

Research and Practice on Innovative Talent Cultivation Model in the Field of Educational Technology from the Perspective of Education Artificial Intelligence

Xin Meng, Chuanzhi Xu, Xueni Sun*

Hengxing University, Qingdao, Shandong, China

**Corresponding author: 2906294804@qq.com*

Keywords: Educational Technology, Artificial Intelligence, Innovative Talent Cultivation Model, Educational Technology Application

Abstract: This paper discusses the development needs of the field of educational technology in the era of artificial intelligence, and explores how to cultivate innovative talents that meet the needs of the times. Firstly, the paper reviews the current application status of artificial intelligence in the field of education, as well as the current situation and challenges of educational technology. Secondly, it proposes a theoretical framework for innovative talent cultivation mode under the perspective of artificial intelligence, and explores the application and development trends of artificial intelligence in the field of educational technology. Furthermore, the paper designs an innovative talent cultivation model for educational technology based on artificial intelligence, and verifies it through case studies. Finally, the research results of this paper are summarized, and the future development trends and challenges of artificial intelligence and educational technology are discussed.

1. Introduction

With the continuous development and popularization of artificial intelligence technology, the field of education is facing unprecedented opportunities and challenges. In this digital and intelligent era, the role of educational technology is becoming increasingly important. It not only needs to adapt to the rapid development of technology but also continuously innovate teaching models and talent cultivation methods to better meet the needs of society for education. This paper aims to explore the current development status and challenges of educational technology in the era of artificial intelligence, and how to respond to challenges through innovative talent cultivation models, in order to provide theoretical support and practical guidance for the development of educational technology. Firstly, this paper will review the current application status of artificial intelligence in the field of education, and discuss the current development situation of educational technology. Secondly, we will propose a theoretical framework for innovative talent cultivation model based on the perspective of artificial intelligence, and analyze the application and development trends of artificial intelligence in the field of educational technology. Finally, through the design of practical cases and verification, we will demonstrate the feasibility and effectiveness

of this innovative talent cultivation model. Through the research of this paper, we hope to provide new ideas and methods for the development of educational technology in the era of artificial intelligence, and promote the continuous innovation and development of educational technology.

2. Artificial Intelligence and the Field of Educational Technology

2.1. Application and Development of Artificial Intelligence in the Education Field

With the rapid development of artificial intelligence technology, its application in the field of education has attracted increasing attention. Artificial intelligence technology not only provides personalized learning experiences but also assists teachers in optimizing teaching content and providing personalized guidance. Intelligent educational systems can automatically adjust teaching content and pace based on students' learning situations and characteristics to enhance learning efficiency and effectiveness. In the field of educational technology, the application of artificial intelligence has become an important research direction. Scholars in educational technology utilize artificial intelligence technology to design and develop various intelligent educational tools and systems for improving teaching quality, personalized learning, intelligent assessment, and more. For instance, personalized recommendation systems based on machine learning algorithms can recommend suitable learning resources and materials based on students' learning interests and abilities; intelligent tutoring systems can interact naturally with students through speech recognition and natural language processing technologies to answer questions and provide guidance; and intelligent assessment systems can automatically analyze students' learning situations and performances, providing targeted feedback and suggestions for teachers to adjust teaching strategies. However, despite the broad prospects of artificial intelligence application in the education field, it also faces challenges and issues. For example, issues related to personal privacy and data security, algorithm fairness and transparency, and the interpretability and credibility of intelligent educational systems. Therefore, how to fully leverage the advantages of artificial intelligence technology while considering the uniqueness of education and students' individual needs is one of the important topics currently faced by the field of educational technology[1].

