

Research on the Reconstruction of the Practical Teaching Model of Digital Intelligence Empowerment-driven Applied Undergraduate Ideological and Political Courses

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Abstract

The rapid development of digital intelligence technology is profoundly changing the form of education and teaching in colleges and universities, and also provides new conditions for the practical teaching reform of applied undergraduate ideological and political courses. Applied undergraduate colleges and universities undertake the important task of cultivating high-quality applied talents. The practical teaching of ideological and political courses should not only serve the value guidance, but also respond to the actual needs of students' professional growth, social cognition and practical ability improvement. At present, there are still phenomena such as goal generalisation, content dispersion, single scene, and lagging evaluation in traditional practical teaching, which affects the effectiveness of ideological and political courses. Under the background of digital intelligence empowerment, we should rely on big data, artificial intelligence, virtual simulation, digital resource platform and other technical means to promote the systematic restructuring of practical teaching goals, content, scenarios and processes, and form a more open, collaborative, accurate and dynamic practical teaching model. By improving the top-level design, platform construction, collaborative education and quality evaluation mechanism, we can further improve the relevance, participation and educational effectiveness of practical teaching of applied undergraduate ideological and political courses.

Keywords

Numerical intelligence empowerment, applied undergraduate, ideological and political course, practical teaching, teaching model restructuring.

1. Introduction

Applied undergraduate education emphasises the combination of knowledge learning, ability cultivation and social practice, in which the practical teaching of ideological and political courses has an important educational function. With the continuous integration of digital technology and intelligent technology into the teaching process of colleges and universities, the practical teaching of ideological and political courses is no longer limited to offline visits, social surveys, thematic activities and other traditional forms, but gradually develops in the direction of data-driven, scene integration, resource sharing and process visualisation[1-2]. Digital intelligence empowerment provides richer resources, environment and technical support for the practical teaching of ideological and political courses, and also prompts teachers to rethink the organisational mode and educational logic of practical teaching. For applied undergraduate institutions, the practical teaching of ideological and political courses should not only enhance students' understanding of theoretical knowledge, but also guide students to form correct value judgements in professional learning, social observation and real participation. Restructuring the practical teaching model around digital intelligence technology helps to break the gap between the classroom and society, theory and practice, online and offline, and promote

ideological and political courses from knowledge transfer to value experience and action generation.

2. The Principle of Restructuring the Practical Teaching Model of Applied Undergraduate Ideological and Political Courses Driven by Digital Intelligence Empowerment

The reconstruction of the practical teaching model of applied undergraduate ideological and political courses driven by digital intelligence empowerment should adhere to the unity of value, practicality, integration and appropriateness, as shown in Table 1. The fundamental task of practical teaching of ideological and political courses is to cultivate morality. Digital technology and intelligent tools cannot replace value guidance, but can only be used as an important means to improve the effect of educating people. Practical teaching design needs to focus on the real growth needs of students, so that theoretical learning can enter the life situation, professional field and social practice. The application of technology should also be adapted to the school's positioning, professional characteristics and student base, so as to avoid ignoring the effectiveness of teaching in order to pursue novel forms. Applied undergraduate colleges and universities have distinct local, industry and practical characteristics. Digital intelligence empowerment should serve the cultivation of students' problem awareness, sense of social responsibility and practical ability. The restructuring of the practical teaching model should also pay attention to online and offline integration, on-campus and off-campus integration, and closed-loop teaching evaluation, so that the practical teaching of ideological and political courses can shift from a single activity to a continuous education process.

Table 1. Basic Principles of Practical Teaching Model Reconstruction

Dimension	Core Content
Value Principle	Adhere to the fundamental mission of fostering virtue and nurturing talent, strengthen value guidance, and use digital and intelligent technologies as supportive tools in education without replacing the core functions of ideological and political education.
Practice Principle	Design practical components around students' genuine developmental needs, integrating theoretical learning into real-life contexts, professional studies, and social practice to enhance experiential engagement and participation.
Integration Principle	Promote deep integration of digital and intelligent technologies with ideological and political teaching, achieving seamless online-offline and campus-outside coordination to improve overall synergy in practical education.
Appropriateness Principle	Technology applications should align with the institution's educational positioning, disciplinary characteristics, and students' foundational levels, avoiding superficiality and technological overuse, while emphasizing actual teaching effectiveness.
Educational Orientation Principle	Leverage the applied undergraduate programs' local and industry-specific features to strengthen students' problem awareness, sense of social responsibility, and practical capabilities.
Process Principle	Build a sustainable practical teaching system combined with a closed-loop assessment mechanism, transforming practical education from isolated activities into a holistic, process-oriented approach to student development.

