

## Retraction

# Retracted: A 5G Multimedia Network-Based Analysis of an Intelligent Physical Education Teaching Method

### Mobile Information Systems

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1].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.

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] Y. Ma and Z. Madina, "A 5G Multimedia Network-Based Analysis of an Intelligent Physical Education Teaching Method," *Mobile Information Systems*, vol. 2022, Article ID 1209782, 10 pages, 2022.

## Research Article

# A 5G Multimedia Network-Based Analysis of an Intelligent Physical Education Teaching Method

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This paper examines the delivery of intelligent physical education using a 5G multimedia network. The pupils in four classes have improved significantly in their abilities to “cross,” “drill,” “climb,” and “circle” in the obstacle course once the course is complete after studying the situational teaching approach. The average favorable rate for class 1 is 58.23%, while for class 2 it is 53.83% when the time index is 50. Class 4 has a 57.14 percent average favorable rate, while the average favorable rates for the other three classes are nearly identical. As can be seen, the majority of pupils have a basic understanding of technical motions, and no student has mastered the obstacle course technique. The new mission and new focus of intelligent service research is how to use 5G multimedia network technology, build the application scene model of intelligent physical education teaching, innovate and reconstruct the overall ecological chain of intelligent services, and continuously promote the transformation and upgrading of physical education teaching. With the aid of the 5G multimedia network, a virtual skill training or vocational training environment may be created, allowing students to experience the genuine training setting indoors while also better learning vocational skills.

## 1. Introduction

In the intelligent physical education classroom, instructors put the students first, plan their lessons in accordance with curricular requirements, use suitable designs with specific objectives for knowledge acquisition, and improvement of learning outcomes, and support their achievement. Physical education instructors now have access to a wider globe and creative chances for teaching design than they would in the typical physical education classroom. Modern educational technology is very helpful as a topic that integrates knowledge transmission, skill development, and physical activity [1]. The involvement of multimedia network technology in physical education in higher vocational colleges will play an extremely important role in the professional, extensive, entertaining, lifelong, and knowledge deepening of physical education [2]. The application of situational education mode in the intelligent

physical education curriculum means that, according to the children’s young age, wide interest, and active nature, teachers set some situations according to the actual situation, so that students can integrate into these interesting situations in the classroom, so that children can get physical exercise and arouse their interest in sports activities [3]. With the theoretical guidance, the key problem lies in how to create situations that are both interesting and suitable for students’ growth in the process of practice [4]. Intelligent wearing and mobile terminals provide a basis for measuring the learning effect in physical education class. Intelligent learning platform provides teachers with diversified teaching methods, borderless teaching space, and massive educational resources [5]. The communication between teachers and students becomes more convenient and efficient, and the evaluation of students will be more multidimensional, three-dimensional, and comprehensive [6].

Virtual reality technology is a computer simulation technology that creates and experiences virtual scenes through computer real-time processing and rendering simulated three-dimensional space [7]. Its combination of virtual and real brings users a completely different viewing experience from traditional video. With the gradual commercialization of Internet technology represented by 5G multimedia network technology, 5G multimedia network technology will gradually be popularized in various fields. 5G multimedia network technology has the characteristics of high speed, low delay, and Internet of things. Not only are the program operation and information processing speed faster and faster, but also the access and application range of network equipment will be wider and wider [8]. As a new communication technology, 5G multimedia network technology uses cellular mobile to complete data transmission, which belongs to the extension of 2G, 3G, and 4G technology. The advantages of 5G multimedia network technology are as follows: it has much faster data and information transmission speed than wired interconnection technology, and the maximum transmission efficiency can reach 10 Gb/s, which is nearly 100 times higher than 4G network.

The implementation of 5G multimedia network technology is primarily based on the support of new technologies like near-eye display, perceptual interaction, network transmission, and content production, in order to build a new format that spans the end-tube cloud and in order to create a virtual immersive and interactive network environment for experience users by means of somatosensory interaction, in order to realize users' immersive experience demand for sports and further realize informational and entertainment applications [9]. The most advantageous and quick data exchange anytime, everywhere, which is highly compatible with the learning community, is the most important aspect of intelligent learning in the age of 5G empowerment [10]. The "5G+ Professional Learning Community of PE Teachers Wisdom" as we know it today was born out of this. Massive amounts of data are being stored online in this age of data explosion. It will only become redundant and meaningless knowledge if it is not coupled with and used by physical organizations. With the aid of the 5G multimedia network, a virtual skill training or vocational training environment may be created, allowing students to experience the genuine training setting inside while also better learning vocational skills [11]. The rapid development of 5G multimedia network technology has injected a strong impetus into the research and development of innovative functions and application scenarios of the new generation of intelligent physical education teaching, which has important theoretical and practical significance for the intelligent physical education teaching and transformation. How to use 5G multimedia network technology, construct the application scene model of intelligent physical education teaching, innovate and reconstruct the overall ecological chain of intelligent service, and continuously promote the transformation and upgrading of physical education teaching is the new mission and new direction of intelligent service research [12].

