



The Development of Online and Offline (O2O) to Create a Teaching Model for Football Courses at the University

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Abstract

Background and Aim: With the continuous development of modern science and technology, information teaching has attracted much attention. Using information technology to promote educational innovation is important research in China's educational reform. Online and offline (O2O) teaching is based on traditional teaching based on the Internet-established teaching mode. This student-oriented teaching model realizes the mix of online and offline teaching. This study was to develop online and offline (O2O) to create a teaching model for football courses in course mates.

Methods: 40 teachers and 359 students were selected as samples for this study by a combination of questionnaire survey, expert interview, and special software package, and data were collected. The research process includes a comprehensive survey of the current teaching model. Then, using Delphi consensus to revise the first draft of the O2O football course teaching model. Finally, focus groups and appreciation experts are used to determine the framework k of the O2O football teaching model.

Results: The analysis reveals that universities need a comprehensive football teaching model. The proposed O2O teaching model includes six basic elements: theoretical basis, teaching objectives, teaching content, teaching procedures, teaching evaluation, and teaching facilities, and is further divided into 13 secondary elements and 44 tertiary elements.

Conclusion: The proposed O2O teaching model provides an innovative teaching model for college football teaching. Combine modern information technology with football teaching to promote the innovation of football education. It is consistent with the idea of China's modernization education reform. This teaching mode is expected to change the traditional teaching mode of football and set a benchmark for the teaching reform of other physical education.

Keywords: Online and Offline(O2O); Teaching Model; University Football Course

Introduction

In 2019, China's State Council issued the "China Education Modernization 2035" which pointed out: "We must accelerate the reform of education in the information age a Build intelligent campus, use modern technology to accelerate the reform of talent training mode, and realize the organic combination of large-scale education and personalized training (Liu, 2019). The rapid development of science and technology has exerted a great influence on higher education. All countries in the world have put the informatization of education in the primary development position and carried out exploration and adoption of modern information technology to reform the traditional teaching mode (Tian & He, 2018). With the continuous development of modern science and technology, scientific and technological products such as computers and mobile phones have also been widely used in teaching. Using information technology to promote educational innovation is important research of educational reform.

With the wide application of educational information technology, the connection between physical





education and mobile Internet technology is gradually closing. Fully integrate the interactive advantages of network teaching and the spatial and temporal characteristics of physical education. It changes the classroom roles of teachers and students in physical education teaching, expands teachers' teaching time, broadens students' learning space, develops the representation cognition of motor skills, and truly creates a personalized knowledge structure education system for students (Zhang & He, 2020).

In China, football course teaching is an important part of physical education. After the study of university football teaching, Chinese education scholars found that the traditional teaching mode is generally adopted in college football teaching in China (Yang, 2016). The traditional teaching mode not only does not meet the need for curriculum reform in the new era but also inhibits the development of students' comprehensive ability. (Liu & Ji, 2017). However, in the context of the development of education informatization in China, some researchers have found that the O2O teaching model is an interactive system-based basis of a traditional teaching structure and relies on the Internet, which realizes the mixture of online and offline teaching. To promote communication and feedback on problems between teachers and students and between students, help teachers grasp students' learning situations more comprehensively, and truly realize teacher-student interaction in teaching (Liu, 2018).

To sum up, compared with the traditional teaching mode, the combination of online and offline teaching methods can effectively improve the teaching quality. Based on the background of education informatization, how to use Internet technology to improve football teaching effect is a problem worth studying. However, there is no relevant research on football teaching in this aspect. Therefore, the researchers researched online and offline (O2O) college football teaching models. It is hoped that online and offline (O2O) teaching models will not only improve the effectiveness of football teaching. It can also improve the comprehensive football ability of college students in physical education and adapt to the needs of modern social development. This study is different from previous studies, which focus more on offline teaching content and teaching methods, but this study not only studies offline teaching but also conducts a comprehensive study on online teaching content, teaching process, teaching evaluation, and teaching environment. This research lays an important foundation for the research of football teaching informatization.

Objectives

To develop the online and offline (O2O) to create a teaching model for football courses' Guangzhou Sport University, South China Normal University, Jiaying University, and Shaoguan University participated in the study.

Literature Review

In recent years, with the progress of modern science and technology, many changes have taken place in the methods of physical education. One of the main driving forces of this transformation is the development of information technology in physical education. The online and offline teaching model emphasizes the student-oriented and teacher-oriented education concept.

