

The Practical Path of Empowering Ideological and Political Education for Medical Postgraduates with Generative Artificial Intelligence

Xiaoyu Fei¹, Yifan Zhang^{1,*}

¹Wenzhou Medical University, Wenzhou 325000, China

*Corresponding author email: 1030517046@qq.com

Abstract: With the in-depth advancement of the national education digitalization strategy, generative artificial intelligence has provided a new driving force for improving the quality and efficiency of ideological and political education for medical postgraduates. As a reserve of high-level medical talents, medical postgraduates receive ideological and political education with unique attributes of academic rigor, practicality and professional ethics, which is crucial for talent cultivation, the development of medical undertakings and the implementation of the Healthy China initiative. Based on the technical characteristics and application logic of generative artificial intelligence, as well as the demand for precise ideological and political education for medical postgraduates, this paper constructs a practical pathway of "precision empowerment–dynamic interaction–collaborative efficiency–safety and controllability" from four dimensions: resource construction, teaching implementation, collaborative education and risk prevention and control. It aims to achieve the deep integration of technological empowerment and ideological and political education for medical postgraduates, and foster a new generation of medical professionals with noble medical ethics, superb medical skills, patriotism and a strong sense of social responsibility, as well as excellent doctor-patient communication competence.

Keywords: Generative artificial intelligence; Medical postgraduates; Ideological and political education.

1. Introduction

Against the backdrop of the coordinated advancement of national education digital transformation and the Healthy China strategy, ideological and political education for medical postgraduates plays a pivotal role in talent cultivation, medical development and the implementation of the Healthy China initiative. At present, ideological and political education for medical postgraduates is confronted with practical challenges such as outdated content, monotonous teaching forms, insufficient targeted education, absent educational subjects and fragmented educational processes. Especially in an era of rapid technological progress, increasing social diversification and globalization, the professional, practical and research-oriented characteristics of medical postgraduate training have become increasingly prominent, placing higher demands on the precision and personalization of ideological and political education[1]. With its core advantages in content generation, situational interaction and data feedback, generative artificial intelligence has emerged as a key engine driving the paradigm shift of ideological and political education. Compared with undergraduate students in general universities, medical postgraduate training integrates theoretical learning, clinical practice and scientific research innovation, requiring ideological and political education to focus on core themes including medical ethics cultivation, sense of responsibility, bioethics and doctor-patient communication. Combining the particularities of medical postgraduate education, this study explores scientific and effective practical paths for generative artificial intelligence to empower ideological and political education among medical postgraduates, which is of great significance for enhancing the effectiveness of ideological and political education and fulfilling the fundamental task of

fostering virtue through education.

2. Current Dilemmas of Ideological and Political Education for Medical Postgraduates in the Context of Generative Artificial Intelligence Empowerment

2.1. Insufficient Content Adaptability and Lack of Targeted Education Orientation

Current ideological and political education content for medical postgraduates is dominated by universal theories, lacking differentiated design tailored to different medical specialties and training stages. It is significantly disconnected from the requirements of core medical professional competencies and clinical practice needs. In particular, there is a shortage of ideological and political content tailored to medical-specific scenarios such as doctor-patient communication, medical ethical decision-making and research integrity, which fails to precisely meet the personalized growth needs of medical postgraduates and hinders the achievement of targeted ideological and political education goals[2].

2.2. Rigid and Monotonous Teaching Modes with Weak Practical Education Effectiveness

Traditional ideological and political education for medical postgraduates mostly adopts one-way indoctrination models such as classroom lectures and thematic seminars, lacking interactivity and immersive experience. Due to heavy clinical and research workloads, limited class time for ideological and political education is insufficient to transform theoretical

knowledge into practical identity, and there is a lack of practical training platforms aligned with real clinical scenarios. This results in a "dual separation" between ideological and political education, clinical practice and scientific research training. Students' understanding of ideological and political concepts remains at the theoretical level, making it difficult to internalize into medical ethical behaviors and professional accountability[3].

2.3. Fragmented Educational Processes and Absence of Dynamic Evaluation and Feedback

Ideological and political education for medical postgraduates is mostly concentrated in phased links such as orientation education and classroom teaching, failing to run through the entire training process including theoretical learning, clinical rotations, scientific research innovation and career development, thus presenting the problem of "process fragmentation". Meanwhile, existing evaluation methods are mainly qualitative, lacking quantitative assessment and dynamic tracking of students' ideological cognition, medical ethics performance and doctor-patient communication abilities. It is difficult to accurately identify weak links in students' ideological and moral development or provide timely personalized improvement suggestions, leading to weak pertinence of ideological and political education and lack of evidence for continuous optimization[3].