The innovations of this paper are as follows.

- (1) This paper puts forward an intelligent physical education teaching model based on 5G multimedia network technology. Driven by 5G multimedia network technology, mixed reality, artificial intelligence, digital twin, and other multitechnologies, the physical model, sensor network, and integrated simulation technology are used to conduct virtual mapping of the physical space of the gymnasium in the whole life cycle, provide efficient intelligent management scheme for the central management system, strengthen the virtual and real integration of the intelligent space of the gymnasium, and form a ubiquitous intelligent gymnasium ecosystem [13].
- (2) A method for teaching intelligent physical education using 5G multimedia network technologies has been developed. Aiming at the future development trend of smart sports teaching systems is 5G multimedia network technology [14]. Similar assumptions have been made by experts in several domains. The majority of them have a propensity to fully utilise cutting-edge technologies in the construction of stadiums and gymnasiums, enhance the level of service provided by stadiums and gymnasiums, optimize resource allocation, gradually implement venue information management, and boost the effectiveness of smart sports teaching management [15].

The overall structure of this paper consists of five parts.

The first chapter introduces the background and significance of intelligent physical education and then introduces the main work of this paper. The second chapter mainly introduces the relevant work of intelligent physical education at home and abroad. The third chapter introduces the principle and model of multimedia network technology. The fourth chapter introduces the realization of intelligent physical education teaching scheme and the analysis of the experimental part. The fifth chapter is the summary of the full text.

## 2. Related Work

*2.1. Research Status at Home and Abroad.* Gréhaigne and Godbout put forward that intelligent physical education teaching ability refers to the comprehensive ability of planning and design, organization and management, hands-on operation, speech expression, evaluation and feedback, regulation and control, teaching science and research, etc. shown by teachers in the teaching process in order to ensure the effectiveness of teaching and achieve the expected teaching objectives [16]. Akhunzada put forward that PE teachers have always attached great importance to such advanced PE teaching methods, and applying them to PE teaching can improve classroom quality and efficiency. Physical education teachers attach great importance to some basic health teaching contents in the teaching process. Through this kind of physical fitness training to enhance students' enthusiasm for physical

education learning and cultivate students' enthusiasm [17], Zhou et al. proposed that we should set reasonable goals in intelligent physical education teaching, conform to the track and direction of the development of modern physical education, and establish body-based and intelligent teaching and then run through the intelligent physical education teaching and practice in the classroom [18]. Akhuzada et al. put forward that the teaching ability of physical education teachers is an important guarantee for the quality of physical education teaching, an important factor to measure the professional quality of physical education teachers, and the most important and basic element in the ability structure of physical education teachers [19]. Therefore, in order to fully understand the connotation, structure, and utility of physical education teachers' teaching ability, researchers in pedagogy, psychology, sociology, organizational behavior, and other disciplines defined and studied the concept and composition of teaching ability in detail from different angles [20]. Sohail et al. proposed that if physical education teachers want to improve the efficiency of students' mastery of physical education knowledge, they can skillfully use multimedia mode for teaching or multimedia assisted teaching mode [21]. Khan et al. put forward that the teaching ability of intelligent physical education means that teachers can diagnose the learning preconditions related to the subject of the course and guide students' learning process, be able to make decisions according to learning objectives, be able to make teaching plans and mobilize students to actively participate in learning arrangements, and be able to carry out effective classroom management to ensure the implementation of the teaching plan [22, 23]. Li and Lu put forward that, in the new concept of intelligent physical education teaching, it is very important for students to establish correct teaching concepts and clarify training purposes, in order to improve their physical fitness and moral concepts, so that people can achieve the purpose of strengthening their bodies [2]. Piran et al. put forward that high school physical education teachers have broken the original wall chart teaching mode. Now, with the help of multimedia teaching, electronic courseware combining sound and text, video, and animation is displayed, and knowledge is transmitted to students in an all-round way [24]. Physical education in high school has been well-optimized with the use of multimedia. Students may learn more about physical activity using this teaching approach, which raises everyone's level of physical education [25]. According to Parikh J. et al. proposal a teacher's teaching ability should include the following five areas: creation of lesson plans, fundamental teaching techniques, evaluation of students' aptitude, fundamental professional information, and fundamental professional theory [26]. According to Manjunat and Prabakaran the conventional teaching techniques for intelligent physical education essentially include explaining physical information and training motions, typically training running, volleyball, and basketball. However, it is difficult for this way of learning to form a lifelong awareness of physical education [27, 28].

