ISSN 2663-8169 Vol. 8, Issue 10: 1-8, DOI: 10.25236/IJNDE.2026.081001

# "Three Repositories and One Course": A Co-construction and Sharing Mechanism for Blended Course Resources in Local Higher Education Institutions under Digital Transformation

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***Abstract:*** *Digital transformation is reshaping the curriculum resource ecosystem of higher education. Local higher education institutions commonly face structural difficulties such as insufficient resource integration, shallow industry-education integration, weak intelligent application, and ineffective sharing mechanisms. Using Zhaoqing University as a typical case, this paper proposes a co-construction and sharing mechanism for blended course resources based on the "Three Repositories and One Course" framework: an industry-enterprise course resource repository, a real-world project case repository, a teaching case repository, and smart courses. It constructs a resource ecosystem architecture of "One Platform, Two Systems, and N Applications" and designs a four-in-one operational mechanism featuring university-enterprise co-construction, cross-college sharing, dynamic updating, and a quality closed loop. Practice shows that, relying on the Yanyuan Digital-Intelligent Teaching Cloud Platform, the first batch has produced 51 resource repositories and 309 cases, covering 18 colleges, and has initially achieved cross-college sharing and access within the university. In terms of smart course development, student enrollment has exceeded 25,000, with a coverage rate of nearly 96%, and teacher enrollment has exceeded 820, with a coverage rate of nearly 50%, laying a solid foundation for the digital transformation of teaching resources. This mechanism can effectively promote course resources from fragmented self-construction to collaborative co-construction, from static storage to dynamic generation, and from exclusive intra-university use to cross-boundary sharing, providing a scalable practical solution for peer local higher education institutions.*

***Keywords:*** *Digital transformation; Local higher education institutions; "Three Repositories and One Course"; Blended courses; Co-construction and sharing mechanism*

## 1. Introduction

Digital transformation is profoundly reshaping the underlying logic of higher education. From teaching methods to governance models, technological penetration is no longer confined to superficial tools; it has increasingly become a key variable driving high-quality development. The Outline of the Plan for Building a Strong Education System (2024–2035) explicitly calls for "promoting education digitalization, building intelligent teaching platforms, and facilitating the sharing of high-quality resources." The Ministry of Education's 2024 work priorities further emphasize empowering the improvement of higher education quality through digital transformation. Under this policy orientation, the development of digital resources in universities has iterated rapidly within just a few years: resource organization has shifted from "linear storage" to "knowledge graphs"; source channels have expanded from "in-house development" to "university-enterprise co-construction"; and application scenarios have upgraded from "static retrieval" to "dynamic generation" [1]. Although the trend is clear, when implemented in the real context of local higher education institutions, problems such as funding shortages, weak technological accumulation, and superficial cooperation mechanisms interact and compound, often rendering resource development fragmented and teaching application ineffective [2].

ISSN 2663-8169 Vol. 8, Issue 10: 1-8, DOI: 10.25236/IJNDE.2026.081001

As a typical local application-oriented university, Zhaoqing University received unambiguous feedback during the 2023 undergraduate education and teaching audit and evaluation: the expert panel pointed out obvious weaknesses in its industry-enterprise course resource repository, real-world project case repository, and teaching case repository; a lack of depth in industry-education integration; and an absence of systematic, proactive exploration of AI-enabled teaching. Facing this "diagnostic report," this raises the question: Are the rectification requirements proposed by the audit and evaluation merely a heavy burden of compliance, or can they serve as a fulcrum for strategic transformation? Can the technological dividends brought by digital transformation truly be converted into core competitiveness in talent cultivation? This is not only a practical question that Zhaoqing University must confront but also a question of the times shared by many local higher education institutions. To this end, this paper focuses on a question that has both practical relevance and theoretical value: How can local higher education institutions build a sustainable mechanism for the co-construction and sharing of course resources? Using Zhaoqing University's "Three Repositories and One Course" initiative as an entry point, this study attempts to answer whether the framework is feasible and under what conditions it can take effect, hoping to provide a referable and discussable practical sample and theoretical approach for peer institutions.

