

Practice path of integration of information technology and physical education curriculum based on BYOD+APP model

Zhen Liu^{1,*}

¹*Institute of Physical Education, Huanggang Normal University, Huanggang, 438000, China*

**Corresponding author: liuzhen295@sina.com*

Abstract: *The research starts with the information technology resources that teachers and students can easily obtain in their daily lives, and tries to build a BYOD+APP-based integration model of information technology and physical education courses. First introduced the new model of mobile learning, and focused on the analysis of the advantages of BYOD, which laid the technical foundation for the construction of the new curriculum model. Then, it analyzes the integration path of information technology and physical education curriculum based on the BYOD+APP model, and summarizes the basic strategy for the integration of information technology and physical education curriculum.*

Keywords: *M-Learning, BYOD+APP, Integration of information technology and physical education, Practice Path*

1. Introduction

1.1 New model of mobile learning: introduction of BYOD+APP

1.1.1 Mobile learning: a new form of learning in the "Internet +" era

Mobile-Learning is a learning method developed on the basis of E-Learning, and is an extension of digital learning. At present, the industry has not yet formed a clear definition of mobile learning. [1] According to the characteristics of mobile learning, mobile learning mainly includes the following connotations: First, mobile learning is digital learning based on some portable mobile learning devices. Mobile learning equipment mainly has the following characteristics-portability, wireless, and mobility. Second, the learning content and learning services of mobile learning must rely on mobile communication technology to achieve; third, mobile learning uses mobile computing technology to achieve the interactivity of teaching and learning activities. Compared with traditional digital learning, mobile learning places more emphasis on the flexibility, convenience, and contextual relevance of learning.

1.1.2 Bring your own device (BYOD): a new path for information technology to enter the classroom

Bring Your Own Device (BYOD) refers to people bringing their laptops, tablets, and smartphones to their study or workplace. The term BYOD originated in 2009 and first appeared in enterprises. Intel's Chief Security and Privacy Officer, Malcolm Harkins, after observing that most employees bring their own smartphones, tablets and mobile storage devices to work, he proposed a policy that caters to this trend as a way to reduce costs and Means to increase productivity. Subsequently, American educators with an open mind and avant-garde vision began to pay attention to the advanced practice of "bring your own device", so your own device appeared in the educational environment. In the field of education, bringing your own equipment refers to the need for students to bring information terminal equipment, such as tablet computers, PADs, smart phones, laptops and other equipment into the school classroom in order to meet the needs of teaching.

1.1.3 Educational apps: new resources for mobile learning

APP is the abbreviation of "Application", which refers to various third-party applications that can be used on mobile terminal devices to achieve certain specific functions. It is also the basic operating carrier for mobile devices to achieve information bearing and interactive functions. Therefore, APP is generally defined as an application for mobile smart terminals. Education APP is an important category of APP, and it is a new type of mobile learning resource developed with the emergence of smart mobile terminals.

Based on its characteristics and functions, an education APP can be defined as a type of application that runs on a mobile device terminal and is developed according to specific educational goals and content that can help learners learn. Educational APPs are rapidly being favored by more and more learners due to their interesting, personalized, flexible, and interactive features, and become a popular mobile learning method. At present, teachers have tried to introduce education APP into the classroom.

1.1.4 Sports APP: the new trend of sports and fitness

Sports APP is a type of application that uses mobile terminal equipment as the carrier to spread sports information to users in various media such as text, pictures, and videos. According to different content and different user needs, sports apps can be divided into two categories: sports information and fitness and entertainment learning. The sports information category includes sports news, sports videos, and sports lotteries. Of course, with the improvement of information technology, the boundaries of sports information apps are not particularly clear. For example, "Sina Sports", "Tencent Sports", "LeTV Sports", "Hupu Sports", etc. are both specific education news and sports. Video, live sports events, sports reviews, sports games, social interaction, sports quizzes, etc. are integrated. Fitness and entertainment learning apps can be further subdivided into: exercise track recording, sports teaching, fitness exercise guidance, and so on.

