

Research on Innovative Pathways for Ideological and Political Education in Universities in the Context of Artificial Intelligence

Qiangqiang Zhou

Zhejiang Open University, Hangzhou, 310000, China

Keywords: Artificial Intelligence, Ideological and Political Education, Higher Education, Innovative Approaches

Abstract: Against the backdrop of deep integration between educational digitalization and artificial intelligence, ideological and political education in universities is facing a significant opportunity for intelligent transformation. Taking intelligent ideological and political education in open universities as the research subject, this paper follows the research logic of "how it emerges—how to interpret—what its value is—what the current situation is—how to achieve it." By comprehensively employing literature research, systematic analysis, and the integration of theory and practice, it systematically elucidates the emergence logic, theoretical framework, and practical value of intelligent ideological and political education. The study analyzes the practical challenges in current university intelligent ideological and political education, including technical application, subject competence, value guidance, and risk prevention. From multiple dimensions such as conceptual reshaping, system construction, technological empowerment, team building, and risk governance, it proposes innovative approaches, aiming to construct a systematic theoretical framework for university intelligent ideological and political education. This study provides theoretical support and practical references for enhancing the quality and efficiency of ideological and political education in universities in the new era, as well as achieving high-quality development.

1. Introduction

The Chinese government report, for the first time, places education, science and technology, and talent in a dedicated chapter, positioning them as the fundamental and strategic pillars for comprehensively building a modern socialist country, and charting the course for high-quality development of education in the new era. Ideological and political education, as the "lifeline" of talent cultivation in universities, shoulders the core missions of political guidance, value shaping, and ideological guidance. The popularization and application of artificial intelligence technology promote the reconfiguration of the educational ecosystem and the transformation of the education model, providing technical possibilities for breaking the time and space limitations of ideological and political education, optimizing the supply model, and enhancing the precise efficiency. Currently, the academic community is conducting diverse explorations on the integration of artificial intelligence

and ideological and political education, forming a series of achievements in the areas of enabling mechanisms, application scenarios, and risks and challenges. However, there are still problems such as fragmented theoretical systems, homogeneous practical paths, and insufficient synergy between technology and value. This study, based on the general trend of artificial intelligence development and the actual needs of university education, systematically constructs a theoretical system of intelligent ideological and political education in universities, clarifies the generation logic, core elements, and basic principles, assesses the current practical situation and bottleneck issues, and proposes innovative paths that are both theoretical and operational. It not only compensates for the deficiencies in the existing research system but also provides practical solutions for universities to promote intelligent ideological and political construction and implement the fundamental task of fostering virtue and cultivating talents. It has significant theoretical innovation value and practical guiding significance.

2. Research Background and Literature Review

2.1. Research Background

The digital technology revolution has pushed education into the era of intelligence, with technologies such as artificial intelligence, big data, and virtual simulation deeply penetrating the entire process of education. Ideological education in universities, as the forefront of ideological and political work, faces real challenges such as a weak sense of the traditional model, insufficient targeting, and poor effectiveness. It urgently needs to be empowered by technology to promote form innovation and efficiency improvement. The state has successively issued policy documents on educational digitalization and intelligent education, providing policy guarantees and development opportunities for the intelligent ideological and political education in universities. Against this background, integrating artificial intelligence technology with ideological and political education and constructing a new form of intelligent ideological and political education has become an inevitable choice for universities to respond to the demands of the times and fulfill the task of fostering virtue.

2.2. Domestic and International Research Status

2.2.1. Domestic Research Situation

(1) Research on the Empowerment of Ideological Education by Artificial Intelligence

First, it has promoted the role positioning and shaping of ideological education educators [1], promoting their transformation into mentor-type and collaborative-type roles [2]. Second, it has broadened the temporal and spatial field of ideological education. Artificial intelligence, with its technological advantages, provides technical support for promoting the distribution of educational content and the expansion of educational space. In addition, with the application of artificial intelligence in different educational scenarios, it has generated internal driving forces such as intelligent companion learning, intelligent teachers, and intelligent assistants for ideological and political education.

(2) Research on the Challenges of Ideological Education by Artificial Intelligence

First, the tendency of technology supremacy leads to the loss of the subjectivity of ideological education [3]. Second, the intervention of artificial intelligence leads to the dissipation of the core values of ideological education. Third, during the application of artificial intelligence, there is an easy generation of ideological and ethical security risks.

