



The Exploration of the Path for Generative Artificial Intelligence to Empower Ideological and Political Education

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Abstract. Generative Artificial Intelligence (GAI) injects innovative momentum into ideological and political education and enables high-quality development through intelligent content construction, immersive scene interaction and personalized teaching recommendation. While promoting the intelligent transformation of teaching content, it also faces multiple challenges such as technology optimization, ethical integration and resource allocation. To this end, it is necessary to build a technical and ethical coordination mechanism, coordinate educational resource allocation and teaching model innovation, strengthen policy guidance and ability cultivation, and finally realize the benign interaction between GAI and ideological and political education, so as to provide support for cultivating well-developed talents.

Keywords: Generative artificial Intelligence (GAI); ideological and political education; empowering

In the context of the rapid development and iteration of GAI, the discipline of ideological and political education has been paying close attention to the development of the artificial intelligence industry. In recent years, GAI has played a unique technological advantage in this combination, it has greatly enhanced the attractiveness and effectiveness of ideological and political education. However, the technological empowerment of ideological and political education by GAI also faces a series of challenges. Therefore, in the process of promoting the deep integration of GAI and ideological and political education, it is necessary to seek a balance between technology empowerment and the essence of education.

1 Technological Advantages of GAI in Empowering Ideological and Political Education

1.1 Intelligent Teaching Content Driven by Big Data and Knowledge Graph Technologies

1) Dynamic Construction of Ideological and Political Course Knowledge Map: The dynamic knowledge graph is the extension and upgrade of the traditional knowledge

graph, the core is to emphasize the timeliness and evolution of knowledge. Through in-depth semantic analysis and modeling, GAI is able to conduct intelligent processing of the teaching content of ideological and political courses. "The knowledge structure forms a network with the knowledge points of a discipline or course and their interrelationships, clearly presents the knowledge context." [1] dynamically constructing a knowledge graph that meets the teaching requirements. GAI can access and process multi-source data in real time, and dynamically update the entities and relationships in the knowledge graph to ensure that the teaching content is always consistent with the latest policy requirements and educational trends.

2) *Cross-Modal Content Generation*: Cross-modal content generation technology can generate content in another modality based on information in one modality, providing a brand-new way for content creation and presentation in ideological and political education. The traditional way of ideological and political education mainly relies on theoretical explanation, and the teaching content is often abstract, which is difficult to stimulate students' learning interest. However, Through cross-modal generation technology, GAI can be used by educators to convert theoretical knowledge points in ideological and political courses into vivid audio and video materials to help students understand complex concepts in textbooks more intuitively.

1.2 Human-Computer Interaction and Scenario Reconstruction Technologies Create Immersive Teaching Spaces.

1) *Scenario Reconstruction in Virtual Reality (VR) and Augmented Reality (AR)*: VR and AR technologies, by constructing immersive and interactive teaching environments, transform abstract theoretical knowledge into vivid and intuitive experiences, enabling "educators and learners to seamlessly navigate between virtual and physical spaces" [2]. VR technology can realize "scene reproduction" of significant historical events. Through immersive experience, students can enhance their understanding of historical events. By utilizing AR technology to convert abstract and monotonous theoretical knowledge in ideological and political education into visualized dynamic models or contextualized scenarios, such presentation methods not only help students understand complex theories more intuitively but also enhance the engagement and effectiveness of ideological and political education.

2) *Optimization of Blended Learning Models Integrating Online and Offline Elements*: GAI not only consolidates online and offline resources and materials for ideological and political education but also dynamically generates online learning content and offline interactive solutions, providing more flexible and efficient teaching methods for ideological and political education. Students can independently study the theories of ideological and political education online through various learning platforms or application software to master the basic content. Then, in offline classes, through practical activities such as group discussions and case analyses, they can further internalize the knowledge and improve their practical abilities. Moreover, GAI can dynamically adjust the proportion and form of online and offline teaching content according to students' learning behavior data and feedback.

1.3 Personalized Intelligent Recommendation Systems Empower Precision Teaching Methods

1) *Student Profile-Based Personalized Learning Path Recommendation*: GAI constructs a multi-dimensional profile of students by integrating their learning behavior data, interest preference data, and competency assessment data. This profile not only enables educators to "closely align with the unique context of each learner, capture their ideological dynamics, value preferences, and behavioral patterns in real time, and gain precise insights" [3], but also provides a scientific foundation for personalized learning. Generative Artificial Intelligence (GAI) utilizes collaborative filtering algorithms and deep learning models to recommend learning resources and pathways tailored to students' needs based on their profiles. For instance, it recommends foundational theoretical courses for students with weaker theoretical grasp, while designing research and analysis tasks for students with stronger practical skills. Furthermore, GAI supports the dynamic optimization of learning paths. By leveraging real-time analysis of students' learning progress and feedback, the system automatically adjusts recommendation strategies and content.

