_m$ determine the image layer of the high-resolution image. Using gradient crossing to locate the details of this smooth image, we can get

$$K(a,b,c) = \frac{1}{2\delta_{l-1}} - \sqrt{2\pi\delta^2 \cdot \left(a^2+b^2-c^2\right)}. \quad (8)$$

The characteristic point of this pixel is

$$v = \sum_{i=1} L_{i\phi_i}\left(\frac{1}{\phi_a} - \frac{1}{\phi_b} + \frac{1}{\phi_c}\right). \quad (9)$$

Among them, σ is the gray area value of the whole image and v is the average gray level of the whole image. After the image is converted into a panoramic image, a comparative analysis is performed between image fusion:

$$\frac{1}{u,v} = \sqrt{\sum_{l=1}^{u}\sum_{t=1}^{v}\left(\gamma(l,t) - \lambda(l,t)^2\right.}. \quad (10)$$

γ is the fusion effect, λ is the image effect, and there is a positive correlation between the two.

2.3. Knowledge Visualization Application of Vision Sensor Teaching. In the age of reading pictures, the age of knowledge, and the background of new curriculum reforms, the rapid increase in the total amount of human knowledge has caused learners' cognitive overload and low learning efficiency. Traditional knowledge representation methods and teaching methods have been shown to a certain extent. Inconsistent with the needs of today's educational development, the application of visual representations of knowledge brings the possibility of efficient and innovative dissemination of knowledge [22]. Visualization technology can transform knowledge into graphics and image representations (as shown in Figure 2) and gain a deeper understanding of data, information, and knowledge. The use of visual representations of knowledge in accordance with the cognitive characteristics and thinking styles of learners in teaching can help and promote meaningful teaching by teachers and meaningful learning by students and expand the teaching role of teachers and the training role of students, conducive to the cultivation of student-centered learning and creative thinking ability [23]. In virtual reality design, the form of text explanation and picture presentation is better than the presentation of text alone, and this process is not a one-way, but a multidirectional, process. Under the application of visual sensors, various tasks can be completed at the same time [24]. Image-based thinking is an important way to express and understand the world. It is a powerful tool for training and writing people. In scientific research, in addition to abstract thinking, scientists often use image-based thinking [25].

For the multitask execution of the vision sensor, the following formula is established:

$$\chi_n = \frac{1}{1 + i_0/i_n \sum_{i=1}^{n-1}\left(1/i_{v+1} + h/\varphi n_{i+1}\right)}, \quad (11)$$

$$\frac{1}{\chi_n} = \sum_{i=0}^{n} + I \pm \left(\frac{\dot{\chi}_1}{I_1}\frac{H}{\varphi_V}\right). \quad (12)$$

$\cdot$ represents the optimal, and χ_n is the execution strategy of the task, where n is the number of times; the completion time is determined by σ. When multiple bodies of the vision sensor process data at the same time, this process conforms to recursive derivation [26]:

$$\eta_{il} = \beta_i \mu_{i+1}, \quad i = 1, \cdots, n+1, \quad (13)$$

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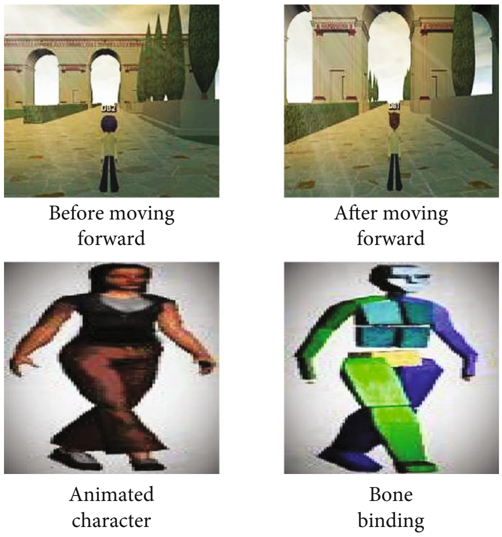

Figure 2: Visualization of the situation.

$$\mu_{\text{in}} = \prod_{j=1}^{n-1} \frac{\mu_j}{\mu_{n-j}(\beta - \mu)}. \quad (14)$$

