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The Research on the Risks and Governance of the Integrated Construction of Ideological and Political Education in Universities, Middle Schools, and Primary Schools Empowered by Generative Artificial Intelligence

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Abstract: In the context of the new era, establishing morality and cultivating talents is the fundamental task of education, and the integrated construction of ideological and political education in universities, middle schools, and primary schools is the key to achieving this task. With the rapid development of digital technologies such as 5G, cloud computing, and Artificial Intelligence (AI), the digital transformation of education has become an important direction of global educational reform. The emergence of Generative Artificial Intelligence (GenAI) has greatly expanded educational content and methods, providing new opportunities to meet learners' personalized needs and create an open and interactive educational ecosystem. However, while GenAI empowers ideological and political education, it also brings challenges and risks such as digital divide, ideological risk, insufficient interpretability, limited comprehension, and information silos. This study explores the theoretical logic of AI empowering ideological and political education, analyzes the basic concepts, characteristics, and potential risk forms that GenAI may face in the process of empowering ideological and political education. It proposes risk avoidance strategies, including enhancing the technical literacy of teachers, strengthening ethical constraints, formulating industry norms, constructing a technical education management system, developing local models, and building a large educational model, in order to effectively prevent and respond to potential risks while utilizing GenAI to innovate ideological and political education, and promote the healthy development of the integrated construction of ideological and political education in universities, middle schools, and primary schools.

Keywords: Generative Artificial Intelligence, ideological and political education in universities, middle schools and primary schools, risk and governance.

1. Introduction

In the new era, the fundamental task of education is to establish morality and cultivate talents, and the key to fulfilling this fundamental task lies in the in-depth promotion of ideological and political education. The continuous deepening of the cognitive chain, from "the integration of moral education in universities, middle schools, and primary schools" to "the integration of ideological and political courses in universities, middle schools, and primary schools", and then to "the integration of ideological and political education in universities, middle schools, and primary schools", is an objective requirement for fulfilling the fundamental task of establishing morality and cultivating talents, as well as a demand for improving and constructing the "big ideological and political education" pattern. Specifically, the integration of ideological and political education in universities, middle schools, and primary schools aims to follow the growth patterns of young people and educational principles, orderly plan and integrate ideological and political education at various educational stages, achieve coherence in educational content and optimal resource allocation, thereby further enhancing the combined force of education [1]. Currently, digitalization in education has achieved success in constructing teaching resources and serving the development of teachers and students. With the innovative advancements in digital technologies such as 5G, artificial intelligence, cloud computing, the Internet of Things, blockchain, and Generative Artificial Intelligence (GenAI), human learning and lifestyles have demonstrated strong potential for transformation. The digital transformation of education has become an important carrier and direction for educational transformation worldwide. Especially since the release of the third-generation Chat Generative Pre-trained Transformer (ChatGPT) by the OpenAI Artificial Intelligence Research Center INC (hereinafter referred to as "OpenAI") in November 2022, the academic community has extensively discussed the application modes of GenAI in the field of education and its potential impact on educational transformation. The rapid development and iteration of GenAI have brought about innovations in teaching methods and technologies for the digital transformation of education, meeting learners' needs for personalization, liberalization, diversification, and lifelong learning. The development of this technology provides new technical support and possibilities for improving the ideological and political work system, promoting the reform of ideological and political education, and facilitating the integration of ideological and political education in universities, middle schools, and primary schools. However, this brings along a series of challenges and risks, requiring educational entities to pay close attention to issues such as "ethical risks" and "information security", and

to deeply analyze the potential impacts of GenAI on ideological and political education from academic dimensions such as technological ethics, security prevention and control, and risk management.

2. Theoretical Logic of GenAI Empowering Ideological and Political Education

In March 2024, the "Government Work Report" of the State Council of China first proposed the "AI+" action, and the Ministry of Education also officially launched the AI-empowered education initiative. This move symbolizes that AI and the education have entered a new stage of integration, injecting new vitality into the digital transformation and intelligent upgrading of China's education [2]. Under the premise of accurately grasping the actual entry points, we should accelerate our pace to promote the deep integration of ideological and political education with digital technology, comprehensively and systematically innovate the education system, and provide a strong driving force for the positive development, quality improvement, and efficiency enhancement of ideological and political education [3]. From a practical perspective, GenAI, as an exemplary integration of disruptive technologies, has not yet been fully popularized in all corners of society. However, the applications supported by its core technology have already quietly penetrated into some areas of society, and its empowering role in ideological and political education has become an inevitable trend in practice [4].