2) *Learning Behavior Analysis and Outcome Prediction*: GAI leverages learning behavior analysis models to collect, organize, and analyze multidimensional behavioral data from students during their learning processes. These data reveal students' learning characteristics, habits, and latent needs. By employing Time-Series Analysis models (e.g., LSTM), GAI further analyzes students' online learning time series data to predict their learning outcomes and developmental trends. These analytical results provide robust data support for educators to design scientific and precise educational plans, enabling teachers to dynamically adjust teaching strategies, optimize instructional content and methods, and ultimately achieve precision education.

2 Challenges of GAI - Empowered Ideological and Political Education

2.1 Challenges in Technical Implementation and Model Optimization

1) *Issues of Data Quality and Model Bias*: Despite the rapid development of artificial intelligence technology, due to the unreasonable design of the model structure and the limitations of the training data, the generated content is inaccurate and incomplete, and there are systematic differences between the real situation and the expected goal. Particularly in its integration with ideological and political education, GAI emphasizes efficiency and outcomes, while ignoring the comprehensive nature of ideological education, its latent educational effects, and the transmission of emotional and value-based dimensions. The rigid outputs of AI models struggle to align with the humanistic care and value guidance required by ideological and political education, potentially leading to content that lacks depth and emotional resonance, thereby failing to meet the educational demands of fostering well-rounded socialist builders and successors.

2) *Barriers to Algorithm Transparency and Interpretability*: GAI relies on analyzing vast amounts of data to generate content. Its deep neural networks exhibit highly non-linear characteristics, meaning that algorithmic decisions involve executing a series of complex calculations based on input data. When GAI generates explanations or answers, logical inconsistencies or incomplete explanations may arise. More critically, if the generated content exhibits biases or errors, the lack of transparency in the algorithm's internal operations makes it difficult to trace the specific source of such issues. For ideological and political education, even if GAI produces seemingly accurate results, explaining how these results are generated remains challenging. Educators and learners can only learn in confusion, which not only undermines trust in the generated content but also risks misinterpretation or deviation from the discipline's core values.

2.2 Challenges in Ethical and Value Integration

1) *Algorithmic Bias and Value Bias*: While GAI algorithms may appear to be "rational" integrations based on large databases, this does not mean they are entirely devoid of political attributes. "Artificial intelligence and big data are not ideologically neutral scientific knowledge that drives economic development and social transformation" [4]. "Behind the façade of algorithmic 'objectivity' lie subjective political preferences or ideologies" [5]. The training data for GAI primarily originates from the internet. The implicit Western values in these datasets—such as individualism and liberalism—are learned by the models and reflected in their outputs, causing the generated content to neglect or misinterpret the characteristics and values of other cultures. For instance, a simulation experiment conducted by Brazilian scholars demonstrated that ChatGPT, as a generative AI system, exhibits strong and systematic political bias, with its political stance distinctly "left-leaning" [6]. For ideological and political education, this bias poses serious risks. It may mislead young people's political thinking, weaken their identification with local culture, and even distort the formation of their values.

2) *Problems of Data Security and Privacy Protection*: The vast training data relied upon by GAI typically originates from diverse sources such as the internet and user behavior logs, which often include personal information from online users. If personal information is not well protected during data collection, it risks unauthorized exposure. In the context of ideological and political education delivered through intelligent platforms, students' behavioral data and personal details, as well as instructors' teaching content, are routinely collected and stored. Should these data lack robust security measures during collection, storage, or transmission, the privacy of both students and educators faces significant threats. Furthermore, ideological and political education carries distinct ideological implications, involving the guidance and dissemination of values that are highly sensitive and critical. A data breach in this domain could enable malicious exploitation, undermining the credibility and effectiveness of ideological education.

2.3 Challenges in Educational Resources and Educator Capacity Enhancement

1) *Difficulty in Balancing Educational Resource Allocation:* The extensive application of artificial intelligence technology in education has the risk of exacerbating the technology gap between different regions. Schools in developed regions can quickly introduce advanced GAI technology and educational resources. Students and teachers in these regions can contact and use GAI technology earlier, and improve education quality and learning results. However, regions and schools without such initiatives face constraints in funding, technical capacity, and infrastructure, making it difficult to integrate GAI technologies, resulting in slower improvements in educational quality. When some students are excluded from technological benefits due to resource scarcity, they might question principles like educational equity and equal opportunity, thereby undermining the formation of their values and worldview.