(3) Research on the Value of Ideological Education by Artificial Intelligence

There is a basic relationship of mutual shaping between artificial intelligence and ideological

education in universities [4]. Artificial intelligence, with its technological advantages, empowers ideological education, while ideological education also plays a value-oriented and regulatory role in the design and application of artificial intelligence.

(4) Research on the Application of Artificial Intelligence in Ideological Education

The rapid development of artificial intelligence has continuously given rise to new forms and new trends in education, and the overall trend of educational practice has begun to shift towards intelligence[5]. Based on the analysis of relevant research results, the current academic community mainly explores the specific applications of artificial intelligence in ideological and political education from three aspects: ideological and political education courses in universities, ideological and political situation surveys, and tracking and online expression of ideological trends and public opinions.

2.2.2. Foreign Research Situation

There is no specific concept of "ideological education" in foreign countries. Relevant research is mainly distributed in fields such as civic education, moral education, values education, and mental health education. The research focuses more on the rationality of technological tools and the empirical effect of education, and less on the top-level design of ideology. Foreign research started earlier, and there are abundant achievements in areas such as intelligent teaching systems, adaptive learning, and emotional computing. The cognitive mentor system developed by Carnegie Mellon University and the adaptive learning platforms promoted by universities in Europe and America provide technical references for personalized value guidance through algorithms that assess learning status in real time and dynamically adjust the difficulty and rhythm of content.

(1) Research on Artificial Intelligence

In 1956 at the Dartmouth Conference, Claude Shannon and others first proposed the concept of "artificial intelligence", and in the following decades, artificial intelligence has continuously developed and improved, achieving significant progress in theoretical research and technological application. Reviewing the abundant achievements of foreign artificial intelligence research, analyzing and grasping it from the aspects of the concept and application of artificial intelligence in education, provides beneficial references for the research on intelligent ideological and political education in Chinese universities.[6]

(2) Research on the application of artificial intelligence in education

Abroad, a series of studies have been conducted on the specific application of artificial intelligence technology in education. The Finnish Technology Research Center used intelligent equipment in the laboratory to build an educational environment and utilized the intelligent machines and platforms in the maker space to have a positive impact on intelligent learning, promoting the realization of intelligent learning (Fox Stephen, 2017)[7]. A team composed of researchers from the United States and Germany stated that intelligent educational software should focus on stimulating the enthusiasm of learners and utilize the advantages and techniques of artificial intelligence technology to help learners learn. The research in Canada indicated that with the continuous development and progress of artificial intelligence technology, it is necessary to strengthen the application of artificial intelligence in educational and teaching work [8].

Based on the analysis of existing research results at home and abroad, intelligent ideological and political education, as a new educational form resulting from the deep integration of ideological and political education and artificial intelligence, has continuously entered the academic field of view and gradually become a frontier issue and hot topic in the field of education. Currently, both domestic and foreign research jointly recognize the transformative role of artificial intelligence in education, and all focus on the development direction of individualization, precision, and digitalization. However, there are distinct differences in value goals, research focus, and practical paths. Domestic research

focuses on ideological security and fostering moral character as the core, with a more systematic and policy-oriented approach, which is more in line with the actual operation of Chinese universities; foreign research focuses on technology application and ethical norms as the core, with prominent marketization and empirical characteristics. The existing research still has shortcomings: domestic research on intelligent ideological and political education in adult universities such as open universities is insufficient, and the exploration of technical compatibility and long-term mechanisms needs to be deepened; abroad, there is a lack of research framework equivalent to China's ideological education system, making it difficult to directly copy. Future research should be based on national conditions, draw on foreign technical ethics and empirical methods, strengthen the unity of value guidance and technological innovation, focus on the learning situation of remote and open education, optimize the integrated paths of precise supply, human-machine collaboration, and risk prevention, and promote the high-quality development of intelligent ideological and political education.

3. Main Issues in the Intelligent Ideological and Political Education Practice in Higher Education Institutions

Compared to regular full-time universities, open universities broadcasting have the characteristics of adult on-the-job education, remote online teaching, multi-level systematic operation, and highly dispersed students. In the process of promoting intelligent ideological and political education, they face practical difficulties in terms of technology application, educational effectiveness, and management support. This study adopts questionnaire surveys and expert interviews, combined with the actual operation of open universities broadcasting, and currently, the intelligent ideological and political education practice mainly has three prominent problems.