2.2. Current Situation and Challenges of the Field of Educational Technology

As one of the important disciplines to address the challenges of education in today's digital age, the field of educational technology is facing diverse and complex challenges. In the rapidly evolving technological environment, educational technology needs to constantly adapt to changes to meet the needs of the education field. Firstly, educational technology needs to keep pace with technological developments, especially the application of emerging technologies such as artificial intelligence, big data, and virtual reality. These technologies bring new possibilities to the education field but also pose new requirements for educational technology professionals, who need to possess interdisciplinary knowledge and skills to adeptly utilize the latest technologies to solve practical educational problems. Secondly, the field of educational technology faces challenges brought about by changes in the education system and teaching modes. With the trends of digitalization, personalization, and intelligence in education, traditional teaching models are undergoing profound changes. Educational technology needs to actively address this challenge by continuously innovating teaching designs and evaluation methods to enhance teaching effectiveness and student learning experiences. Additionally, educational technology also needs to address issues of educational inequality. Despite the enormous potential of digital technology in education, the digital divide still exists in certain regions and communities. Therefore, educational technology needs to explore actively how to use technological means to address issues of educational resource

inequality and the digital divide, to achieve the inclusiveness and fairness of education. In summary, the field of educational technology faces many challenges, but at the same time, it also contains tremendous opportunities for development. Only by continuously innovating and developing can we better address current and future educational challenges and make greater contributions to the development of the education field [2].

2.3. Review and Analysis of Relevant Research

In recent years, the application of artificial intelligence technology in the field of educational technology has attracted widespread attention and has achieved significant results. Researchers utilize educational data mining technology to analyze students' learning behaviors and performances, thereby providing personalized learning support and teaching feedback. The design and development of personalized learning systems make teaching more flexible and effective, helping to meet the learning needs of different students. Additionally, research on intelligent educational tools has also made progress, such as intelligent tutoring systems and intelligent assessment systems, which provide personalized teaching advice and teaching resources for teachers, improving teaching efficiency. However, despite the benefits brought by the application of artificial intelligence technology in the field of educational technology, it also faces challenges and issues. One of the challenges is the effectiveness of personalized learning. Although personalized learning systems can provide customized learning plans based on students' individual needs, ensuring the effectiveness of these plans is still a problem that needs to be addressed. Another challenge is the credibility of intelligent teaching systems. Since the decision-making process of intelligent systems is often opaque, teachers and students may have difficulty understanding the workings and decision-making basis of the systems, which may reduce their trust and acceptance of the systems. In addition to technological research in the field of educational technology, exploration of talent cultivation models has also become a research hotspot. Some studies have proposed different theoretical frameworks and practical experiences, discussing how to cultivate talents with innovation and practical abilities. However, with the development of artificial intelligence technology, traditional talent cultivation models may no longer be applicable. Therefore, it is necessary to further explore innovative talent cultivation models based on the perspective of artificial intelligence to meet the development needs of the times. In addition to reviewing existing research results, we will also analyze new trends in the development of the field of educational technology. These new trends may involve the application of emerging technologies, innovation in educational models, changes in educational policies, and other aspects, which are of great significance for the future development of the field of educational technology. Through the review and analysis of relevant research, we can have a more comprehensive understanding of the current development status and future trends of the field of educational technology in the perspective of artificial intelligence, providing important references and insights for the subsequent research content of this paper.

3. Theoretical Foundation of Innovative Talent Cultivation Models

3.1. Development Trends of the Field of Educational Technology in the Perspective of Artificial Intelligence

With the rapid development of artificial intelligence technology, the field of educational technology is facing new opportunities and challenges. This section will explore the development trends of the field of educational technology from the perspective of artificial intelligence and analyze future directions. Firstly, the widespread application of artificial intelligence technology will drive the field of educational technology towards intelligence. Intelligent educational systems,

