

Analysis on the Application Status of Generative AI Tools in College Physical Education Practical Courses under the Background of Educational Digital Transformation

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Abstract: With the deepening of educational reform, college physical education should be further optimized. Teachers need to actively introduce new educational concepts and teaching methods to better arouse college students' interest, improve their understanding and application of the knowledge learned, and enhance teaching effectiveness. As a popular educational auxiliary form currently, generative AI tools can greatly enrich the content of college physical education, expand educational paths, and play an important role in promoting the all-round development of college students. In view of this, this paper will analyze the application of generative AI tools in college physical education practical courses under the background of educational digital transformation and put forward some strategies for reference only.

Keywords: Digitalization; Generative AI tools; College physical education; Application

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1. The application value of generative AI tools in college physical education practical courses in the background of educational digital transformation

1.1. Conducive to enriching teaching resources

Under the background of educational digital transformation, carrying out high-quality college physical education reform enables teachers to introduce more high-quality online resources into the classroom, thereby further expanding educational resources. In the process of education, in addition to using textbooks to carry out educational activities and explain relevant sports knowledge and skills to college students, teachers can also use generative AI tools to introduce some vivid sports events, sports videos and other resources into classroom teaching, so as to bring more novel and interesting sports knowledge content to college students^[1]. In addition, the number of digital physical education resources is extremely large, which can meet the needs of different types of college students. Moreover, the types of online teaching resources are relatively rich, which can lay a solid

foundation for teachers to carry out more in-depth and extensive physical education reform.

1.2. Conducive to expanding teaching paths

In contrast to traditional college physical education, the teaching reform using generative AI tools against the backdrop of educational digital transformation enables teachers to better break down knowledge barriers with college students, allowing students to learn desired knowledge anytime and anywhere. This is of great value for broadening their learning paths. Furthermore, teachers can create a more open and autonomous online learning platform based on college students' physical fitness, knowledge reserves, and cognitive abilities. By integrating generative AI tools, it provides convenience for college students to acquire physical education knowledge, helps them gradually develop good habits of independent exercise, and thereby improves the quality of talent cultivation ^[2].

1.3. Conducive to enriching interaction forms

Essentially, physical education can be regarded as an interactive process between teachers and students based on physical education knowledge. In traditional physical education classes, teachers usually adopt a cramming teaching mode, resulting in insufficient interaction intensity between teachers and students and a single form of interaction, which makes it difficult to highlight college students' dominant position in the classroom ^[3]. Against the backdrop of educational digital transformation, the introduction of generative AI tools can gradually create a more three-dimensional interactive classroom, thereby improving the efficiency of teacher-student interaction, building a more interesting and efficient physical education class, fully stimulating college students' interest in physical education learning, deepening their understanding and application of the knowledge learned, and putting the principle of "teaching students in accordance with their aptitude" into practice.

2. Current situation of physical education teaching in colleges and universities under the background of educational digital transformation

2.1. Insufficient attention

Before the implementation of physical education reform, many teachers regarded physical education as a supplementary course, which made it difficult for college students to attach sufficient importance to physical education and resulted in incomplete teaching plans ^[4]. Over time, college students are prone to form the wrong perception that "physical education courses are unimportant". Influenced by this concept, they can hardly take the initiative to engage in learning physical education knowledge, leading to a sharp decline in their physical fitness ^[5]. In addition, due to the insufficient emphasis on physical education in the examination system, many schools neglect the construction of physical education courses. Physical education teachers are often part-time male teachers from other disciplines. Since these teachers are not graduates of physical education colleges, neither their physical fitness nor their physical education knowledge can meet the learning needs of college students, which is not conducive to the implementation of subsequent physical education reforms.

2.2. Limited teaching staff

At present, many schools do not pay enough attention to physical education, resulting in major deficiencies in the construction of teaching staff. In the process of teaching, some physical education teachers find it difficult to break through the existing teaching models and rarely enrich the content of physical education. Over time,

teachers can hardly feel a sense of accomplishment from physical education teaching, which is not conducive to them realizing their teaching value and leads to the gradual loss of work confidence ^[6]. In addition, the number of physical education teachers in some schools is seriously insufficient. Often, one teacher is responsible for physical education teaching in multiple classes, and there are even cases where one physical education teacher is in charge of the entire grade. This will invisibly impose great work pressure on teachers, which is not conducive to them carrying out reforms and innovations in teaching work, thereby affecting the development of the entire teaching work.

