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Research on the Collaborative Governance Mechanism of College Students' Ideological Shaping Empowered by Generative AI

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Abstract: The rapid development of generative artificial intelligence (AI) has reshaped the way college students receive and disseminate information, which has brought unprecedented challenges and opportunities to ideological education. As an important group in the construction of mainstream ideology, college students are faced with multiple dilemmas in their ideological formation, such as information cocooning, discourse power, and algorithm bias. Starting from the interaction mechanism between generative AI and college students' ideology, this paper analyzes the coupling relationship between the two, discusses the collaborative governance approach of multiple subjects such as universities and governments, enterprises and social organizations, and proposes a governance mechanism based on multiple collaborations based on technology empowerment, collaborative norms based on institutional innovation, and collaborative shaping based on value guidance. By constructing a collaborative governance framework with both flexibility and stability, a new pattern of ideological shaping with multi-agent participation, multi-path collaboration, and multi-dimensional evaluation is formed, which provides assistance for the healthy development of college students' ideology.
Keywords: Generative AI; Ideological shaping; Collaborative governance; Mechanism innovation; Value-led

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1. Introduction

The rapid development of generative artificial intelligence (AI) technology has brought new opportunities and challenges to the ideological shaping of college students. As digital natives, college students' ability to obtain information and form cognition with the help of AI tools has been significantly enhanced, but they also face risks such as information cocooning and algorithm bias. The General Secretary stressed that ideological work is of great importance to the training of builders and successors in colleges and universities. In the face of technological change,

it is necessary to build a collaborative governance mechanism with the participation of multiple subjects. The theory of collaborative governance provides a new perspective, emphasizing the realization of multi-agent interaction and collaboration under a common goal. Through a systematic and scientific governance path, we can effectively respond to the ideological challenges brought about by generative AI, grasp the initiative of ideological work, and guide college students to use AI technology rationally and critically.

2. Interaction mechanism between generative AI and college students' ideological shaping

On the one hand, generative AI provides college students with convenient and efficient tools for information acquisition and knowledge production and expands the cognitive boundary. On the other hand, its algorithm characteristics and content generation mechanism also imperceptibly affect the value judgment and ideological identity of college students. An in-depth analysis of this interaction mechanism is helpful to grasp the internal logic of college students' ideological shaping under generative AI empowerment and lay a foundation for building an effective collaborative governance mechanism.

2.1. Mechanism analysis of generative AI empowering collaborative governance

Generative AI reshapes the ideological collaborative governance model through the triple empowerment mechanism of data integration and intelligent analysis, precise push and interactive guidance, multi-agent linkage, and resource integration [1]. In terms of information empowerment, AI relies on powerful data processing capabilities to realize the intelligent integration of massive information, identifies key trends from complex environments through natural language processing and deep learning technology, and promotes the transformation of ideological governance from empirical judgment to data-driven. In terms of communication empowerment, AI intelligently pushes content according to the cognitive characteristics and interests of the audience and uses interactive functions to shift the education model from one-way indoctrination to two-way interaction, which enhances the pertinence and effectiveness of mainstream ideological communication. In terms of collaborative empowerment, AI provides technical support for multi-subject cooperation, helps all entities form a governance synergy around a common goal by reducing information asymmetry, optimizing resource allocation, and improving collaboration efficiency, and provides systematic solutions through intelligent decision support functions, breaking the limitations of segmentation and building a new pattern of all-round and multi-level collaborative governance.