In order to make the data processing time the shortest, the difference between μ and β should be the smallest; j represents scheduling. The internal scheduling of the multitasking process can be calculated as

$$\frac{s\mu_{ij}}{t_i} = \sum_{i+1}^{n} \frac{si\beta_{ij}}{v_{s-1}} + \frac{j+1}{\mu}(i-1), \quad (15)$$

$$\beta_{ij} = \frac{1}{v_0/v_n + \sum_{j=1}^{i}\sum_{j=1}^{j}\mu_{ij}}. \quad (16)$$

S is the scheduling of an independent task. When this task is driving, the image area size of the image processing performed by the nodes in charge of other tasks is β_{ij}, and this area can be optimized by

$$\beta_0 + \sum_{i=1}^{n}\sum_{j=1}^{s} \beta_{ij}|\beta, \quad \beta_{ij} = 1, \quad (17)$$

$$\begin{cases} \beta_0 = \dfrac{v_0}{v_{\mu_i}}\beta_{ij}, \\ \beta_{ij} = \mu_{ij}\beta_{kl}, \quad i = 1, 2, \cdots, k. \end{cases} \quad (18)$$

β_{kl} is the idle time of the fixed node after a single task is completed, and the last task is satisfying:

$$\left| s(\mu_i - \beta)_i - s\left(\mu_j - \beta_j\right) \right| < \forall \beta_e - \beta_f, \quad (19)$$

$$\nabla\mu = \left|\mu_i - \mu_j\right| - \beta_t \sum_{i=1} \frac{s}{2}. \quad (20)$$

The visual sensor multitask algorithm can quickly and accurately locate the data and information characteristics of the visual knowledge, so as to locate the knowledge image according to the visual characteristics [27].

3. Experimental Research on Immersive Physical Education

The virtual environment is constructed by high-performance electronic computers through software technology. The viewing system is mainly viewed by wearing a head-mounted display. The tracking motion system is mainly a data glove, which belongs to the data unity and position tracker, which is used to capture the user's physical position and posture. Others also include feedback systems such as smell and touch. In the virtual training process, the trainees are divided into groups under the leadership of the teacher, and the training activities are completed together through discussion. Cooperative teaching improves students' ability to participate and cooperate. Here, teachers can use synchronous or asynchronous guidance to organize and guide the learning of each group. Virtual reality emphasizes the appeal of all senses. At this stage, the visual effects and hearing sensations produced by virtual reality applications are far greater than the touch experience. The construction model of the immersive physical education model is shown in Figure 3.

Through the interpretation of the training program and syllabus of physical education major in physical education colleges and departments, it is found that there are too few practical teaching hours. Through situational learning, many important advantages for students can be cultivated. However, in view of the current situation in our country, there are still some shortcomings in the practical application of situational education in physical education. Therefore, in the research of situational education, the main focus is on how to create a teaching environment that meets the requirements of the educational environment to suit the state of students' physical and mental development. 10 physical and specialty students were invited from a university to participate in the experience of immersive virtual reality physical education teaching practice. In order to facilitate data statistics, they are numbered A-J. Students understand the degree of satisfaction with the current physical education teaching methods, as shown in Figure 4.

The data in Figure 4 shows that for the current four physical teaching methods of inquiry teaching, cooperative teaching, autonomous teaching, and activity teaching, 4 students are dissatisfied with the inquiry physical teaching mode but are not satisfied with the cooperative teaching. Autonomous teaching and activity teaching have reached the average level of dissatisfaction. For this reason, it is necessary to develop a brand-new way of physical education. How to stimulate students' learning enthusiasm is the highest requirement for physical education teachers. The choice of physical education teachers and the choice of teaching methods directly affect the needs of students. How to choose a reasonable and effective physical education method requires teachers to first update the concept of new teaching methods from the way of thinking. The existing related literature is examined, and the concerns of traditional physical education teaching are counted, as shown in Table 1.

