Journal of Computer and Communications, 2025, 13(8), 252-259
https://www.scirp.org/journal/jcc
ISSN Online: 2327-5227
ISSN Print: 2327-5219

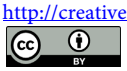
Pathway Exploration and Risk Management in Utilizing Generative AI for Ideological and Political Education in Vocational Schools

Yiwei Li

College of Electronics and IoT Engineering, Chongqing Industry Polytechnic University, Chongqing, China
Email: yuanaelite@qq.com

How to cite this paper: Li, Y.W. (2025) Pathway Exploration and Risk Management in Utilizing Generative AI for Ideological and Political Education in Vocational Schools. *Journal of Computer and Communications*, **13**, 252-259.
https://doi.org/10.4236/jcc.2025.138012

Received: July 14, 2025
Accepted: August 24, 2025
Published: August 27, 2025



Abstract

With the rapid development of generative artificial intelligence technology, the digital transformation of ideological and political education in vocational colleges faces new opportunities and challenges. This paper analyzes the value advantages and application scenarios of empowering vocational ideological and political education with generative artificial intelligence, outlines the current risks and concerns in the technology intervention process, and explores practical paths to building a new "I+ Ideological and Political Education" paradigm. The study suggests that generative artificial intelligence can optimize the supply of teaching content, innovate teaching methods, and enhance the effectiveness of education, yet it also brings about issues such as value shift, ethical alienation, and data security. It is essential to adhere to value guidance, improve risk prevention and control mechanisms, elevate teachers' intelligent literacy, and build a diversified and collaborative human-machine co-education system to ensure that the original intention of ideological and political education to cultivate morality remains unchanged and educational effectiveness continues to improve.

Keywords

Generative Artificial Intelligence, Vocational Colleges, Ideological and Political Education

1. Introduction

Generative artificial intelligence (AI), characterized by capabilities such as deep learning, natural language processing, and human-machine collaboration, presents both opportunities and challenges for ideological and political education (IPE) in

vocational colleges [1]. On the one hand, AI offers the potential to personalize educational content, enhance interactive teaching methods, and create immersive learning scenarios that respond more effectively to the digital learning preferences of contemporary students. These innovations promise to increase the appeal, relevance, and adaptability of IPE in modern vocational settings [2] [3].

On the other hand, the integration of AI into educational systems is far from frictionless. It raises pressing concerns around ethical boundaries, value orientation, data privacy, and the possible weakening of teacher-student emotional bonds. Many vocational institutions face practical constraints such as insufficient digital infrastructure, limited faculty training in AI technologies, and the lack of clear ethical governance frameworks. Moreover, the overreliance on algorithm-driven teaching tools risks replacing critical thinking with mechanical compliance, leading to what some scholars term "algorithmic obedience" [4].

This paper therefore aims to strike a balance between promise and precaution. It systematically explores the enabling potential of generative AI, practical application strategies, and the associated risks from both a technical and pedagogical perspective. By doing so, it seeks to offer not only a conceptual framework but also actionable guidance for vocational colleges to build value-oriented, ethically grounded, and human-centered models of "AI + Ideological and Political Education".

2. The Value Advantages of Generative Artificial Intelligence in Empowering Vocational Ideological and Political Education

2.1. Intelligent Content Supply

By utilizing generative AI's in-depth learning and semantic understanding of massive corpora and knowledge bases, it can automatically generate personalized [5], real-time, and visualized teaching materials for ideological and political education based on students' interests, current hot topics, and course themes. For example, a vocational college uses ChatGPT to automatically create case stories, group discussion topics, and value debate scenarios in a "Professional Ethics" course, significantly enhancing classroom interaction and student engagement.

2.2. Instant Teaching Interaction

AI's capabilities in dialogue generation and emotion recognition transform the classroom from a one-way knowledge transfer by teachers to a space for equal interaction between teacher and students and human-machine collaborative communication [6]. Students can ask questions to AI, simulate dialogues, and experience virtual role-playing at any time, making the classroom more open and engaging. For instance, in a "Patriotism Education" special topic class, students engage in an AI-assisted debate on the rise of domestic products and the pros and cons of globalization through an AI counter-debate system, effectively stimulating interest and tension in ideological and political topics.

