

# Research on the innovation of "online + offline" hybrid instructional mode of physical education courses in institution of higher learning in the era of big data

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**Keywords:** Big data era; Physical education courses; "online + offline"; Innovation research

**Abstract:** The emergence of the "Internet + education" program has provided an opportunity. In recent years, the state has successively issued relevant documents to create a new talent training model in line with the times and share high-quality instructional resources. With the development of Internet technology in teaching activities in Institution of higher learning, institution of higher learning take online and offline teaching as the main form of teaching at this stage. Compared with the traditional instructional mode, this online and offline mixed instructional mode can enhance the interest of teaching, give students enough freedom in the classroom to acquire and learn learning materials, and fully mobilize students' enthusiasm. On this basis, build a big data based online learning platform, and propose a big data based learning behavior analysis and prediction model. Finally, a multi-dimensional integrated teaching comprehensive evaluation system combining online evaluation and offline evaluation, formative evaluation and summative evaluation is established. The evaluation system focuses on the learning process. Teachers can take intervention measures according to the pre-alarm situation to further improve the learning effect of students and achieve better learning results.

## 1. Introduction

With the development of the times and the rapid development of sci & tech, network technology has deeply influenced all fields[1]. Institution of higher learning are an important base for training professional and technical talents in China, which is related to the great rejuvenation of China and a country's "overtaking in corners"[2]. Therefore, in the proposal of "Further Strengthening the Construction and Management of Online Open Courses in Institution of Higher Learning", the Ministry of Education clearly put forward to promote the deep integration of informatization and education, and improve the deep integration of informatization and higher education[[3]. It is hoped that through the in-depth combination of the two, the shift from teaching to learning, from knowledge imparting to ability training, and from classroom teaching to diversified learning can be accelerated. The development degree of higher education is an important index to measure the development degree and development potential of a country[4]. The development of the party and the country can not be separated from the support of higher education, and it needs scientific and technological knowledge and excellent talents, which is an unprecedented urgent need. Under such circumstances, the physical education curriculum in institution of higher learning must be reformed in education and teaching, and innovative in personnel training. The online and offline "hybrid" instructional mode will be personalized and convenient, absorb the advantages of online classroom and traditional teaching methods, and quickly gain the recognition and promotion of various disciplines.

The teaching quality of undergraduate education is directly related to the quality of talent training in higher vocational colleges, and curriculum teaching is the focus of undergraduate teaching[5]. Constructing a high-quality curriculum system is an inevitable requirement to improve the quality of university teaching. At present, it is urgent to speed up the reform of college education and teaching concept, reform teaching content, update instructional mode, change course evaluation and assessment mechanism, and improve the quality of higher vocational talents. With the acceleration of the informatization process in Institution of higher learning, the emergence of various learning modes, such as autonomous learning, active learning, cooperative learning,

personalized learning, etc., because teachers play a role of guidance, inspiration and monitoring in the teaching process, and also fully reflect the students' initiative, initiative and creativity[6]. Therefore, e-learning can not completely replace teachers' classroom teaching. Without teachers' active participation, the effectiveness of students' learning will be difficult to be guaranteed. This change is not only a change in form, but also from the needs of students, teaching content, actual teaching environment and other aspects, through the complementary advantages of network teaching and classroom teaching to enhance students' cognitive ability, and pay attention to the use of appropriate technology at the appropriate time to achieve the best learning purpose[7].

## 2. The disadvantages of traditional instructional mode and the advantages of "online + offline" hybrid instructional mode

### 2.1. Disadvantages of traditional instructional mode

Today, with the rapid development and popularization of network, computer and other technologies, the disadvantages of the traditional education mode are constantly magnified to a certain extent[8]. In a word, the problems existing in the traditional instructional mode mainly include the following aspects: (1) The traditional instructional mode is a teaching method in which teachers are the main body and students attend classes as the auxiliary. No matter what course it is, it is taught in the traditional way. This kind of teaching method strictly defines and divides the occupations and positions of teachers and students, which greatly affects students' enthusiasm for asking questions from teachers. In addition, because teachers are the main body of teaching, class time is always compressed, and teachers often don't comment on students' questions, or even perfunctory, and choose to ignore or give rough answers as treatment, thus greatly undermining their thirst for knowledge and thirst for knowledge. (2) the lag of educational concept; As the traditional teaching method is dominated by "writing on the blackboard", teachers often use writing on the blackboard when teaching key contents. A large amount of chalk not only affects the physical and mental health of teachers and students, but also affects the teaching progress, resulting in poor teaching results. (3) Students' ability of communication, self-study and collaboration cannot be cultivated. Traditional teaching methods seldom adopt independent study and group study, and some schools will adopt group study in a certain period of time to deal with the inspection of the education department, which leads to the self-study instructional mode floating on the surface and not being implemented in the teaching process, which seriously affects the teaching quality. Physical education class is a required course in institution of higher learning in China. Its role lies in improving students' physical fitness, cultivating students' sports habits, shaping students' sports awareness and promoting students' all-round development. Group learning in conventional physical education is different from hierarchical teaching, with strong randomness, no effective complementarity and cooperation between students, and neglect of the interaction between teachers and students, which often leads to laissez-faire teaching, which is not conducive to the achievement of teaching objectives, but also limits the exertion of some students' subjective initiative. Figure 1 shows the disadvantages of traditional instructional mode.