2.1. The Inherent Meaning of Changes in Labor Mode

History has proven that every technological revolution inevitably leads to an industrial revolution, which in tum brings about a series of changes in the field of education. The rapid development of GenAI, a typical representative of the new generation of technologies, has had a profound impact on human production and life. Its exploration and application in the field of education are in the ascendant and have attracted great social attention. On the one hand, the rational application of GenAI helps promote the transformation and innovation of educational ecological elements such as educational concepts, educational environments, educational subjects, teaching content, and teaching methods. On the other hand, the improper application of GenAI can also bring ethical risks in terms of privacy protection, academic integrity, value bias, and discrimination. Marxist productivity theory holds that technology is the core element of productivity. As the latest achievement of the intelligent technology revolution, GenAI's deep learning and content generation capabilities have restructured the knowledge production process, driving the transformation of the education field from "labor-intensive" to "intelligent collaborative". The empowerment of GenAI in ideological and political education is essentially a reflection of the transformation in the mode of production in the digital economy era within the field of education. This transformation not only reflects the innovation of technological tools but also represents a deep-level reconstruction of educational production relations (such as teaching relationships, resource allocation methods, and evaluation systems), marking the entry of ideological and political education into a new form of intelligent education characterized by human-machine collaboration and the integration of virtual and real worlds.

2.2. Inevitable Choice Under the Strategy of Building a Strong Educational Nation

In the journey of promoting the comprehensive construction of a socialist modernized country, building a strong nation in education serves as a solid foundation for achieving a strong modernized country. Without a modernized education system, the success of the modernization cause will be difficult to achieve; and without achieving the goal of a strong nation in education, the construction of a strong modernized country will also be out of the question. Looking around the world, every great nation that has risen to prominence has placed great emphasis on education; every economically strong nation is also a nation with a strong educational system. In September 2024, the National Education Conference further proposed the in-depth implementation of the national digitalization strategy for education. How to integrate the new generation of AI into ideological and political education has become an important theoretical and practical topic in the current context, which is of great significance for accelerating the construction of a leading country in education. It is of great significance to deeply explore the profound changes brought about by digital technology in the field of ideological and political education. By accurately identifying key entry points, we can accelerate the deep integration process of ideological and political education with digital technology, thereby comprehensively and systematically reshaping the educational training process. This can provide a strong driving force for the adherence to the right path, innovative development, quality improvement, and efficiency enhancement of ideological and political education [3]. From a practical perspective, GenAI, as a typical example of disruptive technology deeply integrated, although not yet fully covering all areas of society, its product applications supported by core technology have quietly entered some areas of society. Its application and empowerment in ideological and political education in schools have become an inevitable trend in practical development [4].

2.3. The Inherent Requirements for The Integration of Ideological and Political Education in Universities, Middle Schools, and Primary Schools

In the comprehensive construction of a socialist modernized country, education is the foundation, science and technology are the key, and talent is the fundamental. These three elements have a close relationship of mutual dependence, support, and complementarity, jointly forming an inseparable system. As the three pillars of building a strong country, they nourish each other and progress together [5]. Promoting the integrated construction of ideological and political education in universities, middle schools, and primary schools is the sacred mission entrusted to us by the Party and the country, determined by the fundamental question of "what kind of talents to cultivate". As an important driver of the technological revolution, AI is not only a product of educational development but also the crystallization of the wisdom of outstanding scientific and technological talents. Its achievements should actively contribute to the cause of education and talent. As a new productive force, AI will not only have a profound impact on

the global innovation landscape and global economic institutions, but will also reshape the education system. Especially GenAI, as a "smart assistant", provides more advanced methodologies, intelligent technical solutions, and a more flexible application environment for the integrated construction of ideological and political education in universities, middle schools, and primary schools, depicting a new blueprint for the transformation and upgrading of this integrated construction [6].