3.1. The Adaptation of Intelligent Technology to the Educational Situation of Open Education Is Insufficient, and the Phenomenon of Homogenized Application Is Obvious

The student groups of open universities broadcasting are complex, including on-the-job workers, grassroots practitioners, and veterans, etc. They generally have prominent contradictions between work and study, fragmented learning time, wide geographical distribution, and significant differences in basic conditions. The existing intelligent ideological and political education platforms mostly copy the models of regular universities, focusing on the push of theoretical knowledge, online sign-in, and test-taking functions, lacking scenario-based, lightweight, and vocationalized designs for adult students. AI ideological and political content is mostly in the form of long videos and large pieces of text, which are difficult to adapt to the fragmented learning habits; the application of virtual simulation and immersive teaching technologies mostly relies on fixed terminals and stable networks, which do not match the hardware conditions of grassroots open universities and off-campus teaching points. At the same time, the intelligent system does not sufficiently explore the ideological characteristics, career needs, and practical problems of adult students. The algorithm push still mainly focuses on theoretical knowledge points, failing to effectively combine the students' concerns about common prosperity, grassroots governance, and industry development, resulting in insufficient appeal of intelligent ideological and political education and weak student participation and satisfaction.

3.2. Data Collection and Ideological Analysis Have Limitations, and the Precise Educational Effect Is Difficult to Guarantee

Open universities broadcasting generally implement a provincial, municipal, and county-level operation system, and student data are scattered in online learning platforms, educational

management systems, and off-campus teaching point ledgers, etc. The data standards are not unified, and sharing is insufficient, making it difficult to form a complete digital portrait of students. Limited by the remote teaching model, AI systems mainly collect behavioral data such as study duration, homework submission, and click-through, and have insufficient capture of students' value recognition, psychological state, and viewpoint attitudes, resulting in the problem of "rich data but thin information". Some grassroots open universities have weak technical strength and lack professional operation and data analysis personnel. They mostly stop at simple reminders when dealing with warning information, failing to conduct in-depth conversations and classified guidance based on students' career backgrounds and family situations. In addition, adult students are more sensitive to personal information, and the privacy protection mechanism in the data collection process is not perfect, which to some extent affects the active authorization of students and further restricts the implementation of precise ideological and political education and personalized education.

3.3. The Human-Machine Collaboration Mechanism Is Not Complete, and the Digital Capabilities of the Ideological and Political Work Team Have Shortcomings

Intelligent ideological and political education is not a replacement of technology by humans, but a teacher-led human-machine collaborative education. However, some ideological and political teachers and counselors of open universities broadcasting still have problems such as insufficient technical application capabilities and lagging digital education concepts. On the one hand, the grass - roots ideological and political work teams hold multiple positions and are preoccupied with handling various affairs, lacking systematic artificial intelligence application training, and are unable to proficiently use intelligent platforms to conduct learning situation analysis, content optimization, and interactive guidance. They mostly regard technology as a tool for attendance checking and notification release, failing to play the core role of AI in precise education, risk warning, and resource integration. On the other hand, intelligent ideological and political platforms focus on construction and neglect operation. The system is updated and iterated slowly, and there is poor communication between teachers and technology developers, making it difficult to quickly transform teaching needs into functional optimization. Meanwhile, in the multi-level educational system, there is a disconnection between the overall planning of provincial distance universities and the implementation at the grassroots level. The standards for intelligent ideological and political education are not unified, and the resource sharing and cooperation are insufficient, resulting in the inability to convert the technical advantages into educational effectiveness. Intelligent ideological and political education remains at the superficial and formal stage.

4. Innovative Paths for Intelligent Ideological and Political Education in Universities from the Perspective of Artificial Intelligence

Artificial intelligence technology provides core support for the improvement and efficiency enhancement of ideological and political education in distance open education. Open universities should take digital transformation as the starting point, based on the characteristics of remote education, all-staff coverage, online dominance, and virtual-real integration, and rely on existing platforms such as digital education laboratories, Lei xue Gang, and online organizational units . They should promote intelligent ideological and political education from five dimensions: content, teaching, management, service, and evaluation. This aims to solve the problems of scattered adult students, fragmented learning time, and difficulty in tracking ideological dynamics, and to build an intelligent ideological and political education system adapted to the characteristics of distance universities.

