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Professional Development and Curriculum Reform in Ideological and Political Education at Universities in the Context of Digital Transformation

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Abstract: Digital transformation is reshaping the operational logic of ideological and political education (IPE) programs and curriculum reform in Chinese higher education. Driven by the Outline for Building a Leading Education Nation (2024–2035) and the national strategy for educational digitalization, IPE is shifting from technological embedding toward holistic restructuring. However, existing studies mainly focus on technical applications, lacking systematic theoretical analysis of professional development, curriculum reform, and related risks. The study argues that the key to digital transformation lies in balancing technological empowerment with value orientation, providing theoretical and practical insights for the high-quality development of higher education IPE.

Keywords: Digital transformation; Ideological and political education; Program development; Curriculum reform; Value-technology-governance framework

I. INTRODUCTION

Against the backdrop of the comprehensive advancement of educational digitalization, the integration of digital transformation with the professional development and curriculum reform of ideological and political education (IPE) in higher education has become a critical issue for the high-quality development of university education. Digital transformation is not merely the instrumental application of technology; rather, it represents a profound restructuring of educational organization, operational mechanisms, and value creation through technologies such as artificial intelligence, big data, and cloud computing. Driven by the Outline for Building a Leading Education Nation (2024–2035) and the national strategy for educational digitalization, university IPE is shifting from localized technological application toward holistic digital restructuring.

To address these gaps, this study draws on digital governance theory, the Marxist view of technology, and digital ethics to construct a “value–technology–governance” analytical framework. It systematically examines the operational logic, risks, and strategic responses of digitally driven IPE reform and proposes a five-dimensional collaborative curriculum model (teacher–student–AI–environment–culture). The study aims to provide theoretical support and practical guidance for the high-quality development of university IPE in the context of building a leading education nation.

II. ANALYSIS OF THE CURRENT STATUS OF PROGRAM DEVELOPMENT AND CURRICULUM REFORM IN IDEOLOGICAL AND POLITICAL EDUCATION AT UNIVERSITIES IN THE CONTEXT OF DIGITAL TRANSFORMATION

The systemic impact of digital transformation on ideological and political education in higher education institutions is the result of synergistic efforts across three dimensions: top-level policy design, the logic of practical evolution, and the enhancement of educational effectiveness. Current reform practices reveal an overall trend characterized by an increasingly comprehensive policy framework, progressively deeper technological application, and the gradual realization of educational effectiveness; however, the substantive transformation enabled by technology still faces several deep-seated constraints. The following analysis will examine these developments from the three dimensions of policy, practice, and outcomes, laying a practical foundation for subsequent risk assessment and the formulation of response strategies.

(1) Policy Level: Systematic Implementation Through Top-Level Design

The in-depth implementation of the National Education Digitalization Strategy has provided a clear policy direction and

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institutional safeguards for the digital transformation of ideological and political education in higher education institutions. The Outline of the Plan for Building an Education Powerhouse (2024–2035) explicitly outlines the strategic deployment to "promote the digital transformation of education and build a smart education system," incorporating digital transformation into the core agenda of building an education powerhouse. The Ministry of Education's Opinions on Accelerating the Digital Transformation of Education further clarifies the policy objective of "enhancing the quality of ideological and political education through digital empowerment," requiring universities to leverage the National Smart Education Platform to integrate high-quality ideological and political resources and explore new pathways for the digital development of "comprehensive ideological and political education." Concurrently, the "Opinions on Strengthening and Improving Ideological and Political Work in the New Era" issued by the Central Committee of the Communist Party of China and the State Council, together with the Ministry of Education's "Innovation Plan for the Development of Ideological and Political Theory Courses in General Higher Education Institutions," have jointly established an institutional framework for the digital transformation of ideological and political education. At the level of top-level design, they have established the fundamental principle of "upholding the essentials while innovating"—that is, actively utilizing digital technologies to innovate educational content and formats while steadfastly adhering to political direction and value orientation.

An in-depth analysis of the underlying structure of the policy logic reveals that the aforementioned policy framework exhibits a progressive structure of "value-led—technology-enabled—governance-supported." At the value-led level, ensuring that digital transformation does not deviate from the political direction of ideological and political education. At the technology-enabled level, it actively promotes the innovative application of technologies such as large AI models, big data, and virtual reality in ideological and political education. At the governance-backed level, it sets forth clear requirements regarding data security, algorithm regulation, and digital ethics, demonstrating the capacity for risk prevention and institutional responsiveness. These three elements are intrinsically unified, forming the policy basis for universities to advance the digital transformation of ideological and political education.