Educational informatization

Education informatization emphasizes the use of information technology to optimize the process of education and teaching, to maximize the effect, efficiency, and benefit of education and teaching (He, 2011). The application of information technology in the field of education in China is deepening from the primary stage dominated by the construction of information technology infrastructure to the





advanced stage dominated by the creation of new educational space by information technology, showing remarkable features such as multi-media teaching materials, personalized teaching, autonomous learning, and automated management (Yao, 2018). With the rapid development of education informatization, information technology has not only become more and more popular in various fields, but also promoted the transformation and development of football teaching mode, breaking the traditional teacher-centered teaching mode, and gradually turning to the student-centered information education mode.

Online teaching

Massive open online courses (MOOCs) have become very popular in this century, and these courses provide free, flexible education through reputable institutions of higher education (Beard & Konukman, 2020). With the necessary support, participants were optimistic about their ability to provide high-quality physical education through distance education, they are considered to have played A key role in supporting student health during the COVID-19 pandemic (Vilchez, et al. 2021). Although online teaching has more prominent advantages, there are also many shortcomings. The difficulties of the first operation of the network physical education course include :(1) the limited environmental conditions of the course, the limited teaching content, and the value of physical education is not fully conveyed; (2) The trial-and-error method was adopted nationwide due to the lack of expertise in the operation of online physical education courses; (3) The evaluation guidelines proposed by the Korean Ministry of Education are very limited and cannot be systematically evaluated through online methods (Jeong & So, 2020).

Offline teaching

In the traditional teaching mode, teachers focus on the research of "what to teach" and "how to teach" and other issues, and teachers are in the main position, whether it is the arrangement of teaching content, the choice of teaching methods, or the examination and evaluation of student's academic performance, etc., are all decided by teachers (Liu, 2009). The advantages of traditional offline teaching are the face-to-face teaching activities, offline classroom discussion, and the relatively fixed time and space conditions of teaching activities. However, the traditional teacher-centered teaching mode also has its shortcomings. First of all, teachers teach a lot of content and a long time, and students just passively participate in teaching activities. Secondly, teachers and students have relatively simple access to information, and their professional development and innovation are limited. Finally, traditional offline teaching is difficult to meet the requirements of university students in the new era.

Online and offline teaching

The investigation of the University Information Systems Association (UCISA) shows that the combination of "online" and "offline" teaching is regarded as an important teaching model at Pennsylvania State University in the United States, and believes that the development trend of today's higher education field is inevitably into mixed teaching (ZHAO & YUAN, 2010). Online teaching has become an important means of modern education, it makes up for many shortcomings of the traditional teaching mode, but the traditional offline teaching mode also has many obvious advantages, there is a necessity of existence, how to complement the advantages. (LIU, 2019). In traditional offline teaching, teachers can impart knowledge to students face to face so that students can focus their attention on the teacher's teaching content and further understand the knowledge along with the teacher's teaching ideas. At the same time, they can have face-to-face communication with teachers and timely consult them on the knowledge points they do not understand. Therefore, offline traditional teaching is necessary to





continue to develop its advantages. However, with the development of education informatization, online teaching can make up for the deficiency of students' main position in traditional teaching and the problem of passive learning. Therefore, the development of online and offline teaching modes is an important issue in teaching research.

University football teaching

In the past, the teacher only gave a personal demonstration first, and then let the students consolidate through mechanical exercises. This teaching method is very mechanical, and it also makes students gradually lose interest in learning football during boring training (Gu, 2019). It is difficult to balance the leading role of teachers and the dominant position of students, it is easy to attach importance to the former and ignore the latter, and students passively accept relevant knowledge and skills in football courses. (Yu, 2017). As a result, students only passively accept and cannot fully reflect their subjectivity, which greatly reduces the enthusiasm and initiative of students in learning (Wang, 2018).