2.3. Extension of Educational Scenarios

Generative AI can automatically create contextualized, humanized cases and virtual practice environments, breaking the limitations of physical classrooms to offer immersive learning experiences. For example, a vocational college in Chongqing uses AI to generate a "Virtual Red Crag Martyrs Museum" scenario, where students can "visit" and learn about the heroic deeds and listen to AI-reconstructed narratives of martyrs online, achieving a more impactful outcome in patriotism education compared to traditional PPT presentations.

3. Empowerment Pathways and Practical Applications of Generative AI in Vocational Ideological and Political Education

3.1. Personalized Customization: Enhancing Educational Content with AI

Leveraging student data profiles, AI can dynamically generate personalized learning resource libraries, offering news updates, micro-videos on ideological topics, case stories, and commentary aligned with students' interests and professional backgrounds [7]. For example, a vocational school in Zhejiang created an "Ideological Education Resource Market", where students receive AI-tailored daily updates on trending topics, current event analyses, and synchronized micro-lessons via a mobile app, increasing learning engagement by nearly 30%. Additionally, teachers can call upon AI to generate case studies of the latest societal events as needed, integrating them flexibly into lectures and discussions.

Recent pilot implementations provide preliminary evidence of how AI-based personalization can enhance ideological and political education in vocational settings. For example, in early 2024, Hangzhou Vocational College introduced an AI-driven content recommendation system named "IdeoSmart", which analyzes students' learning behaviors, interest tags, and feedback patterns to deliver personalized ideological case studies and news briefs via a mobile learning platform. A six-month internal report revealed that over 78% of students engaged more frequently with AI-pushed micro-content than with traditional textbook material. Moreover, instructors reported a 22% improvement in class participation during follow-up discussions, particularly when students had previewed AI-selected materials aligned with their vocational interests.

These results suggest that AI systems, when tailored to the professional and ideological context of vocational students, can meaningfully increase content relevance and stimulate critical engagement. However, further research is needed to determine whether such engagement translates into deeper ideological understanding or merely reflects surface-level interactivity.

3.2. Intelligent Interaction: Innovating Educational Methods with AI

AI's abilities in semantic recognition, emotion analysis, and intelligent Q & A sig-

nificantly enhance classroom interaction quality. Teachers use AI to generate classroom questions [8], debate topics, and group tasks to create a diversified interactive space characterized by "AI-aided learning + group collaboration + teacher-student discussions". In Guangzhou, a vocational school applies virtual reality and AI text generation technologies to facilitate practical teaching through "Virtual Red Scene Q & A" and "AI Role-playing Dramas", where students engage in immersive learning about cultural heritage and contemporary missions, greatly improving classroom satisfaction. Moreover, AI can assess students' emotional tendencies based on classroom interactions, providing real-time feedback on emotional intensity to help teachers dynamically adjust their teaching pace and interaction strategies.

3.3. Smart Feedback: Leveraging AI to Grasp Ideological Trends

By relying on natural language processing, emotion recognition, and data analysis technologies, AI can monitor students' opinions and ideological trends on school learning platforms, campus forums, and social media in real-time. A vocational institution developed a "Student Ideological Trend Cloud Platform" that analyzes students' online expressions, course evaluations, and social keywords daily, identifying high-frequency terms like "loneliness", "anxiety", "disengagement", and "ideological shift". This system engages counselors, class advisors, and psychological consultants to offer personalized communication and educational guidance [9]. Furthermore, by tracking changes in students' learning interests, the data provides decision-making support for future course theme design and content adjustments, enhancing the proactivity and foresight of ideological and political education.

4. Risk Challenges and Response Strategies in Empowering Vocational Ideological and Political Education with Generative AI

Leveraging the precise, autonomous, and collaborative advantages of artificial intelligence, vocational colleges can effectively achieve paradigm shifts driven by technology in ideological and political education. While harnessing these tools, it is crucial to recognize that, compared to traditional teaching models, AI's prominence and data-driven nature can, to some extent, diminish the guiding role and authority of humans as educational subjects. Thus, while enhancing technological empowerment, educational institutions must carefully assess related risks and scientifically adjust and reconstruct the educational process.

