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Article

Research on the Innovation Path of Ideological and Political Education in Higher Vocational Colleges from the Perspective of Digital Intelligence Empowerment

Xiong Tian [1] and Luyao Wang [1,*]

[1] Hainan Vocational University of Science and Technology, Haikou, Hainan, 571126, China
* Correspondence: Luyao Wang, Hainan Vocational University of Science and Technology, Haikou, Hainan, 571126, China

Abstract: As the landscape of information technology undergoes a profound metamorphosis, the rise of data-driven intelligence—characterized by big data and artificial intelligence—has catalyzed a significant paradigm shift in the ideological and political training provided by higher vocational institutions. This technological evolution necessitates an immediate and strategic realignment of traditional teaching methods. The current study begins by establishing a rigorous conceptual framework for "intelligent digital empowerment" and its "pedagogical adaptability" within the vocational sector, elucidating the synergistic mechanisms that link these two domains. By synthesizing existing literature and empirical observations, the paper provides a critical assessment of the contemporary significance and the practical bottlenecks encountered when integrating smart technologies into value-based education. Ultimately, a series of targeted reformative measures and implementation strategies are proposed. These pathways are designed to harmonize digital progress with high-quality student cultivation, thereby resolving systemic challenges in the educational process. The goal is to enhance the precision and resonance of ideological courses, offering both a theoretical roadmap and practical insights for nurturing a new generation of skilled professionals who are characterized by steadfast Marxist convictions and superior technical expertise.

Keywords: digital intelligence empowerment; higher vocational colleges; ideological and political education; innovation path

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1. Introduction

Lately, state-level mandates regarding educational progress have consistently underscored a vital imperative: grounding the digital transformation of schooling in the bedrock of character building and moral integrity. Rather than just a technical upgrade, educational digitalization necessitates a steadfast value-orientation, driving a comprehensive overhaul of pedagogical philosophies and instructional settings. Central to this strategy is the proliferation of high-quality digital assets and the enhancement of online learning frameworks, both of which are designed to better resonate with the shifting cognitive patterns of contemporary students. Against this backdrop of systemic change, the higher vocational sector finds itself at a critical juncture. As a primary conduit for instilling social accountability and ethical values, ideological and political education (IPE) in these institutions must proactively weave digital tools into the fabric of its teaching practices. This integration is not merely about using new media but about fostering an immersive, accessible, and responsive pedagogical ecosystem. By leveraging interactive platforms and multimedia resources, educators can transcend traditional boundaries, making value-based learning more engaging for the "digital native" generation. Within this framework, ideological theory courses serve as a cornerstone. For

these courses to retain their persuasive power and educational efficacy, they must evolve in tandem with technological surges, tailoring their delivery to meet the specific learning preferences of today's youth and ultimately fulfilling the overarching mission of cultivating a responsible, skilled workforce [1].

2. The theoretical framework and core connotations of digital intelligence in vocational IPE

The pervasive integration of smart digital systems has catalyzed a structural metamorphosis across the entire educational landscape. Within the specific sphere of higher vocational schooling, ideological and political education (IPE) serves as the linchpin for achieving holistic student development. As the era of "digital intelligence" dawns, the traditional development paradigms and instructional formats of IPE must undergo an adaptive evolution to remain relevant. Consequently, establishing a clear conceptual framework for "digital intelligence empowerment" and delineating the "adaptability" of vocational IPE are essential prerequisites. This theoretical exploration provides the necessary foundation for addressing contemporary bottlenecks and driving the innovative upgrading of moral education.

2.1. Defining digital intelligence empowerment and its pedagogical impact

At its core, "digital intelligence empowerment" represents a dynamic synergy where emerging technologies—ranging from cloud-based architectures and the Internet of Things (IoT) to predictive AI and big data analytics—are utilized to overhaul organizational workflows and resource deployment. This process goes beyond mere technical adoption; it involves a fundamental reconstruction of developmental models to optimize operational efficacy and user experience. In the realm of ideological education, this technological surge has profoundly reshaped pedagogical mechanisms. By transitioning from a generalized approach to one defined by precision and intelligent insights, the educational framework can now transcend traditional constraints of time and space. This shift not only facilitates the long-standing ideal of "personalized instruction" but also enhances the scientific rigor of educational management through data-informed decision-making [2].

2.2. Core meaning and evaluative dimensions of IPE adaptability

The "adaptability" of IPE in higher vocational institutions refers to the systemic capacity of these programs to proactively recalibrate their concepts, content, and methodologies in response to technological surges and evolving student needs. This responsiveness ensures that moral education remains resonant and effective within a digital-intelligence-driven society. The primary objective is to leverage digital tools to enhance the precision and appeal of ideological courses, thereby fulfilling the fundamental mission of character building.