2. Methodology

2.1 Integration path of information technology and physical education curriculum based on BYOD+APP model

2.1.1 Make full use of the advantages of its own equipment to enrich physical education curriculum resources

Although the emergence of self-contained devices has received mixed opinions from the very beginning and has aroused strong responses from the society, behaviors such as "prohibiting mobile phones from entering the classroom" and "prohibiting tablet computers from entering the classroom" have occurred from time to time in the education field. But it is undeniable that a series of reports show that BYOD has been accepted by schools around the world. According to the survey, 43% of kindergarten and compulsory education students often use smartphones, and 73% of middle school teachers often use mobile phones in classroom teaching. In fact, the problem of bringing your own equipment is essentially a contradiction between the school's educational philosophy, teaching methods and management model and the development of the times, especially the rapid development of information technology. In the context of informatization, if a school prohibits students from using their own devices in the classroom, then this school will not be able to enter the "Internet + education". As the Chinese scholar Li Jiao said: Solving the BYOD (bring your own device) problem in school education is the first problem of "Internet + education". Therefore, to realize "Internet + Education", we must start with BYOD of students.

2.1.2 Promote the realization of teaching goals based on the functions and characteristics of the APP

In recent years, education apps have developed rapidly and have attracted widespread attention from the education community. Due to its diverse types and simple operation, educational APPs are not only assistants for students to study outside the classroom, but have become an "artifact" for the integration of information technology and curriculum under the rational use of teachers. At present, there are many varieties of APP in the market, which brings great difficulties for teachers to choose APP to enter the classroom. Physical education teachers should be good at discovering and digging out the functions and characteristics of APP, and integrating them into curriculum teaching. For example, the use of social APP to establish a communication platform, the use of camera functions for teaching and learning feedback, the use of positioning functions to track movement trajectories, and the use of special teaching APPs to assist in the teaching of special skills, and so on. Of course, the use and selection of all APPs must be developed around the teaching goals. In other words, the use of APP is for teaching.

2.1.3 Constructing a diversified physical education teaching model and optimizing the implementation of physical education courses

In the context of the Internet era, the combination of built-in equipment and APP has changed the single mode of "seeing demonstration-doing exercises" in traditional physical education, forming a technology-based information teaching mode or digital learning mode. The so-called information-based teaching model refers to the structure of teaching activities and teaching methods supported by information technology. It is based on the theoretical and practical framework of learning environment

design and enriches the educational environment through technology. Specifically, it can include related teaching strategies and methods. Generally speaking, common informatization teaching models at home and abroad mainly include case-based learning, problem-based learning, and exploratory studies. With the continuous deepening and development of the integration of information technology and courses, new informatization teaching models will continue to emerge., Constitute a more abundant and effective teaching mode. [2] It is true that BYOD+APP is not a complete denial of traditional sports courses, but an optimization of the implementation of traditional sports courses. In other words, the integration of information technology and physical education curriculum advocates the purposeful organization of physical education curriculum implementation based on the teaching objectives and content of physical education curriculum.

2.1.4 Mining the learning analysis of big data, and innovating learning evaluation methods

In the context of the Internet + era, the integration of information technology and curriculum should promote the full integration of learning analysis and learning evaluation. Learning analysis is to realize the optimization of learning and learning situation through the collection, analysis and presentation of data of learners and learning environment. Currently, the application of wearable devices provides a new data source for sports learning analysis. The heart rate, step count, cadence and other physical activity data captured by these devices can become important data for evaluating or predicting students' physical learning activities. At the same time, based on these data analysis, teachers can find potential problems, adjust the learning situation, and further optimize the learning process. Therefore, from the perspective of informatization teaching, learning analysis is based on rich learning data, using real-time intervention, combined with multi-dimensional analysis, and supporting accurate learning through big data.