## 2. Definition of Core Concepts and Theoretical Foundations

### *2.1 The Connotation and Logical Structure of "Three Repositories and One Course"*

The "Three Repositories and One Course" framework is a blended course resource system supported by three types of resource repositories and applied through smart courses. The "Three Repositories" include the industry-enterprise course resource repository (an industry-education interface aligned with industrial frontiers), the real-world project case repository (practical materials carrying real-world problems), and the teaching case repository (teaching paradigms distilling reform experience). The "One Course" refers to smart courses, including knowledge graph-based courses, implemented in a blended online-offline format; it serves as both the resource application endpoint and the blended teaching carrier. The three form a progressive logic of "resource supply layer (Three Repositories)→ course application layer (One Course)→ teaching effectiveness layer": the Three Repositories provide diversified resource supplies for smart courses; smart courses provide a teaching application outlet for resources in the Three Repositories; and the ultimate goal is to improve teaching effectiveness.

### *2.2 Theoretical Foundations for the Co-construction and Sharing of Blended Course Resources*

No mechanism design can be separated from theoretical inquiry; otherwise, it easily degenerates into an enumeration of experience. The theoretical support of this paper comes mainly from three dimensions. First, resource sharing theory and common-pool resource theory jointly point to a practical dilemma: although course resources are non-excludable, their actual sharing is highly susceptible to free-riding. Without clear institutional design to constrain such behavior, the motivation for collective supply will gradually decline. Second, the theory of industry-education integration and collaborative education helps clarify the incentive logic and interest boundaries of university-enterprise co-construction. The education chain, talent chain, industrial chain, and innovation chain are not one-way transmissions or simple additions; rather, they rely on the interactive flow of information, resources, capital, and policies to form a truly sustainable virtuous cycle [3]. Third, knowledge management and social learning theory reveal the internal logic of transforming resources from tacit experience into explicit materials and from static storage to dynamic circulation, providing a theoretical foundation for building a continuously updated resource mechanism.

### *2.3 Review of Related Research*

Existing research has generally advanced along three paths. The first concerns smart courses and smart teaching. Through continuous tracking of smart teaching data in case universities, studies have found that smart course development should not remain at the general education level but should penetrate downward into specialized teaching; meanwhile, process monitoring should be strengthened during teaching to prevent students from losing control of learning in an "Internet+" environment [4]. Application-oriented universities are more suitable for building a smart teaching ecosystem based on tripartite collaboration among universities, government, and enterprises, supported by a governance

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closed loop of "dynamic collection—data analysis—evidence-based decision-making—continuous improvement" [5]. The second path involves research on the co-construction and sharing of digital resources. Existing literature mostly focuses on macro-level platform architecture and policy design, while operational solutions that truly fit the actual contexts of local higher education institutions remain scarce. The third path concerns quality assurance research driven by audit and evaluation. Wang Na once proposed a six-in-one framework supported by digital-intelligent technology-"data-standards-monitoring-evaluation-feedback-improvement" [6]-but it still leans toward the system architecture level. Overall, systematic research that integrates the subject of "local higher education institutions," the instrument of "Three Repositories and One Course," and the core issue of "co-construction and sharing mechanisms" is still in its infancy.

## 3. Practical Challenges in the Co-construction and Sharing of Course Resources in Local Higher Education Institutions

Considering the actual situation of Zhaoqing University, the prominent problems in current course resource development can be summarized as four structural weaknesses along four stages: resource production, resource circulation, resource application, and resource governance.

First, integration is insufficient, and the absence of university-level coordination creates "data silos." Colleges and majors each have their own systems when building resources, lacking connection with one another, while the university has not formed unified development standards. There is a concerning phenomenon: university teachers generally show low willingness to integrate digital resources into classroom teaching, and many have not yet truly realized that digital transformation is no longer an "optional" item but a "required" one [7]. This judgment is particularly apt for local higher education institutions: resources are scattered across different platforms, course teams, or even individuals; metadata standards vary widely; retrieval is time-consuming and laborious; and homogeneous content is repeatedly built across different colleges and departments.

Second, integration is shallow, and the teaching conversion rate of real-world project cases is low. Practical resources from industry and enterprises have not truly penetrated the core links of talent cultivation. Surveys show that only 12% of large-scale enterprises have deeply participated in university course development, while as many as 60% of graduates from AI-related majors report that the knowledge learned in class lags at least one year behind current industry practice [3]. In-depth research finds that in digital-intelligent scenarios, work tasks are dynamically interwoven; rigid task lists can no longer reflect the real workplace, and traditional occupational analysis methods are inadequate for analyzing complex skill structures [8]. As a result, a time lag persists between practical teaching content in local higher education institutions and industrial frontiers: case resources enter the campus but cannot enter the classroom.