*2.2. Research Status of Intelligent Physical Education Teaching Based on 5G Multimedia Network Technology.* This paper studies the intelligent sports teaching scheme based on 5G multimedia network technology. It can be well applied to sports teaching through intelligent sports. At the same time, to get the support of the government, such as financial support and equipment support, it needs to spend a lot of money to buy equipment, organize colleges and universities to carry out individual reform, increase the construction of intelligent sports classroom, and add the current difficulties, so as to better promote the application of sports classroom. Build a virtual environment for skill training or vocational training through 5G multimedia network technology, so that students can feel the real working environment and better master vocational skills without leaving home. The movement of athletes is captured by panoramic camera, and the movement state is analyzed and evaluated in combination with mathematical modeling, AI algorithm, and action recognition library, so as to make targeted improvement plans. The teaching content in the smart sports environment not only includes teachers' teaching, organization, and students' learning and practice activities in the traditional sports classroom, but also includes the online design of the smart sports environment. Teachers can choose the required learning content in the resource bank of the "school sports communication" smart system through 5G multimedia network technology and can also shoot self-made micro-classes, make PPT animation, select the latest relevant videos and news materials, and apply these educational resources to teaching to inspire and guide students' learning. Establishing a sense of sports competition, realizing their own value, and making sports training a partner of their lifelong income is the purpose of sports teaching. Therefore, in sports teaching, certain teaching objectives based on 5G multimedia network technology can help students or people achieve the purpose of strengthening their body and form good sports spiritual character such as perseverance in personality.

### **3. Principle and Model of 5G Multimedia Network Technology**

The original teaching materials may be enhanced by using VR and 5G multimedia network technologies to conduct intelligent physical education. It may first enable distant learning. Teachers and students may communicate in real time while participating in high-definition picture video teaching or panorama sports teaching by employing an AI intelligent camera, panoramic camera, microphone, and other audiovisual equipment. This increases the impact of the teaching process. Sports fans will have more watching options thanks to the virtual reality production technique, which will also improve the audience's in-person experience. Viewers will have a unique experience watching from the standpoint of their own preferences when the real-time VR panoramic sports signal penetrates the user terminals throughout the globe. The adoption of high-speed informatization and the official commercial use of 5G multimedia

network technology have made it easier for rural physical education instructors to learn new information and adopt novel concepts. The way of online learning and offline practice has become an effective path for the sustainable development of physical education teachers. Online learning can bring multichannel and diversified educational resources to rural physical education teachers and provide convenient and intelligent learning methods. Offline practice can ensure the practical exploration of rural physical education teachers, improve physical education teaching methods, and promote their own professional development. The intelligent service of multiscene application integration can quickly improve the physical education teaching scheme and meet the intelligent and efficient information experience needs of users. It can not only strengthen the disciplinary organization, presentation, and retrieval of existing resources, but also provide interdisciplinary, multilevel, and three-dimensional scientific research literacy services. Therefore, the intelligent physical education teaching model under the field of 5G multimedia network technology is established, as shown in Figure 1.

When users transmit data according to the 5G multimedia network technology, the links are divided into uplink and downlink. The ratio of intelligent physical education teaching in multimedia network technology of users  $r_{up}$  and downlink  $r_{down}$  are, respectively,

$$\begin{aligned} r_{up} &= \frac{P_d G_{dbs}}{N_0}, \\ r_{down} &= \frac{P_{bs} G_{dsb}}{N_0}, \end{aligned} \quad (1)$$

where  $P_d$  represents the user's transmission power,  $P_{bs}$  represents the power when the base station forwards,  $G_{dbs}$  and  $G_{dsb}$  represent the channel gain from the user's transmitting end to the base station and from the base station to the user's receiving end in 5G multimedia network technology, respectively, and  $N_0$  represents the channel noise power during data transmission. Signal-to-noise ratio of this mode

$$r_{cell} = \min\{r_{up}, r_{down}\}. \quad (2)$$

Signal-to-noise ratio in this mode

$$r_{ded} = \frac{P_d G_{dd}}{N_0}, \quad (3)$$

where  $G_{dd}$  represents the channel gain between directly connected links in dedicated and multiplexed modes.

Signal-to-noise ratio in this mode

$$r_{re} = \frac{P_d G_{dd}}{N_0 + P_c G_{cd}}. \quad (4)$$

$G_{cd}$  represents the technical resources of users to 5G multimedia network;  $P_c$  indicates the transmission power of cellular users.