3. Digital Intelligence Empowerment Drives the Reconstruction Path of the Practical Teaching Model of Applied Undergraduate Ideological and Political Courses

3.1. Restructure the Goals of Practical Teaching

The reconstruction of the practical teaching goals of applied undergraduate ideological and political courses is based on the background of the deepening of the digital transformation of

college education. Digital intelligence technology is gradually integrated into the whole process of teaching, so that practical teaching has gradually shifted from traditional offline activities to a comprehensive education form of online and offline integration. Against this background, the original goal system with the completion of activities as the core has gradually revealed its limitations, and it is difficult to adapt to the changes in students' ability structure and the needs of social development. Therefore, the goal of practical teaching needs to shift from external task orientation to internal development orientation, and more emphasis is placed on the generation of students' value cognition and comprehensive ability improvement in real or simulated situations[3]. Specifically, a multi-dimensional goal system covering theoretical understanding, social observation, value judgement, teamwork and digital expression should be built, so that students can form an overall understanding of the logic of national development and the social operation mechanism in the process of practice. At the same time, the practical teaching goals of applied undergraduate institutions should also be deeply integrated with the professional talent training system to guide students to transform ideological and political learning into professional identity and job responsibility awareness, so as to enhance the systematicity of the target system and the consistency of education.

3.2. Restructure the Content of Practical Teaching

The reconstruction of practical teaching content for ideological and political courses in application-oriented undergraduate education is of great significance for enhancing the relevance and contemporaneity of ideological and political education. With the development of digital-intelligent technologies, teaching resources have become more diversified, dynamic, and visualized, enabling practical teaching content to move beyond the boundaries of traditional textbooks and develop into a thematic system more closely aligned with real social structures and students' cognitive experiences.

The significance of such content reconstruction lies in its ability to transform abstract theories into real-life issues that students can perceive and participate in, thereby strengthening the explanatory power and appeal of ideological and political courses. In concrete practice, thematic modules can be developed around real-world issues such as Chinese modernization, rural revitalization, grassroots governance, scientific and technological innovation, and ecological civilization[4-5]. At the same time, differentiated content can be embedded in accordance with the characteristics of different majors, enabling students in fields such as engineering, management, and art to understand institutional advantages and social responsibility within their own practical contexts.

The introduction of digital platforms further enhances the capacity for content renewal and resource integration, allowing practical teaching content to be continuously iterated and optimized, and thus maintaining its openness and practical relevance in step with social development.

3.3. Reconstruct the Practical Teaching Scenario

At present, the outstanding problem facing the practical teaching of applied undergraduate ideological and political courses is that the practice scenario is still based on the traditional offline base, and the spatial structure is relatively single, which is difficult to meet the diversified and continuous learning needs of students. Limited by time, funds and organisational conditions, memorial visits, community research or enterprise practice often show the characteristics of one-time and fragmentation, and lack systematic extensibility. Against the background of this problem, digital intelligence empowerment provides an important path for the expansion of practical scenarios, so that practical teaching can expand from a single physical space to a multi-dimensional space structure that integrates virtual and real. Through virtual simulation technology, digital exhibition hall and online interactive platform, students can enter historical situations, governance simulation or industrial digital

scenarios for immersive learning, and at the same time combine offline practice to form data records and result precipitation[6]. As a result, on-campus learning space, off-campus social space and digital virtual space form an interactive system, so that practical teaching changes from "learning somewhere" to "understanding society in multiple scenarios". This kind of scene reconstruction not only expands the boundaries of practice, but also enhances students' overall perception of complex social structures.

