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Research on the Innovation Mechanism of Ideological and Political Course Teaching in Universities Empowered by Artificial Intelligence

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Abstract: Against the background of the continuous advancement of the digitalization strategy in education, artificial intelligence (AI) has been deeply integrated into the teaching system of ideological and political theory courses in Chinese universities, becoming an important technological force for promoting their high-quality development. The application of AI not only reshapes teaching forms and operational mechanisms, but also exerts a profound influence on value guidance and educational models in ideological and political education. Based on the fundamental task of fostering virtue through education, this study draws on literature analysis and practical investigation to systematically examine the current landscape of AI-empowered ideological and political teaching. It identifies its functional advantages in teaching model innovation, resource system optimization, and personalized education, while also analyzing practical challenges such as data security, algorithmic bias, ideological risks, and regional development disparities. On this basis, this paper constructs an innovation mechanism for AI-enabled ideological and political teaching from the perspectives of teaching models, teaching content, and teaching governance, and proposes a coordinated development path that emphasizes people-centeredness, value guidance, and institutional guarantees. The study argues that only by adhering to correct political orientation and value guidance, and by achieving an organic integration of technological rationality and humanistic spirit, can deep integration and connotative development of AI and ideological and political education be realized.

Keywords: Artificial Intelligence Empowerment; Ideological and Political Theory Courses; Teaching Innovation Mechanism; Fostering Virtue Through Education.

1. Introduction

With the promulgation and implementation of the Outline for Building a Leading Country in Education (2024–2035), strengthening and improving ideological and political education in schools in the new era has been established as a key task in shaping the overall framework of moral cultivation and talent development[1]. As a crucial vehicle for implementing the fundamental mission of fostering virtue through education, ideological and political theory courses in universities are currently facing new opportunities brought about by digital transformation and intelligent upgrading[2,3].

Artificial intelligence (AI), as a major driving force of the new round of technological revolution, is profoundly reshaping educational forms and modes of talent cultivation[4,5]. President Xi Jinping has emphasized the importance of promoting the deep integration of artificial intelligence and education in order to advance educational reform and innovation. The integration of AI not only transforms teaching tools, but also reconstructs the operational logic of ideological and political courses in terms of teaching structure, interaction patterns, and evaluation mechanisms[6,7].

Against this backdrop, systematically exploring the operational mechanisms, practical challenges, and optimization pathways of AI-empowered ideological and political teaching in universities holds significant theoretical and practical value for promoting the high-quality development of ideological and political courses. Focusing on the practical foundations and future directions of AI-enabled ideological and political education, this paper aims to provide theoretical support and practical references for the intelligent transformation of ideological and political teaching.

2. The Practical Landscape of AI-Empowered Ideological and Political Teaching in Universities

(1) Practical Challenges in the Deep Integration of Artificial Intelligence and Ideological and Political Courses

The deep integration of artificial intelligence with ideological and political courses represents an important direction for teaching reform in the new era. However, in practice, this integration still faces multiple constraints.

First, teachers' digital literacy and technological application capabilities need further improvement. Some instructors' understanding of artificial intelligence remains limited to the level of teaching tools, lacking systematic integration awareness. As a result, it is difficult for them to effectively combine technological applications with pedagogical objectives, which may ultimately affect the educational outcomes of ideological and political teaching[8,9].

Second, the risk of instrumental rationality overriding value rationality has gradually emerged. In some teaching practices, excessive emphasis is placed on technological presentation and visual effects, turning artificial intelligence into a superficial "teaching gimmick." Such practices tend to neglect theoretical interpretation and value guidance, thereby weakening the ideological leadership and educational function of ideological and political courses[10].

Third, insufficient top-level design constrains systematic coordination. In many universities, intelligent teaching platforms are promoted as isolated projects without

comprehensive planning or institutional coordination. This often leads to the formation of "technological islands," making it difficult to establish stable and sustainable operational mechanisms[11].

(2) The Practical Value of AI-Empowered Ideological and Political Teaching

Despite the challenges mentioned above, the application of artificial intelligence in ideological and political teaching demonstrates significant practical value. This value is mainly reflected in three dimensions: efficiency, learning experience, and educational outcomes.