In a group of  $M$  users, the signal-to-noise ratio of user  $i$  when communicating in two modes:

$$r_{ded,ik} = \frac{P_{d,ik} G_{dd,ik}}{N_0}, \quad (5)$$

$$r_{cell,ikk'} = \min\{r_{up,ik}, r_{down,ik'}\},$$

where  $k$  and  $k'$  represent the channel resources allocated by users to the uplink and downlink of 5G multimedia network technology.  $r_{ded,ik}$  and  $r_{cell,ikk'}$  represent the best SNR output of user  $i$  under orthogonal and 5G multimedia network technologies, respectively.

Under the optimal channel resource and signal-to-noise ratio, the best throughput in the corresponding mode is obtained by  $i$  users according to Shannon formula.

$$\begin{aligned} C_{ded,ik} &= B \log_2(1 + r_{ded,ik}), \\ C_{cell,ikk'} &= 2B \log_2(1 + r_{cell,ikk'}). \end{aligned} \quad (6)$$

Signal-to-noise ratio in user multiplexing mode is

$$r_{re,ij} = \frac{P_{d,ij} G_{dd,ij}}{N_0 + P_{cd,ij} G_{cd,ij}}. \quad (7)$$

The user  $i$  shares the same spectrum resources with the cellular user  $j$  in the cell, and  $G_{cd,ij}$  is the channel gain of the link from the sending end to the receiving end by the 5G multimedia network technology when the resources are shared.

Users can automatically access the background management system, easily realize the senseless verification of multiple identities, realize the behavior detector in the gymnasium, and assist athletes in realizing the self-service borrowing and returning process of sports venues and sports equipment by relying on 5G multimedia network technology, face recognition, accurate user portrait, iBeacon, and other modern multitechnology support. Physical education instructors may acquire additional information that cannot be gained during training and can enhance their professional skill in the intelligent professional learning community thanks to the numerous exchange activities of the community, which is based on 5G multimedia network technology. Driven by 5G multimedia network technology, mixed reality, artificial intelligence, digital twin, and other multitechnologies, the physical model, sensor network, and integrated simulation technology are used to conduct virtual mapping of the physical space of the gymnasium in the whole life cycle, provide efficient intelligent management scheme for the central management system, strengthen the virtual and real integration of the intelligent space of the gymnasium, and form a ubiquitous intelligent gymnasium ecosystem. Relying on 5G, artificial intelligence, cloud data, digital resource portrait, and sports image processing technology, the gymnasium can realize 24-hour collection and monitoring of athletes' mobile sports behavior and conduct cloud data analysis on the central system intelligence platform. That is, 5G multimedia network technology enables the development of intelligent technology, which will help the deep integration of intelligent technologies such as artificial intelligence, hybrid reality, cloud technology, and Internet of things with new learning patterns such as hybrid

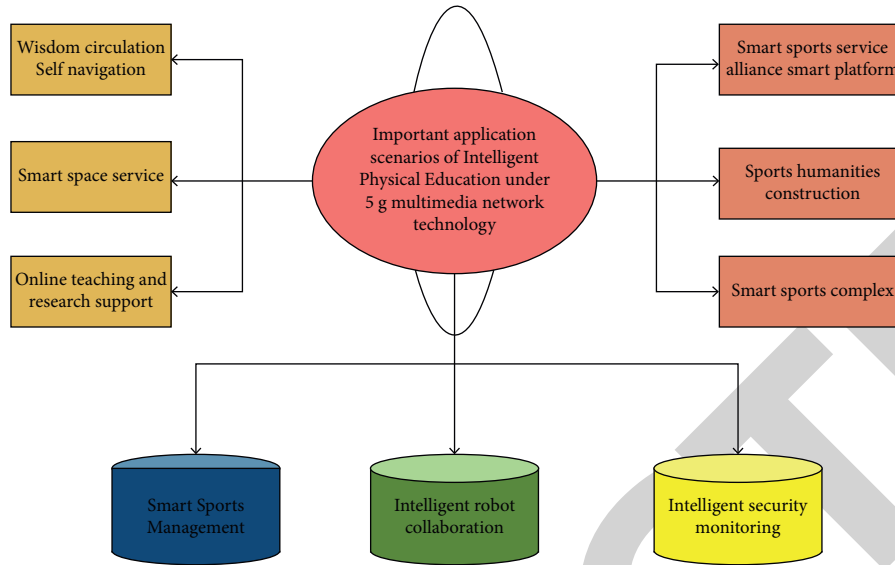


FIGURE 1: 5G intelligent physical education teaching model under the field of multimedia network technology.

