The Role of AI Technology in Digital Media Technology Course Teaching

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Abstract. With the rapid development of Internet technology and the widespread use of smart terminals, we have entered the Internet era. The continuous innovation of artificial intelligence (AI) technology has enriched people's work and life and has changed how people receive information. Unlike traditional media such as newspapers, magazines, and television, digital media provides a more efficient way to access information. In the 21st-century knowledge economy, digital media has become a core industry. Under such circumstances, universities across the country have successively introduced related courses, with the Digital Media Technology program being one of the most representative. Due to the diverse fields and wide application range of digital media technology, its social functions have been fully demonstrated during its development. Therefore, integrating AI technology into the teaching of digital media technology courses can help adjust teaching goals, optimize teaching methods, and gradually enhance students' initiative. This paper aims to explore the specific application of AI technology in digital media technology course teaching to provide useful references for educators.

Keywords: AI technology, digital media technology, innovation strategies.

1. Main Research Content of Digital Media Technology Courses

Digital media technology courses focus on exploring the full lifecycle management of information in the digital media field, covering processes from information acquisition, processing, storage, dissemination, management, and maintenance to final output [1-3]. It involves a comprehensive integration of various technologies, including computer technology, information processing technology, and communication technology. Core technologies include digital information acquisition and output, storage, processing, dissemination, and management and security. Additionally, other comprehensive digital media technologies are based on these key technologies, as shown in Figure 1. For instance, streaming media technology, widely used in digital media network transmission, is based on digital transmission and compression technologies. Computer animation, extensively applied in the digital entertainment industry, relies on computer graphics technology, while virtual reality, which finds applications in entertainment, broadcasting, exhibitions, and education, integrates human-computer interaction, computer graphics, and display technologies. The continuous development and application of these technologies inject new vitality and challenges into digital media technology courses.

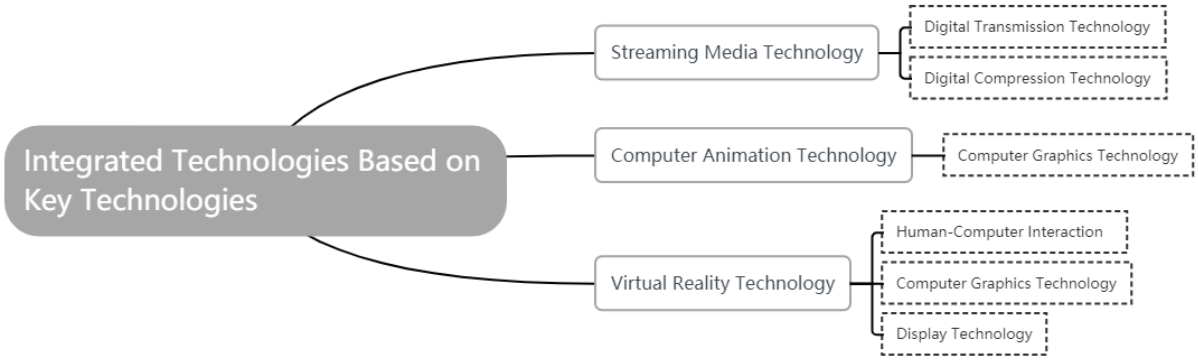

Figure 1. Integrated Technologies Based on Key Technologies

2. The Importance of AI Technology in Digital Media Technology Course Teaching

2.1. Enhancing Students' Learning Interest

In the current educational context, stimulating students' interest and increasing their initiative have become key goals. For digital media technology courses, the application of AI technology is particularly important. Teachers can use innovative teaching methods to enhance students' engagement, which in turn improves the quality of education. For instance, in the design of digital media courses, educators can introduce knowledge from other disciplines or use classic cases from society to increase students' understanding of life, broaden their perspective, and encourage them to accumulate relevant knowledge [4-5]. Schools can also organize regular activities or competitions, allowing students to improve through practice, explore their potential, develop creative thinking, and cultivate teamwork skills, laying a solid foundation for future career development.