First, artificial intelligence helps improve teaching efficiency and the allocation of educational resources. AI-based knowledge retrieval and resource integration systems enable instructors to rapidly identify and select high-quality teaching materials, thereby improving the overall structure of course resources. Such systems can effectively alleviate teachers' information overload and allow them to devote more attention to instructional design and value guidance[12].

Second, artificial intelligence contributes to enhancing the learning experience and promoting deeper learning. By employing technologies such as virtual reality and intelligent simulation, immersive learning environments can be created that transform abstract theoretical concepts into vivid experiential scenarios. This approach can foster students' emotional engagement and deeper understanding, thereby enhancing the attractiveness and persuasive power of ideological and political courses[13].

Finally, artificial intelligence facilitates the transformation toward a personalized education model. By analyzing students' learning behavior data and constructing learner profiles, instructors can better understand students' cognitive characteristics and interests, enabling more precise content delivery and differentiated guidance. This provides technological support for implementing individualized teaching strategies in ideological and political courses[14], promoting the integration of standardized educational requirements with students' personalized development.

(3) Ethical Risks and Practical Challenges of AI-Empowered Ideological and Political Education

While artificial intelligence provides important support for ideological and political teaching, its application also brings about complex ethical risks and practical challenges.

First, issues related to data security and privacy protection have become increasingly prominent. Students' learning data, behavioral trajectories, and ideological development information are highly sensitive[15]. Without strict access control and data encryption mechanisms, the use of such data may easily lead to privacy breaches.

Second, algorithmic bias and the illusion of value neutrality should not be overlooked. Artificial intelligence systems primarily rely on historical data and algorithmic models for analysis and content generation, and therefore lack the capacity for autonomous value judgment [16,17]. When dealing with issues involving ideology and political positions, AI-generated outputs may tend to appear "neutralized" or "ambiguous." Such tendencies may objectively weaken the principled stance and guiding function of ideological and political courses.

Third, regional disparities in development also constrain the inclusive application of intelligent technologies. Influenced by differences in economic foundations and resource allocation, the central and western regions still lag behind in terms of intelligent infrastructure and platform development. This not only limits the wider implementation of AI-empowered teaching models but may also further widen regional gaps in educational development.

In addition, during the training process of algorithmic models, diverse and sometimes non-mainstream viewpoints may inevitably be incorporated into datasets. Without effective review and supervision mechanisms, such content may lead to value deviations or ideological risks in AI-generated outputs.

3. The Operational Mechanism of AI-Empowered Ideological and Political Teaching in Universities

From a systemic perspective, the empowerment of ideological and political teaching by artificial intelligence is not merely a simple aggregation of technological elements[18]. Rather, within an integrated framework that unifies educational objectives, teaching activities, and governance structures, it operates through the coordinated integration of technological systems, data resources, value orientation, and institutional environments. This process forms a dynamic educational mechanism characterized by multi-actor participation, multi-stage interaction, and continuous feedback and iterative improvement.

Overall, the operational mechanism of AI-empowered ideological and political teaching can be summarized as four interrelated and mutually constraining mechanisms: technological support, data-driven decision-making, value guidance, and institutional guarantees. Technological support provides the necessary tools and platform infrastructure for teaching activities; data-driven mechanisms enhance the precision of instructional decision-making and learning support; value guidance ensures that technological applications consistently serve the fundamental goal of fostering virtue and cultivating talent; and institutional guarantees establish normative boundaries and governance support for the stable operation of the system. Through the coordinated interaction of these four mechanisms, ideological and political courses are gradually transformed from the mere introduction of technological tools to a comprehensive reconstruction of the educational mechanism.

(1) Technological Support Mechanism: Building the Intelligent Infrastructure for Ideological and Political Teaching

The technological support mechanism constitutes the material foundation and operational prerequisite for the application of artificial intelligence in ideological and political teaching in universities[19]. Its core lies in utilizing intelligent platforms and algorithmic tools to systematically transform the provision of teaching resources, classroom interaction, and learning support, thereby promoting the transition of teaching organization from experience-driven practices to intelligent-assisted approaches.