3. Results and discussion

3.1 The basic strategy for the integration of information technology and physical education curriculum

3.1.1 Strengthen the construction of hardware and software facilities and equipment related to the integration of information technology and physical education courses

The modernization of education has given birth to the construction of digital and informationized campuses. Information technology hardware facilities are the basic guarantee for the integration of information technology and physical education courses, including computers, networks, multimedia equipment, etc., and are the basis for comprehensively building an information education environment and carrying out information education and learning activities. At present, my country's information technology hardware facilities are developed around the construction of "three links and two platforms". After unremitting efforts, great progress has been made. Among them, the "broadband network school-to-school link" has achieved leapfrog development, and more than 80% of the country's The school has opened an online learning space. It can be said that the construction of the "three links and two platforms" solves the problem of infrastructure equipment for the integration of information technology and physical education courses.

3.1.2 Application-driven as the basic idea of integrating information technology and physical education curriculum

To achieve the integration of information technology and physical education curriculum, we must adhere to the basic idea of application-driven. [3] Only focus on the application of information technology in physical education curriculum, especially the application of physical education, to provide students with an informatized physical education learning environment and improve students The enthusiasm of sports participation can truly dig out the integration point of information technology and physical education curriculum, and truly reflect the key role of integration in promoting the reform of physical education curriculum and improving the quality of physical education. The integration of information technology and physical education courses must be supported by certain hardware conditions. However, our understanding of information technology cannot only remain on the hardware conditions, because hardware is not the essence and core of the informationization of physical education.

3.1.3 Efforts to improve the subject teaching knowledge of physical education teachers integrating information technology (TPACK)

Physical education teachers are the leading factor to achieve the integration of information technology and physical education curriculum. [4] Only when physical education teachers actively invest and

participate in the practice of integrating information technology and physical education curriculum can they achieve effective integration and is expected to achieve deep integration. Therefore, physical education teachers must have certain information literacy. From the perspective of teacher professional development, information literacy has become one of the necessary professional literacy for teachers in the "Internet +" era, and the country has also spent a lot of manpower, material and financial resources to cultivate teachers' information technology capabilities. However, only mastering information technology is far from enough, because how to integrate information technology with subject teaching is the real problem that plagues teachers. Therefore, the information literacy training of physical education teachers should focus on their physical education teaching abilities that integrate disciplines.

3.1.4 Strengthen theoretical research related to the integration of information technology and physical education curriculum, and use theory to guide practice

Compared with the informatization research of other disciplines, the theoretical research on the integration of information technology and physical education curriculum has received insufficient attention. The definition of its connotation and the research on the theoretical framework have just started. Therefore, it is urgent to do a good job in theoretical foundation work for further development. Lay the foundation for research and practice. To solve the problem of weak theoretical research, we should increase the pertinence of scientific research, change the spontaneity and randomness of previous research, incorporate research related to the integration of information technology and physical education into the scope of the National Social Science Fund and other topics, and guide the general physical education research work To carry out related researches on the informatization of physical education.

4. Conclusion

With the advancement of "Internet + Education", the informatization of physical education has also entered a new stage. Drawing on the theoretical implications and practical strategies of international sports education informatization, combining the objective reality of the reform and development of my country's physical education curriculum and the specific tasks of promoting student health, my country's exploration of the integration of information technology and physical education curriculum needs to start from the following aspects: The first is to strengthen the construction of hardware and software facilities and equipment related to the integration of information technology and physical education courses. The second is to focus on improving the subject teaching knowledge (TPACK) of physical education teachers integrating information technology. The third is to give full play to the guiding role of policy documents on the integration of information technology and physical education curriculum. The fourth is to strengthen theoretical research related to the integration of information technology and physical education curriculum, and to guide practice with theory.

References

- [1] Motiwalla L F. *Mobile Learning: A Framework and Evaluation [J]. Computers & Education, 2007, 49(3): 581-596.*
- [2] Li Luyi, Zheng Yanlin. *The "Bring Your Own Device" (BYOD) Action and Enlightenment in American Elementary and Secondary Schools [J]. Modern Distance Education Research, 2012(6): 71-76.*
- [3] Zhong Zhixian. *Informatization teaching mode [M]. Beijing Normal University Press, 2006.*
- [4] Garrison D R, Anderson T, Garrison R. *E-Learning in the 21st Century: A Framework for Research and Practice [M]. 2003.*