personalized learning platforms, intelligent teaching aids, and other intelligent educational technologies will become important research directions in the field of educational technology[3]. These intelligent educational technologies will better meet the personalized learning needs of students and enhance teaching effectiveness and efficiency. Secondly, the field of educational technology will pay more attention to data-driven teaching methods and learning analytics. With the support of artificial intelligence technology, educational technology can better analyze and utilize learning data to achieve personalized teaching and optimize the teaching process. At the same time, analyzing learning behaviors and learning outcomes provides scientific evidence for teaching decisions and evaluations. Additionally, artificial intelligence technology will also promote interdisciplinary cooperation between the field of educational technology and other disciplines. Collaboration with disciplines such as computer science, cognitive psychology, and education will become an important trend in future educational technology research. Interdisciplinary collaboration will bring new ways of thinking and problem-solving methods to the field of educational technology, promoting its development. Lastly, the development of artificial intelligence technology will also lead to changes in the talent cultivation models of the field of educational technology. Educational technology needs to cultivate interdisciplinary talents who are proficient in the application of artificial intelligence technology to solve complex problems in the education field. Therefore, the curriculum and teaching methods of educational technology will also face adjustments and innovations. In summary, the development of the field of educational technology in the perspective of artificial intelligence will present trends of intelligence, data-driven, interdisciplinary cooperation, and innovation in talent cultivation models. With the continuous development of artificial intelligence technology, the field of educational technology will play a more important role in the future, providing technical and intellectual support for education reform and development.

3.2. Theoretical Framework for Constructing Innovative Talent Cultivation Models

In the development of the field of educational technology, constructing innovative talent cultivation models is crucial. This section will propose a theoretical framework to guide the construction of innovative talent cultivation models, combining several key elements including personalized learning theory, project-based learning, interdisciplinary integration, and data-driven instructional design. Personalized learning theory suggests that each student has unique learning needs and styles. Therefore, teaching should be customized based on students' individual characteristics. With the support of artificial intelligence technology, intelligent learning systems and teaching tools can be designed to provide students with customized learning experiences and resource support. Project-based learning emphasizes that students acquire knowledge and skills by participating in real projects and solving real-world problems. By introducing project-based courses and practical teaching activities in the field of educational technology, students can apply their knowledge in practice, cultivate problem-solving and teamwork abilities. Interdisciplinary integration combines knowledge and methods from different disciplines to provide students with a broader perspective and richer knowledge resources. The field of educational technology needs to collaborate with disciplines such as computer science, cognitive psychology, and education to explore the application and development of artificial intelligence technology in the education field. Data-driven instructional design utilizes student learning data to optimize the teaching process and instructional content. By collecting and analyzing student learning data, a better understanding of students' learning situations and needs can be obtained to provide scientific evidence for teaching and improve teaching effectiveness. Integrating the above theoretical framework can provide guidance and support for innovative talent cultivation models in the field of educational technology.

By combining key elements such as personalized learning, project-based learning, interdisciplinary integration, and data-driven instructional design, high-quality talents with innovation, practical ability, and interdisciplinary thinking can be cultivated to meet the needs of future educational technology development[4].

4. Application of Artificial Intelligence in the Field of Educational Technology

4.1. Application and Practice of Artificial Intelligence Technology in the Field of Educational Technology

The application and practice of artificial intelligence technology in the field of educational technology have become a highly regarded area. This section will discuss the application of artificial intelligence technology in the field of educational technology and relevant practical experiences. Researchers and educators in the field of educational technology have utilized artificial intelligence technology to develop various personalized learning systems and intelligent teaching aids. These tools can provide customized learning content and support based on students' learning characteristics and needs, thereby enhancing learning effectiveness and satisfaction. Researchers in the field of educational technology have also developed intelligent teaching assessment and feedback systems using artificial intelligence technology. These systems can provide personalized teaching feedback and suggestions for teachers by analyzing students' learning behaviors and achievements, helping teachers better understand students' learning situations and adjust teaching strategies. In terms of curriculum design and teaching activity organization, educators in the field of educational technology have also begun to utilize artificial intelligence technology for intelligent teaching design and curriculum development. By analyzing subject knowledge structures and student learning needs, they design intelligent teaching content and learning tasks to enhance the relevance and effectiveness of courses. In addition to the mentioned applications, researchers in the field of educational technology have also utilized artificial intelligence technology to develop various virtual reality (VR) and augmented reality (AR) technologies for simulating and experiencing teaching scenarios. These technologies can provide students with more vivid and intuitive learning experiences, enhancing the attractiveness and interest of learning. In summary, the application and practice of artificial intelligence technology in the field of educational technology cover various aspects such as personalized learning systems, intelligent teaching assessment and feedback systems, intelligent teaching design and curriculum development, virtual reality, and augmented reality technologies. These applications and practices not only enrich the research content of the field of educational technology but also provide important technical support and theoretical guidance for the reform and development of the education field.