First, intelligent teaching platforms provide an integrated operational environment. By integrating online learning systems, intelligent lesson-preparation systems, and interactive communication tools, these platforms facilitate the sharing of teaching resources and the coordination of teaching processes. For example, in the course Ideological and Moral Cultivation and the Rule of Law, instructors can use intelligent lesson-preparation systems to construct knowledge graphs for the course, presenting key themes such as the core socialist values, the spirit of the rule of law, and social

responsibility in a structured form. Based on students' disciplinary backgrounds, differentiated case materials can also be recommended. During classroom activities, intelligent interaction systems can be used to conduct real-time discussions, automatically generating keyword analysis results. This enables instructors to capture students' ideological responses in a timely manner and transforms classroom interaction from random questioning to precise feedback.

Second, the "Smart Ideological and Political Cloud Platform" promotes the integration of resources, data, and management. Some universities have established comprehensive platforms covering courses such as Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics and Introduction to Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era. These platforms integrate micro-lecture resources, case databases, theoretical assessments, and online discussion modules, and automatically generate learning diagnostic reports. Such data-driven feedback provides important support for instructors to optimize instructional design and deliver targeted guidance, thereby shifting teaching management from experience-based judgment to data-informed decision-making.

Third, technological support extends to post-class learning support and the formation of a closed-loop teaching process. With the assistance of intelligent Q&A platforms and learning tracking systems, a continuous learning structure can be formed that includes pre-class preparation, in-class interaction, and post-class consolidation. This enables the continuous collection of learning feedback and the iterative improvement of teaching strategies, thereby enhancing the continuity and stability of teaching activities.

It should be emphasized that the establishment of the technological support mechanism does not aim to replace teachers with technology. Rather, intelligent tools are intended to improve teaching efficiency and precision, creating conditions for teachers to better perform their roles in value guidance and intellectual inspiration. Only by maintaining the leading role of teachers can technological empowerment truly become an effective driving force for the high-quality development of ideological and political education.

(2) Data-Driven, Value-Guided, and Institutionally Coordinated Mechanisms: Establishing the Operational Support System for Intelligent Ideological and Political Teaching

Beyond the technological support mechanism, whether artificial intelligence can sustainably empower ideological and political teaching depends largely on the coordinated interaction of data-driven mechanisms, value guidance, and institutional guarantees[20,21]. Together, these three dimensions form the operational support system of intelligent ideological and political courses, addressing three key questions respectively: how teaching can become more precise, how the educational direction can remain aligned with core values, and how the system can operate in a standardized and governable manner.

First, the data-driven mechanism improves the precision of instructional regulation and learning support. By collecting multidimensional data such as students' learning behaviors, participation frequency, assignment performance, and ideological feedback, a comprehensive learning database can be established. Learning analytics technologies can then be applied to evaluate students' knowledge mastery and identify trends in value recognition, providing an empirical basis for instructional regulation and decision-making optimization. At the same time, standardized data collection procedures and robust data security management systems should be established to prevent privacy risks.

Second, the value-guidance mechanism ensures the political orientation and educational direction of technological applications. The fundamental nature of ideological and political courses requires that the operational logic of artificial intelligence be guided by clear value orientations. In practice, Marxist positions, viewpoints, and methodologies should be embedded in processes such as content generation, resource recommendation, and interactive feedback. A regulatory mechanism of "technological generation – human review – dynamic calibration" should be established to reduce potential ideological risks. Meanwhile, the central role of teachers in value interpretation and ideological guidance should be emphasized to prevent the "subjectification" of technological tools.

Third, the institutional guarantee mechanism provides stable boundaries and organizational support for the system's operation. By improving institutional frameworks for technology access, content review, data governance, and ethical regulation, universities can clarify the functional boundaries and responsibility structures of artificial intelligence in ideological and political teaching, thereby preventing governance irregularities. In addition, a coordinated governance system involving publicity departments, academic affairs offices, information technology departments, and schools of Marxism should be established to promote multi-stakeholder collaboration. Through special funding programs, demonstration projects, and the development of research platforms, continuous momentum can be provided for AI-enabled reforms in ideological and political education.

