

# Research on Innovation Pathways for Ideological and Political Education Models in Universities Under the Context of Educational Informatization

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## ABSTRACT

With the ongoing advancement of educational informatization in China, ideological and political education in universities is undergoing a critical phase of conceptual renewal and structural reform. Educational informatization not only supplies abundant digital resources and technical tools for ideological and political work but also introduces new imperatives for its scientific, precise, and systematic development. The study aims to elucidate the intrinsic logical relationship between educational informatization and ideological and political education, identify key challenges confronting universities in the digital era, and propose an integrated innovation framework for reconstructing ideological and political education models. Through literature analysis and theoretical synthesis, this paper first clarifies the core concepts of educational informatization and ideological and political education models. It then examines prevalent issues such as superficial technology integration, fragmented resource systems, insufficient digital literacy among educators, and ineffective ideological guidance in online environments. Building on this analysis, an innovative framework is proposed, encompassing the construction of a data-driven ideological and political work system, the development of technology-enhanced learning environments, the strengthening of cross-department collaborative education mechanisms, and the optimization of value-based communication in digital spaces. Furthermore, the study discusses governance implications for university administrators, frontline educators, and policy-makers, and suggests future research directions, including empirical validation and cross-institutional comparative studies. The findings are expected to provide theoretical and practical references for advancing the high-quality development of value-laden education in Chinese higher education amid digital transformation.

## KEYWORDS

Educational informatization; Ideological and political education; Digital transformation; Data-driven decision-making; Innovation pathways

## 1 Introduction

In the new era, the rapid development of information technologies such as artificial intelligence, big data, cloud computing, and mobile internet has profoundly reshaped the landscape of higher education. Educational informatization has become a strategic engine for advancing educational modernization and building new forms of smart universities<sup>[1]</sup>. In China, large-scale initiatives in smart education platforms, digital campus construction, and AI-supported teaching systems have been launched to enhance educational equity, quality, and efficiency<sup>[2]</sup>. Within this context, ideological and political education in universities, which plays a fundamental role in cultivating morally grounded, well-rounded socialist builders and successors, is undergoing unprecedented changes in its objectives, content, modes, and evaluation.

Existing studies on educational informatization have focused extensively on technology-enhanced learning, intelligent tutoring systems, learning analytics, and digital resource construction, demonstrating their potential to improve learning outcomes and instructional efficiency. At the same time, international research on civic education, character education, and value-oriented instruction under digital transformation has revealed both opportunities and risks brought by online platforms and data-driven tools<sup>[3]</sup>. However, relatively few studies have systematically examined how educational informatization can support the overall reconstruction of ideological and political education models in universities, especially from the perspective of integrating value guidance, technological empowerment, and institutional governance into a coherent framework. In practice, many universities have attempted to apply digital platforms, online courses, and multimedia resources in ideological and political teaching. Nonetheless, problems such as superficial application of technology, low-quality or outdated digital resources, limited data utilization, and weak online discourse construction are still widespread, which severely restrict the improvement of the attractiveness, pertinence, and effectiveness of ideological and political education<sup>[4]</sup>. Against this backdrop, there is a pressing need to explore how to achieve deep integration between educational informatization and ideological and political education, and how to build a precise, intelligent, and collaborative educational ecosystem that effectively supports students' value formation and holistic development.

Accordingly, the study addresses the following research questions: (1) What is the intrinsic logical relationship between educational informatization and university ideological and political education? (2) What key challenges do universities face when promoting ideological and political education under the conditions of educational informatization? (3) How can universities construct feasible innovation pathways to reconstruct ideological and political education models in a data-driven and technology-enhanced manner? By answering these questions, the paper seeks to contribute a

theoretically grounded and practically oriented framework for the digital transformation of ideological and political education.

## **2 Methods and Theoretical Framework**

### **2.1 Research Design and Methods**

The study adopts a qualitative research design that combines literature analysis, policy document review, and theoretical synthesis. First, domestic and international studies on educational informatization, digital transformation in higher education, intelligent tutoring systems, and value-oriented or civic education were reviewed to identify common trends, typical challenges, and theoretical insights relevant to ideological and political education in universities. Second, Chinese policy documents and strategic plans regarding educational informatization and ideological and political work in higher education were examined to understand the macro-level policy environment and governance expectations. Third, based on the above review, a conceptual framework was constructed to analyze the logical relationship between educational informatization and ideological and political education and to organize the innovation pathways into an integrated model. Rather than conducting empirical testing with specific samples, the study focuses on theoretical exploration and model-building. The proposed framework aims to provide guiding principles and structural ideas that can be adapted and tested in different institutional contexts. Future empirical research can further operationalize the concepts and evaluate the effectiveness of the proposed pathways.