University O2O teaching

O2O teaching is a mixture of offline face-to-face teaching and online learning. As long as it involves both online and offline, it can be called O2O teaching (Wang, 2014). As a new teaching mode, O2O mixed teaching integrates the advantages of online and offline teaching and becomes a new direction for future education course reform in universities advantages of O2O teaching have been recognized by scholars in China's physical education. However, some scholars pointed out that based on an understanding of the inherent laws of technology teaching and the careful analysis of relevant textbooks, disintegrated objective program teaching should be applied in basic technology teaching according to specific teaching objects (Meng, 2000). Due to the different attributes of sports disciplines, not all content is suitable for online teaching, so it is necessary to conduct a reasonable e-classification of teaching content (Diao & Wei, 2020).

To sum up, online and offline (O2O) teaching models can improve the effectiveness of teaching. In addition to offline practice teaching, teachers also conduct online teaching, including online self-study, teacher-student communication, homework, testing, and teaching evaluation. Firstly, difficulties in teaching can be solved through online information technology. For example, the learning of football skills is difficult to understand in football teaching. In addition, the class time is limited, and it is impossible to explain in detail within the limited class time, and students generally think that learning is difficult. However, on the online teaching platform, students can easily find videos, pictures, text, and videos of relevant action analysis, etc., and students can form correct action images in their brains after independent online learning. Then with the knowledge points in the offline class and students' own practice, the teaching problem can be solved. Secondly, on the online information platform, teachers record students' online learning situations, and situations' learning problems, and implement targeted exercises for offline classroom teaching. Students can improve their comprehensive ability more effectively through online platform teaching resources and offline classroom practice.

Therefore, the researchers will summarize the research results of the former scholars and try to develop the O2O football teaching model in combination with the characteristics of football courses. Hope to provide innovative ideas for the teaching reform of football courses.



Conceptual Framework

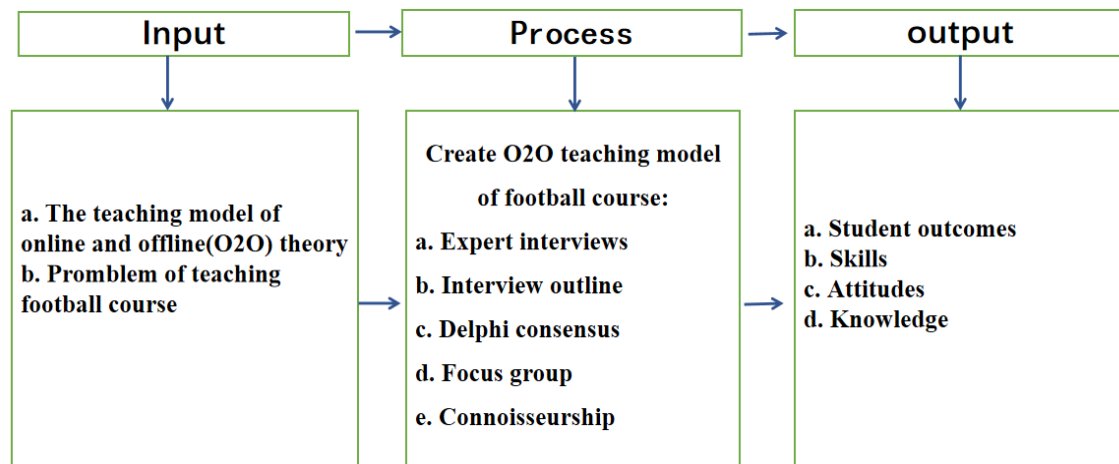


Figure 1 Research Conceptual Framework

Methodology

Population and sample

Population: In this study, 40 teachers and 3520 students from Guangzhou Sport University, South China Normal University, Jiaying University, and Shaoguan University were selected, with a total of 3,560 people.

Sample: Using the Taro Yamane method to sample 3520 students and 40 teachers, to make the sampling error of the sample within the 95% confidence level, the test sample was drawn for 359 students and 40 teachers. There are 19 Delphi experts, including 3 physical education researchers, 5 physical education experts, 8 college football teachers, and 3 teaching administrators.

Research tools

- (1) Questionnaire: Student questionnaire and teacher questionnaire are designed to investigate teaching questions
- (2) Interview outline: The content of the expert interview outline is designed for the expected interview
- (3) Evaluation table: A five-level Likert scale was designed for experts to score
- (4) Analysis software package: SPSS26.0 and EXCEL2019 software are used to analyze relevant data

Collection data process

1. Data collection of teacher questionnaire and student questionnaire goal consistency test

Before the teacher and student questionnaires were distributed, 5 experts were invited to perform a goal consistency test (IOC). The test result of IOC was 0.97. Use Questionnaire software to issue and collect questionnaires.