2.4. Insufficient Multi-subject Collaboration and Unformed Synergistic Educational Force

There exists a "subject absence" phenomenon in current ideological and political education for medical postgraduates, with an ineffective collaborative linkage mechanism among ideological and political instructors, academic supervisors and clinical preceptors. Ideological and political instructors have limited knowledge of medical expertise, making it hard to precisely integrate medical-specific ideological and political elements; academic supervisors and clinical preceptors emphasize professional competence training while neglecting ideological and political guidance, failing to fully leverage the educational role of practical links. Dispersed resources across stakeholders prevent the formation of a multi-subject collaborative education pattern featuring "value guidance, professional integration and practical reinforcement", resulting in insufficient synergistic force.

3. Practical Paths for Generative Artificial Intelligence Empowering Ideological and Political Education Among Medical Postgraduates

3.1. Construct an Intelligent Ideological and Political Resource System to Consolidate the Educational Foundation

First, build a medical-featured ideological and political resource repository. Relying on generative artificial intelligence technology, integrate medical ethics cases, exemplary deeds of medical ethics, ideological and political materials from public health emergencies and typical doctor-patient communication cases to establish a dynamic resource repository covering basic medicine, clinical medicine, public

health and other fields. The repository shall realize real-time content updates and precise push services to meet the personalized learning needs of medical postgraduates across different specialties and stages, supporting the realization of targeted ideological and political education. For instance, clinical postgraduates are prioritized for cases on doctor-patient communication ethics and medical ethical decision-making in diagnosis and treatment; research-oriented postgraduates receive content on research integrity and academic ethics; public health postgraduates are provided with cases on responsibility commitment in public health emergencies. Second, develop personalized resource generation tools. Supported by large generative artificial intelligence models, develop a resource generation platform adapted to ideological and political education for medical postgraduates, enabling teachers and students to independently generate personalized resources such as teaching cases, speeches and practical plans according to needs, especially simulation scripts for doctor-patient communication tailored to specific clinical scenarios, enhancing the flexibility and pertinence of resource construction[5].

3.2. Innovate an Immersive Teaching Implementation Model to Improve Educational Effectiveness

On the one hand, carry out situational virtual simulation teaching. Use generative artificial intelligence to construct real scenarios including virtual clinical ethical decision-making, complex doctor-patient communication and emergency response to public health emergencies, with core scenarios focusing on the mediation of doctor-patient disagreements, informed consent for patient privacy protection and communication of adverse medical outcomes. Through human-computer interaction, medical postgraduates participate in scenario simulations, deepening their understanding of ideological and political concepts such as life first, patient respect and due diligence, while improving practical doctor-patient communication skills, achieving dual transformation from theoretical cognition to practical identity and competence enhancement. This situational teaching model breaks the spatio-temporal constraints of traditional classrooms and boosts the appeal and effectiveness of ideological and political education. On the other hand, implement an intelligent interactive teaching model. Leverage the voice interaction and real-time Q&A functions of generative artificial intelligence to build an intelligent ideological and political classroom. Interactive sessions such as medical ethics debates, doctor-patient communication case analyses and research integrity seminars are arranged in class, with generative artificial intelligence collecting and analyzing students' viewpoints in real time to guide in-depth thinking and enhance classroom participation and critical thinking[6][7].

3.3. Improve the Multi-subject Collaborative Education Mechanism to Gather Educational Synergy

First, establish an intelligent collaborative education platform. Based on generative artificial intelligence technology, build a collaborative platform involving ideological and political instructors, academic supervisors, clinical preceptors and postgraduates, realizing the sharing of

teaching resources, synchronization of teaching progress and joint evaluation of educational effects. The platform can automatically record postgraduates' ideological and political performance and doctor-patient communication practice in each training link, providing precise educational references for supervisors and effectively resolving the dilemma of subject absence in targeted ideological and political education. Second, improve the teacher capacity enhancement mechanism. Provide training on the integration of artificial intelligence technology application and ideological and political education for medical academic supervisors and clinical preceptors, focusing on improving their ability to integrate ideological and political elements and guide doctor-patient communication practice through intelligent tools; encourage ideological and political instructors to gain in-depth knowledge of medical expertise to enhance the pertinence and professionalism of ideological and political education. Third, promote the deep integration of ideological and political education with scientific research and clinical practice. Use generative artificial intelligence to track postgraduates' research processes and strengthen research integrity education; in clinical rotations, record postgraduates' doctor-patient communication performance via intelligent systems, combined with real-time guidance from clinical preceptors, to provide timely instruction on medical ethics norms and communication skills, achieving seamless connection between ideological and political education and clinical practice.