### **2.2 Conceptual Definitions**

To avoid ambiguity, several key concepts are defined. "Educational informatization" refers to the comprehensive integration of modern information technologies into the whole process and elements of education, including objectives, curriculum, teaching, management, evaluation, and governance. Its core is not merely the application of digital tools but the reconstruction of educational ecosystems through data-driven decision-making, intelligent support, and networked collaboration. "Ideological and political education in universities" denotes systematic educational activities that aim to cultivate correct political orientation, firm ideals and convictions, sound moral character, strong social responsibility, and healthy psychological qualities among college students. It includes both explicit ideological and political courses and implicit "ideological and political education in all courses", encompassing classroom teaching, campus culture, social practice, and cyberspace activities. An "ideological and political education model under educational informatization" in this paper refers to the relatively stable yet adaptable combination of educational concepts, organizational mechanisms, teaching modes, technological support, and evaluation methods that guide how ideological and political goals are achieved in a digital environment. It emphasizes the integration of value guidance with data analytics, intelligent platforms, and collaborative governance.

### **2.3 Theoretical Underpinnings**

The framework developed in the study draws on several theoretical perspectives. From the ecosystem theory perspective, universities are viewed as complex educational ecosystems in which technological, institutional, cultural, and individual factors interact dynamically. Educational informatization reshapes the ecosystem by altering the flows of information, resources, and interactions, thereby creating new conditions and paths for ideological and political education.

Learning analytics and evidence-based decision-making theories highlight how data on learners' behavior, engagement, and outcomes can support real-time monitoring, personalized intervention, and continuous improvement. Applying these ideas to ideological and political work implies a shift from experience-based judgment to data-informed guidance, without neglecting professional ethics and value orientation. Teacher technology integration frameworks, such as the TPACK model and digital competence frameworks, suggest that the effectiveness of educational informatization largely depends on teachers' ability to combine technological, pedagogical, and content knowledge. In the context of ideological and political education, this means that teachers and counselors must not only master digital tools but also design technology-enhanced learning experiences that effectively convey core values and stimulate critical reflection.

## **3 Results: Logical Relationships and Practical Dilemmas**

### **3.1 Logical Relationship Between Educational Informatization and Ideological and Political Education**

Educational informatization and ideological and political education in universities are closely intertwined in terms of

goals, means, and outcomes <sup>[5]</sup>. At the goal level, both aim to promote students' holistic development, though from different angles: educational informatization stresses modernization, efficiency, and quality, while ideological and political education emphasizes value guidance, political identity, and social responsibility. Under the vision of high-quality higher education, these goals are not contradictory but mutually reinforcing. Digital resources, including high-quality online courses, red culture archives, virtual simulations, and multi-media cases, enrich content presentation, making abstract values more vivid and experiential <sup>[6]</sup>. Learning analytics capture students' learning trajectories, interaction patterns, and engagement indicators, which can inform tailored guidance and targeted interventions in ideological and political courses and activities.

At the outcome level, educational informatization can help improve the precision, attractiveness, and sustainability of ideological and political education. Through data-driven evaluation and feedback, universities can better understand how students internalize values and participate in activities, thereby optimizing teaching strategies and resource allocation. At the same time, ideological and political education provides normative orientation and ethical constraints for the use of digital technologies, reminding universities to pay attention to data security, privacy protection, and the humanistic spirit in the process of informatization.

### 3.2 Key Challenges under the Background of Educational Informatization

Despite the potential synergies, multiple challenges hinder the deep integration of informatization and ideological and political education. The integration of information technology in many universities remains superficial. Technology is often used as a replacement for traditional tools (such as slide presentations or video playback) rather than as a driver for rethinking teaching design, learning processes, and evaluation mechanisms. As a result, the essence of ideological and political education still follows conventional models, with limited improvement in interactivity and personalization. Digital resource construction suffers from fragmentation and uneven quality. Various platforms and systems coexist without sufficient coordination, leading to information silos and repeated construction <sup>[7]</sup>. Limited training opportunities, heavy workloads, and a lack of incentives for innovation further constrain their willingness and ability to explore new models.

In the complex and volatile online environment, universities face serious challenges in ideological guidance and discourse construction. Social media and online communities expose students to diverse and sometimes conflicting values. Fragmented information, sensational narratives, and emotional discourses can easily shape students' perceptions and attitudes <sup>[8]</sup>. However, university ideological and political work often lags behind in terms of platform operation, content production, and risk monitoring, resulting in a weak voice in cyberspace and limited capacity for timely response to online public opinion <sup>[9]</sup>. Under such conditions, traditional face-to-face ideological and political work methods became less effective, underscoring the urgency of developing new models compatible with long-term digital transformation.

## 4 Discussion: Innovation Pathways and Governance Implications

Building on the above analysis, this section proposes an integrated framework of innovation pathways for ideological and political education under educational informatization and discusses its implications for different stakeholders.