From a practical standpoint, this adaptability is assessed through several key dimensions: the foresight of institutional leadership, the diversity and relevance of the curriculum, the depth of technology-pedagogy integration, and the rationality of management mechanisms. Ultimately, the success of this adaptation is measured by its impact on students' core competencies. To achieve high-precision teaching, it is imperative to identify the exact "convergence points" where technological tools align with ideological objectives, forming a scientific basis for evaluation [3].

2.3. Theoretical foundations of smart technology integration in IPE

The convergence of digital intelligence and vocational IPE is anchored in a trifecta of interdisciplinary theories. Firstly, Technology Empowerment Theory suggests that advanced tools serve as catalysts for reorganizing productive relations and resource allocation, thereby elevating the overall efficiency of a system. This provides a robust

justification for using smart technologies to transform IPE delivery methods. Secondly, the Mandate of Holistic Moral Cultivation dictates that value-based education must remain fluid and evolve in tandem with societal shifts. Digital empowerment offers the technical means to embed moral guidance into every facet of the student journey. Finally, Constructivist Pedagogy emphasizes that learning is an active process of meaning-making by the student. Modern AI-driven environments—such as immersive virtual reality and affective computing—create the "situated learning" contexts necessary for a truly student-centered educational model, bridging the gap between abstract theory and lived experience [4].

3. The contemporary value and practical challenges of integrating smart technology into vocational IPE

The convergence of digital intelligence with vocational ideological and political education (IPE) presents a transformative opportunity to transcend conventional developmental limitations and pioneer new educational horizons. While this integration offers significant modern value, the inherent professional characteristics of vocational education, coupled with current technological limitations and institutional gaps, have given rise to a series of urgent structural impediments.

3.1. The contemporary significance of digital empowerment

To begin with, smart technology facilitates high-precision pedagogy. By synthesizing multi-dimensional data to construct comprehensive learner profiles, institutions can gain granular insights into students' ideological leanings and personalized educational requirements. This allows for tailored pedagogical interventions and the precise delivery of value-oriented content, effectively realizing the ideal of personalized cultivation. Furthermore, the reconstruction of educational settings is a major breakthrough. Utilizing Extended Reality (XR) and digital simulation to build immersive, high-fidelity teaching environments helps mitigate the "work-study conflict" often faced by vocational students, providing realistic scenarios for practical moral training.

In parallel, instructional efficiency is significantly enhanced. The deployment of automated teaching assistants and intelligent assessment tools alleviates the burden of administrative and repetitive tasks for educators. This redistribution of effort enables teachers to concentrate their expertise on the core responsibilities of value shaping and ethical guidance. Lastly, digital integration optimizes the evaluative framework. By capturing data traces throughout the learning journey, institutions can transition from a summative, result-heavy assessment model to a dynamic, evidence-based trajectory of student growth. This shift addresses the traditional bias of over-prioritizing final outcomes while neglecting the formative process of character development.

3.2. The persistent realistic dilemmas

Despite preliminary successes in constructing digital platforms and hybrid learning models, significant friction points remain in the deep integration of smart technologies. Most notably, there is a discernible shortage of specialized algorithms and professional application systems tailored specifically for the nuanced needs of vocational IPE, leading to a lack of pertinence in existing digital assets [5]. Beyond technical limitations, the integration process is hindered by institutional hurdles and a notable deficit in humanistic considerations.

Specifically, several critical gaps are evident: First, a cognitive misalignment exists where some institutions over-prioritize technical proficiency at the expense of ethical grounding, thereby diluting the humanistic essence of ideological education. Second, the supply of digital resources remains problematic; many existing materials suffer from homogenization and fail to align with the specific requirements of various professional sectors or the realities of the modern workplace. Third, faculty capacity acts as a bottleneck.

A considerable portion of the teaching staff lacks the necessary technological fluency and digital pedagogical competence to effectively utilize advanced instructional tools. Fourth, the synergy between industry and education remains superficial. The disconnect between academic IPE and the actual professional field makes it difficult to extend moral guidance into real-world industrial contexts [6]. Finally, emerging vulnerabilities are becoming more prominent, as concerns regarding data privacy, technological alienation, and the widening "digital divide" pose potential threats to the equity and healthy evolution of the IPE ecosystem.

4. Innovative practice path of ideological and political education in higher vocational colleges from the perspective of mathematical intelligence empowerment

In order to realize the deep integration of digital intelligence technology and higher vocational ideological and political education, and effectively improve the pertinence and effectiveness of ideological and political education, it is necessary to closely follow the orientation of higher vocational education as a type of education, focus on key dimensions such as resource construction, teaching mode and coordination mechanism, and truly transform the advantages of digital intelligence technology into the actual effect of educating people, so as to promote the ideological and political education of higher vocational education from concept innovation to practice, so as to effectively solve the problem of educating people and cultivate high-quality technical and skilled talents in line with the requirements of the new era.