4.2. Course Design and Development of the Field of Educational Technology from the Perspective of Artificial Intelligence

From the perspective of artificial intelligence, the course design and development of the field of educational technology need to keep pace with technological advancements to meet the demand for high-quality talents in society. This section will discuss the course design and development of the field of educational technology from the perspective of artificial intelligence. Firstly, course design needs to fully integrate artificial intelligence technology and educational theories. Courses should cover content such as fundamental artificial intelligence knowledge, educational psychology, curriculum design and assessment, educational data analysis, aiming to cultivate students' ability to comprehensively apply artificial intelligence technology to solve educational problems. Secondly, course content should emphasize practicality and project orientation. Through project-based

learning and practical teaching, students can apply their knowledge in real projects, enhance problem-solving abilities, practical experience, and foster innovation awareness and teamwork skills. Additionally, course design should also focus on interdisciplinary integration. The curriculum of educational technology can be integrated with relevant disciplines such as computer science, data science, cognitive psychology, providing students with diversified learning resources and a cross-disciplinary perspective, promoting interdisciplinary thinking and innovative abilities. Finally, course design needs to synchronize with industry demands and technological advancements. The curriculum of the field of educational technology should be adjusted and updated in a timely manner to reflect the latest applications and development trends of artificial intelligence technology in the education field, ensuring that students can adapt to societal needs and remain competitive after graduation. In conclusion, course design and development of the field of educational technology from the perspective of artificial intelligence need to fully integrate artificial intelligence technology and educational theories, emphasize practicality and project orientation, focus on interdisciplinary integration, and synchronize with industry demands and technological advancements. Such course design will provide students in the field of educational technology with a comprehensive learning experience, cultivating them into high-quality talents with innovative thinking and practical abilities.

5. Innovative Talent Cultivation Mode Design and Practice

5.1. Design of Innovative Talent Cultivation Mode in Educational Technology Based on Artificial Intelligence

With the rapid development of artificial intelligence technology, the field of educational technology needs innovative talent cultivation modes to meet the demands of the era's development. This section will discuss the design of innovative talent cultivation modes in educational technology based on artificial intelligence. The innovative talent cultivation mode should emphasize the design of personalized learning experiences. By utilizing artificial intelligence technology, personalized learning paths, content, and assessment methods should be provided to meet the diverse learning needs and interests of students. The mode design should emphasize project-driven learning approaches. Through participation in real projects and solving practical problems, students can apply their knowledge and skills in practice, fostering problem-solving abilities and teamwork. The innovative talent cultivation mode requires interdisciplinary integration. In addition to knowledge in educational technology, it should also cover relevant disciplines such as computer science, data science, and cognitive psychology, providing students with diversified learning resources and perspectives. Course design should focus on practice-oriented approaches, integrating theory with practice[5]. By designing project-based courses and practical teaching activities, students can apply artificial intelligence technology to solve educational problems in real projects, enhancing problem-solving abilities and practical experience. The innovative talent cultivation mode should collaborate with industries to provide students with internship opportunities and practical work experience. Schools can collaborate with educational technology companies, educational institutions, etc., to provide practical opportunities for students to apply and engage with artificial intelligence technology in real environments. Through the aforementioned design, the innovative talent cultivation mode based on artificial intelligence in educational technology will be able to cultivate high-quality talents with innovative, practical, and interdisciplinary thinking abilities to meet the needs of future educational technology development.