3. The Basic Connotation of GenAI and The Potential Risk Patterns It Poses to Ideological and Political Education

3.1. Basic Concepts and Characteristics of GenAI

In September 2023, UNESCO issued a document titled "Guidelines for the Education and Research Applications of Generative Artificial Intelligence" (hereinafter referred to as the "Guidelines"), marking the establishment of the first global framework for GenAI within the field of education. The Guidelines define "GenAI" from the perspective of AI's simulation of human thought representation symbol systems: GenAI is an AI technology that automatically generates content based on prompts expressed by humans through thought symbol representation systems. The core technology of GenAI is the Generative Pre-trained Transformer (GPT), a content generation deep learning model trained using data collected from internet webpages, social media conversations, and other online media. [7] As a manifestation of digital technology, GenAI has become a new tool for reshaping social structures and interpersonal connections, promptingthe education system based on the industrial era to embrace new issues, new environments, and new transformations, providing Chinese education with a historic opportunity to keep pace with or even surpass the times [8].

3.2. Potential Risk Patterns of GenAI Empowering Ideological and Political Education in Schools

3.2.1. Digital Divide: Exacerbating Educational Inequality

While GenAI enhances the effectiveness of ideological and political education, it also exacerbates educational inequality. The application of GenAI encompasses core technological aspects such as continuous innovation, large-scale datasets, and high-performance computing capabilities, which are often closely linked to high-end resources. The natural convergence of technology and resources tends to favor economically prosperous and technologically advanced regions. Therefore, regions and individuals that are economically lagging, lack access to data, or do not possess data mining technology and high-performance computing capabilities will face the dilemma of "data scarcity". From this perspective, the widespread application of Gen across various fields has further promoted the deep integration of technology and education, improving the educational standards in developed regions. However, it has also inadvertently widened the gap between developed and underdeveloped areas. This directly contributes to GenAI technology becoming a key factor in exacerbating the vicious cycle of the digital divide [9].

3.2.2. Value Projection: Intensified Ideological Risk

From a technical perspective, when a string appears frequently in the training dataset, the transformer tends to repeat these characters and the sentence patterns they form in its output results. When using external datasets, foundational models with monopoly status, such as ChatGPT, tend to regard consensus views, mainstream beliefs, or dominant concepts of mainstream media as "standard responses" that align with established values and linguistic and cultural habits, thus forming a feedback loop: the strong values and linguistic and cultural habits on the Internet are further reinforced in the output of GenAI. If we do not deeply explore the cultural and linguistic backgrounds of the training datasets used by the technology platform, but blindly and extensively adopt the current mainstream foundational models, this may exacerbate the spread of external values and the solidification of cultural stereotypes [9]. As a technological crystallization of human social practice, GenAI not only has instrumental characteristics but also carries ideological attributes. It is closely connected with politics, culture, and values in the social system, and plays an ideological function through various forms of output such as text, images, audio, and video. In a sense, it has infiltrated ideological attributes into all aspects of ideological and political education in schools, which undoubtedly brings new challenges to ideological and political education [4].

3.2.3. Insufficient Explanatory Power: Inhibiting Innovation in Ideological and Political Education

The artificial neural network models employed in GenAI have long been plagued by the issue of "black box" model architecture, which lacks clear explanations regarding the number and hierarchy of neural nodes, parameter settings, and computational rules. This issue has been further highlighted in the recent breakthroughs achieved in GenAI. For example, the GPT-4 model defines complex learning pathways through billions of parameters and their corresponding weights, which in turn determine the responses and outputs recognized by the model. As a result, it is extremely difficult to explain why a pre-trained model will produce a particular output. The inherent technical indeterminacy of the models, combined with the suppliers' subjective reluctance to disclose key technical indicators, creates insurmountable barriers for regulatory authorities and independent researchers in identifying both the intentional risks and unintentional harms associated with these models. The unexplainability of the model and the undetectability of risks make it impossible to trace the causes when errors occur, nor is it possible to assess and prevent risks through a transparent mechanism. Therefore, some experts argue that GenAI should not be applied to high-risk tasks [9]. The errors and uncertainties introduced by the models have brought considerable uncertainty to the ideological and political education work, which is characterized by strong ideological elements. This has hindered the rapid and effective integration of GenAI technology into the integrated construction of ideological and political education in universities, middle schools, and primary schools in a manner that aligns with the educational objectives of the respective countries.