4.1. AI Empowers Content Production, Creating a Precise Ideological and Political Resource Library

By leveraging AI content generation, knowledge graph, and big data mining technologies, the supply model of ideological and political content is restructured, addressing the issues of lagging content updates and insufficient targeting in traditional ideological and political education. Considering the learning situation of adult students at open universities, which is characterized by part-time employment and prominent contradictions between work and study, as well as wide geographical distribution, large-scale models are used to automatically extract local red resources and contemporary cases related to the "Eight-Eight Strategy", common prosperity demonstration zone construction, and digital reform, generating lightweight learning materials such as short videos, micro-lectures, and audio books, which are suitable for mobile device dissemination. Through the integration of knowledge graphs with ideological and political theories, local practices, and industry cases, an intelligent ideological and political resource library is established, which is compatible with school's exemplary courses for ideological and political education. AI-generated content is integrated into courses such as "Introduction to Artificial Intelligence" and "Individual and Team Management", achieving deep coupling of ideological and political elements with professional teaching. At the same time, a content review mechanism is established to ensure correct political direction, creating an intelligent ideological and political content system with contemporary, local, and practical characteristics.

4.2. Constructing Intelligent Teaching Scenarios, Innovating Immersive Hybrid Teaching

Based on the characteristics of distance open education, intelligent ideological and political education classrooms are created through AI interaction and virtual simulation technology, solving the problems of insufficient interaction and weak experience in online teaching. Relying on the digital education laboratory of open universities, VR/AR virtual ideological and political scenarios are built to restore red education bases and reform and development scenes, and conduct online immersive teaching of "thoughts in the ideological and political class". AI teaching assistants and intelligent interaction systems are introduced to provide 24-hour online tutoring, real-time monitoring of learning situations, intelligent grouping and discussion guidance for the classroom, and adapt to the fragmented learning needs of adult students. Combined with the online organizational units platform pioneered by the university, AI live streaming, intelligent sign-in, and interactive question answering functions are used to conduct online theme days and ideological and political lectures, breaking the time and space limitations. Promoting human-machine collaborative teaching, teachers rely on AI data analysis to optimize teaching design, shifting from "one-way indoctrination" to "precise guidance", enhancing the attractiveness and participation of remote ideological and political classes.

4.3. Data-Driven Precision Portrait, Achieving Intelligent Analysis of Ideological Dynamics

Integrating multi-dimensional data such as students' learning behaviors, online activities, psychological assessments, and social practices, a digital portrait of adult students and an ideological dynamics early warning mechanism are established to solve the problem of scattered open education students and difficulty in grasping their ideological states. Connecting with the online learning platform of open universities, AI algorithms analyze learning concentration, interaction frequency, and viewpoint tendencies, establishing an abnormal behavior recognition model to intelligently warn of risk points such as psychological fluctuations and value confusion. Considering the career background, age structure, and regional characteristics of adult students, personalized classification is achieved based on individual strategies, providing data support for counselors to conduct

personalized talks. Based on the intelligent analysis results, targeted ideological and political materials and psychological counseling resources are pushed, transforming passive management into active intervention, and strengthening the targeted and effectiveness of remote ideological and political work.

4.4. Upgrade Intelligent Management Services and Improve the Entire Cycle of Education and Nurturing

Optimize the management and service processes of ideological and political education with artificial intelligence, enhance the efficiency of remote education collaboration, and adapt to the systematic operation and all-round nurturing requirements of open universities. The university constructs an ideology and political management platform based on artificial intelligence, integrating data from online ideological and political courses, practical teaching, volunteer services, and other relevant sources. The platform enables integrated scheduling and coordination of ideological and political work across provincial, municipal, and county levels. By leveraging intelligent process automation technology, it streamlines workflows such as activity registration, credit recognition, and evaluation and assessment, significantly reducing the administrative burden on both teachers and students. The platform also features intelligent service assistants that provide one-stop support for students, including ideological and political consultation, career planning, and policy interpretation, effectively addressing the learning and career development needs of working adults. Furthermore, it connects with the "grand ideological and political class" practical teaching bases through AI-powered geolocation, practice check-in, and intelligent archiving of learning outcomes, bridging the gap between online practice and offline implementation. Ultimately, this creates a complete and intelligent educational chain that spans teaching, management, service, and practice, forming a closed-loop system for nurturing students' ideological and political development.