In summary, technological support, data-driven mechanisms, value guidance, and institutional guarantees are mutually embedded and interact collaboratively to form the operational structure of intelligent ideological and political teaching. Technology provides the conditions for data utilization; data offers the basis for instructional optimization; value guidance establishes normative boundaries for technological applications; and institutional guarantees ensure the stable development of the system. Only through the coordinated operation of these four mechanisms can AI empowerment evolve from the mere integration of technological tools to the systematic reconstruction of the educational framework, thereby promoting the comprehensive optimization and upgrading of ideological and political teaching.

4. Innovative Pathways for AI-Empowered Ideological and Political Teaching in Universities

(1) Innovation in Teaching Models: Constructing a Human–AI Collaborative Intelligent Teaching System

Innovation in teaching models is a key step in enabling the connotative development of AI-empowered ideological and political education in universities. It is necessary to adhere to a student-centered approach, maintain the leading role of teachers, and take the enhancement of value guidance effectiveness as the core objective. On this basis, artificial

intelligence should be deeply integrated with traditional teaching methods to construct a human–AI collaborative teaching model characterized by "teacher leadership – technological empowerment – student participation,"

First, the intelligent teaching process should be systematically reconstructed. With the support of artificial intelligence technologies, a comprehensive teaching support system integrating intelligent lesson preparation, intelligent instruction, intelligent Q&A, and intelligent tutoring can be established to achieve coordinated intelligent operation throughout the entire teaching process. During the lesson preparation stage, knowledge graphs and semantic analysis technologies can be used to organize theoretical systems and logical structures. In classroom teaching, intelligent interaction systems can strengthen discussion guidance and provide real-time feedback. After class, intelligent tutoring platforms can be employed to provide targeted consultation and follow-up guidance, thereby transforming the teaching process from an experience-driven model to one that combines intelligent support with human guidance.

Second, mechanisms for personalized and tiered learning should be further developed. Based on a comprehensive analysis of students' learning behaviors, cognitive characteristics, and levels of value identification, dynamic learner profiles and learning models can be constructed to design differentiated and progressive learning pathways. Through intelligent recommendation systems, adaptive theoretical resources, practical cases, and discussion tasks can be delivered to students, encouraging autonomous learning and deeper reflection while achieving an organic integration of standardized educational requirements and differentiated instructional guidance.

Third, a multidimensional and collaborative evaluation system should be established to support precise assessment. By integrating technologies such as natural language processing, learning analytics, and intelligent assessment tools, students' classroom performance, assignment quality, critical thinking ability, and level of value recognition can be evaluated comprehensively. This approach enables the construction of a diversified evaluation system that emphasizes process-based evaluation as the foundation, outcome-based evaluation as a supplement, and developmental evaluation as the guiding orientation. Through data feedback and diagnostic reports, teachers can continuously refine their instructional strategies, thereby fostering a virtuous cycle of coordinated improvement among teaching, learning, and evaluation.

Overall, the key to innovating teaching models lies in preventing the tendency of "technology replacing teachers." Artificial intelligence should always serve educational objectives, particularly the cultivation of students' values and moral development. Only by maintaining the guiding role of teachers while leveraging technological empowerment can a new collaborative model of education be established.

(2) Innovation in Teaching Content: Strengthening Value Guidance and Building a High-Quality Digital-Intelligent Resource System

Teaching content serves as the core medium through which ideological and political courses exert their role in ideological guidance. In the context of AI empowerment, it is necessary to uphold the principle of integrating "content as the foundation" with "values as the guiding spirit." This requires combining technological advantages with theoretical depth and clear political orientation, thereby promoting the systematic reconstruction of the resource system for ideological and political education.

First, a resource system that integrates dynamic updating with intelligent generation should be established. Artificial intelligence can be used to mine, classify, and conduct associative analysis of massive teaching resources, thereby developing a multidimensional resource database that includes theoretical interpretations, representative case studies, practical materials, and current political and social issues. Through intelligent updating mechanisms, teaching content can remain dynamically aligned with contemporary developments, social realities, and students' learning needs, thus enhancing both the timeliness and relevance of resource provision.

Second, immersive and scenario-based teaching formats should be further developed. By utilizing technologies such as virtual reality (VR), augmented reality (AR), and mixed reality (MR), immersive learning environments with clear ideological and value-oriented dimensions can be created. Such environments guide students through a learning process that integrates situational experience, theoretical understanding, and value internalization, thereby promoting the coordinated advancement of cognitive education and affective education.