3.4. Build a Full-chain Risk Prevention and Control System to Safeguard the Educational Orientation

First, uphold the educational concept of "teacher-led, technology-assisted". Clarify the dominant position of teachers in ideological and political education, with generative artificial intelligence serving only as an auxiliary tool to avoid the absence of teacher subjectivity caused by technological alienation. Strengthen technical ethics training for teachers to guide the rational application of artificial intelligence and adhere to the value orientation of ideological and political education. Second, improve data security and privacy protection mechanisms. Establish strict data security management norms for personal information and clinical practice data collected in ideological and political education for medical postgraduates, and apply encryption technologies to ensure data security and prevent information leakage. Third, fortify the ideological security defense. Strengthen the review of content generated by generative artificial intelligence, establishing a dual review mechanism of "technical screening + manual audit" to ensure that ideological and political education content conforms to mainstream ideological requirements and avoid risks of erroneous value orientation. Fourth, reinforce ethical norm guidance. Integrate medical ethics and technical ethics education into intelligent ideological and political education, guiding postgraduates to correctly understand the value and limitations of artificial intelligence and establish a scientific technological outlook[8].

4. Conclusion

Generative artificial intelligence brings brand-new

development opportunities for ideological and political education among medical postgraduates, yet its application must be grounded in the unique professional, practical and research-oriented attributes of medical postgraduate education, follow the laws of ideological and political education and the logic of technological application, and closely focus on practical goals such as targeted ideological and political education and the improvement of doctor-patient communication abilities. By constructing an intelligent ideological and political resource system, innovating an immersive teaching model, improving the multi-subject collaborative education mechanism and building a full-chain risk prevention and control system, current dilemmas including subject absence, process fragmentation and monotonous methods in ideological and political education for medical postgraduates can be effectively addressed, realizing the deep integration of generative artificial intelligence and ideological and political education and enhancing the effectiveness and pertinence of ideological and political education. In the future, empirical research can be further conducted to optimize the practical paths, continuously explore new approaches and methods for technological empowerment of ideological and political education for medical postgraduates, and constantly refine the education model, providing strong support for cultivating high-quality medical professionals in the new era, advancing medical undertakings and implementing the Healthy China strategy.

References

- [1] Fan Y Y, Jiang S Y, Shi W X, et al. Research on practical paths of ideological and political education for clinical medical postgraduates. *Acta Medicinæ Sinica*, 2025, 38(04).
- [2] Yi T, Li X G. On the social significance of improving doctor-patient communication ability through ideological and political education for medical postgraduates. *China Continuing Medical Education*, 2025, 17(07): 16–19.
- [3] Wang S, Xu L M. Research on generative artificial intelligence empowering collaborative education between ideological and political theory courses and curriculum-based ideological and political education. *Henan Association of Private Universities. Proceedings of the 2025 Symposium on Higher Education Teaching (Volume 1)*. 2025: 122–124.
- [4] Yang Y H. Dilemmas and innovative paths of precise ideological and political education for postgraduates in medical colleges. *Journal of Jinzhou Medical University (Social Science Edition)*, 2025, 23(02): 59–62.
- [5] Zhang N. Countermeasure analysis of generative artificial intelligence empowering moral education in colleges and universities. *Anhui Science and Technology News*, 2025-11-26(012).
- [6] Wang C. Influence mechanism, potential risks and coping strategies of generative artificial intelligence precisely empowering college students' ideological and political education. *University*, 2025(36): 48–51.
- [7] Yao C L, Lü L. Generative artificial intelligence empowering vocational colleges in fulfilling the fundamental task of fostering virtue through education: epochal opportunities and practical paths. *Vocational and Technical Education*, 2025, 46(17): 28–32.
- [8] Lin X G. Innovative opportunities, practical challenges and coping strategies of generative artificial intelligence empowering moral education in colleges and universities. *Journal of China Multimedia & Network Teaching*, 2025(11): 13–16.