2.2. Adjusting Classroom Teaching Objectives

With the deepening of quality education, teachers should refine original teaching objectives based on development needs. By combining relevant case studies during teaching, they can increase students' interest in digital media while enhancing overall learning quality and development. AI technology can be used to integrate video clips, animations, and other content into teaching materials, guiding students to analyze, think, and research. This allows for practical training, enhancing both design skills and hands-on experience, which lays a solid theoretical foundation and practical knowledge for students' future development. This integrated, hands-on approach helps educators cultivate students who are well-versed in theory and practice, thereby enhancing the overall effectiveness of teaching and the practicality of digital media technology courses.

2.3. Optimizing Classroom Teaching Methods

The teaching level and professional competence of educators directly affect students' learning outcomes. Therefore, teachers should align with current trends and effectively apply AI technology, adopting diverse teaching methods to integrate them into digital media courses, as shown in Table 1. Firstly, AI and computer technologies can be effectively integrated into teaching, combining micro-lesson teaching with multimedia approaches to enhance students' learning through intuitive and visual teaching methods. Secondly, it is essential to strengthen teacher-student interaction and communication, which can greatly enhance students' understanding of course knowledge. Teachers can guide students to apply and practice knowledge under their direction. Thirdly, with AI technology, educators can more accurately monitor students' learning progress, adjust teaching strategies in real time, and ensure that every student benefits from interaction, achieving both knowledge and skill improvement.

Table 1. Optimization of Classroom Teaching Methods

Optimization method	Expected effect
Integration of AI and computer technology	Through intuitive and visual teaching methods to improve students' overall learning level and comprehensive ability
Enhance teacher-student interaction	Good interaction forms and communication methods between teachers and students can help students to enhance their in-depth understanding of curriculum knowledge, and effectively practice and use relevant knowledge under the guidance of teachers
Use AI technology to assist teaching	Ensure that each student can benefit from the interaction and realize the double improvement of knowledge and skills

3. Principles for Digital Media Technology Course Teaching

3.1. Human-Centered Principle

When constructing a teaching system for digital media courses, it is essential to consider the unique characteristics and development trends of the digital media discipline. Digital media technology is characterized by its practicality and applicability, requiring students to undergo repeated training and verification during the design and development process, which is a cycle of cognition, practice, and re-cognition. Developing an effective teaching system must align with the characteristics of the digital media discipline and its future development trends. However, students' diverse traits and the unique circumstances of each school can significantly impact the efficiency of course teaching. As a highly comprehensive and interdisciplinary system, digital media technology encompasses varying knowledge backgrounds among students, and the educational philosophies and training goals differ across schools [6-7]. This results in different focal points when constructing the practical teaching system and in the various elements of the practical teaching process and content. Therefore, schools should adhere to the human-centered principle, aiming to meet students' developmental needs, design corresponding talent cultivation goals, and achieve optimal teaching outcomes.

3.2. Systematic Principle

The systematic principle is crucial. Practical teaching is a key component of the overall course structure, requiring deep integration with course content and practical reform, which must be incorporated into the curriculum and educational reform process in a coordinated manner. Effective integration between practical and theoretical teaching is necessary, ensuring proper allocation of teaching hours between practical and theoretical courses. During the construction process, maintaining the integrity and systematic nature of subject knowledge is essential. Additionally, course teaching must form a cohesive system across different stages, with tightly connected elements, providing comprehensive and systematic content. This content must not only meet the developmental needs of students and the scientific requirements of educational curricula but also align with future job market demands, laying a solid theoretical and practical foundation for future development.