3.4. Restructure the Practical Teaching Process

Traditional practical teaching is often based on the promotion of stage tasks, and lacks continuous tracking of students' learning status in the whole process, so that practical activities are easy to stay at the level of "completing tasks" and difficult to form sustainable cognitive development. Under the condition of digital intelligence empowerment, this problem is more prominent, because although digital tools improve management efficiency, if there is no support for process design, it may strengthen the tendency of formalisation. Take the relevant research of the "Report on the Digital Development of Chinese Colleges and Universities in 2024" as an example, as shown in Figure 1, 90.7% of colleges and universities carry out information-based teaching ability training, 77.9% of colleges and universities use virtual simulation experiments or practical training platforms, and 68.7% of colleges and universities have carried out a certain degree of artificial intelligence applications, which shows that colleges and universities The digital support capacity of the teaching process is continuously enhanced. In response to this problem, the practical teaching process needs to shift from a linear structure to a chain structure, and integrate task release, data acquisition, teamwork, data analysis, achievement expression and reflection feedback into the continuous learning system. Through the data recording and behaviour analysis of the teaching platform, teachers can dynamically grasp the participation status of students and provide targeted guidance, so that the teaching process can shift from empirical judgement to data-driven. At the same time, students constantly revise the cognitive path in continuous interaction and task promotion, so that practical learning can be transformed from stage behaviour to continuous generational learning process, so as to improve the overall depth and stability of practical teaching of ideological and political courses.

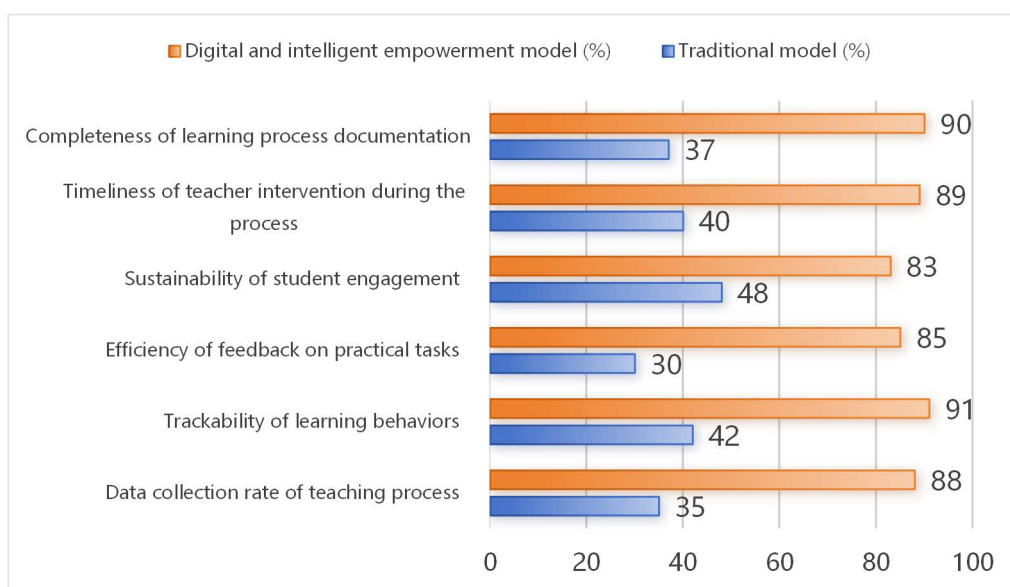


Figure 1. Comparison before and after the management of the digital process of practical teaching in colleges and universities

4. The Guarantee Mechanism of the Practical Teaching Mode of Digital Intelligence Empowerment Applied Undergraduate Ideological and Political Courses