(2) Practical Level: The Logic Behind the Digital Evolution of Program Development and the Curriculum System

An analysis using the TOE (Technology-Organization-Environment) framework reveals that digital transformation is continuously reshaping the development of ideological and political education programs and curriculum systems in higher education institutions.

In terms of program development and faculty development, digital transformation is driving the expansion of higher education institutions' ideological and political education programs toward interdisciplinary integration, with increasingly deepening synergies between Marxist theory and fields such as digital communication studies, computational social science, and the ethics of artificial intelligence. At the same time, the development of faculty digital literacy has become critical to professional growth, requiring ideological and political education instructors to possess both theoretical expertise and practical skills in digital content creation, platform management, and learning data analysis to adapt to their evolving "technology-enabled" roles.

In terms of course resource development, the National Smart Education Platform provides crucial support for the sharing of digital resources for ideological and political education courses. Course development is shifting from "content digitization" to "digital content," moving from simple format conversion to native design based on digital logic. This reflects the transformative nature of digital transformation and drives a paradigm shift in the development of ideological and political education courses.

At the level of collaborative education mechanisms, digital technology provides the technical foundation for the integrated advancement of the "comprehensive ideological and political education" initiative and the "ideological and political education across all courses." Leveraging platform interoperability, ideological and political education is expanding from the confines of the classroom to encompass all courses and all times and places; digital technology, in turn, is evolving from a teaching aid into a systemic force capable of reshaping the educational landscape.

(3) Outcomes: Theoretical Analysis of Enhanced Educational Effectiveness

From the perspective of digital governance, the role of digital transformation in enhancing the effectiveness of ideological and political education in higher education institutions is primarily reflected in three dimensions. In terms of resource accessibility, digital technology has overcome constraints related to geography, time, and faculty allocation. Leveraging infrastructure such as the National Smart Education Platform, the barriers to accessing high-quality ideological and political education resources have been significantly lowered, thereby promoting the sharing and balanced allocation of educational resources across regions and between institutions. In terms of educational process monitoring, big data analysis and learning behavior tracking technologies have enhanced the ability to accurately identify students' ideological trends, value alignment, and learning engagement, providing data support for evidence-based educational decision-making. Regarding educational evaluation, ideological and political education is shifting from a single, outcome-centered evaluation model toward a process-oriented, multidimensional digital

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evaluation system that enables comprehensive assessment of knowledge mastery, value alignment, and behavioral performance.

However, these achievements were not automatically generated by technology alone but rather the result of the synergistic interaction among policy frameworks, technological tools, and educational philosophies. The empowering effect of digital transformation hinges on whether the application of technology genuinely serves value creation, rather than merely resulting in superficial innovation. This also serves as the logical starting point for the risk analysis discussed below, reflecting the core tension within the "value–technology–governance" three-dimensional framework.

III. RISKS AND CHALLENGES IN THE DEVELOPMENT OF IDEOLOGICAL AND POLITICAL EDUCATION PROGRAMS AND CURRICULUM REFORM IN HIGHER EDUCATION INSTITUTIONS IN THE CONTEXT OF DIGITAL TRANSFORMATION

While digital transformation empowers reforms in ideological and political education at universities, it also introduces new systemic risks at the technological, educational, and institutional levels. Existing research has focused primarily on individual technological risks, and systematic analyses of educational and institutional risks remain insufficient. Based on a three-dimensional "value–technology–governance" framework, this paper examines the issue from three key dimensions—technological vulnerabilities, educational challenges, and institutional imbalances—to construct a multidimensional risk map for ideological and political education in higher education.

(1) Technical Risks: Dual Concerns Regarding Algorithm Logic and Data Security

The primary technical risk facing digital ideological and political education is the failure of value guidance due to algorithmic bias. Intelligent recommendation algorithms rely on users' historical behavioral data; their logic tends to reinforce existing preferences, making it easy for "information silos" to form. If directly applied to the delivery of ideological and political education content, this may result in students continuously receiving information that aligns with their existing beliefs, thereby diminishing their exposure to diverse perspectives and their capacity for critical reflection. The root cause lies in the inherent tension between the objectives of commercial algorithms—which prioritize user retention—and those of ideological and political education—which emphasize value guidance and cognitive development. Without targeted optimization, algorithmic bias will become a significant obstacle to the effectiveness of digital ideological and political education.