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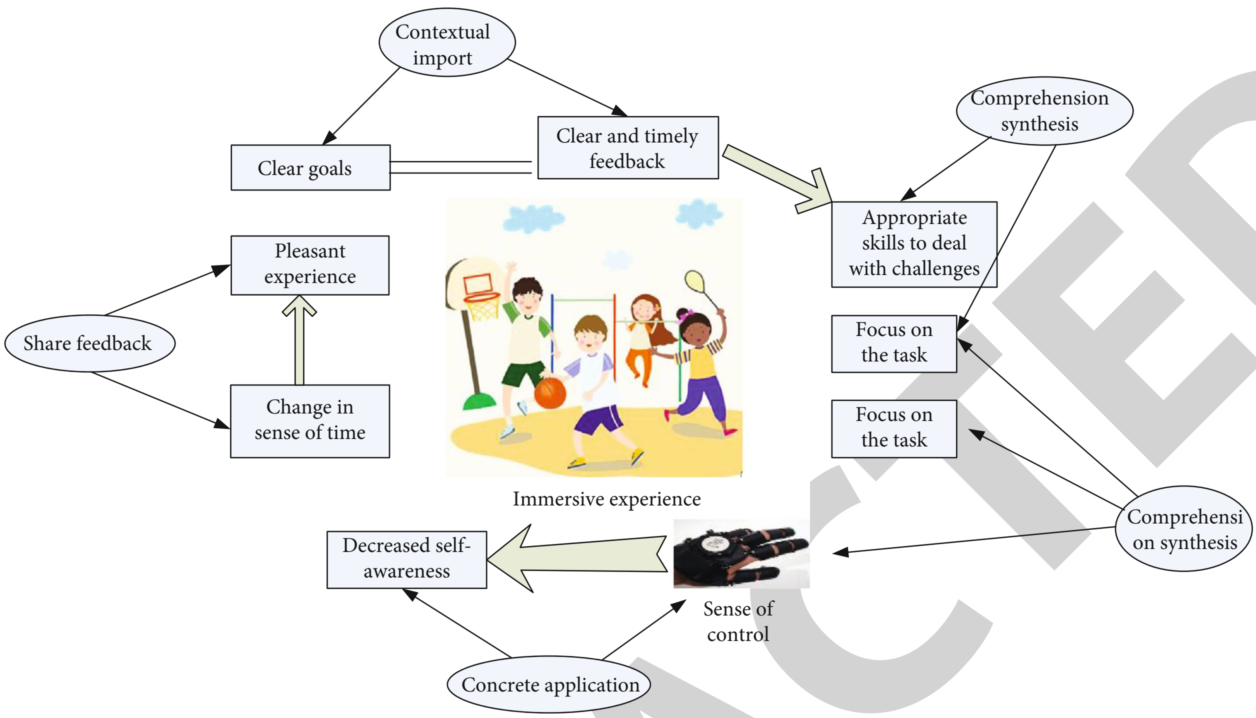

Figure 3: Immersive physical education.