3.3. Innovation Principle

In digital media course teaching, building a comprehensive teaching system helps cultivate professional and practical talents. With the rapid development of digital media education, an innovative teaching system has a unique connotation, exploring new teaching models that prioritize social needs as important developmental directions and competence as a central focus. This enables students to pursue personalized development within the teaching system, addressing key issues in modern digital media technology education [8-9]. Therefore, throughout the entire teaching process, educators should continuously update and refine course content, using traditional teaching methods as a foundation while incorporating a series of specialized features to more effectively enhance students' overall competence, fostering their personalized growth. Furthermore, adhering to the innovation principle means fully integrating personalized and innovative education into future digital media talent cultivation models. This involves adopting diversified practical content and providing tailored education, further promoting the personalized development of students in digital media course teaching.

4. Issues with the Application of AI Technology in Digital Media Technology Course Teaching

4.1. Technology Selection and Compatibility Issues

The integration of AI technology into digital media technology course teaching has opened up new avenues for innovative teaching methods. However, it is not without challenges, and one of the most

significant issues lies in technology selection and compatibility. As technological advancements in China continue to progress, a wide range of AI tools and platforms have emerged in the market, each offering different features, functions, and benefits. Despite the variety of options, not all tools are suitable for educational use. One key challenge is that different course objectives and content demand specific technological tools; for example, a course focused on digital animation might require AI tools specializing in graphic rendering, while a course on media analysis might benefit from tools equipped with advanced data processing capabilities.

Additionally, students have varying levels of familiarity with technology, and their learning abilities and interests differ, which must be considered when selecting AI tools. Some students may be more comfortable and engaged when using interactive AI tools, while others might struggle with more complex systems. Therefore, teachers must carefully evaluate the technological tools available, taking into account both the course content and the unique characteristics of their students. Selecting appropriate tools that align with both educational goals and student capabilities is essential for ensuring effective teaching outcomes. If the wrong tools are chosen, it can lead to confusion, frustration, and a lack of engagement, ultimately resulting in counterproductive effects that hinder the overall learning process.

4.2. Differences in Student Adaptability

The introduction of AI technology in the teaching of digital media technology courses has the potential to innovate traditional teaching approaches and provide numerous benefits, including interactive learning, personalized feedback, and enhanced student engagement [10]. However, it is important to recognize that each student is unique, and there is significant variability in their acceptance and adaptability to AI technology. Some students may find AI tools intuitive and easy to use, quickly integrating them into their learning process. Others, however, may find these tools complex or unfamiliar, and this can become a major obstacle to their learning experience. The relative complexity of AI technology might intimidate some students, leading to a loss of confidence in mastering the subject. This lack of confidence could, in turn, affect their overall learning performance, causing them to disengage from the course.

To address these challenges, educators must continuously monitor students' learning progress and identify those who may be struggling to adapt to AI-based tools. Differentiated teaching approaches should be implemented to accommodate varying levels of technological proficiency. For instance, students who are less comfortable with AI could benefit from additional tutorials, simplified interfaces, or step-by-step guidance, while more adept students might be given opportunities to explore advanced features independently. Gradually helping students overcome learning barriers will improve their ability to engage with AI tools, boosting their confidence and ensuring that they can make the most out of AI technology. In this way, educators can foster a more inclusive learning environment that supports every student, regardless of their initial level of familiarity with AI.

Overall, while AI technology offers exciting new possibilities for digital media education, its successful integration depends on thoughtful selection of tools and a flexible, student-centered approach to teaching. By addressing the challenges of technology selection and student adaptability, educators can maximize the benefits of AI, leading to a more engaging and effective learning experience for all.

5. Strategies for Applying AI Technology in Digital Media Courses

5.1. Choosing Appropriate Technology Tools

In the digital era, the integration of AI technology in education has proven to be an effective way to enhance the quality and efficiency of teaching, particularly in digital media courses. To maximize these benefits, educators must carefully select appropriate AI tools based on specific teaching objectives and content. Conducting an in-depth analysis of teaching goals and content helps in identifying tools that align closely with the course structure, ensuring optimal teaching outcomes. For

example, if the teaching goal is to enhance visual content creation skills, educators may choose AI tools that specialize in image recognition or animation creation. Conversely, if the aim is to improve students' programming abilities, selecting AI-driven coding assistants would be more appropriate. Additionally, factors such as ease-of-use, reliability, and accessibility of the AI tools should be taken into account, as these aspects directly influence how effectively students can understand and apply the knowledge. Well-chosen AI tools can make the learning process more engaging and interactive, enhancing students' motivation and enabling them to apply knowledge more effectively in real-world scenarios [11-12].