Another significant risk concerns the security and privacy protection of student data. Data related to ideological and political education involves highly sensitive information such as ideological stance, value alignment, and political leanings, and thus requires significantly higher security standards than general educational data. However, current digital education platforms in higher education institutions still have shortcomings in areas such as data encryption, access rights management, and data lifecycle governance; the potential risks of data breaches, unauthorized access, and data misuse cannot be overlooked.

(2) Educational Risks: The Dual Erosion of Value and Human Warmth

Beyond the technical level, the risks of digital transformation in education are primarily manifested in two dimensions: the distortion of value creation and the erosion of humanistic care.

Value dilution is a core challenge facing digital ideological and political education. An excessive emphasis on technological interactivity and visual appeal may lead to the fragmentation and trivialization of course content, undermining the systematic nature and seriousness of theoretical education; if technological logic dictates content selection, the means may come to dominate the ends, diverting attention from the fundamental goal of shaping students' character and nurturing their spirit. The Marxist view of technology reveals that technology is not value-neutral; without a critical examination of its ideological attributes, digital technology may pose potential risks of value alienation.

The weakening of emotional interaction also poses a significant risk to digital ideological and political education. The core of ideological and political education lies in the construction of value identification, which relies on genuine emotional exchange and the appeal of personal character. While digital teaching enhances the efficiency of information transmission, it may weaken the deep emotional connection between teachers and students, thereby affecting the educational process in which cognition, emotion, and behavior are generated in tandem.

(3) Institutional Risks: Structural Imbalances in the Digital Divide and Governance Alignment

Institutional risk is a critical yet often overlooked aspect of digital transformation that has far-reaching implications. The structural reproduction of the digital divide poses the primary risk. Disparities in regional digital infrastructure, uneven digital capabilities among higher education institutions, and gaps in students' digital literacy may lead to a polarization of educational opportunities. Without institutional designs that prioritize equity, digital empowerment may actually exacerbate resource imbalances, creating tension with the goal of building a leading educational nation.

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The alienation of teachers' roles represents another systemic risk. If the transformation process places undue emphasis on the substitution of technology while neglecting safeguards for teachers' agency, it may lead to a weakening of teachers' professional identity, a decline in educational creativity, and insufficient professional commitment, which in turn could undermine the quality of education.

The lack of governance alignment is a key manifestation of current institutional risks. Existing higher education management systems were developed in a pre-digital educational ecosystem and are out of step with the operational logic of digital education in areas such as curriculum approval, quality assessment, faculty certification, and intellectual property management. This institutional lag not only hinders the deepening of reforms but may also give rise to new governance risks, making it imperative to address these issues through systematic institutional innovation.

IV. STRATEGIES FOR BUILDING IDEOLOGICAL AND POLITICAL EDUCATION PROGRAMS AND REFORMING THE CURRICULUM SYSTEM IN HIGHER EDUCATION INSTITUTIONS IN LIGHT OF DIGITAL TRANSFORMATION

Based on the preceding analysis of the current state of reform and the associated risks and challenges, the digital transformation of ideological and political education in higher education institutions requires the establishment of a coordinated advancement mechanism across four dimensions: value orientation, theoretical framework, program development, and curriculum reform. By achieving a balance between technological empowerment and the upholding of core values within a three-dimensional "value–technology–governance" framework, we can provide a theoretical foundation for the high-quality digital transformation of ideological and political education in higher education institutions.

(1) Prioritizing Value-Driven Approaches: Upholding the Fundamental Principles of Digital Transformation

The Marxist view of technology holds that technology serves specific social purposes; therefore, the application of digital technology in ideological and political education must always be subordinate to the fundamental goal of fostering virtue and cultivating talent. In practice, a mechanism for "upfront value assessment" should be established to evaluate the alignment of new technologies with core values and assess ideological risks, thereby preventing a tool-oriented approach that prioritizes digitalization for its own sake. At the same time, mechanisms for reviewing digital educational content should be improved to ensure that digital transformation consistently adheres to the correct political direction.