4.1. Promote the construction of characteristic digital resources and consolidate the foundation of mathematical intelligence education

In view of the current problems of weak pertinence and high repetition rate of digital resources, we should focus on building a hierarchical classification and distinctive digital resource library of ideological and political education. It should be guided by promoting the deep integration of ideological and political courses and professional courses, and develop and produce digital teaching resources that fit the characteristics of different majors in higher vocational colleges and contain professional attributes. For example, industry standards, model worker stories, technical expert cases, etc. can be transformed into vivid and intuitive digital materials.

Strengthen the linkage effect of " teacher-classroom-cyberspace, " and analyze the learning needs based on the information fed back by students ' personal growth portfolios, so as to reversely drive teachers to clarify the teaching focus and direction. In practical teaching, we should promote the organic combination of in-class and out-of-class, campus and social resources, and actively build a new learning model of ' autonomous learning-practical teaching-enterprise internship '.

4.2. Build a precise teaching mode to improve the pertinence of education

Relying on the comprehensive reform of big data-driven teaching methods, educational institutions can now transition from a generalized approach to a precision-oriented pedagogical model. By performing longitudinal analysis and deep mining of massive educational datasets, educators can gain profound insights into students' evolving thinking characteristics and cognitive patterns. This data-backed understanding enables the formulation of personalized teaching programs tailored to individual learning needs, thereby ensuring the accurate transmission and deep internalization of ideological content. Furthermore, by leveraging the latest advancements in intelligent interaction and scene reconstruction, technologies such as VR and AR are utilized to construct high-fidelity, immersive learning environments. These "virtual red pavilions" and professional experience centers allow students to engage in embodied learning, which significantly enhances the emotional resonance, appeal, and overall persuasion of ideological and political courses [7].

In addition, it is imperative to further optimize online and offline hybrid teaching frameworks. By designing and implementing digital practice projects that are seamlessly integrated with practical skill training, the school can effectively alleviate the structural contradiction between academic work and field study [8,9]. The strategic deployment of Artificial Intelligence tools further optimizes teaching efficiency by automating repetitive administrative tasks. This "technological liberation" allows teachers to transcend tedious affairs and refocus their professional energy on the core mission of value guidance and soul-shaping. Such a transition not only improves the immediacy of feedback but also effectively meets the internal demands for a profound and sustainable reform of the modern teaching mode.

4.3. Improve the diversified coordination mechanism and solve the problem of integrated development

To establish a robust "Great Ideological and Political" education framework, we must prioritize institutional synergy under the unified leadership of the school's Party Committee. By fostering seamless cooperation among all relevant departments, the school can create a unified force that effectively bridges the gap between specialized ideological teaching and broader curriculum-based ideological construction. This integrated approach ensures that values-based education permeates every aspect of the student experience. Furthermore, specialized training programs must be launched to empower educators with mathematical intelligence (digital intelligence) tools and educational data analysis capabilities [10]. By systematically addressing the technical bottlenecks and "digital anxiety" faced by some faculty members, these initiatives will significantly enhance the digital literacy of ideological and political teachers, enabling them to leverage big data for precision teaching. In terms of resource development, we should deepen the integration of industry and education. By exploring innovative co-construction and sharing models enabled by digital intelligence, we can transform real-world enterprise achievements and industrial resources into high-quality educational content. This effectively resolves the historical separation between production and education, ensuring that classroom theory is revitalized by industrial practice. Finally, while embracing technology, we must steadfastly adhere to a "student-centered" philosophy. This involves implementing stringent measures to mitigate data security risks and prevent excessive technological dependence. By proactively innovating teaching scenarios and fostering a collaborative educational community, we strive to build a new ecosystem characterized by human-machine synergy and the harmonious coexistence of digital technology and ideological education.

5. Conclusion

The exponential proliferation of smart digital technologies has presented higher vocational institutions with a pivotal juncture for pedagogical overhaul, offering both a transformative catalyst and a complex set of structural demands for ideological and political education (IPE). To effectively harness the potential of "intelligence-led" empowerment, it is imperative to anchor all innovative efforts in the bedrock of moral stewardship and character cultivation. This necessitates a strategic alignment with the unique professional identity of vocational schooling, while simultaneously addressing entrenched systemic hurdles such as conceptual inertia, resource distributive inequities, and the prevailing gaps in instructional capacity and inter-departmental coordination.

This research has systematically dissected the epochal value and the multifaceted integration hurdles inherent in the digital transition of vocational IPE. Based on this analysis, the study proposes a tripartite strategic framework: the development of niche-specific digital repositories, the implementation of precision-driven instructional models, and the optimization of multi-dimensional collaborative mechanisms. These pathways are intended to serve as a robust practical reference for the modernization of value-based

education. Moving forward, continued empirical investigation into the granular applications of smart technology remains essential. By deepening the synergy between technological tools and pedagogical objectives, institutions can significantly amplify the resonance of moral education, thereby providing a steadfast guarantee for nurturing the next generation of highly skilled professionals who are equipped to spearhead the vision of national revitalization.

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