Third, application is weak, and AI-enabled teaching is more rhetoric than substance. Many current explorations remain at the concept demonstration stage, lacking truly implementable and replicable tools and scenarios. A considerable number of teachers narrow digital-intelligent literacy to basic software operation skills, assuming that using smart tools means completing digital-intelligent transformation; as a result, smart course development becomes merely superficial technological decoration [9]. A more practical problem is that digital-intelligent literacy has not yet been incorporated into the teacher evaluation system, and teachers' investment in smart courses is hardly linked to professional title review or performance incentives. Tools such as AI teaching assistants and knowledge graphs mostly appear only in demonstration classes; in actual teaching, they are used infrequently and superficially, remaining in a state of "demonstration first, interaction secondary."

Fourth, mechanisms are ineffective, and the absence of standards and duplicated construction hinder each other. Without unified standards, cross-major and cross-college resource sharing cannot be discussed, and the input-output ratio of resources naturally remains low. The traditional quality assurance system is designed more from a "management" than a "development" perspective; monitoring methods are limited, data are isolated from one another, and improvements often take a long time after problems are fed back [6]. If online interactive teaching systems and teaching resource systems cannot keep pace, then no matter how advanced the hardware of smart classrooms is, it is ultimately only an upgraded multimedia playback room [10]. The superposition of missing standards and sharing barriers traps resource development in the awkward situation of "built but not easy to use, used but not fully utilized," becoming the most direct obstacle to improving overall benefits.

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## 4. Design of the Co-construction and Sharing Mechanism for "Three Repositories and One Course" Blended Course Resources

### *4.1 Overall Architecture: "One Platform, Two Systems, N Applications"*

To address the above four structural weaknesses, this study attempts to build a university-level resource ecosystem architecture with “One Platform, Two Systems, and N Applications” as the framework. The “One Platform” refers to a university-level “resource hub” built on the Chaoxing FanYa Platform, enabling unified resource access, intelligent retrieval, scheduling management, and cross-system data interconnection. The “Two Systems” include the smart course system (planned to build 150 courses, including 50 knowledge graph-based courses) and the “Three Repositories” resource system (100 industry courses, 200 real-world cases, and 200 teaching cases). The “N Applications” refer to the deployment of intelligent tools such as AI teaching assistants, AI lesson plan generators, AI agents, and AI-powered practice, gradually forming an intelligent teaching environment covering the entire process of pre-class, in-class, and post-class activities. Under this architecture, four mechanisms interlock to form a closed loop: university-enterprise co-construction addresses where resources come from; cross-college sharing addresses how resources circulate; dynamic updating addresses how resources remain current; and the quality closed loop safeguards the sustainable operation of the entire system. They respectively respond to “shallow industry-education integration,” “insufficient integration and ineffective sharing,” “weak intelligent application,” and shortcomings in overall governance.

### *4.2 University-Enterprise Co-construction Mechanism: Resource Production through Industry-Education Integration*

The design of the university-enterprise co-construction mechanism addresses the problem of “shallow industry-education integration.” The theory of industry-education integration and collaborative education points out that the key to university-enterprise co-construction lies not in the formality of “signing an agreement” but in whether a sustainable institutional channel for interaction can be built. Three parties participate in co-construction: universities are responsible for instructional design and academic adaptation; enterprises provide real projects and first-hand industry resources; and the platform undertakes technical support and data services. Each performs its respective role while coordinating with the others. The entire process generally goes through four stages: industry demand research, project case selection, teaching-oriented adaptation, and repository entry review. To keep this chain running continuously, interest balance is key. In practice, various methods are used—such as intellectual property agreements, enterprise brand exposure, and recognition of teachers’ research and teaching outcomes—to give all three parties sustained motivation to participate. At present, Zhaoqing University has established a strategic cooperative relationship with Beijing Century Chaoxing, and the enterprise team is deeply involved in platform development and technical support, providing a concrete organizational foundation for university-enterprise co-construction.

### *4.3 Cross-College Sharing Mechanism: Standard-First Resource Circulation*

The cross-college sharing mechanism targets two intertwined problems: “insufficient resource integration” and “ineffective sharing mechanisms.” The core warning of resource sharing theory and common-pool resource theory is that the technical feasibility of resource sharing does not equal institutional feasibility. Accordingly, to break down barriers between colleges, the first step is to unify entry standards—including metadata specifications, classification coding, and quality baselines. With this “common language,” resources built by different colleges and majors can truly become interconnected. Relying on the resource hub of the Chaoxing FanYa Platform, this initiative has achieved unified access, intelligent retrieval, and flexible scheduling, and has also designed cross-major reuse rules, detailing resource granularity segmentation, major-specific adaptation labeling, and tiered usage authorization. There is an ecological coupling relationship between smart campuses and smart classrooms; therefore, the resource management system needs to integrate storage, classified retrieval, and sharing/updating functions [11]. The cross-college sharing mechanism is precisely the concrete implementation of this idea at the course resource level.