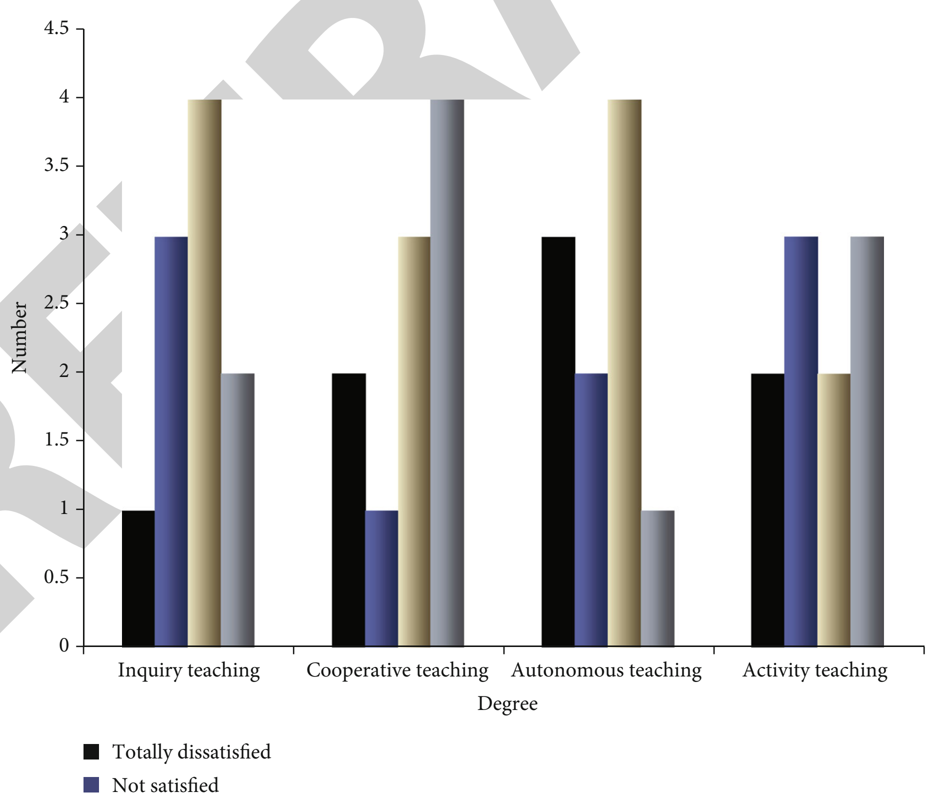

Figure 4: Student satisfaction survey.

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Table 1: Focus of traditional teaching.

Item	N	Percentage
Improve teaching efficiency	27	27.6%
Promote teaching goals	31	31.6%
Enhancing student initiative	23	23.5%
Other	7	7.1%

Obviously, the traditional physical education teaching model pays more attention to improving the teaching goal. Secondly, the student's perception rate as the main body is only 23.5%, which is 8.1% worse than the teaching goal. This data result shows that the current physical education is only focused on the study of teaching tools, ignoring the status of students in the teaching process. Immersive teaching emphasizes the uniqueness of subjects and respects individual differences and diversity. It is a people-oriented learning concept. This experiment investigates the frequency and difficulty of virtual reality physical education teaching methods, as shown in Figure 5.

Virtual reality physical education teaching methods are gradually being used in physical education today. The data in Figure 5 shows that those physical education teachers who did not choose the virtual reality physical education teaching method when they taught classes believed that the lesson preparation and various preparations required for this teaching method were complicated and difficult, and they also did not use the virtual reality physical education teaching mode of physical education. It is also for this reason. The results presented by the experimental data are reasonable. Virtual reality teaching itself is a project that requires a lot of capital and technology investment, and the content and development of physical education teaching have relatively high requirements for teaching methods. Comprehensive evaluation of virtual reality immersion teaching is shown in Table 2.

Virtual reality immersion teaching is a perfect teaching method as a whole. In the process of teaching, both students and teachers can control the situation independently and create a happy atmosphere. As a result of the combination of autonomous teaching, activity teaching, inquiry teaching, and cooperative teaching, it has absorbed the advantages of these teaching methods and can achieve concentrated teaching goals, behavior-cognition integration, reasonable coping skills, and free control of time. At the same time, it is a particularly intuitive way of teaching to be able to get teaching feedback directly based on the performance of students in the classroom. At present, the research on "immersion teaching" and "virtual teaching" is becoming more and more intense. The relevant literature in this area in the past five years has been sorted out, as shown in Table 3.

Obviously, the research on immersive physical education in virtual reality has grown explosively and at a relatively rapid rate. This shows that the application and teaching of virtual reality technology and the immersive teaching model have received unprecedented attention. Therefore, it is necessary to carry out relevant research on this subject. This experiment analyzes the four aspects of the total classroom experience, learning interest, learning motivation, and learning goals ($n = 10$) of the 10 invited physical and specialty students before and after the immersive virtual reality teaching mode experience. The first is the overall experience of the immersive classroom, as shown in Figure 6.

Before experiencing the immersive physical education, the highest value of the students' rating on the current physical teaching method is student J, which is 6.7; the lowest score given is student H, which is 5.1. The overall sense of classroom experience before the experience is relatively low. After participating in the immersive physical education, the scores given by the students are all higher, more than 7 overall, and the 10 students gave the lowest evaluation score of 6.9, far beyond the experience highest score before. The changes in the learning goals of these 10 students were studied, as shown in Figure 7.

Similarly, after students have experienced the immersive physical education classroom, the sense of experience has undergone a strong change, and the students' learning goals have become more clear. The two minimum values are 5.6 and 7.2, and the difference is 1.6 points; the maximum is 7.1 and 8.1, and the difference is 1 point. This shows that students have a deeper and more thorough understanding of physical training and learning. The students' learning motivation awareness is analyzed, as shown in Figure 8.

