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The Value Meaning and Development Strategy of Physical Education Teaching in the Era of Artificial Intelligence

Guining Chen*

School of Physical Education and Health, Yulin Normal University, Yulin, 537000, China
**Corresponding author*

Abstract: *As an important component of the education system, school physical education has entered a period of rapid development driven by strategies such as "Healthy China", "Education Power", and "Sports Power". With the emergence of ChatGPT, the current discussion about artificial intelligence promoting educational change has become increasingly intense. This paper proposes that the rapid development of artificial intelligence has triggered systematic changes in the field of education, promoting the internal renewal and reconstruction of the education system. As an important component of the education field, school physical education is also deeply influenced by it. Artificial intelligence not only has a profound impact on educational elements such as physical education curriculum content, teaching methods, learning evaluation and management, but also on the physical education learning environment, including physical education teaching venues, equipment and facilities.*

Keywords: *artificial intelligence, physical education teaching, education, value, development*

1. Introduction

Artificial intelligence is a product of the deep development of computer science, with intelligent programs and high-tech chip manufacturing as its core, combined with intelligent robot manufacturing, which has had a revolutionary impact on the production and manufacturing of traditional electrified machinery. Of course, artificial intelligence is not only as simple as intelligentizing traditional instruments, but also a shallow application of artificial intelligence. Against the backdrop of the continuous development of computer science, artificial intelligence will undoubtedly further develop into the depth of intelligence[1]. As a branch of computer science, artificial intelligence focuses on the research and development of human intelligence in machinery (including human action ability, cognitive ability, thinking ability, etc.). In the early stage, by imitating and expanding human intelligence, the basic direction of mechanical intelligence development is established. Based on this, in-depth research and development are carried out to ultimately achieve the goal of surpassing human intelligence in the level of mechanical intelligence.

Currently, artificial intelligence technology has been applied to multiple fields of social production and life, including intelligent robot manufacturing, development and application of intelligent induction recognition systems, digital intelligent payment technology, development and application of intelligent databases, and research and application of intelligent network security defense systems. However, in the field of cultural education, although schools at all levels have generally introduced many multimedia devices for networked teaching, the application of artificial intelligence technology is still in its infancy. Both mature artificial intelligence devices and digital forms of artificial intelligence technology have not yet entered the field of school education and teaching. In fact, with the mature development of artificial intelligence technology, it has enormous potential for application in the field of culture and education. This is not only reflected in the use of intelligent robots to replace the role of "teachers" for knowledge transmission, but also can greatly assist in the design and application of school teaching systems, enabling the school's educational management and teaching system to evolve from a traditional networked version to an "intelligent" version, this has a positive significance in improving the level of academic management in schools and thereby improving teaching efficiency. The article intends to take the teaching of physical education as an example to briefly explore the application of artificial intelligence in the design of physical education teaching systems, in order to provide some reference experience for improving the scientific and systematic nature of school physical education and improving the effectiveness of school physical education teaching.

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2. Current design and application status of physical education teaching system

Physical education, as a relatively special discipline in the teaching system of universities, differs from the teaching of general professional theoretical courses. Modern physical education teaching emphasizes the moderate and efficient coordination of theoretical learning and sports training, without overly emphasizing any particular item [2]. It requires teachers to be able to flexibly arrange course content and adopt effective physical education teaching methods according to the overall requirements and implementation principles of modern school physical education teaching. At present, universities or primary and secondary schools in the compulsory education stage have relatively insufficient attention to physical education. Physical education teaching is often influenced by other regular subjects and professional courses teaching, and the originally few physical education teaching courses are dominated by other courses, resulting in a situation where students' physical exercise ability is low and their physical health quality is worrying. In this situation, students' basic sports needs cannot be met, and most of the sports teaching policies can't be implemented, let alone using a scientific and efficient sports teaching system to assist in sports teaching practice. From a practical perspective, the design of physical education teaching systems is generally seen in higher education institutions. However, at present, the physical education colleges or majors of ordinary universities have not established their own physical education teaching systems. Universities generally only have one school's teaching system, and the teaching systems of each major are attached to the school system, without forming an independent portal system. This naturally affects the scientific and efficient development of physical education teaching. Even in some sports universities or those with relatively high levels of information technology construction, the design status of sports teaching systems cannot be objective. The physical education teaching systems of these universities mostly rely on the school's teaching system, and the database capacity and system framework design they can occupy are limited, which can't meet the needs of independently implementing their own design architecture based on the basic requirements and characteristics of physical education curriculum teaching. Therefore, the design of physical education teaching systems is still in a relatively traditional and early stage. In fact, most universities, even sports high schools, still use traditional design ideas for their physical education teaching systems. The hardware and software systems, as well as design techniques, are quite outdated, and they only hastily construct a simple "standalone" electronic portal website. The system's intelligence level is very low, and its ability to carry, analyze, and process data is low, and it can only serve as a simple data storage center, The lack of humanization and intelligence in port design has affected the daily development of physical education teaching work, and there is no independent intelligent analysis ability, which has played a negligible role in physical education teaching practice. In summary, the current design and application of physical education teaching systems in universities are still very scarce. Even if they exist, they are still in a relatively early stage, and there is an urgent need to innovate and transform them with artificial intelligence technology.