2.2. Pluralistic subject analysis of college students' ideological formation

In the process of ideological shaping, universities, government departments, and enterprise platforms serve as the leading subjects, guiding subjects, and technical subjects, respectively, and together constitute a multi-collaborative pattern [2]. As the main front of talent training and thought leadership, colleges and universities systematically teach Marxist theory through channels such as ideological and political courses, campus cultural activities, and academic research, and mainly undertake three core functions in the era of generative AI: integration of educational resources,

innovation of educational model, and value orientation. Government departments, especially education and internet information departments, provide institutional guarantees and resource support for ideological work through policy formulation, resource allocation, and supervision and management, and are responsible for key tasks such as policy guidance and standardization, supervision, and resource guarantee in the context of AI. AI enterprises and network platforms play an increasingly important supporting role in ideological shaping by virtue of their technological R&D strength, directly influencing the information ecological environment through algorithm design, model training, and content review, and undertaking important responsibilities such as technology R&D, content governance, and value embedding, providing strong technical support and practical foundation for collaborative governance.

2.3. Dialectical relationship between ideological shaping with the intervention of generative AI

The coupling relationship between generative AI and ideological shaping is reflected in three dimensions: the dialectical unity and openness of technology empowerment and value orientation, the balance mechanism between sharing and the bottom line of security, and the interaction logic between algorithm recommendation and subject selection [3]. Technology empowerment provides a new realization path for value orientation and improves the efficiency and accuracy of communication, while value orientation sets the direction and boundary for technology application to ensure that technology development meets the requirements of mainstream values, with the two promoting and restricting each other. At the level of openness and security, AI promotes information flow and innovation, but also brings security challenges, and it is necessary to build a balanced mechanism through AI security audit technology, data sharing norms, and capacity building, so as to maintain the bottom line of ideological security in an open environment. In the interaction between the algorithm and the subject, AI analysis of behavioral data for content recommendation may lead to the “information cocoon” effect, and user choice will inversely affect the optimization of the algorithm and form a circular interaction, which requires that the algorithm mechanism be optimized to improve diversity and transparency in collaborative governance, and the audience’s critical thinking and subject initiative should be cultivated, so as to realize the organic combination of technical guidance and humanistic care.

3. Dilemma of the implementation of college students’ ideological collaborative governance under the empowerment of generative AI

Generative AI provides a new technical support and development path for the collaborative governance of college students’ ideology, but it also faces multiple difficulties in the process of practice. These dilemmas are not only due to the limitations and risks of technology itself but also from the structural contradictions in the coordination of multiple subjects as well as related to the particularity of ideological work. In-depth analysis of these practical dilemmas can help to find breakthroughs and provide a basis for building a more effective collaborative governance mechanism.

3.1. Algorithmic bias and content security risks

The algorithmic bias and content security risks of generative AI constitute a technical dilemma of ideological collaborative governance, which is manifested in three interrelated levels: the ideological bias hidden in the algorithm training data leads to the AI system unintentionally transmitting specific value tendencies in the process of content generation, and the "filter bubble" effect strengthens the user's existing value preference and polarizes the value cognition, and it is difficult for AI to serve ideological education objectively and neutrally [4]. Even if security alignment measures are implemented, there is still the possibility of being "jailbroken," and malicious users may bypass security restrictions to generate content that violates mainstream values, impacting the ideological security defense line. The contradiction between the rapid development of technology and the lack of follow-up of ethical norms leads to the continuous breakthrough of technological boundaries and the relative lag of ethical standards. The existing system cannot effectively deal with AI application innovation, and there is no consensus on the ethical guidelines and safety standards applied in the ideological field. The standards and actions of various governance subjects are inconsistent in practice, which increases the uncertainty and risk coefficient of ideological collaborative governance.