2) *Disparities in Educators' Technological Proficiency:* The disparity in educators' proficiency with AI applications poses a significant challenge to integrating AI technologies into ideological and political education. On one hand, institutions that proactively implement systematic technical training programs enable teachers to master GAI and achieve deep integration with traditional pedagogical methods. This fosters innovative teaching approaches, making ideological and political lessons more appealing and attractive. On the other hand, some teachers, constrained by factors such as age, limited technical awareness, or lack of training opportunities, exhibit misconceptions or lag in adopting AI technologies for ideological education. As a result, their classrooms remain confined to traditional lecture-based formats, failing to achieve breakthroughs through technological innovation. This technological divide among educators not only undermines the consistency of teaching effectiveness but also risks hindering the overall development and innovation of ideological and political education.

3 Practical Pathways for GAI to Empower Ideological and Political Education

3.1 Dual Safeguards: Technical Optimization and Ethical Constraints

1) *Dual Safeguards: Technical Optimization and Ethical Constraints:* To enable GAI to empower ideological and political education more effectively, efforts must focus on both technical optimization and ethical constraints. At the technical level, developing more precise GAI models is critical. This begins with data optimization—collecting diverse sources of data relevant to ideological and political education and rigorously labeling these datasets to establish a specialized database. Concurrently, continuous improvements to GAI algorithms are essential, including advancing natural language processing (NLP) technologies to enhance deep understanding of students' learning needs and inquiries. Additionally, improving algorithmic transparency and interpretability. Explainable generative models should be designed, with visualization tools to intuitively display decision-making processes, helping students grasp the logi-

cal flow behind generated answers.

2) **Ethical Constraints:** Ethically, the responsibilities of developers, users, and regulators must be clearly defined. Developers must strictly control training data sources, ensuring content aligns with regulatory standards and mainstream ideologies, while establishing robust data protection mechanisms (e.g., encryption, access controls) to safeguard personal information and privacy. Regulators must proactively oversee the application of GAI in ideological education, regularly assessing its practical outcomes and risks, and intervening to address issues like algorithmic bias or data distortion. Educators and students, meanwhile, should be guided by mainstream values when using GAI, critically evaluating its answer to ensure alignment with the fundamental goals of ideological and political education.

3.2 Synchronized Advancement of Equitable Resource Allocation and Pedagogical Innovation

1) *Narrowing Regional Disparities in Educational Resources:* The imbalance in AI-driven educational resource allocation is particularly pronounced across regions, but such inequality is temporary and can be resolved by leveraging AI itself. While gradually balancing funding, and policy support for AI in education across regions, it is essential to harness AI's strengths to innovate pedagogical models and promote equitable resource distribution. For instance, Intelligent educational platforms can utilize remote teaching and real-time interaction to precisely connect high-quality resources with schools and learners. This enables students in underdeveloped regions to transcend geographical barriers and access high-quality learning experiences simultaneously with their peers in developed areas. VR technology allows students to immerse themselves in educational resources such as museums and historical settings, effectively compensating for underdeveloped regions' deficits in cultural infrastructure and educational materials.

2) **Exploring New Pedagogical Models:** Furthermore, GAI can dynamically generate personalized learning content and instructional plans tailored to students' needs, ensuring optimized educational experiences for all and effectively avoiding the education inequality caused by a 'one-size-fits-all' teaching approach. Through inclusive technological applications, not only can more effective and diverse teaching models be explored, but regional educational gaps can also be gradually narrowed. This provides equal opportunities for all students, driving dual improvements in educational equity and quality.

3.3 Strengthen Teacher Training to Build an Integrated Intelligent Ideological and Political Education Teaching Team.

1) **Policy Guidance by Relevant Authorities:** The deep integration of AI with ideological and political education requires a moderate inclination of relevant policies. For the government, specialized policies should be formulated to increase funding and resource allocation for AI applications in ideological and political education, particularly in underdeveloped regions with scarce educational resources. Policy incentives

and financial prioritization can effectively narrow regional gaps in technological adoption. Simultaneously, schools must actively respond to policy initiatives by establishing intelligent educational platforms, providing educators and students with essential technological infrastructure and supportive learning environments.

2) *Enhancing Technical Training for Educators*: For teachers, systematic training programs—including structured courses, hands-on practice, and case-based learning—should be strengthened to comprehensively improve their AI literacy and technical proficiency. This enables educators to master the core functionalities of GAI technologies. Additionally, teachers should be encouraged to leverage their pedagogical expertise and the traditional strengths of ideological and political education to explore innovative pathways for deeply integrating GAI into teaching practices. Through the synergistic interplay of policy guidance and capacity building, a collaborative momentum can be fostered to drive the deep integration of AI and ideological and political education.

4 Peroration

In the context of the intelligent era, we should see that the close integration of GAI and ideological and political education is an inevitable trend. At the same time, it is necessary to integrate the value attributes of ideological and political education and moral ethics into the research and development process of artificial intelligence, ensure that the positive benefits of emerging technologies in empowering education are maximized. By aiming for high-quality, elevated outcomes, we can collectively propel ideological and political education in higher education to new heights.

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