### 4.1 Constructing a Data-driven Ideological and Political Work System

A central pathway is to construct a data-driven ideological and political work system that integrates multiple data sources and supports evidence-based decision-making. Universities can gradually build unified data platforms that collect and connect information from learning management systems, student information systems, campus cards, questionnaires, and co-curricular activity records <sup>[10]</sup>. These data may include students' course participation, assignment completion, discussion engagement, time-on-task indicators, and participation in ideological and political activities <sup>[12]</sup>. Counselors and teachers can then conduct targeted interviews, provide personalized support, and involve peer mentors to form a "detection – intervention – feedback – optimization" closed loop. Importantly, data use must follow ethical principles, with transparent rules, limited access, and student consent, to prevent stigmatization or misuse.

### 4.2 Creating Technology-enhanced Learning Environments for Value Education

Another key pathway is to design technology-enhanced learning environments that promote the internalization of values through immersive and interactive experiences. Digital tools such as virtual reality, serious games, simulation systems, and online discussion forums can be embedded into ideological and political curricula as well as professional courses with strong ethical and social implications <sup>[12]</sup>. After immersive activities, teachers can organize debriefing sessions

where students critically analyze their decisions, connect them to theoretical concepts and policy documents, and articulate personal value positions. Blended teaching modes that combine online resources with face-to-face seminars can help maintain emotional connection and deepen understanding. In addition, technology-enhanced environments should be inclusive and accessible, taking into account students with different backgrounds and digital skills.

### 4.3 Strengthening Cross-sector Collaborative Education Mechanisms

Ideological and political education under educational informatization cannot rely solely on individual courses or single departments; it requires systematic collaboration among multiple units. Universities can establish cross-sector coordination mechanisms involving academic affairs offices, student affairs departments, information technology centers, and schools or faculties<sup>[13-14]</sup>. A possible approach is to set up a “Committee for Informatization-Enabled Moral Education” or a similar governance body that is responsible for planning overall strategies, promoting platform interoperability, and ensuring value coherence across disciplines. Within such a structure, ideological and political courses and “ideological and political education in all courses” can be better aligned<sup>[15]</sup>. Shared digital platforms can support resource co-development and co-use, reduce duplication of effort and enhancing thematic consistency. Regular cross-department meetings and joint training programs can foster common understanding and mutual support among different actors.

### 4.4 Optimizing Value Communication in Digital Spaces

In the era of mobile internet and social media, optimizing value-oriented communication in digital spaces is indispensable for effective ideological and political education. Universities should actively build and operate online platforms that are attractive to students, such as official accounts on mainstream social media, micro-video channels, and interactive Q&A communities<sup>[16]</sup>. Content production needs to follow a systematic workflow including topic selection, expert review, multi-modal design, release scheduling, and impact evaluation. Thematically, content can focus on national development achievements, exemplary role models, campus stories, and responses to hot social issues, presented through concise texts, high-quality images, short videos, and live broadcasts<sup>[17-18]</sup>. In cases of major events or sensitive topics, timely and well-reasoned explanations can help guide public discourse and maintain a positive online campus atmosphere.

### 4.5 Implications for University Leaders, Teachers, and Policy-makers

From a governance perspective, university leaders need to embed informatization-enabled ideological and political education into institutional development planning, resource allocation, and performance evaluation systems<sup>[19]</sup>. This may include setting explicit indicators for digital moral education in strategic plans, investing in integrated platforms and data governance infrastructures, and recognizing innovative practices in personnel evaluations. Rather than expecting immediate mastery of complex tools, universities can provide staged support: starting from the effective use of existing digital resources, moving toward designing interactive activities, and eventually adopting data analytics for continuous improvement<sup>[20]</sup>. Professional development programs should address not only technical skills but also digital ethics and pedagogical principles for value-oriented education. Guidelines on responsible AI use in education, transparent data governance, and quality assurance of online ideological and political content can provide an enabling environment for universities to innovate while safeguarding students’ rights and well-being.

## 5 Conclusion and Future Directions

Educational informatization has opened up new horizons and tools for ideological and political education in universities, while also exposing significant conceptual, technical, and institutional challenges. The study has clarified the logical relationship between educational informatization and ideological and political education, highlighting how digital technologies can support value guidance, and how ideological and political work in turn provides ethical orientation for informatization. It has identified key dilemmas, including superficial technology integration, fragmented resources, insufficient digital literacy of educators, and weak online ideological guidance. These pathways underscore the need to align student-centered goals, problem-oriented diagnosis, and technology-oriented solutions, supported by sound governance arrangements.

The study has certain limitations. It is primarily conceptual and does not provide empirical data from specific institutions or large-scale quantitative evaluations. Many of the application scenarios discussed remain at the level of theoretical reasoning rather than tested practice. Future research could adopt mixed-methods designs, longitudinal tracing, and cross-institutional or cross-national comparisons to examine how data-driven and AI-supported ideological

and political education models influence students' value formation, learning outcomes, civic engagement, and well-being over time. Despite these limitations, the framework proposed here offers a structured reference for universities seeking to harness educational informatization to promote the high-quality development of ideological and political education and to better fulfill their mission in the era of digital transformation.

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