3. The mechanism of artificial intelligence technology in teaching system design

Artificial intelligence, as the name suggests, is a technology or device research primarily aimed at imitating or surpassing human intelligence and skills. It will further leap forward on the basis of human cognition and action ability, forming intelligent technologies and devices that can replace human observation, action, thinking, problem solving, and other work. It is a highly revolutionary technological force. Currently, the material design and production of artificial intelligence mainly rely on technologies such as robot design and manufacturing, speech and image recognition, intelligent detection and analysis, and data collection and processing. Therefore, specifically for cultural education, at present, it is not possible to replace "teachers" and "classrooms" with intelligent robots to complete knowledge education on a large scale. However, based on the current efficient collection, processing, detection and analysis capabilities of artificial intelligence for information data, the design of teaching systems using artificial intelligence technology is undoubtedly a reasonable and realistic approach. In the past, the design of school teaching systems was treated as a simple webpage design, with low data carrying and processing analysis capabilities, simple and fixed port functions, dispersed system architecture, and unstable system operation being common problems of such teaching systems. In order to solve these problems, make the teaching system play a greater role, and make it an effective platform to support teaching practice and school logistics management, it is the original intention of artificial intelligence entering the field of teaching system design in universities.

Specifically, current artificial intelligence technology can provide the following functions for the design of teaching systems in high schools: firstly, to solve the problem of unstable operation of

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teaching systems. Due to the fact that most of the design of school teaching systems comes from some unqualified data system suppliers in the market, who provide finished systems with relatively simple architectures, there are many problems. As the only network system that supports the learning and work of students, teachers, and administrative logistics personnel, the teaching system in universities has a large number of users and centralized access. This simple but not targeted designed finished system often experiences overload and collapse, which is extremely unstable and seriously affects the normal operation of teaching work. Artificial intelligence technology has a strong R&D capability for the core of high-capacity and high-speed systems, providing an extremely powerful, highly stable, and convenient system platform, which has a very good effect on solving such problems. Secondly, based on multiple intelligent technologies, expand the functional design of teaching systems. The traditional online teaching system in high schools generally serves as the school's portal website, providing basic functions such as publishing and displaying teaching activities, inputting and querying teaching scores, and storing teaching and academic data. Based on artificial intelligence's abilities such as voice and image recognition, intelligent analysis and design, rapid and accurate calculation, large capacity data storage, and scientific architecture design, the teaching system can be upgraded throughout the entire department, enrich the functional design of the teaching system to provide more convenient, efficient, and intelligent teaching assistance services.