Since the original physical education teaching method only follows a certain teaching structure for teaching, most of the students also learn step by step, and the immersive teaching method of virtual reality brings more practice to students and has more contact areas. Extensively, this can stimulate students' learning motivation, thinking, and inquiry ability. A survey was conducted on these 10 students' interest in learning physical education, as shown in Figure 9.

The effect of the classroom is obvious, and the interesting classroom makes the students' interest in learning stimulated. If you want to make students more proactive, just mechanical preaching and rigid rules cannot achieve good results, and more should stimulate students' inner interest. If the immersive teaching mode of virtual reality is used in physical education courses, students can feel the beauty and emotional experience in the process of situational courses, which can guide them to think for themselves. Then, it can make the course more interesting, so that students are more willing to participate in it. In this context, the students can be better able to develop their potential and cultivate their various abilities. The reasons for the changes in the above results were understood. The direct reasons that led to the transformation of these 10 students' sports learning molecules were counted, as shown in Table 4.

Data statistics are carried out from three aspects: the teaching behavior attitude, the teaching behavior intention, and the teaching behavior control method of the immersive teaching of virtual reality. These three aspects have a great impact on students' learning, and the gap between the three is very small. In addition, indirect influencing factors are analyzed, as shown in Figure 10.

Financial and institutional aspects of online teaching and learning include behavior consciousness, emotional consciousness, and subjective standards. From the detailed analysis of the data in Figure 10, students evaluate the immersive

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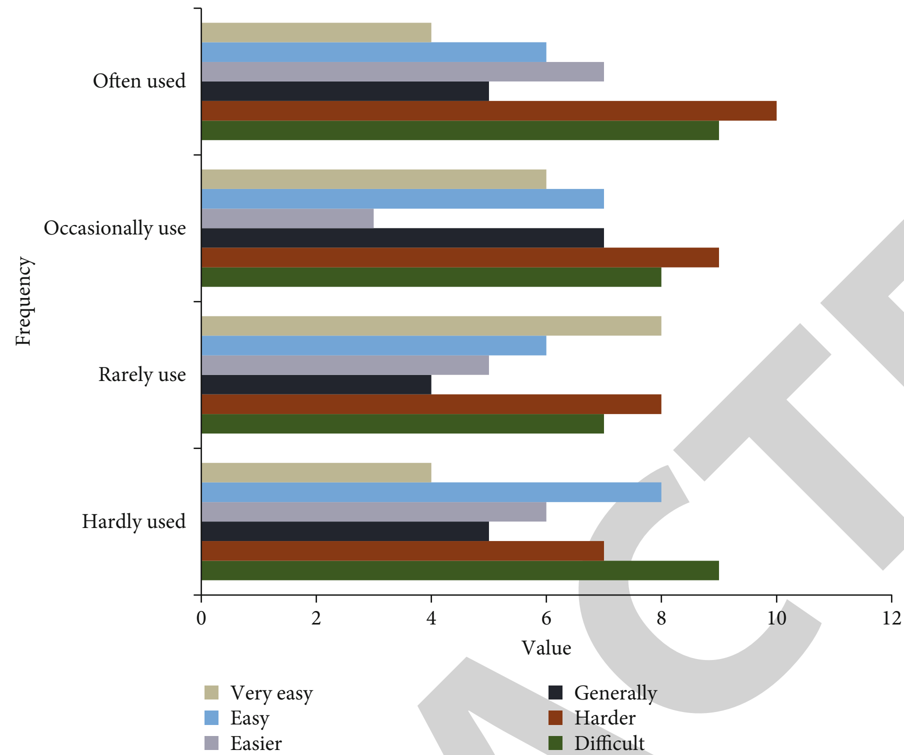

Figure 5: Frequency and difficulty of virtual reality physical education teaching methods.

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Table 2: Evaluation of virtual reality immersion teaching.

Subscale	Points	Result
Sense of control	8.724	10
Pleasant experience	8.679	10
Focus on the task	8.932	10
Clear and timely feedback	9.021	10
Behavioral awareness fusion	8.749	10
Appropriate skills to deal with challenges	8.889	10
Decreased self-awareness	9.265	10
Clear goals	9.304	10
Change in sense of time	9.147	10

Table 3: Literature search results using “immersion teaching” and “virtual teaching” as keywords.