2. Questionnaire data collection of teaching model status

Questionnaires were distributed to 359 students and 40 teachers in the form of an open questionnaire. Questionnaires were distributed and collected using the "Questionnaire Star" software.

3. Target consistency detection data collection of Delphi expert consensus questionnaire



4. Delphi Consensus questionnaire data collection

(1) Extract the first draft of the O2O football teaching model framework

(2) Formulate the first draft of the O2O football teaching model framework

5. connoisseurship expert questionnaire data collection

To formulate the connoisseurship expert questionnaire. The five-component Likert scale was used to score the various elements of the O2O football teaching model and was distributed to experts in person. Experts were invited to fill in the questionnaire and collect questionnaires.

Data Analysis

1. Use SPSS26.0 software to calculate the survey results of teachers and students.

2. Use SPSS26.0 software to calculate the Delphi consensus correction result value.

In this study, IQR and median were used as the evaluation criteria for screening factors. The collected data is entered into the SPSS26.0 software to calculate the IQR and median respectively. Elements with IQR less than 1.5 and a median greater than 3.5 are retained, and vice versa are deleted. Select elements of teaching mode according to inclusion criteria.

3. Use EXCEL2019 software to calculate the IOC inspection expert result and the connoisseurship expert assignment result respectively.

Results

The investigation results of existing problems in the current teaching mode show that (Table 1, Table 2). First of all, the teaching objective is single, the teaching content is not comprehensive and the practicability is not strong. Secondly, teachers often use traditional teaching methods to teach, and students learn by repeating cycles, which is not the performance of efficient teaching. Finally, the assessment content pays more attention to the assessment of technical aspects. Teaching evaluation pays too much attention to the result evaluation and lacks the process evaluation.

Table 1 Students think that there are problems in the teaching of football course (N=359)

Options	Subtotal	Proportion (%)
Single assessment	340	94.71
There is no combination of Internet teaching	337	93.87
Outdated teaching content	330	92.92
Little theoretical knowledge content	321	89.42
Few teachings competitions	312	88.86
Single teaching method	282	50.42
other	2	0.56



Table 2 Teachers think there are problems in football teaching (N=40)

Options	Subtotal	Proportion (%)
Weak self-learning ability	37	92.50
Poor skill level	35	87.50
Single assessment method	32	80.00
Outdated teaching methods	29	72.50
Incomplete teaching content	21	52.50
other	0	0.00

2. According to the principles of goal, integration, flexibility, and interaction, the author constructs the elements framework of the O2O football teaching model. Six first-level elements, 13 second-level elements, and 60 third-level elements are summarized. To further scientifically and effectively screen out key elements, 19 experts were invited to conduct two rounds of Delphi consensus revision on the first draft of the O2O football teaching model, and scientifically develop the framework of O2O football teaching elements.

3. Invite seven experts for a focus group discussion. invite nine appreciation experts to confirm the O2O football model. It consists of 6 primary elements, 13 secondary elements, and 44 tertiary elements (Figure 2). Experts agree that the O2O teaching model meets the requirements of the reform policy of university football teaching under the background of modernization education of the Ministry of Education of China. At the same time, it also meets the practical needs of university football teaching and reflects the adaptability and innovation of Chinese university football teaching.

