



Precision Ideological and Political Education Practice Research in Hunan Vocational Schools Based on Artificial Intelligence

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Abstract. This study takes vocational schools in Hunan as a case study and explores the innovative practices and theoretical innovations of AI-empowered precision ideological and political education. The research draws the following main conclusions: Firstly, based on AI, a personalized ideological and political education model is established to enhance students' interest and participation through personalized evaluation of content, methods, and effects using AI technology. Secondly, by optimizing the management process of ideological and political education with AI, the efficiency and level of education management are improved, including resource management, teaching process monitoring, and education quality diagnosis. Thirdly, a quality evaluation system for ideological and political education based on big data and intelligent algorithms is constructed to provide a foundation for continuous improvement in education quality through scientific assessment indicators, data collection, and feedback. It is recommended to strengthen the research and application of AI technology in ideological and political education, establish long-term mechanisms to promote deep integration, and contribute to the high-quality development of vocational education.

Keywords: precision ideological and political education, artificial intelligence, vocational schools, personalized learning, educational management

1 INTRODUCTION

With the rapid development of artificial intelligence technology, its increasingly widespread application in the field of education has brought new opportunities and challenges to the transformation of traditional educational models. As an important

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component of vocational education, vocational schools bear the important mission of cultivating high-quality skilled talents. Ideological and political education in vocational schools plays a crucial role in cultivating students' values and developing professional ethics.

Artificial intelligence technology, with its powerful data processing, intelligent analysis, and personalized recommendation capabilities, provides new possibilities for the precise and personalized development of ideological and political education in vocational schools. Based on this, this study takes vocational schools in Hunan Province as the research object to explore the innovative application of artificial intelligence in ideological and political education, aiming to construct a precision ideological and political education practice model empowered by artificial intelligence in vocational schools, providing valuable exploration to enhance the quality and effectiveness of ideological and political education.

2 LITERATURE REVIEW

2.1 Characteristics and Challenges of Ideological and Political Education in Vocational Schools

Vocational schools, as an essential component of vocational education, possess certain characteristics in their ideological and political education, such as emphasis on practicality, strong relevance, and diverse teaching methods.^[1] However, they also face challenges such as uniformity of content, passive teaching methods, and an incomplete evaluation system.^[2] On one hand, traditional ideological and political education curriculum content tends to be overly theoretical, lacking targeted integration with students' majors and employment prospects. On the other hand, teaching methods are often too singular, making it difficult to stimulate students' initiative and engagement in learning.^[3] Moreover, the incomplete quality assessment system for ideological and political education makes it challenging to comprehensively and objectively reflect educational outcomes.^[4] Therefore, vocational schools urgently need to innovate their ideological and political education models to enhance the quality of education and students' ideological and political literacy.

2.2 Theoretical Foundation of Artificial Intelligence Empowering Ideological and Political Education

The theoretical foundation of artificial intelligence empowering ideological and political education in vocational schools mainly includes personalized learning theory, intelligent education system theory, and educational quality assessment theory.^[5] Personalized learning theory emphasizes tailored teaching methods, providing personalized learning content and methods based on students' characteristics.^[6] Intelligent education system theory underscores the optimization of teaching processes and enhancing teaching effectiveness through the use of artificial intelligence technology.^[7] Educational quality assessment theory provides theoretical support for constructing an artificial intelligence-driven quality assessment system for ideological

and political education.^[8]These theories offer crucial theoretical foundations for the deep integration of artificial intelligence with ideological and political education in vocational schools.

3 INNOVATIVE PRACTICES OF ARTIFICIAL INTELLIGENCE IN IDEOLOGICAL AND POLITICAL EDUCATION IN HUNAN VOCATIONAL SCHOOLS

3.1 Optimization of Ideological and Political Education Management Processes through Artificial Intelligence

Intelligent Teaching Resource Management. The school utilizes artificial intelligence technology to achieve intelligent management of ideological and political teaching resources. By employing technologies such as semantic analysis and knowledge graph construction, an intelligent resource repository covering teaching outlines, course standards, teaching cases, etc., is established. As shown in Fig. 1.

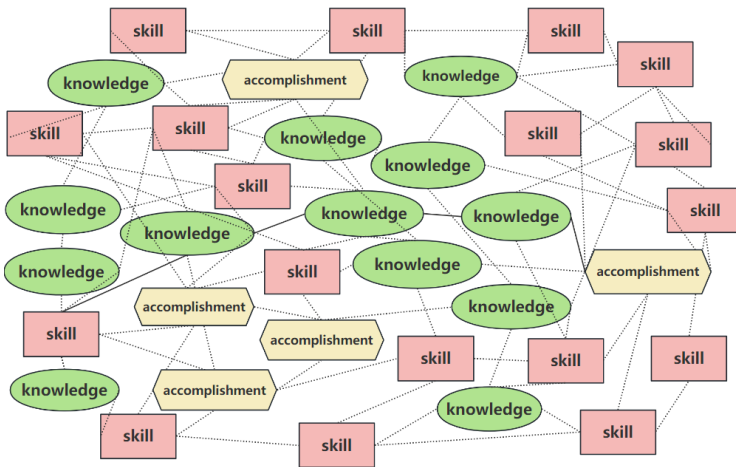


Fig. 1. Knowledge Graph Construction

Intelligent Teaching Process Monitoring. To grasp the ideological and political teaching process in real-time, the school has built an intelligent teaching monitoring system using artificial intelligence technology. This system automatically collects data on teacher-student interactions, student classroom performances, etc., through technologies such as speech recognition and facial recognition, enabling intelligent analysis.^[9]