2.3. Inadequate infrastructure

Currently, many schools tend to allocate funds to the development of specialized disciplines, while rarely updating or supplementing the various equipment used in physical education in a timely manner. This leads to inadequate sports facilities in many schools and a lack of proper physical education learning environments for college students, seriously hindering the progress of teachers' efforts to reform physical education teaching ^[7]. In addition, the insufficient introduction of information resources and equipment in some schools is another major factor affecting the efficiency of physical education teaching reform. Although some schools have relatively complete infrastructure construction, teachers fail to master correct teaching management models, and college students struggle to use relevant equipment for training in a reasonable and efficient manner. As a result, some equipment remains idle for a long time, which not only causes a waste of resources but also exerts a negative impact on the effectiveness of physical education teaching reform ^[8].

2.4. Outdated teaching models

Against the backdrop of educational digital transformation, when conducting college physical education, teachers should optimize teaching processes, content, and forms based on students' actual learning conditions to improve teaching effectiveness. However, although some teachers attach importance to teaching reform, there are no signs of reform in actual teaching activities—they still adopt inherent models, which makes it difficult to meet college students' needs for physical education learning ^[9]. Furthermore, in the process of teaching reform, few teachers can optimize existing teaching plans or meet the professional requirements of teachers. This gradually undermines college students' confidence in learning physical education knowledge and is not conducive to fostering their interest in learning. Outdated teaching models will lead to college students' boredom with physical education teaching, trigger various negative emotions, and hinder the improvement of the quality of college physical education teaching reform.

3. Preparations for the application of generative AI tools in college physical education practical courses in the background of educational digital transformation

Under the background of educational digital transformation, the reform of college physical education is still in its initial stage, and many preparations are not yet complete. Therefore, before applying generative AI tools to physical education courses, teachers should make preliminary preparations based on specific student learning conditions to ensure the effect of practical teaching reform and improve the quality of talent cultivation ^[10].

Under the background of educational digital transformation, when applying generative AI tools, teachers should try to integrate physical education teaching with generative AI tools. In addition to reflecting innovations in teaching equipment, they should also optimize their teaching concepts and teaching methods ^[11]. To this

end, if universities want to improve the application effect of generative AI tools, they need to establish a highly professional and capable information-based physical education teaching team based on actual conditions. They should further expand the current teaching content and teaching forms in light of college students' actual learning needs, laying a solid foundation for subsequent teaching reforms.

Under the background of educational digital transformation, when implementing the application of generative AI tools, teachers should build a generative AI tool application resource library with extremely rich content and strong pertinence according to actual needs. In this resource library, teachers can integrate videos, online documents, micro-courses, etc., used in daily teaching, and then classify and organize them to meet the application needs of generative AI tools in the background of educational digital transformation. By enriching online resources, the efficiency of teachers' application of generative AI tools in physical education teaching will be further improved, and college students can also obtain more references in their learning, which is of great significance to improving teaching quality^[12].

4. Application strategies of generative AI tools in college physical education practical courses under the background of educational digital transformation

4.1. Leveraging online AI videos to stimulate college students' interest

In the process of college physical education reform, the importance of interest cannot be overstated, as it is regarded as a key prerequisite for teachers to successfully apply generative AI tools in the background of educational digital transformation. If teachers fail to adopt appropriate methods to stimulate college students' interest during the implementation of physical education reform, it will be difficult for students to experience the true value of generative AI tools, thereby negatively impacting the application effects of these tools^[13]. Therefore, teachers should consider introducing generative AI tools to carefully select sports-related video content from online resources for college students, such as Olympic event videos and sports skill teaching videos. This can more effectively stimulate students' audio-visual perception, promote their multi-dimensional understanding and analysis of the sports knowledge they have learned, and further arouse their curiosity, laying a solid foundation for subsequent physical education reform. Before selecting video content, teachers should conduct an in-depth analysis of college students' sports knowledge level, cognitive ability, and interest preferences, and based on this, select sports videos that are more in line with students' needs to effectively stimulate their interest.