4.1. Risks of Personalization: Data Privacy and Algorithmic Overreach

Generative AI depends heavily on large-scale data collection to enhance its precision and adaptability. However, in the context of ideological and political education (IPE), this reliance poses significant risks across multiple stages—data acquisition, storage, transmission, and use [10].

First, data breach risks remain a primary concern. Many vocational colleges lack robust data governance infrastructure, making sensitive student information—such as learning records, ideological expressions, and behavioral data—vulnerable to unauthorized access or tampering. Second, data bias and discrimination may arise when AI systems are trained on incomplete or skewed datasets. This can result in one-dimensional evaluations that misinterpret students' ideological tendencies or reinforce stereotypical assumptions. Third, data overload and determinism can erode student agency. When every aspect of learning is quantified, subjective qualities such as moral judgment and emotional development may be sidelined by algorithm-driven metrics.

In addressing these risks, institutions must go beyond technical fixes and confront practical constraints. Many vocational colleges face a lack of cybersecurity personnel, unclear data classification protocols, and weak legal awareness. Therefore, a three-pronged approach is needed:

Legal and institutional safeguards, such as a campus-wide data rights charter clarifying consent, boundaries, and accountability.

Technical improvements, including anonymization tools, secure cloud platforms, and third-party audits.

Digital literacy education, enabling students to understand, monitor, and question how their data is collected and used—transforming them from passive subjects into informed data citizens.

4.2. Risks of Intelligent Interaction: Devaluation of Human Agency

While AI can enrich classroom interactivity and reduce teacher workload, overreliance on it risks reshaping the human core of education. In AI-driven Q&A systems or automated grading environments, the warmth of teacher-student relationships may be diluted. Students may become more concerned with "pleasing the algorithm" than understanding ideological content, prioritizing efficiency over critical reflection [11].

Pilot programs in some colleges have shown that AI systems, when left unchecked, shift student focus from "why think" to "how to pass". This instrumental orientation not only undermines the cultivation of critical and moral reasoning but also risks reducing IPE to a series of machine-recognizable patterns.

To avoid this drift toward mechanized education, institutions must intentionally preserve teacher-led emotional and ethical guidance. A "human-machine synergy" model should be encouraged, where: AI assists in generating learning materials and scenarios; Teachers guide final interpretation, emotional engagement, and value judgments; Pedagogical designs like flipped classrooms, co-creation tasks, and discussion-based feedback loops maintain human subjectivity as the center of the educational experience.

4.3. Risks of Smart Feedback: Ethical Gray Zones and Surveillance Concerns

The notion of "neutral" AI is fundamentally flawed. Algorithms are built upon hu-

man-defined goals, data filters, and design values. When applied to IPE—where value formation is central—this can lead to serious consequences [12]. AI-based sentiment analysis and ideological profiling tools, if misused, may turn education into a form of soft surveillance, subtly shaping student behavior under the guise of optimization.

Moreover, AI-driven prediction systems, when used for early warning or evaluation, could inadvertently stigmatize students expressing dissenting views or emotional vulnerability. This risk replaces open dialogue with silent conformity, and moral development with data compliance.

To prevent such ethical transgressions, vocational colleges must proactively build educational technology governance frameworks. This includes:

Establishing an institutional ethics review board to evaluate AI tools used in classrooms; Requiring all AI teaching applications to undergo ethical clearance, with particular scrutiny of those influencing value interpretation; Training teachers not only in AI tools but also in ethical awareness, so they can act as value stewards in an increasingly automated environment.

Ultimately, AI must serve as a pedagogical assistant—not a moral authority or ideological filter.

5. Conclusions

Generative artificial intelligence, as a key representative of the latest digital technologies, is increasingly integrating into various aspects of vocational colleges' ideological and political education, revealing unprecedented application potential. However, it is important to recognize that the understanding of generative AI in these institutions remains varied. Current applications are often concentrated on surface-level technical enhancements, lacking visionary design and systematic responses to deeper issues like ideological security, human-machine collaboration, and ethical boundaries in teaching. In some cases, the drive for intelligent and efficient teaching methods has led institutions to neglect the humanistic care and value-oriented functions of education, resulting in a variety of classroom interaction styles that ultimately diminish educational effectiveness. This underscores that technological progress does not automatically translate to improved educational quality; AI-driven innovations must align with the core mission of fostering moral and ethical development.