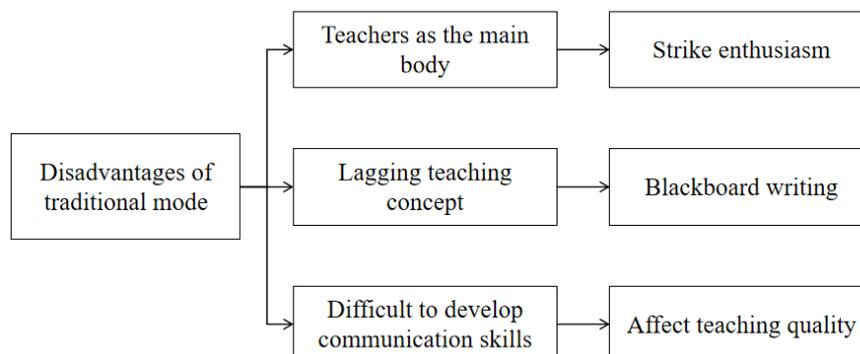


Figure 1 Disadvantages of traditional instructional mode

## 2.2. Advantages of the "online + offline" blended instructional model

(1) Visually present the teaching content. The traditional physical education classroom teaching is mainly demonstrated and explained in detail by the teacher, so that students can learn the essentials and basic knowledge of sports from the teacher's personal demonstration and analysis. However, in this process, the expression space of many actions is limited, and most of the sports actions are completed without interruption, and there is no way to decompose each action one by one. Students can only see it with their eyes, In the limited time, there is no way to really understand and master the essentials of movement. The mixed teaching method can effectively solve this problem[9]. By using advanced network technology and a large number of instructional resources, the content will be made into teaching videos, and the key and difficult knowledge will be displayed to the students in the form of image freeze frame, slow playback, animation, and uploaded to the Internet, so that the students can master the essentials of each set of actions by themselves. (2) Physical education classes that effectively improve the teaching effect generally include classroom routines, warm-up before sports, theoretical knowledge, movement skills, summary, physical relaxation, etc. physical education teachers should not only explain knowledge to students in class, but also do a variety of actions. Although every teacher has undergone professional and systematic training, there are still great differences in some aspects, such as the differences in Teachers' personal strengths, teaching ideas, teaching methods, physiology and so on. Not every teacher's teaching is the same, and the teaching effect cannot be guaranteed. Through mixed teaching, teachers can provide students with accurate explanation and standardized demonstration through modern multimedia technology, and quickly solve their learning problems, which can not only effectively enhance the pertinence of teaching, but also enable students to review after class. Figure 2 shows the advantages of hybrid teaching.

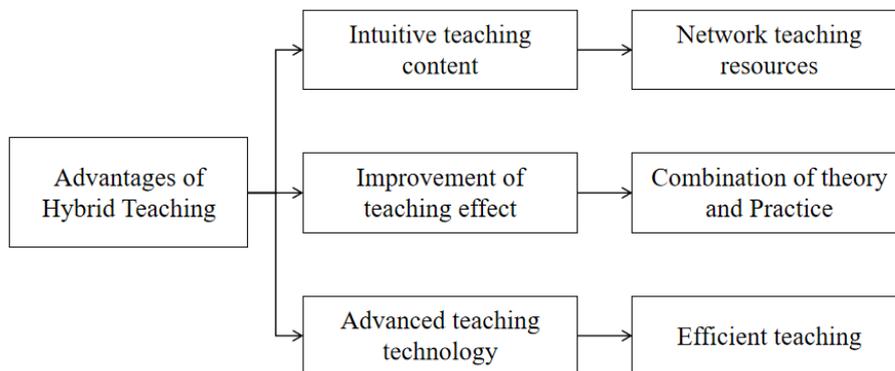


Figure 2 Advantages of blended teaching

## 3. The implementation strategy and significance of the mixed instructional mode of physical education in institution of higher learning