Third, mechanisms for ideological review and supervision should be strengthened. A coordinated mechanism of "technological generation – human review – value-based verification" should be established to examine teaching content generated or recommended by artificial intelligence across multiple stages and levels. This mechanism can effectively prevent incorrect viewpoints, harmful information, and value deviations from entering the classroom. By clarifying responsibilities and improving review procedures, the ideological security of ideological and political education can be effectively safeguarded.

Fourth, digital ethics education should be strengthened. Digital ethics and AI literacy should be incorporated into both the curriculum of ideological and political courses and teacher training systems. This approach can help teachers and students better understand the boundaries and potential risks associated with technological applications, while enhancing awareness of data security, algorithmic fairness, and technological responsibility. Ultimately, it will contribute to fostering a culture of rational and responsible technology use.

Through innovation in teaching content, the empowerment of artificial intelligence can shift from a mere enhancement of instructional form to a deepening of educational substance, ensuring that technological applications consistently serve the goals of ideological guidance and value cultivation.

(3) Innovation in Teaching Management: Improving Institutional Safeguards and Establishing Long-Term Operational Mechanisms

Teaching management serves as a crucial support for the sustained advancement of AI-empowered ideological and political education. It is therefore necessary to take institutional development as the foundation and collaborative governance as the pathway, so as to establish an intelligent teaching management system that is standardized, well-ordered, and operationally efficient.

First, a comprehensive regulatory framework for intelligent teaching should be established. Focusing on key aspects such as technology access, platform construction, content review, data governance, and ethical boundaries, systematic management standards should be formulated. These standards

should clearly define the functional roles, responsible entities, and usage boundaries of AI teaching assistants and intelligent platforms, thereby preventing the excessive expansion of technological applications and potential governance irregularities.

Second, a data-supported model of teaching governance should be promoted. Universities should develop integrated management platforms that combine teaching monitoring, quality evaluation, and operational analysis. Through dynamic monitoring and comprehensive assessment of course implementation, teaching outcomes, and student development, these platforms can provide scientific evidence for instructional decision-making, thereby promoting the transformation of teaching governance from experience-based judgment to evidence-based decision-making.

Third, collaborative innovation platforms should be strengthened. Interdisciplinary research communities integrating ideological and political education, educational technology, and artificial intelligence should be established to enhance cooperation among schools of Marxism, information technology departments, and research institutions. Such collaboration can facilitate the deep integration of theoretical research, technological development, and teaching practice, thereby continuously improving the professionalization and effectiveness of intelligent educational initiatives.

Fourth, incentive and support mechanisms should be further improved. By establishing special research funds, demonstration course projects, and teaching achievement awards, universities can encourage teachers to actively participate in intelligent teaching reforms. At the same time, AI application competencies should be incorporated into teacher evaluation and professional promotion systems, thereby strengthening teachers' intrinsic motivation for continuous learning and innovative practice.

Through innovation in teaching management, a stable institutional environment and long-term operational guarantees can be provided for AI-empowered ideological and political education. This will promote the transformation of intelligent educational reform from exploratory initiatives to institutionalized development.

5. Conclusion

Artificial intelligence provides an important driving force for the high-quality development of ideological and political education in universities. However, its application must always adhere to the correct political direction and value orientation. The intelligent transformation of ideological and political courses should not be understood merely as a technological upgrade; rather, it must be grounded in the fundamental mission of fostering virtue and cultivating talent, achieving an organic integration of technological rationality and value rationality.

Practical experience demonstrates that only by coordinating technological innovation, institutional development, and ethical regulation, and by establishing a collaborative operational mechanism, can the deep integration of artificial intelligence and ideological and political teaching be realized. At the same time, it is essential to fully recognize and maintain the central role of teachers, preventing technological tools from becoming substitutes for the educational subject in the process of moral cultivation.

Looking ahead, universities should further improve top-level design and collaborative governance systems, deepen the interaction between theoretical research and practical innovation, and continuously enhance the scientific, standardized, and sustainable development of intelligent educational initiatives. In doing so, higher education institutions can provide strong support for cultivating a new generation capable of undertaking the historic mission of national rejuvenation.

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