In the future, vocational colleges should aim to refine the educational pathways of "AI + Ideological and Political Education" while steadfastly adhering to value-based guidance. First, there is a need to enhance intelligent content review mechanisms and ethical assessment systems to ensure that technology supports appropriate political and value frameworks. Second, efforts should be made to enhance teachers' digital literacy and foster a classroom environment rich in humanistic warmth to prevent tendencies toward "de-emotionalization" and "de-valuation" within educational settings. Third, the data security governance system should be strengthened to bolster privacy protection and ensure the safeguarding of stu-

dents' legal rights. Finally, it is important to explore new teaching paradigms that emphasize "human-machine collaboration + diverse interaction", positioning AI as an assistant rather than a leader in the educational process, and cultivating an intelligent classroom ecosystem where "AI supports, teachers lead, and students take center stage".

In summary, generative artificial intelligence injects new momentum into vocational ideological and political education, and its impact continues to evolve. Vocational colleges need to scientifically balance the dialectical relationships among "efficiency and value", "technology and humanity", and "innovation and risk". By maintaining educational integrity and nurturing a nurturing educational environment, they can truly achieve the value enhancement and high-quality development of AI-empowered ideological and political education.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

References

[1] Hao, N. and Gui, Z. (2025) The Technological Model, Practical Symptoms, and Approaches of AI Empowerment in "Precise Ideological and Political Education" in Universities. *Heilongjiang Researches on Higher Education*, **43**, 1-10.

[2] Li, X. and Xie, Y. (2025) From ChatGPT to DeepSeek: The Mechanism and Approach of Generative AI in Ideological and Political Education. *Contemporary Education Forum*, 1-14.

[3] Yan, R. (2025) The Ethical Risks and Resolution Path of AI Empowerment in Ideological and Political Education: An Examination from the Perspective of Educational Subjectivity. *Ideological Education Research*, No. 6, 34-42.

[4] Jin, S. and Yang, Y. (2025) "Virtual" and "Reality": The Reality Landscape, Problem Reflections, and Coping Strategies of Digital Narratives in Ideological and Political Education. *Ideological Education Research*, No. 5, 30-36.

[5] Wu, H., Zhu, G. and Bai, Z. (2025) The Value Implications, Development Dilemmas, and Implementation Paths of Digital Empowerment in University Ideological and Political Education. *Theory and Practice of Education*, **45**, 40-44.

[6] Zhou, L. and Liu, K. (2025) Exploration of AI Algorithm Empowerment in the Dissemination of Ideological and Political Education Discourse. *Ideological Front*, **51**, 165-172.

[7] Xie, Y. and Zhang, K. (2025) Adaptation and Leadership of Ideological and Political Education in the AI Era—On Strategies for the Use of DeepSeek in Ideological and Political Education. *Teaching and Research*, No. 5, 79-89.

[8] Xie, Y. and Zhang, K. (2025) The Mechanism, Risks, and Directions of AI Empowerment in the Innovation and Development of Ideological and Political Education. *Journal of the Discipline of Marxist Theory*, **11**, 97-107.

[9] Lu, L. (2025) The Logical Path, Dynamic Mechanism, and Practical Landscape of Innovation in Ideological and Political Education Driven by Scenarios. *Journal of Guizhou Normal University* (*Social Science Edition*), No. 3, 1-10.

[10] Feng, Y. and Yi, X. (2025) The Value Adherence, Real Issues, and Optimization Paths of Digital Ideological and Political Education in Universities. *School Party Building*

and Ideological Education, No. 9, 79-82.

[11] Huang, X. and Zhang, H. (2025) The Potential and Strategies of ChatGPT Empowerment in University Ideological and Political Education. *Journal of Shanxi University of Finance and Economics*, **47**, 262-264.

[12] Xie, H. and Zhou, J. (2025) DeepSeek and University Ideological and Political Education: Influence Mechanism, Application Risks, and Response Strategies. *Journal of Hunan University of Science and Technology* (*Social Science Edition*), **28**, 104-111.