Time	2016	2017	2018	2019	2020
Journal literature	3001	4212	5742	6724	5083
Master and PhD thesis	987	1624	2779	3002	3108
Total	3988	5836	8521	9726	8191

physical education teaching in virtual reality: the target attitude is given a score of 7.9, the highest score for behavioral awareness is 7.8, and the maximum value for emotional experience is 8.2. The maximum subjective standard is also 8.2. Let students participate in teaching as the main body, emphasize the improvement of students' enthusiasm, creativity and autonomy, conduct cognitive guidance to students from all aspects, and promote students to develop good values.

4. Discussion

At present, the design of physical education teachers’ teaching methods mainly considers how to enable students to learn movements and master skills more quickly and effectively, ignoring the cultivation of students’ emotions, behaviors, and values during the training process; in the test and evaluation of learning effects, the standards are met. Testing has almost become the most important yardstick to measure the effect of students’ physical learning and physical ability. It ignores the cultivation of students’ sports habits and the cultivation of lifelong sports awareness and ignores the development of students’ innovative thinking and individualization. As a new teaching environment, immersive learning environment can improve students’ learning ability, increase communication between students, inspire pupils’ enthusiasm for physical education, and cultivate their problem-solving and analysis skills. In recent years, although the deep true teaching model already has been broadly promoted in the system of education of the sports, there are still shortcomings in the practical application of physical education, which proves that the learning model needs to be improved, especially the virtual learning immersive physical education model. This teaching research can increase students’ interest and self-confidence in physical education,

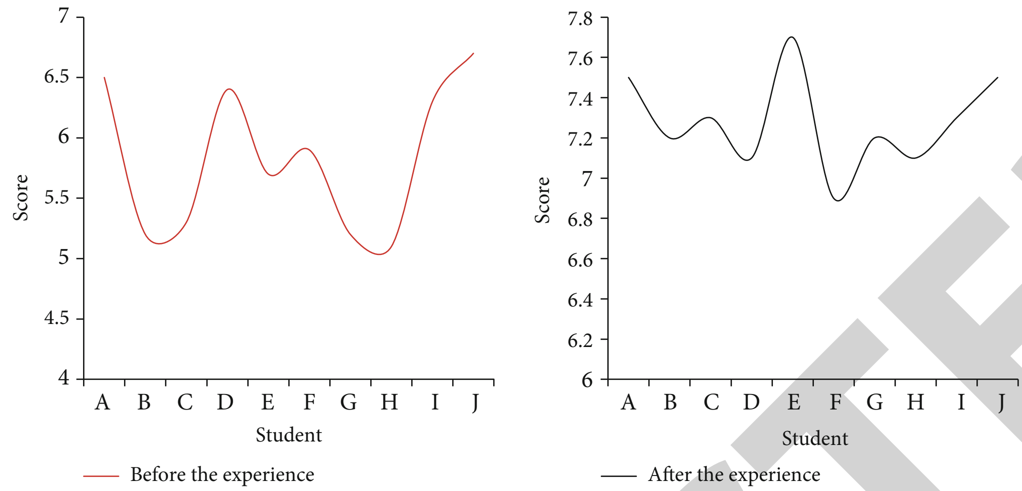

Figure 6: Total classroom experience.