3.2 Artificial Intelligence-Driven Ideological and Political Education Quality Assessment System

Construction of Evaluation Index System. The school has constructed a multidimensional ideological and political education quality assessment index system based on artificial intelligence technology. Initially, through text mining, knowledge graph, etc., the system analyzes the goals, content, methods of ideological and political education, determining evaluation dimensions including knowledge objectives, skill objectives, value objectives, etc.^[10] Using machine learning algorithms and combining student learning data, teacher teaching feedback, the evaluation indices are continuously optimized and refined. This system not only covers aspects such as knowledge skills, emotional attitudes, behavior habits but also considers individual differences among students, providing a basis for comprehensive and objective evaluation of ideological and political education quality.

Data Collection and Analysis for Evaluation. To ensure the scientific and effective evaluation, the school uses artificial intelligence technology for intelligent data collection and analysis. Specifically, through technologies like speech recognition, image recognition, the system automatically collects process data such as teacher-student interactions, student classroom performances. Additionally, based on big data analysis, the system can uncover student learning characteristics, behavioral tendencies, etc., supporting comprehensive evaluation. Furthermore, the system possesses intelligent data analysis capabilities, automatically generating diagnostic reports based on evaluation indices, providing a basis for teachers to improve teaching.

Feedback and Application of Evaluation Results. To ensure timely feedback and effective application of evaluation results, the school has established an artificial intelligence-driven feedback mechanism. The system can automatically generate personalized feedback reports based on evaluation results, offering targeted suggestions to teachers and students. Additionally, the system can intelligently correlate evaluation results with teaching resources, teaching processes, etc., providing intelligent support for teachers to optimize teaching. Furthermore, the school has established a continuous improvement mechanism for teaching quality based on artificial intelligence, continuously enhancing the quality and effectiveness of ideological and political education through dynamic analysis and application of evaluation results.

4 THEORETICAL INNOVATION OF PRECISION IDEOLOGICAL AND POLITICAL EDUCATION EMPOWERED BY ARTIFICIAL INTELLIGENCE IN HUNAN VOCATIONAL SCHOOLS

The fusion of artificial intelligence and ideological and political education requires the establishment of a systematic theoretical framework to guide innovative practices.

Firstly, from an epistemological perspective, the core of artificial intelligence technology lies in simulating and extending human cognitive abilities, including perception, learning, reasoning, which closely align with the goals of ideological and political education - nurturing students' values, thinking patterns, and behavioral habits. Secondly, from a methodological standpoint, artificial intelligence technology can provide personalized, interactive, and intelligent teaching methods for ideological and political education, making the educational process more precise and efficient. Thirdly, from an ontological level, the integration of artificial intelligence and ideological and political education contributes to constructing a new educational ecosystem, optimizing the allocation of educational resources, and continuously enhancing educational quality. As shown in Fig. 2.

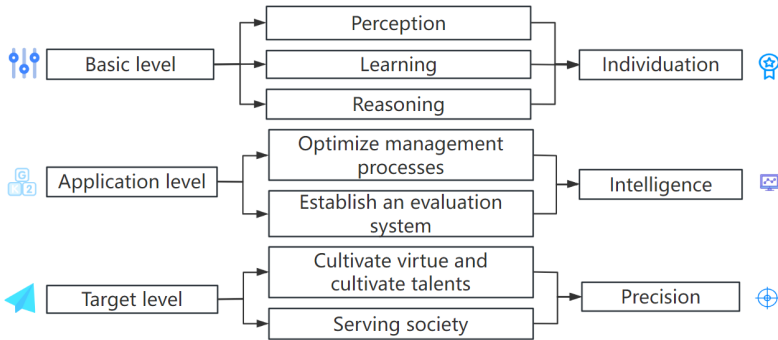


Fig. 2. Theoretical framework

5 CONCLUSION AND DISCUSSION

This study's theoretical innovations and practical explorations hold significant application value. Firstly, it provides an effective path for the reform of ideological and political education in vocational schools. Through AI empowerment, personalized, intelligent, and precise ideological and political education can enhance teaching effectiveness and cultivate students' ideological and political literacy. Secondly, it offers new scenarios for the application of AI in the field of education. Ideological and political education in vocational schools, as a unique educational domain, serves as a new testing ground for innovative applications of AI technology in education. Thirdly, it contributes new ideas to promote the high-quality development of vocational education. AI-empowered precision ideological and political education helps nurture comprehensive socialist builders and successors, contributing to the realization of the Chinese Dream of the great rejuvenation of the Chinese nation.

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