### *4.4 Dynamic Updating Mechanism: AI-Enabled Resource Iteration*

Empowering the entire process of teaching and learning with AI is an unavoidable path for course development in the digital-intelligent era [12]. The dynamic updating mechanism focuses on resolving

ISSN 2663-8169 Vol. 8, Issue 10: 1-8, DOI: 10.25236/IJNDE.2026.081001

the passive situation of "weak intelligent application." Knowledge management and social learning theory reveal a key proposition: the teaching experience and industry insights accumulated in teachers' minds are tacit knowledge. Without a transformation cycle of externalization, combination, and internalization, they cannot become disseminable and reusable organizational knowledge assets. Therefore, resource development cannot remain in a static "build and use" mindset; instead, it must establish a continuous knowledge transformation channel. This study attempts to reorganize course content with knowledge graphs, transforming traditional linear directory structures into networked knowledge relationships, making the prerequisite and subsequent relationships and horizontal connections of each knowledge point visible and traceable. AI teaching assistants play content generation and support roles throughout teaching, covering automatic lesson plan generation, intelligent case recommendation, and preliminary learning diagnosis, helping teachers free themselves from repetitive work. Updating triggers are not one-size-fits-all; instead, three parallel modes are designed: periodic course updating (iteration by semester), immediate updating based on hot events (closely tracking industrial frontiers), and feedback-driven updating (continuous optimization based on teacher and student usage data). Digital-intelligent technology is reshaping the spatial boundaries of education, and a three-dimensional teaching field integrating online and offline learning has begun to take shape [13].

### *4.5 Quality Closed-Loop Mechanism: Review-Application-Feedback-Optimization, a Governance Safeguard throughout the Whole Process*

The essence of digital-intelligent empowerment is to use the comprehensive integration and intelligent analysis of data elements to shift the quality assurance system from "proving quality" to "improving quality." The quality closed-loop mechanism runs throughout, providing continuous operational support for the above three mechanisms. Repository entry review adopts three-level gatekeeping: initial review by the teaching and research office focuses on academic norms and teaching suitability; review by the college checks professional standards and the feasibility of cross-college sharing; and final review at the university level coordinates the quality baseline from an overall perspective. After resources go online, data such as usage frequency, covered courses, and student feedback are collected to gradually form an application profile for each resource, making clear at a glance which content is frequently reused and which is gradually marginalized. On this basis, iterative optimization is promoted: inefficient resources exit in an orderly manner, high-quality resources receive more recommendations, and development directions are dynamically adjusted according to data feedback. Against the background of the new round of audit and evaluation rectification, multidimensional and multi-stakeholder evaluation indicators should be constructed, and the routine collection and analysis of classroom teaching big data should be promoted. This mechanism design is an exploratory response based on these judgments.

## 5. Practical Exploration and Outcomes at Zhaoqing University

### *5.1 Foundation and Background*

The construction of "Three Repositories and One Course" at Zhaoqing University was not built from scratch; it has certain realistic foundations. In terms of policy, this work directly responds to the rectification tasks of the undergraduate education and teaching audit and evaluation and has been included in the university's list of key priorities. In terms of platform, the Chaoxing system covers more than 65% of all university courses, effectively laying a technical foundation in advance. In terms of hardware, 80 smart classrooms and 10 virtual simulation laboratories provide basic carrying space for resource implementation. In terms of projects, a number of course construction projects are underway, including the "AI+" Special Course Project, the Second Round of the "Digital-Intelligent Courses" Construction Application Guide, and the User Requirements Document for the Second Phase of the Smart Course Production Service Project.

### *5.2 Phased Advancement of "Three Repositories" Resource Development*

In terms of pace, the initiative did not aim to be comprehensive at the outset; instead, it adopted a strategy of launching in batches and gradually expanding coverage. Relying on the Yanyuan Digital-Intelligent Teaching Cloud Platform, the first phase of digital construction of the "Three Repositories" was completed: 11 industry-enterprise course resource repositories, 29 real-world project

ISSN 2663-8169 Vol. 8, Issue 10: 1-8, DOI: 10.25236/IJNDE.2026.081001

case repositories (containing 195 cases), and 11 teaching case repositories (containing 114 cases). These cover 18 colleges, including the School of Marxism, the School of Foreign Languages and Cultures, the School of Computer Science and Software Engineering, and the School of Food and Pharmaceutical Engineering, achieving cross-college sharing and access within the university. The previously separate "data silos" have begun to loosen. The expected goals are 100 industry courses, 200 real-world cases, and 200 teaching cases, totaling 500 typical cases. The construction process did not follow the old path of "build first, then use"; instead, it built while using and improved while using, continuously feeding classroom feedback and teacher-student opinions back into construction through action research, forming a dynamic closed loop of "construction-application-feedback-iteration."

