Research on the Existing Problems and Optimization Path of Physical Education Teaching in Colleges and Universities

Dan Guo

Liaoning Communication University, Shenyang, Liaoning Province, China

ty5618.@163.com

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Abstract: With the progress of science and technology and the continuous improvement of education and teaching methods, intelligent education and teaching will continue to improve and mature, and the new intelligent sports teaching style supported by intelligent technology will replace the traditional sports teaching and become the mainstream. This paper analyzes the practical difficulties in the development of intelligent physical education in colleges and universities, and puts forward targeted countermeasures and suggestions. Through the research of this paper, we can provide some useful suggestions for strengthening physical education in colleges and universities.

1. Introduction

With the rapid development of information technology and the Internet, many countries have raised the application and research and development of artificial intelligence (AI) and other technologies to the national strategic level. From 2018 to 2019, nearly 60 countries and regions prepared to develop national strategies for AI. In 2019, the State Council issued "China's Education Modernization 2035", which requires accelerating the educational reform in the information age, building intelligent campus, and building an integrated and intelligent teaching management and service platform. Physical education in colleges and universities needs to follow the trend, cultivate talents in an all-round way, improve the physical literacy of the whole people, and accelerate the construction and practice of intelligent physical education teaching system.

2. The Practical Dilemma of Developing Intelligent Physical Education in Colleges and Universities

2.1 The system design and implementation are slow due to financial reasons

From the design of the feasibility plan and various indicators to the final formulation and implementation, they need to be linked. In addition, pilot projects need to be set up in batches and categories according to the design. The whole process from experience summary to promotion and implementation is time-consuming and labor-intensive, requiring a large amount of capital investment. With the development of intelligence, the demand for funds will be increasing. The research and development of smart devices, platforms and terminal products are constantly updated, and the market demand is constantly changing. The equipment update and maintenance costs are very high during use. Lack of funds, low equipment performance and people's lack of recognition of intelligent physical education lead to the slow development of intelligent physical education.

2.2 PE teachers' intelligent teaching concept needs to be improved

Intelligent equipment is only a means of intelligent education. Intelligent education needs to adjust education content, change learning methods and reorganize learning resources. Shannon, an American mathematician and founder of information theory, pointed out that information exists in a certain environment in disorder. The greater the amount of information in the environment, the more information entropy will be, making the environment more complex and increasing the uncertainty of effective information acquisition. Intelligent education hopes to achieve education

fairness, personalization and accuracy. With the development of intelligence, physical education teachers should change their conventional ideas and boldly explore effective models and methods.

2.3 There are many barriers to the implementation of intelligent sports technology

2.3.1 Technical standards need to be unified

The application integration of digital resources platform resources is not high, and the educational government information resource database "covering the whole country, unified standards, up and down linkage, and resource sharing" has not been fully established. "Intelligent leading education informatization 2.0" promotes the deep integration of big data and physical education, which is of great significance to the high-quality development of intelligent physical education. The early data lacks specifications and standards, and many problems will arise in the later data collection, docking, sharing, development and utilization. It is necessary to break information islands and data barriers and establish corresponding mechanisms. In addition, due to the impossibility of intelligent products coming from the same manufacturer, the interface between various intelligent products is not uniform and incompatible.

2.3.2 Lack of integration of information fragments

At present, information overload, information fragmentation and limited time make the integration of PE teaching resources face new challenges. Network information release is no longer limited to traditional media. Everyone can release information without time and space constraints. The distribution channels and forms of information are various, and the existence time is often short, which increases the difficulty for collectors. How to collect, screen, select and sort out data, naturally and seamlessly link up with each link of the course, establish the relationship between different data information, realize the value of information, meet the needs of physical education, and establish basic education models are urgent issues Research.

2.3.3 Information security issues need to be strengthened

With the help of computer simulation, AR/VR, AI and other technologies, build a high-level virtual classroom or teaching environment to improve the teaching effect of physical education classroom. At present, the development stage of intelligent education and the accompanying problems lead to the failure of intelligent physical education and teaching in one move, and the information security problems caused by technology update are inevitable. With the in-depth development of intelligence, people increasingly rely on intelligent tools. However, the gap caused by the algorithm, the stubborn "information cocoon" and the threat of ideological security are worrying.

3. The Optimal Path of Developing Intelligent Physical Education in Colleges and Universities

The national policy provides a good macro education environment, which needs to be designed and implemented by governments, schools and departments at all levels according to the actual situation to ensure its comparability, evaluation and sustainable development. There is a long way to go to solve the financial, human and technical problems that affect the development of intelligent education and teaching, and to find a way to break the ice.

3.1 Internal and external joint construction, joint creation and sharing

The development of intelligent education and teaching is not isolated, but requires the coordinated development of multiple departments and roles. Zhang Chen of the General Administration of Sport of the People's Republic of China once vividly said that only "the hands of the General Administration of Sport", "the hands of the administrative departments", "the hands of the local authorities" and "the hands of the enterprises" are connected hand in hand, and the outstanding problems are solved in a centralized way, and the weak points and strengths are supplemented, can the sports interconnection situation be formed and the "sports intelligence" be realized. To build a sports intelligent chemical technology community, it is necessary to establish a

joint working mechanism with multiple departments, cooperate with key laboratories of the Ministry of Education and innovation centers at all levels to set up long-term research bases, gather some universities, build research platforms, and form a long-term mechanism to support intelligent basic research, application research and technology development. Government departments and schools adhere to the concept of "invite in and go out" to cooperate with enterprises. Enterprises "deeply cultivate" users, establish a long-term and stable partnership with university research platforms, jointly build platform resources such as virtual courses, and carry out intelligent education through intelligent devices to rapidly, directly and effectively promote technological progress. The policy guidance of the management department, the professional support of sports colleges and departments, and the financial and technical support of enterprises need to work together to create a win-win situation.