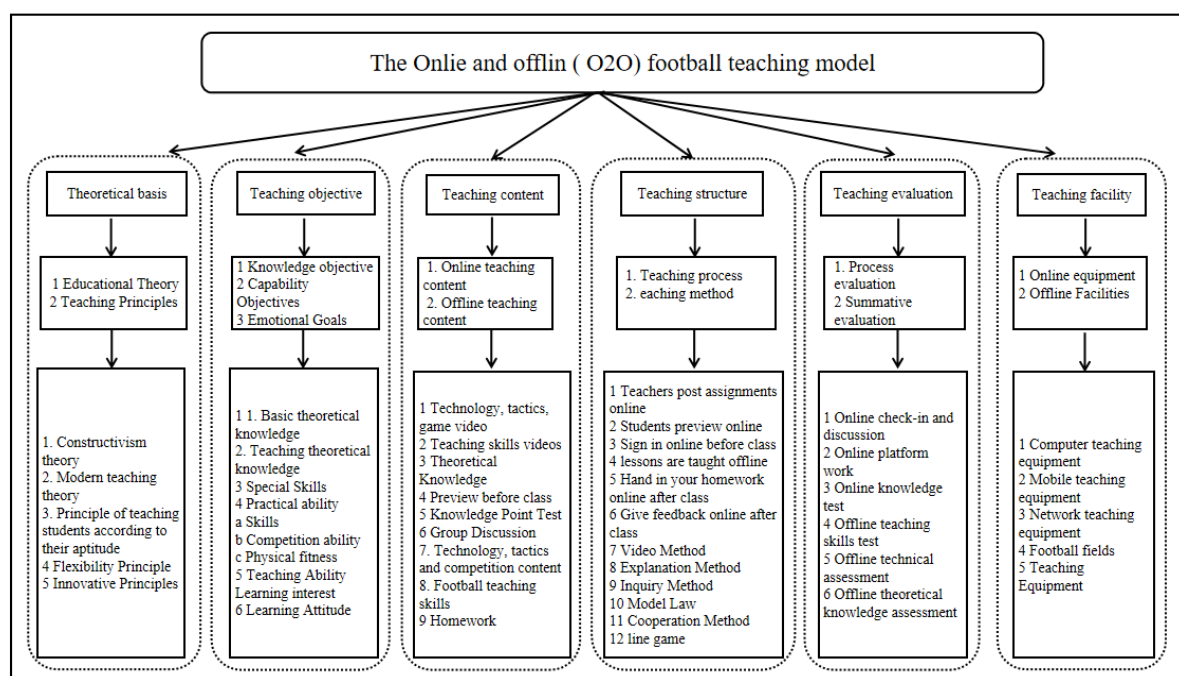


Figure 2. The Online and Offline (O2O) Teaching Model



Discussion

1. Constructivism theory

Constructivism is the crystallization of the wisdom of many scholars. Vico, an Italian philosopher in the 18th century, has the earliest thought of constructivism (Ren, 2002). Constructivism learning theory is a learning theory with constructivism as its guiding ideology. Constructivism holds that knowledge is acquired using meaning construction with the help of others and the use of relevant learning materials. Learners are the center of learning and active constructors of meaning. Online and offline (O2O) teaching focuses on the dominant position of students and the leading role of teachers. After independent online learning, students initially construct primary cognitive goals in their own mind. In offline classroom learning, teachers and students jointly complete offline classroom teaching activities to form meaningful constructed knowledge. Through the guidance and help of teachers, students' autonomous learning ability can be effectively improved.

2. Modern information-based teaching theory

Education informatization emphasizes the use of information technology to optimize the process of education and teaching, to maximize the effect, efficiency, and benefit of education and teaching (He, 2011). The guiding theory of modern educational technology is advanced educational thought and learning theory; In terms of technical means, it adopts modern information technology and gives full play to the advantages of information technology (Zhang, 2006). With the rapid development of education informatization, the application of information technology has also obtained new development opportunities. Application of information technology is not only more and more popular in various fields but also promotes the reform and development of football teaching mode.

3. Teaching principles

Teaching principles are the basic requirements formulated according to certain teaching objectives and tasks and following the objective laws of the teaching process. It is also the basic requirement and guiding principle that teachers must follow in their teaching work (Zhang & Zhou, 2017). In the teaching work of O2O football teaching mode, the principle of individualized teaching, interaction, and flexibility should be followed.

4. Teaching objective

A goal is an important beacon to guide the direction of teaching. Whether the teaching goal is clear and specific directly affects whether the teaching is carried out in the right direction. Teaching objectives can provide a basis for designing teaching activities, provide a scientific basis for teaching evaluation and modification of the teaching process, and stimulate learners' learning motivation (Qiu & Sun, 2019). The teaching goal of O2O football teaching mode should be designed closely around the goal of personnel training. We should pay attention not only to the cultivation of technical ability but also to the achievement of theoretical knowledge and emotional goals.

5. Teaching content

Teaching content is the basic guarantee of achieving teaching objectives and the basic basis of teaching work. Teaching content is important information for teachers to exert influence on students. The selection of teaching content must be reasonable and meet the requirements of students' physical and mental development, and its quality restricts the quality of teaching (Wang & Guo, 2016). In the O2O teaching model, we should choose the core teaching content, improve the achievement of teaching objectives, and stimulate students' interest in learning.