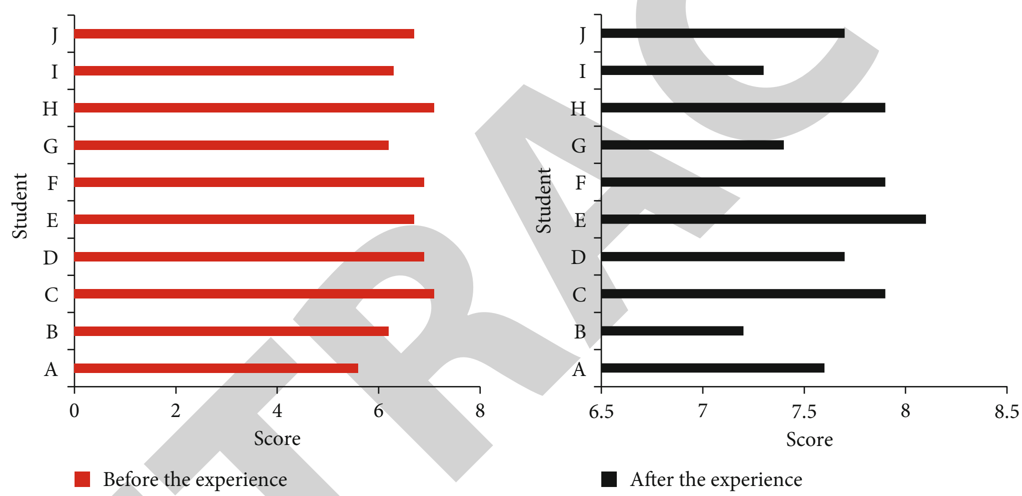

Figure 7: Learning objectives.

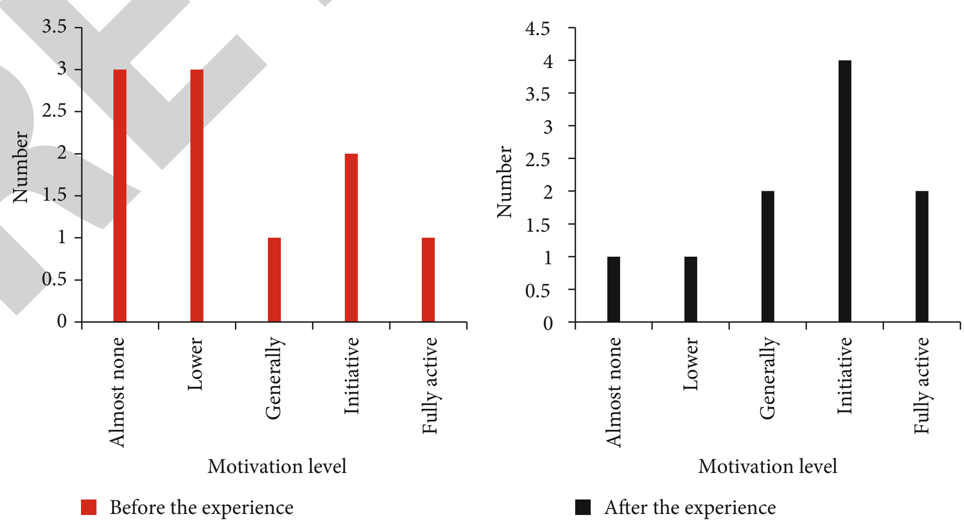

Figure 8: Learning motivation.

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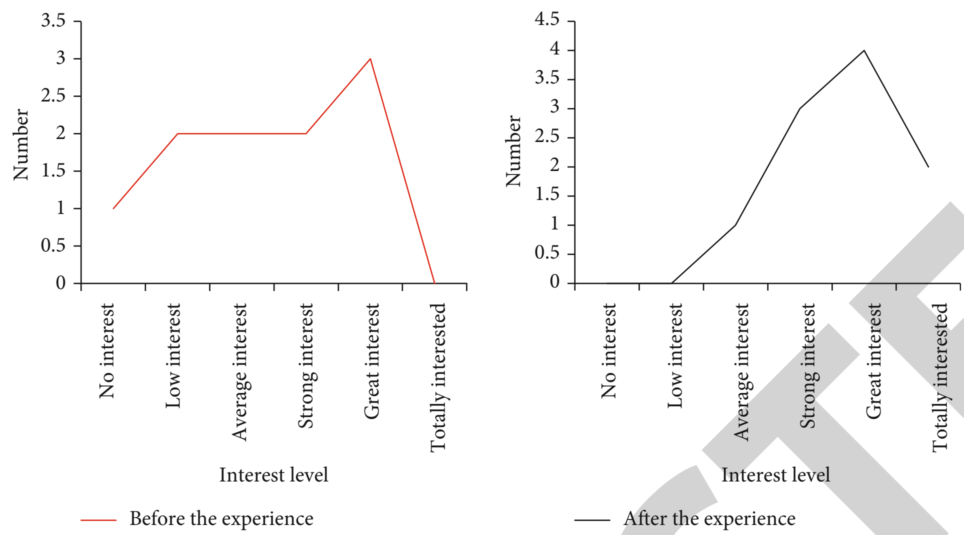

Figure 9: Learning interest.