learning, mobile learning, project learning, and maker learning, so as to improve the professional awareness of physical education teachers, help them accumulate professional knowledge, develop professional ability and improve professional technology, and apply the professional knowledge learned in the network to practice and then find problems from practice and feedback to the intelligent professional learning community of physical education teachers. Compared with the traditional teacher teaching in the past, this paper constructs a ubiquitous learning field for intelligent physical education based on 5G multimedia network technology. As long as there is a network, all students can connect with education through mobile terminal equipment. Mobile learning terminal provides the possibility for various innovative teaching modes and methods and penetrates the open content into specific teaching links, so that students can be in a “borderless learning field” for learning anytime and anywhere. In the teaching of intelligent physical education, the design should also be carried out in a boundless learning field inside and outside the class, as shown in Figure 2.

Students can watch the homework content independently and follow the exercises, and the system will automatically count the exercise time and completion quantity to form the homework completion report chart, which will be fed back to teachers. By using the fragmented time, it is simple for students to access the pertinent learning materials at any time and from any location. This enables the classroom knowledge to be expanded and linked to the outside world, pique student interest in learning, and improve instructional design. By largely avoiding the effect of other commercial resources and improving the video stream quality, the “virtual private network” of 5G multimedia network technology enables VR video streams to create their own unique channel. Sharing is the key concept behind 5G multimedia network technology. We can only genuinely embrace the effect of 5G multimedia network technological

empowerment with sharing concept and sharing attitude. The 5G multimedia network technology’s sharing economy is flourishing. Through this server’s cloud processing, MEC network components enabled by 5G multimedia network technology may sink to network edge nodes. When the VR video for users is streamed to MEC server in 5G multimedia network technology, it will transcode the received content in combination with the user’s viewing orientation, hardware configuration, and bandwidth communication status, providing excellent viewing experience for users. The 5G multimedia network technology can provide bandwidth of up to 1 Gbps for each user and support the ultimate VR video transmission. Tens of thousands of users can watch 1 Gbps VR video content at the same time in a dense urban area. However, if the VR video is at a lower bit rate, such as the resolution of 8K × 4 K, it can theoretically meet the simultaneous viewing of about 1 million users in a square kilometer. Starting from the professionalism of PE teachers, taking the professional development of PE teachers as the fundamental goal, with the help of 5G multimedia network technology, accessing the terminal equipment of 5G multimedia network technology, using modern information technology, and exchanging and interacting in a virtual environment, we can optimize PE teachers’ teaching methods and theoretical knowledge, improve their classroom teaching ability and professional level, and promote their professional development.

#### 4. Realization of Intelligent Physical Education Teaching Scheme

4.1. Design of Intelligent Physical Education Teaching System. With the help of the function of “virtual private network,” 5G bearer network can effectively ensure the live content and ensure that the VR live stream can be transmitted to the content platform fluently. Then, the cloud content platform stores it locally, converts the resolution, code rate, and

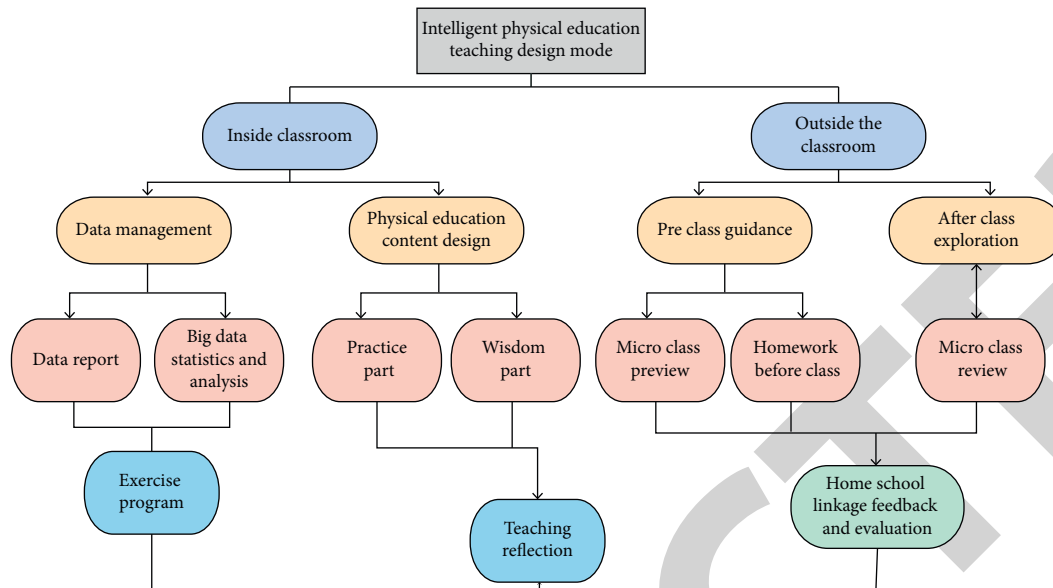


FIGURE 2: 5G multimedia network technology intelligent physical education teaching design mode.