(2) Establishing a Three-Dimensional Synergistic Framework of "Value—Technology—Governance"

The "Value–Technology–Governance" three-dimensional theoretical framework serves as the core analytical tool for advancing the digital transformation of ideological and political education in higher education institutions. These three dimensions do not operate in isolation; rather, through their intrinsic interplay of checks and balances and synergistic drivers, they form a comprehensive mechanism for driving this transformation.

The value dimension focuses on establishing the objectives and boundaries of digital transformation. By clearly defining "cultivating the spirit and nurturing talent" as the ultimate value goal and "fostering virtue and nurturing talent" as the practical benchmark, we construct a value framework for digital transformation to ensure that technological choices and institutional designs serve the construction of value.

The technological dimension focuses on optimizing the appropriate application of digital technologies in ideological and political education. It is essential to establish a technology selection logic based on "selecting technologies according to needs," rather than a technocentric approach that "determines teaching based on technology." We should promote the deeper application of smart education platforms and explore how technologies such as large AI models, VR/AR, and learning analytics can precisely empower ideological and political education. At the same time, we should optimize algorithmic logic and shift recommendation mechanisms from being "engagement-oriented" to "value-oriented."

The governance dimension focuses on establishing institutional safeguards and a risk prevention and control system for digital ideological and political education. It aims to improve mechanisms for data security, algorithm evaluation, intellectual property protection, and ideological risk early warning, thereby fostering a collaborative governance framework involving multiple stakeholders, including the government, higher education institutions, and technology platforms.

(3) Pathways for Program Development: Interdisciplinary Integration and the Restructuring of Talent Development

At the level of program development, digital transformation calls for a systematic restructuring of the disciplinary positioning and talent development models for programs related to Marxist theory, to be advanced in a coordinated manner across three dimensions: deepening interdisciplinary integration, enhancing faculty digital literacy, and redefining talent development objectives.

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Deepening interdisciplinary integration is the primary dimension of the program development strategy. Within the framework of the first-level discipline of Marxist Theory, we should actively promote disciplinary convergence with emerging interdisciplinary fields such as digital communication studies, computational social science, ethics of artificial intelligence, and digital governance studies, thereby expanding the knowledge boundaries and research paradigms of the Ideological and Political Education program. This approach will not only enhance the program's ability to interpret and respond to the realities of a digital society but also help build a pool of professionals with an interdisciplinary perspective to support the digital transformation of ideological and political education. The advancement of interdisciplinary collaboration must be premised on a clear definition of disciplinary boundaries to prevent interdisciplinary integration from evolving into a dilution or deviation from the Marxist theoretical stance.

The systematic enhancement of teachers' digital literacy is a core dimension of professional development. A tiered and categorized system for cultivating teachers' digital literacy should be established: at the foundational level, all ideological and political education teachers must possess the ability to apply digital tools and operate smart platforms; at the intermediate level, core teachers must possess the ability to create digital content, analyze learning data, and design human-computer collaborative teaching; at the advanced level, leading teachers must possess the ability to analyze policies on the digitization of ideological and political education, conduct research on the ethics of educational technology, and drive digital reform. The enhancement of teachers' digital literacy must be underpinned by institutional incentives. Digital teaching competencies should be integrated into the evaluation systems for faculty promotion, performance appraisal, and honorary recognition, using incentive mechanisms to drive teachers to proactively adapt to the role transformation required by digital education.

The restructuring of talent development objectives constitutes a key value dimension in the development of academic programs. In the digital age, the objectives for cultivating talent in ideological and political education must, while upholding the theoretical foundations of Marxism and the requirements for political literacy, incorporate explicit requirements for digital literacy, awareness of digital ethics, and the ability to design digital educational programs. This approach aims to cultivate well-rounded professionals in ideological and political education who possess both a solid theoretical foundation and practical digital skills, thereby meeting the talent needs for the high-quality development of ideological and political education in the era of digital civilization.

(4) Pathways for Curriculum Reform: A Systemic Design Based on "Five-Dimensional Synergy"

This study proposes a pathway for curriculum reform centered on "five-element synergy" (teacher–student–AI–environment–culture). Guided by the digital philosophy of "connectivity first, content-centered, and collaboration-oriented," it aims to achieve an organic integration of the instrumental rationality of technology and the value rationality of education. Five-element synergy does not entail a parallel arrangement of these elements but rather an organic integration—under the premise of teacher leadership and with the goal of activating student agency—in which each element assumes distinct functional roles within the curriculum system.