3.2 Multi-dimensional intelligent physical education teaching paradigm

3.2.1 Focus on the goal of intelligent physical education, and promote knowledge, action and innovation

Intelligent physical education teaching relies on sports basic resource data and constantly updated technical means and equipment to change the display mode, transmission mode and recording mode in the traditional physical education process into "immersive" form, and to reform and transform the teaching system, mode and content. Deepen the top-level design and standardization based on the existing digital resources, teaching reform achievements and other "knowledge". Interconnect, expand and update the existing data base, improve the teaching content and system, enrich and improve the early planning and design with the practice results of "line", innovate the future technical equipment, provide practical data for the new education and teaching model, and put forward new requirements. In the early stage of the development of intelligent physical education, knowledge, practice and creativity developed dynamically, promoted each other and stepped up.

3.2.2 Practice scientific teaching paradigm of physical education

At present, there are some problems in the implementation of intelligent physical education, such as lack of identification concept, omission of standards, and insufficient top-level planning and design, which seriously hamper the application of intelligent technology and the development process of intelligent physical education. Observation, error correction, practice and repetition are the processes of traditional sports technical skills teaching. Most universities still follow the traditional teaching paradigm. Intelligent physical education teaching classroom is not only the inheritance and reproduction of knowledge, but also the "five in one" teaching paradigm of "research-based teaching paradigm", "heuristic teaching paradigm", "empirical teaching paradigm", "interactive teaching paradigm" and "open teaching paradigm". Virtual reality (VR) and augmented reality (AR) technologies immerse the experiencer in a multi-source information fusion, interactive multi-dimensional dynamic scene and physical behavior, and change the traditional textbook-led teaching mode. In the four stages of forming generalization, differentiation, solidification and automation, sports technical actions are experienced from a multi-dimensional perspective. The course content is a personalized exercise prescription customized by teachers based on students' personal data, aiming to enhance the health awareness level and physical health management skills of college students.

3.2.3 Establish a multi-angle, process and embedded evaluation system

Intelligent teaching enables people to open an immersive deep learning mode and improve the evaluation system in the process of building intelligent physical education. On the premise of respecting the individual differences of students, the intelligent system and digital audio and video acquisition technology are used to help teachers teach according to their status and facilitate the school to carry out effective teaching quality supervision. The algorithm of facial emotion classification and recognition is realized through convolution neural network (CNN), and the learning status of each node in the class is counted and analyzed; The sensor captures and analyzes

the physical state of students' heart rate, GPS, blood pressure, sweat, temperature, calories, respiration, movement, etc; Adjust sports methods, reduce physical injuries caused by incorrect sports, and timely and accurately monitor and standardize technical actions in sports activities. It is convenient for teachers to timely, accurately and intuitively understand and control the students' body, learning state, technical movements and other aspects, and for teachers to establish an evaluation system for learning and planning; Data, videos and records are convenient for schools or departments to understand the teaching situation, help teachers adjust and establish a good teaching model, and achieve key changes in education and teaching. The modernization and intelligence of education make it feasible to establish scientific, comprehensive, objective and efficient classroom teaching evaluation. Promoting the process and embedded evaluation is very helpful for teaching feedback, learning effect improvement, teacher teaching progress and subject development.

3.3 Build an all-round and open intelligent sports ecosystem

3.3.1 Unify standards and reduce artificial technical restrictions

The technical support function of intelligent tools is embodied in four aspects: recognizing situation, recording process, perceiving environment and connecting community, which are the main characteristics of intelligent learning environment. In the 5G network era, creating an intelligent sports learning environment with full time domain, full airspace and full audience will help individuals develop lifelong learning habits and realize the foundation of a strong sports country. The establishment of national standards or industrial standards will help each equipment brand to achieve barrier-free docking, complete the integration of intelligent equipment and physical education, and form an intelligent physical education system.

3.3.2 Determine information rights and ensure information security

The improvement of the intelligence, informatization and digitalization of the public service for national fitness provides effective support for organizational management and talent technology management. Colleges and universities need to expand the scope of intelligent physical education. The development of universal and personalized projects such as sports clubs, clubs and gyms and scientific fitness guidance have led to the problem of how to make safe use of personal data information. In physical education, the collection and tracking of data information such as students' physical fitness involves the protection of students' privacy. Only by defining data rights can data privacy protection have laws to follow.

4. Conclusion

Intelligent and information-based education and teaching will liberate teachers from simple and repetitive work. In this intelligent education revolution, college teachers need to keep pace with the times and actively participate in teaching research. With the support of big data and intelligent devices, intelligent physical education is gradually trying to prescribe different "exercise prescriptions" for different students. With the progress of science and technology and the continuous improvement of education and teaching methods, intelligent education and teaching will continue to improve and mature, and the new intelligent sports teaching style supported by intelligent technology will replace the traditional sports teaching and become the mainstream.

References

[1] Yang Jirui. Integrating the "Five in One" to transform the university teaching paradigm [J]. China Higher Education. 2013 (6): 44-46.

[2] Huang Ronghuai. The Triple Realm of Smart Education: From Environmental Model to System [J]. Research on Modern Distance Education. 2014 (6): 3-11.

[3] Zhang Wenhua. Talking about the difficulties and development strategies of intelligent sports teaching in higher vocational education based on "Internet plus" [J]. Journal of Hubei Open Vocational College. 2020 (18): 137-139.