packaging format, and then transmits the newly generated VR video stream to the terminal through the bearer network. With the rapid increase of social pressure, the professional development of teachers is constantly increasing. Based on 5G multimedia network technology, a smart physical education teaching system is constructed. There are more professional athletes among physical education teachers, which shows that the professionalism of physical education teachers is improved rapidly. Under the background of the increasing improvement of the professional standards of physical education teachers, many physical education teachers are not professional enough, which requires further theoretical study. The professional learning community in 5G+ physical education teachers' intelligent physical education teaching system has attracted more and more attention of physical education teachers. By using 5G multimedia network technology, classroom pictures and teaching behaviors can be shown in two classes at the same time, and interaction can be realized. The other is immersive panoramic teaching. Panoramic cameras are arranged in the sports area to clearly shoot teachers' teaching behavior. Students wear glasses with VR function to feel the virtual sports environment, learn sports details, and understand the key points of action, so as to achieve the effect of indoor experience teaching and training. Intelligent physical education teaching system can gather physical education teachers around experts and famous teachers to form a professional development group of physical education teachers. The development of a professional LED intelligent physical education teaching system for physical education teachers should be based on the discipline of physical education, with physical education teaching experts serving as the core, physical education teachers serving as the main body, and the use of 5G multimedia network technology as the carrier to create an online community of "discipline expert teachers" who are intelligent learners. Sports-related

material must be regularly learned. Students often struggle to comprehend the material that has to be remembered. The truth cannot be explained gently enough for every pupil to grasp. Therefore, this will lead to the tension of students' mentality, only through multimedia network teaching to alleviate students' mood, so as to effectively improve students' learning efficiency and enthusiasm. Teachers should also change the original teaching mode and use reasonable teaching mode to teach, so that students can learn easily and efficiently.

Under the 5G multimedia network technology, VR video streams are uploaded to electric machines, mobile phones, VR helmets, and other devices through the downlink channel of the base station for decoding and playing. In the intelligent sports teaching system, there will be differences in video stream code rate and resolution received by different terminal devices. When the multimedia network changes, the video stream parameters received by the same terminal device will also change. With the support of 5G multimedia network technology, it is possible to train confrontation from a distance, so that two people in different places can experience real combat confrontation. For example, volleyball, badminton, and other antagonistic sports can use VR technology to simulate the opponent, imitate the other side's movements, practice in advance before the game, get familiar with the opponent's movements and routines, find out the countermeasures, and then improve your chances of winning in the actual battle. In the process of communication, PE teachers show their own value by sharing their sports level, teaching methods, and knowledge of PE teaching with other PE teachers. This kind of communication and interaction can also improve teachers' moral education level. The community in the intelligent physical education teaching system provides a 5G learning platform for teachers' professional development. The emergence and application of MEC server saves broadband expenditure for

users. The 360 video is compressed to 1/3-1/2 of the previous one, which saves the traffic cost for users. At the same time, the video show has low requirements on the configuration of hardware devices, which indirectly saves users the cost of purchasing hardware.

5G multimedia network technology aims at the future development trend of smart sports teaching system. Experts in different fields have made corresponding assumptions. Most of them tend to make full use of emerging technologies in the development of stadiums and gymnasiums, improve the service quality of stadiums and gymnasiums, optimize the allocation of venue resources, steadily implement venue information management, and improve the efficiency of smart sports teaching management. Sports should constantly be shown to students in physical education classes in order to effectively convey the appeal of sports and encourage students' interest in studying and participation in sports. Teachers use sports videos to efficiently relax students' bodies and minds while also instilling in them a sense of the worth of life. It is still crucial to develop students' global perspectives and values since graduates will eventually have to choose schools and institutions. Therefore, using 5G multimedia network technology, we should help students understand their own bodies, improve their physical condition through intelligent teaching, and develop a proper concept of intelligent physical education so that they can understand the fundamental importance of physical education. After the completion of sports training, a personal physical fitness evaluation report is generated to analyze the technical action characteristics and nonstandard actions of all athletes. At the same time, a targeted and scientific training scheme is formulated with reference to the report results obtained from the analysis, which can effectively improve the training quality and ensure that sports training is more accurate and scientific. In addition to learning in the community, physical education teachers should also give feedback about the problems encountered in learning, communicate the problems encountered in teaching practice with all personnel in the community, make suggestions and suggestions, find reasonable solutions, and then promote them, so as to enable teachers to form internal and external driving forces for professional learning, and finally promote the continuous development and maturity of the intelligent professional learning community of physical education teachers.