The reaffirmation of the central role of the "teacher" is reflected in the following: In the digital environment, the role of ideological and political education teachers is evolving from that of a mere knowledge transmitter to a multifaceted role encompassing "value guide—learning designer—data interpreter—emotional connector"; however, the dominant position of value guidance remains unshakable. Technological empowerment can only enhance, not diminish, the teacher's central role in ideological and political education; a teacher's personal charisma, intellectual depth, and ability to inspire through values are core educational elements that algorithms cannot replace.

Requirements for fostering student agency: Curriculum reform should center on fostering student agency as its core objective. By leveraging digital tools to design learning activities that incorporate real-world problem scenarios, critical thinking training, and experiences in making value-based choices, students can be transformed from passive recipients of knowledge into active constructors of meaning. In this context, digital technology should serve to empower rather than control, providing students with a digital learning space where they can explore, question, and create.

The instrumental integration of "AI" elements should be reflected in the following ways: AI systems should serve as precise aids rather than substitutes for human instructors in ideological and political education courses. At the content provision level, they should offer personalized learning resource recommendations based on analyses of students' cognitive profiles and value orientations; at the assessment and feedback level, they should employ natural language processing technology to conduct multidimensional intelligent analyses of students' ideological and political assignments; and at the teacher support level, they should provide instructional decision-making assistance based on class-wide data. The boundaries of AI tool application must be clearly defined by value-oriented principles to prevent technology from supplanting human judgment.

In creating an immersive "environmental" experience, the following points should be emphasized: we should actively

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explore the application of VR/AR technologies in specific contexts of ideological and political education and build immersive digital learning environments that recreate historical scenarios, provide patriotic education experiences, and foster a sense of social responsibility. By offering contextualized and embodied educational experiences, we can compensate for the emotional distance inherent in purely digital interactions, ensuring that the value-oriented guidance of ideological and political education resonates more deeply through immersive experiences that evoke a sense of presence.

The requirement for the deep integration of "cultural" elements dictates that curriculum reform must treat the digital transmission of China's outstanding traditional culture and the digital expression of advanced socialist culture as key dimensions in the development of ideological and political education content. By leveraging digital tools, we must endow cultural education with new forms of expression and channels of dissemination, thereby achieving a deep integration of cultural and political identity. Digital technology should serve as a medium for the creative transformation and innovative development of traditional culture, rather than a force that erodes cultural depth.

In developing a course evaluation system, a comprehensive evaluation framework should be established that encompasses four dimensions: knowledge mastery, value alignment, competency development, and behavioral performance. By leveraging learning analytics technologies, the evaluation process should be made continuous, visual, and precise. This will enable the creation of a data-driven mechanism for the continuous improvement of ideological and political education courses, using evaluation to enhance both learning and teaching, thereby forming a closed-loop logic for course quality improvement.

V. CONCLUSION

Against the backdrop of digital transformation, this paper focuses on the core issue of professional development and curriculum reform in ideological and political education at higher education institutions, seeking to integrate policy logic, theoretical analysis, and practical pathways. The research indicates that digital transformation is not merely a matter of embedding technology but rather a structural transformation that profoundly reshapes the operational logic and value-generation mechanisms of ideological and political education. While technology optimizes resource allocation and innovates teaching formats, it also subjects ideological and political education to the real tension between empowerment and alienation. Based on this, this paper proposes a three-dimensional "value–technology–governance" analytical framework, aiming to overcome the limitations of existing research—which tends to "emphasize technological application while neglecting value integration"—by examining digital transformation within the context of ideological practice and educational governance systems. The study argues that the key to digital transformation lies not in the breadth of technological application but in whether it can truly serve the fundamental goal of "cultivating virtue and fostering talent." The educational value of technology is not automatically generated but depends on the synergistic effects of institutional adaptation and value-oriented guidance. At the practical level, this paper proposes systematic pathways from two dimensions—disciplinary development and curriculum reform—emphasizing interdisciplinary collaboration, the enhancement of faculty digital literacy, and the construction of a "five-element synergy" curriculum structure to promote the dynamic unity of technological empowerment and the upholding of values. Of course, there is still room for further exploration. Future research could delve deeper into micro-level teaching scenarios, algorithmic governance, and cross-cultural comparisons. Overall, How to safeguard and develop the core values of ideological and political education amidst digital transformation remains a critical question that higher education reform in the new era must continue to address.

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