4.5. Establish Multiple Intelligent Evaluations and Promote the Improvement and Efficiency Enhancement of Ideological and Political Education

Break the traditional single assessment model and build an AI-driven process-based and diversified ideological and political evaluation system, objectively reflecting the improvement of adult students' ideological awareness and behavioral transformation. Relying on data collection from the entire process of classroom participation, online interaction, practical performance, and volunteer services, AI automatically generates comprehensive quality evaluation reports, combining process-based evaluation with final evaluation. The assessment process sets quantitative indicators, such as the ideological leadership index, value recognition degree, and practical implementation degree, to objectively evaluate the effectiveness of ideological and political education. The evaluation results are then fed back into the teaching and management processes, enabling intelligent optimization of teaching plans and nurturing strategies, thereby forming a closed loop of "evaluation–feedback–improvement." Taking into account the characteristics of open education at O universities, the platform reduces the emphasis on paper-based assessments while strengthening the evaluation of practical performance and daily implementation. This approach drives ideological and political education to shift its focus from "emphasizing test scores" to "emphasizing overall qualities," ultimately improving the quality of distance ideological and political education.

5. Conclusion

In summary, this study systematically addresses the five core questions of "how it was generated, how to interpret it, what its value is, what its current situation is, and how to achieve it" in the field of

intelligent ideological and political education in universities, and forms three conclusions: First, intelligent ideological and political education in universities is a new form of ideological and political education jointly created by the technological revolution and educational reform, with a clear generation logic and a complete theoretical system. It is necessary to prioritize value guidance. Second, the current construction of intelligent ideological and political education in universities has achieved phased results, but there are problems such as conceptual deviations, shallow application of technology, weak teams, and insufficient risk prevention. Third, schools should base themselves on the characteristics of distance and open education, with the directions of precise content, intelligent teaching, digital management, personalized services, and scientific evaluation, deepen the deep integration of AI and ideological and political education, solve the pain points of adult ideological and political education, create an intelligent ideological and political model with the identification of an open university, achieve high-quality development of ideological and political education, and provide solid support for cultivating new era individuals who take on the responsibility of national rejuvenation.

Acknowledgement

Research Project of Zhejiang Open University in 2025: Research on Innovative Paths of Intelligent Ideological and Political Education in Colleges and Universities from the Perspective of Artificial Intelligence (Project No.2025xkt28); Higher education reform project of Zhejiang Open University in 2025: An Exploratory Study on Advancing Ideological and Political Education in Universities in the Era of Artificial Intelligence——Based on the Practical Research of Zhejiang Open University (Project No. XJG202508).

References

- [1] Lei Zheng. *Research on the Role Transformation of College Ideological and Political Educators in the Era of Artificial Intelligence* [J]. *Ideological Education Research*, 2021(05): 112-116.
- [2] Chen Kun, Li Yini. *The Mechanism and Pathways of Artificial Intelligence Empowering College Ideological and Political Education* [J]. *Ideological Theory Education Guide*, 2023(02): 145-149.
- [3] Han Hongfeng, Yin Xi. *The Technical Risks and Avoidance Strategies of Ideological and Political Education in the Perspective of Artificial Intelligence* [J]. *School Party Building and Ideological Education*, 2022(18): 67-69.
- [4] Lu Lan. *The Inter-construction Logic of Artificial Intelligence and Ideological and Political Education* [J]. *Marxism and Reality*, 2022(03): 178-184.
- [5] Ministry of Education. *Several Opinions on Strengthening the Construction of Ideological and Political Theory Courses in Colleges and Universities in the New Era* [Z]. 2022.
- [6] Fox Stephen. *Artificial Intelligence in Education: Promise and Practice*[J]. *Journal of Computer Assisted Learning*, 2017(04):321-330.
- [7] Fox Stephen. *Mass Imagination: Integrating Human Imagination and Automated Engineering from Early Education to Digital Afterlife* [J]. *Technology in Society*, 2017 (3).
- [8] Rapanta C, Walton D. *The Use of Argument Maps as an Assessment Tool in Higher Education* [J]. *International Journal of Educational Research*, 2016 (79).