**4.2. Experimental Results and Analysis.** This experiment aims at the judgment of experts' authority from two dimensions. The first dimension is the basis (Ca) for experts to judge indicators, which is divided into three levels: theoretical analysis, practical experience, and peer understanding. Another dimension is experts' familiarity with the problem (Cs), which can be divided into five levels: familiar, familiar, familiar, average, and unfamiliar. The experimental results are shown in Tables 1–3.

It can be seen from Tables 1–3 that the influence degree of experts is added by each index. When CA = 1, the influence degree of judgment basis on experts is great, and

TABLE 1: Important judgment basis (CA) value of index.

Judgment basis	Influencing factors of expert judgment		
	Big	Middle	Small
Theoretical analysis	0.2	0.1	0.1
Practical experience	0.4	0.3	0.2
Peer understanding	0.1	0.1	0.1

TABLE 2: Important familiarity of indicators (CS).

Familiarity	Quantized value
Very familiar	1
More familiar	0.7
Be familiar with	0.5
Commonly	0.3
Very unfamiliar	0

TABLE 3: Statistical table of expert authority.

Index	Ca	Cs	Cr
Teaching design ability	0.91	0.96	0.93
Teaching implementation ability	0.82	0.95	0.91
Teaching evaluation and reflection ability	0.76	0.81	0.79
Mean value	0.83	0.90	0.87

when CA = 0.8, the influence degree of judgment basis on experts is moderate. CS indicates the expert's familiarity with the index. The closer to 1, the higher the expert's familiarity with the index. The average value of primary index CA is 0.83 and the average value of CS is 0.90. The calculation of expert authority is based on  $Cr = (Ca + Cs)/2$ .  $Cr \geq 0.7$  indicates a high degree of credibility. It can be seen that  $CR = 0.87$ , indicating a high degree of expert authority.

In order to verify the teaching effect, this experiment monitors the learning effect of technical movements such as "crossing," "drilling," "climbing," and "circling" in obstacle running. Before teaching, we should first make a simple evaluation of the students' actual obstacle running situation, and after teaching, we should evaluate the students again. By comparing the two results, we can effectively analyze the effect of situational teaching methods. Three distributed experiments were conducted for comparison. After the test, the experimental results of obstacle course technical level of students in four classes are shown in Figures 3–5.

It can be seen from Figures 3–5 that, after learning the situational teaching method, the students of four classes have made a qualitative leap in the skills of "crossing," "drilling," "climbing," and "winding" in obstacle running after the course. When the time index is 50, the average praise rate of class 1 is 58.23%, the average praise rate of class 2 is 53.83%, the average praise rate of class 3 is 57.53%, and the average praise rate of class 4 is 57.14%. The average praise rate of the four classes is almost the same. It can be seen that most students can preliminarily master the technical movements, and no students have not learned the obstacle running technology.



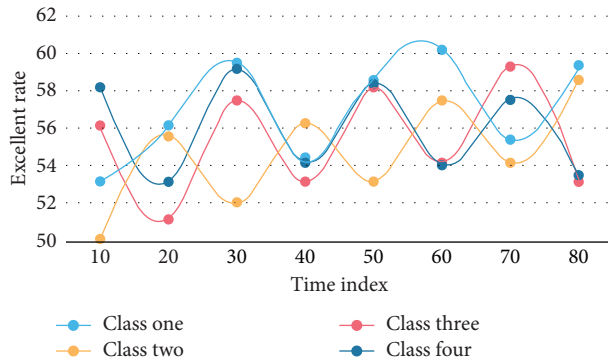


FIGURE 3: Final test results of obstacle running skill level.

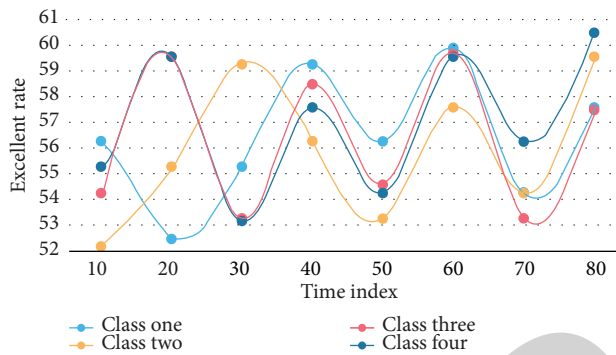


FIGURE 4: Final test results of obstacle running skill level.