### *5.3 Smart Course Development and AI Tool Deployment*

According to funding input, the overall plan for smart course development is 150 courses, including 50 knowledge graph-based courses, also advanced in batches. At present, Phase 1, comprising 45 smart courses (including 13 knowledge graph-based courses), has been completed and put into operation; Phase 2, comprising 46 smart courses (including 15 knowledge graph-based courses), is underway. Tools such as AI teaching assistants, AI agents, and AI-powered practice are embedded throughout the whole process of pre-class, in-class, and post-class activities: before class, they assist teachers in lesson plan generation and case recommendation; during class, they support interactive teaching and real-time feedback; after class, they undertake learning diagnosis and personalized tutoring. By December 2025, the number of students using the platform per semester had exceeded 25,000, with a student coverage rate of nearly 96%; the number of teachers using the platform had exceeded 820, with a teacher coverage rate of nearly 50%; the number of self-built courses in operation was close to 3,000; the number of active courses exceeded 1,000; and the number of class sessions conducted was close to 4,000, laying a foundation for the digital transformation of teaching resources.

## 6. Discussion

### *6.1 Key Conditions for Mechanism Effectiveness*

For the co-construction and sharing mechanism of "Three Repositories and One Course" to truly operate, it cannot take effect automatically simply because the framework is established; several preconditions must be in place simultaneously. First is the authorization strength of university-level coordination. Resource development naturally involves interest coordination among multiple departments and colleges. If the university level lacks clear coordinating authority and a cross-departmental promotion mechanism, relying solely on a single operational department will easily fall into the awkward situation of "everyone is responsible, but no one is truly responsible." Second is whether the platform's technical foundation is solid. A digital teaching platform with broad coverage and relatively complete functions is the physical prerequisite for the entire system to operate; without this foundation, even the most elaborate upper-level design will be difficult to implement. Third is whether enterprises' willingness to cooperate can be sustained. University-enterprise cooperation fears "hot start, cold end"; only by finding a real intersection of interests can a long-term stable collaborative relationship be formed, rather than a one-off deal. Equally critical is the motivation mechanism for teacher participation. After all, resource development depends on front-line teachers to fill and use resources. If outcomes are not recognized by the evaluation system, even the best plan will remain unrealized. These four conditions are not optional but necessary; a shortcoming in any one link will directly drag down overall operational effectiveness.

### *6.2 Applicability and Boundaries for Peer Local Higher Education Institutions*

Of course, this mechanism is not a universal template applicable everywhere; its applicable objects have clear boundaries. Relatively speaking, local higher education institutions that already have a certain digital platform foundation and whose educational positioning clearly points to application-oriented talent cultivation will find it easier to transplant the "Three Repositories and One Course" framework, with lower transformation costs. However, it must also be acknowledged that the actual operational effect of the mechanism is largely constrained by two external variables. First is the local industrial resource endowment: if the regional industrial foundation is weak and the number of enterprises is limited, obtaining high-quality industry cases and real projects will be inherently difficult. Second is the adequacy of funding input: hardware upgrades and platform construction both require

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substantial funding, and if funding is tight, the pace of advancement will inevitably be affected. Therefore, other institutions should not mechanically copy it when drawing on it; rather, they should make necessary tailoring and adjustments according to their own resource conditions and development stage.

### *6.3 Research Limitations and Future Directions*

Finally, it is necessary to honestly confront the limitations of this study. First, a single-case study is ultimately limited in representativeness. Whether the practical experience of Zhaoqing University as a local application-oriented university can be smoothly transferred to other types of institutions or institutions in different regions requires more follow-up verification. Second, the entire project is still in the early stage of construction; whether the long-term mechanism can withstand the test of time and whether new problems will emerge during operation remain to be continuously tracked and observed. Third, the ethical and data security issues brought by the deep involvement of AI technology in teaching are still explored only preliminarily in this paper, and these issues deserve fuller attention in subsequent research. Future directions may need to advance simultaneously along several dimensions: expanding the sample scope, conducting long-term tracking, and deepening ethical governance.