3.2. Blurring the boundaries of responsibilities and the game of interests

The dilemma of subject collaboration in the generative AI environment is manifested as a structural problem in three dimensions: unclear responsibility boundaries, information barriers, and conflicts of interest. In terms of the boundaries of responsibility, AI technology has broken the boundaries of traditional ideological work, overlapping the scope of responsibilities of multiple entities such as educational institutions, government departments, technology enterprises, and social organizations. The existing institutional framework has failed to clearly define the boundaries of rights and responsibilities of each subject in the new technological environment, and there are disputes over the attribution of responsibility for inappropriate content generated by AI, resulting in frequent blame-shifting and redundant construction in the process of collaborative governance [5]. In terms of information sharing, although AI promotes the flow of information, the problem of data barriers between various entities is still prominent, the requirements of data security and privacy protection limit the scope of sharing, and the differences in technical standards and data formats increase the difficulty of integration. Additionally, the teaching data owned by educational institutions, the user behavior data held by enterprises, and the regulatory data managed by the government are difficult to effectively integrate, and collaborative decision-making is inefficient due to the lack of a global perspective. In terms of interest coordination, the tension between the pursuit of economic benefits and the pursuit of social benefits in ideological work, as well as the contradiction between the interests of various main departments and the overall interests, lead to the widespread phenomenon of "free riding" in collaborative governance, and the lack of sustainable and stable cooperation power and reciprocal mechanism between subjects.

3.3. Weakening of the discourse system and identity crisis

The value-leading dilemma in the generative AI environment is reflected in three deep-seated problems: the lack of attraction of mainstream discourse, the lack of critical thinking ability, and the shallowness of value identity [6]. In

terms of discourse system, the networked, fragmented, and entertaining communication environment has brought severe challenges to the traditional mainstream theoretical discourse, the digital indigenous group is accustomed to vivid and interactive expressions and lacks a sense of closeness to abstract theories, the AI-generated content has diverse styles and friendly language, and the mainstream ideological discourse is at a relative disadvantage in the competition. In terms of cognitive ability, AI convenient services cause young people to rely too much on ready-made answers and reduce independent thinking, resulting in cognitive inertia. Many audiences tend to directly accept AI-generated content rather than conduct critical analysis and lack discernment and judgment in the face of complex and changeable ideological information. In terms of value identification, AI has exacerbated the fragmentation of information acquisition and the shallow trend of cognitive construction. The knowledge acquired by young people through AI is often fragmented and difficult to form systematic cognition. AI responds to more neutral expressions and avoids value judgments, weakens the value-leading function, value identity stays on the surface and lacks deep rational thinking and emotional resonance, and the situation of "knowing what it is and not knowing why it is so" affects the internalization of mainstream ideology.

4. Effective practice of the ideological collaborative governance mechanism of college students empowered by generative AI

The collaborative governance of college students' ideology empowered by generative AI needs a systematic implementation path and effective coping with the above-mentioned practical dilemmas by building a governance system that emphasizes multi-subject collaboration and multi-dimensional integration, as well as technology and humanities. The design of the implementation path should be based on the actual needs of socialist education with Chinese characteristics, give full play to the enabling role of technology, and at the same time adhere to the value orientation of ideological work, so as to provide a strong guarantee for cultivating new talents who will take on the great task of national rejuvenation.

4.1. Technology empowerment: Building an intelligent monitoring and precise guidance system

The construction of a generative AI-enabled intelligent monitoring and precise guidance system should be designed around three aspects: situational awareness system, intelligent education platform, and precise ideological and political service mechanism [7]. The situational awareness system uses natural language processing technology to monitor and analyze the campus cyberspace in real time and conducts multi-dimensional data mining through deep learning algorithms to form an ideological situation assessment report, providing forward-looking decision-making support for collaborative governance. The intelligent ideological education platform integrates curriculum resources, practical activities, and media resources to realize personalized recommendation and intelligent interaction based on cognitive characteristics, enhance the immersion and experience of values education through AI-driven scenario simulation and role playing, and adapt to the learning habits of digital natives. The precise ideological and political service mechanism uses AI technology to draw the ideological portrait of the audience, assist in the design of personalized ideological and political programs, and realize the transformation from "flood irrigation" to "precise

drip irrigation" [8]. The three support each other and together constitute the core architecture of the technology empowerment path, realize the keen capture of ideological dynamics through data-driven, and provide targeted educational content and service methods with the help of intelligent algorithms. It not only solves the problems of lagging information acquisition, low efficiency of content dissemination, and homogenization of service methods in traditional ideological and political work, but also effectively improves the scientificity, accuracy, and effectiveness of ideological work and provides a solid technical foundation for collaborative governance.