4.1. Strengthen the Top-level Design of the School

The digital and intelligent transformation of practical teaching of applied undergraduate ideological and political courses is essentially a system project involving multi-subject, multi-link and multi-resource coordination. Its smooth promotion first depends on institutional coordination and overall planning at the school level. Judging from the actual situation, some colleges and universities still have the problem of independent governance and decentralised promotion in the practical teaching reform, resulting in low resource allocation efficiency and lack of overall coordination between practical projects. Against this background, strengthening the top-level design has become the institutional basis for ensuring the effective implementation of digital intelligence empowerment[7-8]. Applied undergraduate colleges and universities should integrate the practical teaching of ideological and political courses into the overall planning of the talent training system, and carry out an integrated design of the curriculum goal system, digital platform construction, capital investment mechanism, teacher capacity development and quality evaluation system. At the same time, we should promote the formation of a stable coordination mechanism between Marxist colleges, professional colleges, information technology departments and practice bases, so as to realise the joint construction, sharing and operation coordination of resources. At the specific implementation level, it is also necessary to formulate an operational practical teaching implementation plan, clearly standardise the types of practical projects, school hours structure, organisational methods and evaluation standards, avoid the problem of duplicate construction and ambiguity of responsibility from the institutional level, and change the practical teaching reform from experience-driven to system-driven, so as to empower digital intelligence. It can provide stable organisational security.

4.2. Improve the Construction of Digital Resource Platform

The construction of digital resource platform plays a fundamental supporting role in the practical teaching system of digital intelligence empowering ideological and political courses. Its importance is not only reflected in the level of technical tools, but also in the carrying capacity of reshaping the teaching structure. Judging from the current situation of practical teaching, the dispersion of resources, the difficulty of tracking the process and the difficulty of precipitation of achievements are long-standing outstanding problems, and the digital platform is the key path to solve this structural dilemma. Applied undergraduate colleges and universities should build a comprehensive digital platform system integrating resource management, task release, process recording, interactive communication, achievement display and evaluation feedback around the practical teaching needs of ideological and political courses, so that the whole process of practical teaching can realise data and visual management. Platform resources should cover theoretical learning materials, policy texts, typical cases, digital exhibition halls and practical project libraries. At the same time, students should be supported to upload research data, interview records, practical images and reflection results, so as to form a complete learning data chain. As shown in Figure 2, the national smart education public service platform has integrated high-quality resources in multiple school sections, reflecting the practical role of the digital platform in resource gathering and sharing. In terms of operation mechanism, we should pay attention to the ease of use and adaptability of the platform, so that it can truly embed the teaching process instead of becoming an additional system, and maintain the vitality of resources through continuous updating of the mechanism. At the same time, it is also necessary to strengthen the standards of data security and privacy

protection, clarify the boundaries of data use, and make the platform both open and standardised, so as to provide a reliable data basis for the continuous optimisation of practical teaching.

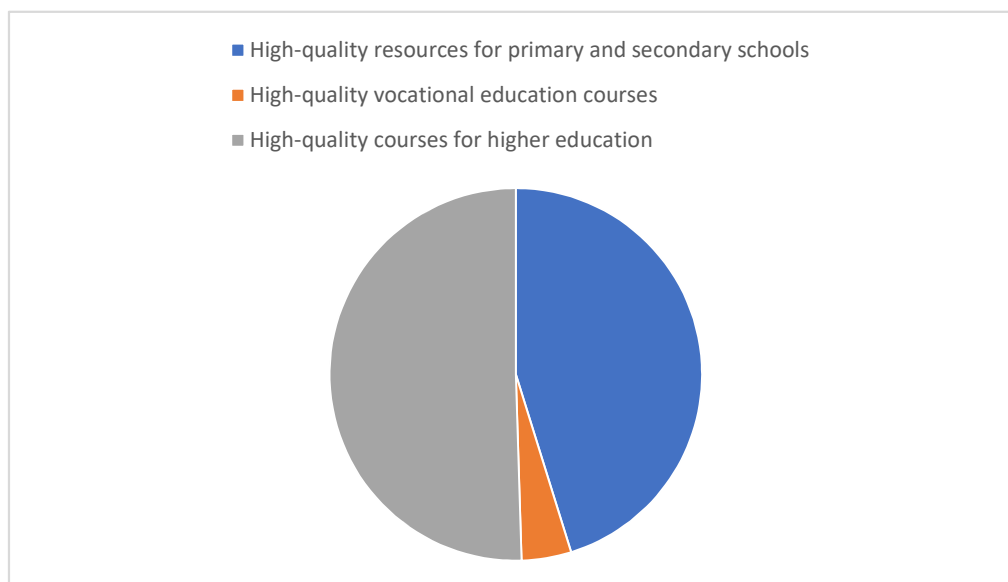


Figure 2. Statistical Table of Resource Structure of National Intelligent Education Public Service Platform