### 3.1. Implementation strategy of blended instructional mode of physical education in institution of higher learning

(1) Ubiquitous learning, which is a way for anyone to get any information they need anytime and anywhere. With the popularization of smart phones, network multimedia courses can provide all-round learning services for students in college sports blended teaching. By establishing a "ubiquitous" learning environment, the blended teaching of college physical education will be more convenient, so that students can complete the teaching task better without special equipment. (2) Closed-loop teaching system to make clear plans for online and offline teaching; In addition, the evaluation and feedback mechanism of different roles on the curriculum is also targeted. Teachers can make use of online high-quality curriculum resources, explore diversified mixed instructional modes, and build a "golden course" that meets the characteristics of schools and the requirements of teaching and training. The evaluation of online courses can test students' online academic

performance through classroom sign-in, discussion activities, homework and other related functions. Online, however, is to evaluate the students' final exam, and the final score is online score+offline score. (3) Establish a comprehensive management platform, which is divided into three modules: system administrator, teaching administrator and teacher according to the characteristics of college physical education. In addition, in order to facilitate the operation of teachers and academic staff, the system should also realize terminal configuration, and be connected with a third-party teaching platform to facilitate data transmission. (4) Pay attention to students' differences. Compared with traditional college physical education, college physical education blended teaching pays more attention to students' extracurricular learning and communication. Teachers can divide different students into different groups according to different characteristics, and formulate different learning and training programs according to different characteristics. (5) Do a good job in teaching evaluation. Teaching effect evaluation is to evaluate and analyze the course implementation process in order to improve the teaching quality. The curriculum evaluation method is from the perspectives of teaching philosophy, teaching objectives, teaching design, teaching content, organization and implementation, curriculum management and assessment, etc[10]. The curriculum system evaluation is to evaluate the overall quality of the curriculum, and on this basis, to determine whether the teaching philosophy and curriculum objectives are in line with the school's talent training objectives.

### **3.2. The significance of blended instructional mode to college physical education curriculum**

(1) Improve students' learning enthusiasm. Through the theoretical knowledge and sports essentials of network teaching, and the learning methods of offline learning focus, focus and difficulty, students are encouraged to think actively and exercise, so as to give full play to their initiative and initiative. (2) Hybrid teaching is the teaching of theoretical knowledge through the network platform, so that students can expand their theoretical knowledge, make them master the basic knowledge of basic sports, and make them better able to carry out sports training. (3) In the mixed teaching, teachers can use the network teaching platform to conduct questionnaire survey, preview, after-school test, and conduct teacher-student interaction, question answering and puzzle solving on the Internet. So that teachers can more comprehensively grasp the teaching situation in the classroom, so as to make full preparation for teaching. At the same time, hybrid teaching relies on more and more digital curriculum resources, implements the "network + education" strategy, and the University's information construction has developed rapidly. The rich digital curriculum resources provide a good basis for the development of hybrid physical education. The development of network teaching in epidemic prevention and control can provide rich practical experience for improving the quality of network teaching. The selection and application of the platform in hybrid teaching is very important. Therefore, to do a good job in mixed teaching, we must unify the relevant software according to the teaching requirements and clarify the application requirements, so as to better realize mixed teaching. Finally, a good sports place ensures that college physical education is a highly practical discipline. Although the above mentioned importance of theoretical learning, its essence is to enhance physical fitness through practical sports practice. Physical education should have appropriate sports fields, such as football field and basketball field, which is not only a necessary condition for school physical education, but also a basic guarantee for carrying out mixed teaching.

## **4. Conclusions**

As an important part of national fitness activities, college physical education undertakes the important task of cultivating high-quality sports talents for the whole country. With the deepening of China's educational system reform, the requirements for college physical education are getting higher and higher at present. In order to stimulate students' interest in physical education and fully arouse students' enthusiasm in class, college physical education teachers must change the traditional teaching methods and adopt various teaching methods to achieve the purpose of improving teaching quality. Constructing a compound physical education system can not only improve the quality of

physical education, but also promote the development of physical education informatization. In the current situation, teachers and students are very popular with massive high-quality resources, rich teaching methods, personalized teaching and diversified evaluation methods. Blended teaching is an organic combination of information technology and education. It is advanced and has the characteristics of faltering. However, it is not mature enough at present, so we must look at it from a correct perspective. In addition, we should really implement the reform and innovation of the blended instructional mode of physical education courses in institution of higher learning, grasp the general law of its development, and grasp its particularity in practice, so as to make it more in line with the reality of institution of higher learning, and further enhance the effect of the blended instructional mode in institution of higher learning.

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