3.2.4. Limited Comprehension: Restricting The Transformation of Ideological and Political Education

The cornerstone of AI lies in the integration, analysis, and processing of data, with its operations conducted in the binary digital form of "0" and "1" for storage, transmission, and

computation, embodying the characteristics of technical rationality or instrumental rationality. Unlike the technical rationality of digital technology, the essence of school ideological and political education lies in its value rationality. It focuses on the activities of ideological and political education and their participants, with the inherent requirement being the promotion of the comprehensive development of individuals, adhering to an educational philosophy that puts people at the center. This philosophy is also reflected in the spirit of humanistic care within ideological and political education, primarily manifested in the adherence to a human-centered approach to humanistic values. The differences in logical connotation between the two have led to a conflict between technical rationality and value concepts in the process of digital transformation of ideological and political education. This has resulted in practical challenges such as "technological external additions" and "technological detachment from reality," which affect the organic integration of GenAI with ideological and political education and limit the effectiveness of technology in school-based ideological and political education [10]. When GenAI is embedded into ideological and political education, there is a risk that technical rationality may surpass value rationality. One notable manifestation is the loss of control over technology, leading to changes in the subjective consciousness of the objects of ideological and political education. For example, in terms of educational forms, the functional advantages of GenAI, such as precise push notifications and intelligent decision-making, may weaken the initiative of the subjects of ideological and political education. This leads the educational subjects to develop a psychological dependence on technology, falling into a state of thinking inertia and content dependency. They enjoy the convenience of quickly acquiring knowledge without much thinking. Over time, this may lead to the disruption of the information chain and cognitive logic of the subjects of ideological and political education, weakening the coherence and focus of their thinking, and further exacerbating the changes in subject consciousness. On the other hand, the technical rationality of artificial intelligence obscures the 'humanistic care' inherent in ideological and political education. This may reduce direct communication between individuals within the educational process, indirectly weakening the humanistic spirit and value orientation of ideological and political education, and ignoring the "people-oriented" value orientation in ideological and political education [11].

3.2.5. Information Cocoon: Mindset Fixation and Over-Reliance

In the process of integrating GenAI with the integrated construction of ideological and political education in primary, secondary, and tertiary institutions, the issue of "information cocoons" for educators and learners may arise. Automated technology-driven content recommendations can lead to a convergence of the interests of learners, preventing them from exposure to diverse ideas and perspectives. This in tum deprives them of the opportunity to interact with individuals from different backgrounds, ways of thinking, and approaches, potentially causing learners to unconsciously fall into a "thought cocoon," confined within a narrow space of thought and consciousness. Once learners are exposed to similar ideologies, it may lead to the extremization of ideological and cognitive thinking, resulting in polarization and radicalization. Furthermore, excessive reliance on technology can lead to technology dependency syndrome, where technological algorithms replace human independent thinking abilities, causing a backlash effect on learners [12]. Over-reliance may also lead to the inertia and impairment of one's own thinking ability, innovation ability, and learning motivation [13]. Therefore, if we fail to handle technology correctly, we may lose more rather than gain more.

4. Paths to Avoiding Potential Risks in the Integrated Construction of Ideological and Political Education in Universities, Middle Schools, and Primary Schools Empowered by GenAI

4.1. Upgrading the Construction and Development of The Teaching Staff: Enhancing Artificial Intelligence Literacy

Teachers or educators are the practitioners and leaders of educational reform. The improvement of the quality of the teaching staff is of decisive significance for the leap in educational quality and the achievement of educational goals. Therefore, strengthening teachers' advanced cognitive learning abilities and new competencies plays a pivotal role in building a future-oriented educational talent cultivation model. Future-oriented education not only requires teachers to excel in traditional teaching skills, but also calls for them to master and effectively utilize emerging technologies such as artificial intelligence, in order to promote the innovation and optimization of educational and teaching activities. In daily teaching activities, teachers can integrate GenAI into their teaching activities, utilizing large AI models for tasks such as big data analysis and content generation. This approach can provide students with customized learning support, fostering their curiosity and initiative. In terms of curriculum design, it is also important to adopt an interdisciplinary approach to enrich the content of ideological and political education courses, helping students develop a sound and positive set of values, and comprehensively cultivate their overall skills and abilities [14].