5.2. Regular Teacher Training

The ever-changing dynamics of social development and technology require educators to continuously update their teaching methods. The integration of AI technology has the potential to transform traditional teaching practices, thus, educators need to actively participate in regular AI skills training. By engaging in systematic training programs, teachers can stay informed about the latest advancements in AI technology and learn how to integrate these innovations effectively into everyday teaching. This training should cover a range of topics, including the use of AI tools for course design, the development of digital teaching resources, and the implementation of personalized learning experiences. Through such training, educators can master AI applications, allowing them to enhance not only their teaching methods but also the overall learning experience for students. This transformation is demonstrated in Figure 2, which compares teaching efficiency and quality before and after teachers have undergone AI skills training. By building their technical competence, educators can deliver more effective, engaging, and customized teaching services, ultimately pushing forward the modernization of education.

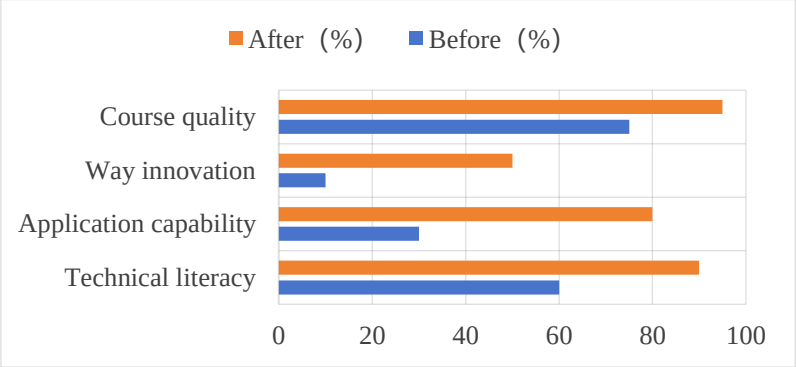

Figure 2. Comparison of Teaching Efficiency Before and After AI Skills Training

5.3. Establishing a Diversified Assessment System

A diversified assessment system is essential in aligning teaching with students' development needs, thereby improving teaching quality and supporting well-rounded growth. As AI technology becomes more prevalent, constructing a diversified assessment system that integrates AI can offer a more comprehensive and objective evaluation of students' overall abilities. Traditional assessment methods, such as exams and written assignments, are still valuable as they provide insight into students' understanding. However, these methods have limitations and may not fully reflect students' learning progress. By introducing project-based learning, interactive assessments, and online testing, teachers can get a more nuanced understanding of student achievements and areas that need improvement. Additionally, AI can assist in the assessment process by providing immediate feedback, analyzing student performance, and even suggesting personalized learning plans based on the results. This helps teachers to adjust their teaching strategies more effectively and promotes individualized development for students. The ultimate goal is to create an inclusive and supportive educational environment that caters to each student's unique learning style and pace, enhancing their overall learning experience and helping them build confidence in their skills.

These strategies not only streamline the teaching and learning process but also address the needs of students and educators in a rapidly evolving digital media landscape. By selecting appropriate tools, ensuring educators are well-trained, and establishing an assessment system that adapts to individual learning pathways, the integration of AI technology in digital media courses can be made more effective and comprehensive.

6. Conclusion

Digital media technology, as a new field, has broad applications and may become a vital industry in economic development. The rapid development of the digital media industry requires professionals with both technical skills and aesthetic sensibility. Educators must keep pace with modern developments, applying AI technology to enhance the teaching of digital media courses. Effectively leveraging AI can improve students' practical skills and lay a solid theoretical and practical foundation for continuous learning and development.

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