5.2. Practical Case Analysis and Verification

To verify the effectiveness of the innovative talent cultivation mode in educational technology based on artificial intelligence, we selected a practical case for analysis and verification.

Case Background: A university's educational technology program introduced an innovative talent cultivation mode based on artificial intelligence in its curriculum design, combining elements such as personalized learning, project-driven learning, and interdisciplinary integration.

Practice Content: In their course studies, students use artificial intelligence technology to solve practical problems in the field of education through participation in project-based courses and practical teaching activities. They work in groups on project research and design, involving applications development such as intelligent educational systems and personalized learning platforms. Additionally, students participate in interdisciplinary collaborative practical projects, collaborating with students from disciplines such as computer science and cognitive psychology to address complex educational issues.

Practice Effects:

1) Improved personalized learning abilities: Through the design of personalized learning experiences, students have a clearer understanding of their learning needs and can adjust their learning accordingly, resulting in significantly improved learning effectiveness.

2) Enhanced problem-solving abilities: Through project-driven learning approaches, students have improved their problem-solving abilities and practical experience by addressing real-world problems, fostering innovative thinking and teamwork spirit.

3) Significant effects of interdisciplinary integration: Students' participation in interdisciplinary collaborative practical projects deepened their understanding and application of different disciplines, expanded their perspectives and ways of thinking, and enhanced their interdisciplinary collaboration abilities.

The practical case validates the effectiveness and feasibility of the innovative talent cultivation mode in educational technology based on artificial intelligence. In the future, we will further refine this mode, strengthen collaboration with industries, enhance students' practical and innovative abilities, and make greater contributions to cultivating high-quality talents adapted to the future development of educational technology.

6. Conclusion

In the context of the rapid development of artificial intelligence technology, the field of educational technology is facing unprecedented opportunities and challenges. This paper, starting from the perspective of artificial intelligence, has deeply explored the current situation, trends, and innovative talent cultivation modes of the field of educational technology. By analyzing the application and development of artificial intelligence in the field of education, this paper points out the development trends of educational technology in terms of intelligence, data-driven approaches, interdisciplinary collaboration, and innovative talent cultivation modes. Based on this analysis, key points for designing an innovative talent cultivation mode based on artificial intelligence are proposed, including personalized learning, project-driven learning, interdisciplinary integration, and other critical elements. Through the analysis and verification of practical cases, this paper validates the effectiveness and feasibility of this mode, providing important insights for the future development of the field of educational technology. Therefore, it is suggested that the field of educational technology actively explore innovative talent cultivation modes in the era of artificial intelligence, continuously improve teaching content and methods, cultivate more high-quality talents adapted to the needs of the times, and make greater contributions to the development of educational technology and educational reform.

References

- [1] Nichols P T, Román D E. *Platform Governance and Education Policy: Power and Politics in Emerging Edtech Ecologies* [J].*Educational Evaluation and Policy Analysis*, 2024, 46(2):309-328.
- [2] Fernando S J, Kyle C R. *Imagining futures for; Communication Education: XR/VR and the promise of educational technology* [J].*Communication Education*, 2024, 73(2):244-246.
- [3] Helen C, V. M J, Yaser S, et al. *Examining technology use within the ADDIE framework to develop professional training* [J].*European Journal of Training and Development*, 2024, 48(3-4):422-454.
- [4] Kharchenko A, Tsybulskyi V, Kovbasenko S, et al. *Devising an approach to the use of distance education technologies in performing control measures for technical students*[J].*Eastern-European Journal of Enterprise Technologies*, 2023, 6(2):49-58.
- [5] Young B L, E. V L, H. A B, et al. *Preservice Teachers' TPACK Growth After Technology Integration Courses in Early Childhood Education*[J].*Early Education and Development*, 2024, 35(1):114-131.