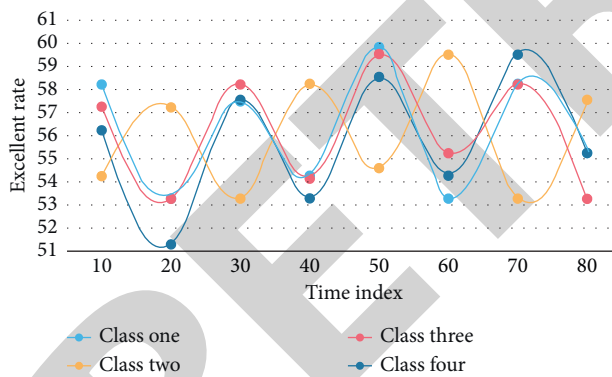


FIGURE 5: Final test results of obstacle running skill level.

Similarly, before and after the teaching of Topic 8: Rollover in the situational teaching of the theme unit of “Long March,” two experiments were conducted to compare students’ mastery of rollovers in four classes. The experimental results are shown in Figures 6 and 7.

As can be seen from Figures 6 and 7, due to the difficulty of forward rollover technical action, after learning the situational teaching method of one class, when the time index is 50, the average praise rate of class 1 is 56.42%, the average praise rate of class 2 is 59.27%, the average praise rate of class 3 is 55.71%, and the average praise rate of class 4 is 56.98%. About 73.56% of the students in each class can preliminarily master the forward rollover technical action, more than

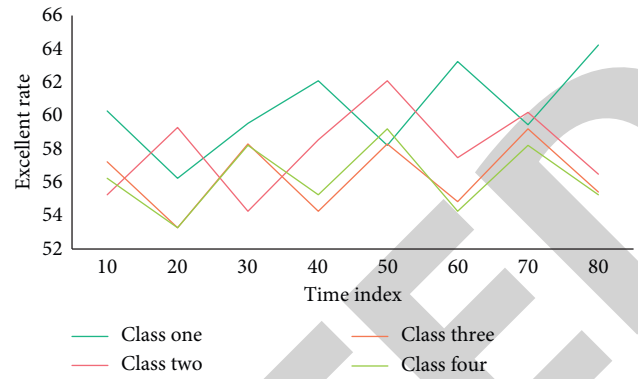


FIGURE 6: Final test results of front rollover technical level of four classes.

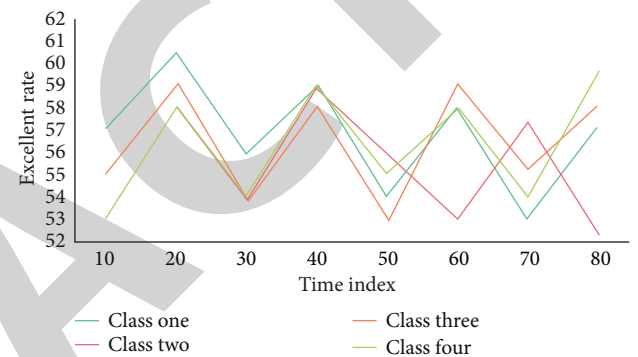


FIGURE 7: Final test results of front rollover technical level of four classes.

24.25% of the students were able to master the front roll technique, and only a few students did not master the technique.

## 5. Conclusions

The construction of the intelligent physical education teaching system, which is based on 5G multimedia network technology, and the presence of many professional athletes among physical education instructors are evidence that the field has quickly advanced. Additionally, the development and use of 5G multimedia network technology will raise the price of video content, reveal the industry’s growth potential, and satiate consumer demand for immersive and interactive experiences. When teaching intelligent physical education, we may choose the best teaching strategies for the various participants and the best educational platforms for the various physical characteristics of exercisers. The old classroom teaching method should be abandoned in favor of modern technologies and essential instructional tools. After the study of situational teaching method, after the end of the course, the students of four classes have made a qualitative leap in the skills of “crossing,” “drilling,” “climbing,” and “circling”. When the time index is 50, the average favorable rate of class 1, class 2, and class 3 is 58.23%, 53.83%, and 57.53%, respectively. The teaching mode of 5G multimedia network technology can break the geographical limitation,

optimize and upgrade the original distance teaching form, and bring people a more real interactive experience. At the same time, we can communicate with all the staff in the community about the problems we have encountered in teaching practice, and everyone can make suggestions and suggestions to find a reasonable solution and then promote it, so that teachers can form the internal and external driving force of professional learning and finally promote the continuous development and maturity of the wisdom professional learning community of physical education teachers.

## Data Availability

The data used to support the findings of this study are included within the article.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

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