4.2. Strengthening Ethical Constraints: Ensuring Positive Applications

"Artificial Intelligence-driven Education Transformation" is gradually becoming the focus of educators and researchers, giving rise to three typical application areas: personalized adaptive learning systems, intelligent assessment systems, and the intelligentization and modernization of education governance. These application fields are gradually demonstrating strong influence and becoming an important driving force for educational reform. However, educators should not blindly regard GenAI as an omnipotent "savior", but should establish the development concept and practical value of "human-machine collaboration" and "AI teachers working alongside real teachers" as soon as possible. GenAI relies on a series of algorithms to process and analyze student data, constructing a general reference framework including student models, subject knowledge system models, knowledge push models, and assessment modules to simulate certain aspects of human solutions to educational problems. In other words, although machines are good at information processing, they still lack in truly understanding information.

Therefore, education management departments need to conduct value assessments of the application of GenAI in the field of education from the perspective of humanistic care, guided by values that align with educational purposes. This requires us to deeply understand the theoretical essence and practical needs of "education as a social activity" [15].

4.3. Technology Application Management: Building A Security System

In July 2023, China issued the "Interim Measures for the Administration of Generative Artificial Intelligence" (referred to as the "Measures"), which is the first formal legal document globally to implement regional supervision for GenAI services. The "Measures" clearly define that when providing and using GenAI services, it is necessary to adhere to the principles of socialist core values, and emphasize that practical measures must be taken in various aspects such as algorithm construction, training data selection, model generation and optimization, and service provision to strictly prevent discrimination based on factors such as ethnicity, belief, and nationality. Currently, there are mainly two feasible regulatory approaches: the primary approach is to require GenAI platforms providing services domestically to ensure that the training corpus fully reflects the representativeness of the main regional languages, and consider setting a minimum proportion requirement for Chinese in the training corpus; another approach is for regulatory authorities and users to collaborate to supervise the content output by GenAI from a value perspective, and establish and improve complaint and reporting mechanisms. Once any illegal content is detected, immediate actions should be taken, including but not limited to stopping the generation, interrupting the transmission, and removing the inappropriate content. Additionally, corrective measures should be implemented through methods such as model optimization and training [7].

4.4. Building a Large Educational Model: Promoting Innovation and Integration

Firstly, to address the large-scale application of teaching and learning, further iterations of model development techniques are used to ensure that the knowledge output by the models is more accurate. Secondly, by adhering to various official regulatory requirements and the development standards set by model creators, it is ensured that generative content in the education sector meets stricter ideological and security standards. Additionally, considering the different training objectives of schools at different educational levels and the learning characteristics of students, the structure and coherence of the content produced by large models are optimized. In light of this, several domestic internet companies are working on creating specialized educational models based on general-purpose models. These models will include functions such as generative classroom teaching for ideological and political education courses and automatic exam grading, which will assist teachers in lesson preparation and enrich teaching resources. They will also enable refined educational management and governance through data analysis. Moreover, these models will provide comprehensive services such as assignment distribution, exam organization, teaching research, and daily management, thereby effectively enhancing the teaching and learning experiences of both teachers and students.

5. Conclusion

The emergence of GenAI is profoundly reshaping the ecosystem of ideological and political education, providing new paradigms and pathways for the integrated construction of ideological and political education in universities, middle schools, and primary schools. While providing technical support for innovation in this field, GenAI also brings significant ethical risks and challenges that cannot be ignored. Through value examination and technical analysis, this study clarifies the positive role of GenAI in the integrated construction of ideological and political education in universities, middle schools, and primary schools, and further explores the risk patterns associated with its application. Based on this, it proposes four risk mitigation strategies: enhancing the technical literacy of teachers, imposing ethical constraints on technology application, establishing a secure education management system, and innovatively constructing a large educational model. These strategies aim to provide theoretical reference and practical guidance for advancing the integrated construction of ideological and political education in universities, middle schools, and primary schools.

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(2) Guangdong Province Education Science Planning 2021 Research Project (Moral Education Special) "Research on the Paths and Strategies for Integrating the 'Four Histories' Education, with the History of the Communist Party at Its Core, into the Ideological and Political Education in Higher Education Institutions", Project Number: 2021JKDY026.

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