6. Teaching procedure





In the teaching process, teachers often guide students, focus on learning and applying knowledge, and consciously carry out question-and-answer, discussion, feedback, and other activities between teachers and students, and between students and students. Help students get inspired and reflect (Wang & Guo, 2016). In the process of O2O teaching, the teaching procedure includes the teaching process and teaching method.

7. Teaching evaluation

Through the examination, we can understand the teaching effect in time and find the teaching problems. Assessment can help students understand their learning results and strengthen their learning motivation (Wu, 2008). In the evaluation of the O2O teaching model, we should not only pay attention to the summative evaluation but also pay attention to the process evaluation.

8. Teaching facilities

Online platforms are useful and interesting learning environments, and this information environment support can enhance learners' learning (Özdemir, 2017). The teaching mode combining online and offline should attach great importance to information technology conditions and be called necessary conditions (Ou, 2015). In the O2O teaching mode, network equipment, computers, smartphones, etc. are necessary teaching equipment for online teaching.

Recommendation

1. Change the traditional teaching concept, improve students' independent learning ability, and promote the development of comprehensive ability

The teaching idea that students are the main body should be fully embodied in the design of each link of teaching. In the course of teaching, the teacher is no longer the indoctrinator of knowledge, but the guide of students' learning. In teaching, we should enhance the communication and exchange opportunities between teachers and students, and between students and students. Teachers inspire students to construct knowledge through guidance. Under the active guidance of teachers, students take the initiative to explore knowledge and enhance their learning initiative. To promote the development of students' comprehensive ability in an autonomous learning environment.

2. According to the characteristics of football courses, reasonable design of online and offline teaching content

The characteristics of football courses should be fully considered when designing online and offline teaching content. First of all, the teaching content should not only conform to the achievement of the teaching objective but also cater to the interests of students. Secondly, online teaching content and offline teaching content are integrated. Online teaching content is to prepare for online teaching after class, and offline content is an important basis for online feedback after class. Finally, the proportion of teaching content should conform to the characteristics of football courses. The teaching content of theoretical knowledge and related teaching videos can be reasonably arranged for online teaching, while the practice content of football skills should be arranged for offline teaching, which is more in line with the characteristics of football courses.

3. Optimize teaching methods to improve student's learning effect

In the O2O football teaching mode, different teaching methods should be used according to different teaching contents and different students' personality characteristics. For example, when teaching soccer skills, teachers can use video teaching methods online, and students can form correct action images in their brains after watching relevant videos to initially construct knowledge. When





teaching offline in class, teachers can use demonstration methods and cooperative teaching methods to improve students' ability to use knowledge. When giving feedback online after class, teachers can use the explanation teaching method and inquiry teaching method to guide students to find and solve problems.

4. Improve teaching evaluation and strengthen online evaluation supervision

When designing the teaching evaluation of O2O football teaching mode, we should consider both summative evaluation and process evaluation. In the implementation of teaching evaluation, in addition to the summative evaluation of technical and theoretical knowledge, it is also necessary to evaluate the learning process of students. In the implementation of online learning process evaluation, teachers should monitor students' homework and tests in real-time, give timely feedback to students, and guide students to complete learning tasks. In addition, the process evaluation needs to rely on a sound online teaching platform to complete. Therefore, the process evaluation of students should pay attention to the confidentiality of students' personal information and data.

5. Constantly improve teaching facilities and improve teaching quality

To ensure the safe and orderly development of online and offline teaching, the relevant management departments of the school should maintain and update the online teaching software and hardware in a time promptly same time, schools should also do a good job in the field of football and equipment. It provides a good teaching environment and learning environment for teachers and students to interact with each other in class and review after class.

6. Strengthen the training of teachers' modern teaching ability

In the course of teaching, the quality of football teaching resources has a direct impact on the teaching effect. Therefore, it is very important to improve teachers' information technology education literacy. First, schools should hold regular training and lectures on modern educational technology. To help teachers master the knowledge of modern educational technology. Second, the school regularly organizes and carries out information teaching exchange activities to improve teachers' modern educational literacy. Third, teachers should actively change traditional teaching concepts, strengthen self-learning network information education technology, update teaching resources in time, and actively explore modern teaching innovation.

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