4. New requirements for teaching system design in modern physical education

Physical education is related to students' physical exercise ability and physical health. In recent years, with the gradual emphasis of the country on physical education in high schools, physical education has returned to the right track from its previous position as a "mixed subject". Physical exercise ability has become a basic literacy that all students must master, which puts forward new requirements for the design of physical education teaching systems [3]. Given the shortcomings of previous physical education that placed too much emphasis on physical fitness and sports skill training, the new physical education teaching system must attach importance to students' learning of sports science knowledge. Specifically, in the design and practice of teaching systems, designers should separate enough space to scientifically design the learning and evaluation of sports theory literacy, and introduce rich sports science theory knowledge into the teaching system for students to reference and learn, to design a scientific learning plan for students' sports theory knowledge, and strengthen their systematic and effective learning of sports science theory [4]. Thus, students' academic performance in sports theory courses can be steadily improved, maintaining a balanced relationship with their sports abilities. Secondly, under the requirements of quality education, physical education should gradually move towards modernization and provide students with distinctive and diverse physical education courses, enabling them to break free from their previous fixed understanding of physical education teaching and thereby enhance their interest and enthusiasm for physical education learning. Therefore, in the physical education teaching system, it is necessary to provide rich content of physical education elective courses to make up for the shortcomings of professional physical education courses in cultivating students' modern sports literacy [5]. It is necessary to design a highly flexible, participatory, convenient, and intelligent physical education elective system to facilitate students' selective learning of sports courses of interest and improve their sports literacy. Finally, it is necessary to enrich the physical education teaching mode and provide high-quality and diverse physical education teaching courses with innovative and flexible forms. In the era of networking, any form of teaching cannot rely solely on 45 minutes in the classroom. It is necessary to fully utilize information technology, increasingly mature artificial intelligence technology, reform the teaching form of physical education courses, develop and design diverse online courses, facilitate students' independent learning, and keep students' learning of sports science knowledge and sports training in a comprehensive and real-time state, Maximize and facilitate students' access to sports knowledge.

5. Implementation path for optimizing physical education teaching system design using artificial intelligence technology

With the gradual emergence of application potential, the country, society, and the general public have recognized the powerful energy of artificial intelligence technology. The country and enterprises at all levels have increased their research and development efforts in artificial intelligence technology, and artificial intelligence technology is moving towards a new stage of development. Currently, the auxiliary role of artificial intelligence technology in the design of physical education teaching systems is very obvious. Specifically, innovative optimization of physical education teaching system design can

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be achieved from the following aspects: firstly, fully utilize the information data processing ability of artificial intelligence technology to improve the intelligence level of physical education teaching systems. Artificial intelligence technology, in simple terms, refers to the powerful collection, organization, calculation, analysis, and processing capabilities of various information data, which can achieve efficient and accurate processing of massive data. Based on this, university physical education teaching systems can optimize physical education teaching plans, analyze physical education teaching results in detail, reconstruct the evaluation mechanism of physical education teaching, and reasonably optimize physical education teaching courses, and it is reflected in the port design of the system, providing students and teachers with a better access experience and more practical learning or teaching assistance [6]. Secondly, utilizing the intelligent expansion features of artificial intelligence technology to enrich system functions, in the past, the design of physical education teaching systems was relatively simple, with weak interactivity. Visitors could only actively choose to access the project after logging in, resulting in a serious lag in intelligence; Artificial intelligence technology can track users' search records, analyze their access preferences based on their search data, and proactively provide visitors with access functions they may need, such as recommending high-quality sports courses, displaying sports course teaching plans, and pushing domestic and foreign sports teaching trends, allowing users to have more access options after logging into the system. Thirdly, leverage the advantages of deep thinking in artificial intelligence technology and innovate and reform the physical education teaching mode. Based on the powerful processing ability of artificial intelligence for correlated data, areas that are difficult to conduct manual research and analysis can be replaced by artificial intelligence. For example, in evaluating the teaching effectiveness of a new physical education course, it is difficult to manually collect and analyze data. At this time, the comprehensive and traceless collection and processing capabilities of artificial intelligence technology can be utilized to produce feedback data for physical education educators to refer to. Based on the data, corresponding teaching mode adjustments can improve the scientific nature of the evaluation system.

6. Conclusion

Artificial intelligence technology can gather high-quality physical education resources to cover underdeveloped rural areas and weak schools, promoting the balanced development of urban and rural physical education. On the one hand, it is possible to rely on the national smart education platform to provide rich physical education curriculum resources for rural or schools with weak educational resources; On the other hand, technology such as AR can be used to establish remote synchronous intelligent classrooms, promote the sharing of high-quality physical education resources such as famous schools, teachers, and courses on a larger scale, and meet the requirements of more students for the high-quality development of school physical education.

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