4.3. Promote the Cooperative Education of Schools and Enterprises

The improvement of the practical teaching quality of ideological and political courses under the background of numerical intelligence empowerment cannot be separated from the in-depth coordination between schools and local society and industry enterprises. Its essence is to build an open and shared education ecosystem. Applied undergraduate colleges and universities have the natural attribute of serving local economic and social development. This positioning determines that practical teaching should not be limited to the campus, but should be actively integrated into the regional development and industry operation system. In the current practical teaching reform, some activities are still at the level of short-term visits or single research. The lack of continuous cooperation mechanisms and system resource integration limits the deepening of the effect of practical education[9]. On this basis, the construction of a cooperative education mechanism between schools and enterprises is particularly important. Schools can rely on local governments, community organisations, industrial parks and enterprises and institutions to establish a multi-level practical teaching base network, and realise the online and curriculum transformation of resources through digital platforms, so that off-campus practice is no longer an isolated event, but a sustainable teaching module. At the same time, the introduction of enterprise tutors and local practice instructors to participate in teaching design, process guidance and performance evaluation is conducive to enhancing students' true understanding of social operation logic and professional ethics. Through this multi-subject collaborative structure, the practical teaching of ideological and political courses can more closely connect with the real social operation system, and further strengthen the practical orientation and social adaptability of applied talent training.

4.4. Improve the Teaching Quality Evaluation Mechanism

In the process of empowering digital intelligence to promote the restructuring of the practical teaching model of ideological and political courses, the scientificity and completeness of the evaluation mechanism directly determine the sustainability of the reform results. Judging from the current situation of practical teaching evaluation, there are still problems such as single

evaluation method, insufficient process attention and weak data support. It mainly relies on static indicators such as practice reports, attendance records and performance display, and it is difficult to truly reflect the changes in students' abilities and the development of value identification in the process of practice. Against this background, building a comprehensive evaluation system based on the support of whole-process data has become a necessary direction. The development of digital intelligence technology provides conditions for the innovation of evaluation methods, so that process data such as learning trajectory, interactive behaviour, task completion, teamwork records and reflective text can be incorporated into the evaluation system, so as to realise the transformation from result evaluation to process evaluation and comprehensive evaluation. In terms of evaluation structure, we should build a multi-subject system that combines teacher evaluation, student mutual evaluation and off-campus tutor evaluation, while taking into account the two dimensions of theoretical mastery and practical application ability, so as to make the evaluation more comprehensive and three-dimensional[10]. More importantly, the evaluation results should reverse the process of teaching design and resource optimisation, forming a continuous feedback and dynamic adjustment mechanism, so that evaluation is no longer the end point of teaching, but the starting point of teaching improvement, so as to promote the practical teaching of ideological and political courses to achieve long-term optimisation and high-quality development under the background of digital intelligence empowerment.

5. Conclusion

Digital intelligence empowerment provides a new development opportunity for the reconstruction of the practical teaching model of applied undergraduate ideological and political courses. In the face of students' growth needs, the requirements of applied talent training and the trend of digital transformation of education, the practical teaching of ideological and political courses needs to be systematically optimised in terms of goals, content, scenarios and processes. The value of digital intelligence technology does not lie in replacing teachers and practical practice, but in expanding teaching space, enriching teaching resources, optimising teaching organisation and improving evaluation accuracy. Based on their own school positioning and local service characteristics, applied undergraduate institutions should deeply integrate digital technology, intelligent tools and the law of ideological and political course education, and promote practical teaching from one-way indoctrination and activity completion to situational experience, problem exploration and value generation. At the same time, schools also need to ensure the implementation of reform through mechanisms such as top-level design, platform construction, collaborative education and quality evaluation. Only by transforming technical advantages into educational advantages can we truly improve the attractiveness, infectious power and effectiveness of practical teaching of ideological and political courses, and provide strong support for the cultivation of applied talents with firm ideals and beliefs, a sense of social responsibility and practical ability.

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