## 7. Conclusion

Aiming at the problem of co-construction and sharing of course resources in local higher education institutions under digital transformation, this paper takes Zhaoqing University as a typical case and proposes the “Three Repositories and One Course”co-construction and sharing mechanism for blended course resources. The core findings are as follows. First, course resource development in local higher education institutions faces four types of structural difficulties: insufficient resource integration, shallow industry-education integration, weak intelligent application, and ineffective sharing mechanisms. Second, the resource ecosystem architecture of “One Platform, Two Systems, and N Applications” and the four-in-one mechanism of “university-enterprise co-construction, cross-college sharing, dynamic updating, and quality closed loop” can effectively address these difficulties. Third, the practical exploration of Zhaoqing University has preliminarily verified the feasibility of this mechanism. The theoretical contribution of this study is to enrich research on course resource governance mechanisms in local higher education institutions, and its practical contribution is to provide a scalable “Zhaoqing University solution.”

## Acknowledgements

This work was supported by the 2026 Higher Education Teaching Reform Research Project under the “15th Five-Year Plan” of the Guangdong Association of Higher Education Teaching Management (No. ZD202601018), the 2023 Guangdong Provincial Undergraduate Teaching Quality and Teaching Reform Project, the 2025 Guangdong Provincial Undergraduate Teaching Quality and Teaching Reform Project, the Undergraduate Innovation and Entrepreneurship Training Project (No.S202510580050, 202510580022X, 202610580020 and 202610580021), Zhaoqing University-Zhangjiang Institute for Food and Drug Control Joint Laboratory (No. 51), Zhaoqing University-Institute of Pharmaceutical Engineering.

## References

*[1] Feng X X. High-quality supply of digital resources in higher education: Value implications, mechanisms, and system construction[J]. Scientific Management Research, 2024, 42(2): 92–102.*
*[2] Zhou K, Yin P P. Current situation and countermeasures of smart curriculum education system construction in local universities[J]. Science and Education Guide (Mid-month), 2020, (26): 23–24.*
*[3] Zeng J G, Wang R. Research on the integrated innovation path of application-oriented undergraduate education from the perspective of digital intelligence empowerment[J]. Journal of Chengdu Technological University, 2025, 28(6): 88–96.*
*[4] Qin Y J. Research on the network alienation of "Generation Z" college students[D]. University of Electronic Science and Technology of China, 2025.*
*[5] Huang N. Research on the construction path of a new smart teaching ecosystem in application-oriented undergraduate universities from the perspective of digital intelligence*

ISSN 2663-8169 Vol. 8, Issue 10: 1-8, DOI: 10.25236/IJNDE.2026.081001

*empowerment[C]//Proceedings of the Innovative Seminar on Modern Vocational Education Development. Chengdu, 2025.*
*[6] Wang N, Zhang L J, Wang Z Y. Integration and reconstruction of audit and evaluation and quality assurance system in application-oriented universities under digital intelligence empowerment[J]. Wireless Internet Technology, 2026, 23(2): 114–118.*
*[7] Wu Q P, Li X Y. Exploration and practice of improving undergraduate classroom teaching quality in local universities[J]. New Curriculum Research, 2025, (15): 8–10.*
*[8] Han Y, Xu H. Transformation of skills into curriculum content in the digital intelligence era: Optimization of vocational analysis methods[J]. China Vocational and Technical Education, 2026, (14): 64–73.*
*[9] Wang X T, Shang F F. Strategies for improving digital intelligence literacy of teachers in local universities under the background of smart curriculum construction[J]. Science, Education and Culture, 2026, (7): 20–24.*
*[10] Sun J K, Zhang X P, Zhao J. Reflections on the construction and application of smart classrooms[J]. University Education, 2019, (4): 25–27.*
*[11] Li J L, Zhang Y. Construction and application of smart classrooms under the smart campus ecological environment[J]. China Information World, 2025(7): 188–190.*
*[12] Liu F Y, Li G H. Thoughts and practice on upholding integrity and innovation in curriculum ideological and political construction in the digital intelligence era[J]. Journal of Hebei Tourism Vocational College, 2026, (1): 75–80.*
*[13] Li Y X, Xiang C, Zhao L. Opportunities, challenges and responses of digital intelligence technology empowering curriculum ideological and political construction in universities[J]. Journal of Shijiazhuang Tiedao University (Social Science Edition), 2026, 20(3): 88-95.*