4.2. Institutional innovation: Improving coordination norms and responsibility sharing mechanisms

The core of the institutional innovation path lies in building a collaborative governance framework for multiple subjects, improving ethical norms and technical standards, and establishing a collaborative evaluation and accountability mechanism, so as to provide institutional guarantee for ideological collaborative governance empowered by generative AI. The multi-subject collaborative governance framework clarifies the boundaries of rights and responsibilities of all parties by formulating governance charters and establishing collaboration platforms, solves the problems of ambiguity of responsibilities and lack of motivation, and relies on clear rights and responsibilities and benefit and risk sharing to form a governance synergy [9]. Ethical norms and technical standards address the ethical ambiguity in AI applications, clarify the value orientation and use boundaries, standardize data collection, algorithm design, and content generation, and prevent technical risks while maintaining innovation vitality. The collaborative evaluation and accountability mechanism constructs an evaluation system covering the dimensions of technology application, organizational collaboration, and educational effectiveness, establishes an accountability system for violations, and forms positive incentives and reverse constraints. These three institutional designs cooperate with each other to weave an institutional guarantee network, which not only clarifies the responsibility boundaries and behavioral norms of each subject in technological change, but also establishes an incentive mechanism and evaluation system to promote cooperation. It also sets up an ethical defense line and safety standards to prevent technological risks, effectively solves the institutional dilemmas such as ambiguous responsibilities, inconsistent standards, and poor coordination, and provides a standardized institutional environment and sustainable operation mechanism for ideological collaborative governance.

4.3. Value-led: Reshaping the discourse system and enhancing cultural identity

The value-led path focuses on achieving deep identification with mainstream ideologies through discourse innovation, ability training, and identity space construction [10]. Discourse expression innovation uses AI technology to analyze the cognitive characteristics and language preferences of the audience, transforms abstract theories into concrete and life-like expressions, and uses AI to assist in the creation of high-quality content in various forms, so as to enhance the affinity and influence of mainstream ideological discourse. The cultivation of critical thinking and media literacy integrates AI literacy education into the curriculum system, carries out the training of discernment ability and value

judgment ability, and helps the audience maintain a clear understanding and independent choice in the complex information environment. The construction of cultural identity space uses AI technology to create virtual cultural pavilions and interactive communities to promote the integration of online and offline activities and provide immersive value experiences. These three dimensions constitute a value-leading chain from the outside to the inside and from knowledge to emotion to action, which solves the problems of rigid discourse, passive acceptance, and lack of experience in traditional ideological education. The problem of "listening" is solved through the intimacy of the form of discourse, the problem of "thinking clearly" is solved through the improvement of critical ability, and the problem of "trustworthiness" is solved through the construction of identity space, and finally the unity of cognitive, emotional, and behavioral identities is realized, forming the endogenous power and lasting effect of value leadership. This effectively copes with the challenge of weakening the discourse system and identity crisis in the AI environment.

5. Conclusion

The rapid development of generative AI has had a profound impact on the ideological shaping of college students, injecting new impetus and bringing novel challenges. Based on the interaction mechanism between AI and ideology, this paper proposes a three-in-one collaborative governance mechanism of technology empowerment, institutional innovation, and value leadership. In the face of the rapid iteration of AI and complex changes in ideology, it is necessary to strengthen interdisciplinary research and international comparison and practical exploration, and build a new pattern of collaborative governance led by the government and supported by universities and enterprises, and social participation. These measures provide a strong guarantee for cultivating socialist builders and successors, effectively respond to new challenges and risks in the ideological field, and cultivate the all-round development of socialist builders and successors.

Disclosure statement

The author declares no conflict of interest.

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