4.2. Integrating micro-courses to deepen college students' understanding

Some college students have limitations in their comprehension ability. If physical education is solely based on textbook content, students may struggle to grasp the core and difficulties of the knowledge, which will affect their practical ability in subsequent sports training and further impact the effectiveness of sports learning. In the traditional college physical education teaching model, teachers usually adopt the method of "theoretical explanation plus demonstration and training": first guiding students to learn sports theories in class, then conducting practical training on the playground. During the demonstration and training session, teachers demonstrate once and then ask students to imitate. Although this method can achieve teaching objectives to a certain extent, it is often insufficient to help students deeply understand the connotation of sports knowledge and sports skills, and may also lead to unnecessary consumption of students' physical strength and energy^[14].

In view of the current trend of educational digital transformation, integrating generative AI tools into physical education classes has become a new attempt. By combining micro-course teaching, teachers are

expected to break through the key and difficult points in physical education and deepen students' understanding of sports knowledge. When designing micro-courses, the duration should be strictly controlled to 5 to 10 minutes, and the interest of micro-courses should be continuously improved to enhance their appeal to college students and ensure their teaching value. Promoting physical education reform through micro-courses can more effectively attract students to participate in the exploration and practice of sports knowledge, help them understand the learned content more deeply, and thus improve the efficiency of sports learning.

4.3. Building an online platform and improving the knowledge system

Against the backdrop of educational digital transformation, to enhance the application effectiveness of generative AI tools, teachers must attach importance to cultivating college students' autonomous learning capabilities. Guiding college students to develop good self-learning habits helps them gradually form sound exercise habits, which is of great significance for improving their physical fitness. However, in traditional physical education practice, college students rarely engage in high-quality autonomous physical education learning. The main reason for this is the lack of an appropriate online self-learning platform, making it difficult for them to solve problems promptly. This not only affects the efficiency of their autonomous learning of physical education knowledge but also may hurt their learning mindset, which is not conducive to improving their physical education knowledge system. To address this issue, teachers can build an online platform integrated with generative AI tools based on the actual situation of their university. When college students encounter obstacles in self-learning physical education knowledge, they can upload their questions to the platform and solve them with the help of classmates and teachers, thereby smoothly advancing subsequent self-learning activities ^[15]. In addition, in the process of applying generative AI tools, teachers can also develop an after-class assignment function on the online platform and regularly release physical training programs. After completing the physical training, college students can submit their training results, reflections, and related questions, which will serve as an important basis for teachers to conduct targeted evaluations.

4.4. Conducting reasonable evaluations and improving teaching issues

In advancing the reform of college physical education, teachers should emphasize the importance of teaching evaluation. Implementing a reasonable and scientific evaluation system helps college students identify their shortcomings in physical education learning, thereby supplementing and improving relevant knowledge points. Based on the evaluation results, teachers can optimize and innovate the content and form of subsequent physical education teaching reforms, effectively solving potential problems and improving the quality of education. Before conducting teaching evaluations, teachers should consider the physical characteristics and knowledge levels of different college students and implement a hierarchical evaluation to ensure the pertinence and effectiveness of physical education teaching. For college students with weak physical fitness, evaluations should focus on theoretical knowledge and encourage them to learn health maintenance knowledge independently to enhance their physical fitness. For average college students, evaluations should cover both theoretical knowledge and sports skills, ensuring that they master the basics while also proficiently acquiring fundamental sports skills and maintaining sufficient exercise volume to meet the needs of physical development. For college students with excellent physical fitness, while evaluating their physical education theoretical knowledge, higher requirements should be put forward to motivate them to continuously challenge themselves and improve their comprehensive abilities.

5. Conclusion

In summary, to enhance the application effect of generative AI tools in college physical education practical courses against the backdrop of educational digital transformation, teachers can start from the following aspects: leveraging online videos to arouse college students' interest; combining micro-courses to deepen their understanding; building online platforms to improve knowledge systems; and conducting reasonable evaluations to address teaching problems. By doing so, the application quality of generative AI tools in college physical education practical courses under the context of educational digital transformation will be invisibly elevated to a new level.

Disclosure statement

The authors declare no conflict of interest.

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