Table 4: Direct causes that affect learning molecules.

Variable	Behavior attitude	Behavioral intention	Behavior control
Before the experience	19.24 ± 3.21	18.97 ± 4.01	20.23 ± 3.11
After the experience	22.86 ± 5.37	24.41 ± 3.74	23.49 ± 3.73
Mean difference	0.127	0.214	0.382

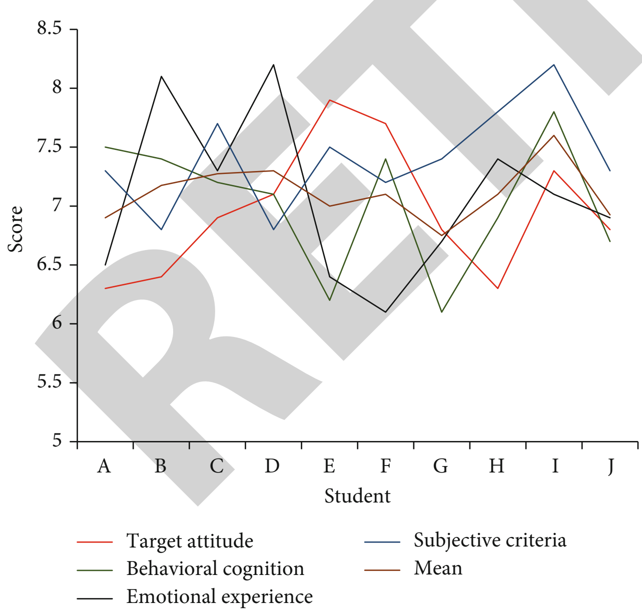

Figure 10: Indirect factors.

cultivate students' understanding of collaboration and the potential of students to think, provides individual analytical and solution to issues, and recognize the many functions of physical education. Immersion theory provides a valuable reference for educating and instructing on campuses. The implementation of active immersion experience in the teaching of chemistry experiments enables teachers to increase immaturity of pupils in teaching work, which allows teachers to learn more easily and students to learn more happily, with twice the result with half the effort. Exercising students' enthusiasm for physical education courses; creating a happy, cohesive, and harmonious classroom environment; meeting students' real needs; and cultivating self-efficacy and lifestyle training awareness are teaching breakthrough in the physical education system. Virtual reality technology allows students to play a role in the created virtual environment and place themselves in this situation, which will be quite beneficial to students' skill training.

5. Conclusion

The practical teaching of physical education major plays a vital role in the training of applied talents in this major. Theoretical teaching, skill teaching, and educational practice in colleges and universities should be evenly divided in the cultivation of talents in normal universities. The concept of physical learning conduct is the outward expression of the thinking mode of physical education, which includes the methods of physical learning, organization and form, and technology. In the process of physical education, teachers and students are often unable to teach and create according to their own teaching style, and students' learning status guides learning behavior. Therefore, according to the way of thinking in teaching, teachers and students receive different learning behaviors in teaching. The renewal and rapid development of computer software and hardware have created continuous leaps in virtual reality technology and at the same time promoted various applications combined with virtual reality technology. Among them, the combined application of virtual reality technology in the field of education is a bold innovation attempt, which perfectly combines serious education and entertainment-oriented virtual reality technology, allowing users to get a new learning experience and complete learning effects. This research is aimed at analyzing the immersive physical education model, the development of physical fitness and sports skills of students in the physical education process, and the enthusiasm for sports participation. The use of immersive teaching methods in physical education courses can meet the needs of students and be used in physical education courses. The immersive teaching method of virtual reality can stimulate students' interest and make them better participate in the course content. In general, the development of virtualized situational teaching in physical education courses can not only enable students to cooperate with teachers to complete the teaching goals but also greatly stimulate their initiative in sports.

Data Availability

No data were used to support this study.

Conflicts of Interest

There are no potential competing interests in our paper.

Authors' Contributions

All authors have seen the manuscript and approved submission to your journal.

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