# Research on Strategies of Blended Course Management in Colleges and Universities under Digital Transformation

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***Abstract:*** Digital transformation is profoundly reshaping the higher education ecosystem, and blended teaching has become the mainstream teaching model. However, the traditional course management system in universities is facing significant challenges in dealing with its complexity. This article, through a systematic literature review, aims to clarify these challenges and construct response strategies. The study found that the current challenges mainly lie in four aspects: the lack of top-level strategy and organizational synergy, barriers in the shared and shared use of teaching resources, insufficient digital literacy and support systems for teachers, and lagging quality assessment and feedback mechanisms. To address these issues, this article proposes a systematic management strategy framework. This framework emphasizes the formulation of clear digital strategies and agile organizational guarantees, the construction of integrated platforms and dynamic resource systems, the implementation of developmental and incentive support for teachers, and the promotion of data-driven evidence-based assessment and continuous improvement mechanisms. This research provides theoretical references and path guidance for universities to optimize blended course management in the context of digital transformation, and has significant practical significance for improving teaching quality and promoting educational reform.

***Keywords:*** Digital Transformation; Blended Learning; Course Management; Higher Education; Strategic Framework

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## 1.Introduction

Higher education is undergoing a profound transformation driven by digital technologies such as artificial intelligence and big data. The core of this transformation is the "digitalization transformation" that goes beyond simple technological application and aims to systematically reshape the educational ecosystem. Against this backdrop, blended teaching, which integrates the advantages of online and offline methods, has become an inevitable choice for university teaching reforms (Sun Daming et al., 2024)[6]. However, its effective implementation and sustainable development heavily rely on a corresponding course management system. The traditional course management paradigm shows many inconveniences when dealing with the complexity and dynamics of blended teaching, and requires a systematic reconfiguration. Therefore, this article aims to systematically review the existing literature, clarify the core challenges faced by current university blended course management in the wave of digital transformation, and on this basis, construct an integrated strategic management framework to provide theoretical references and practical guidance for university administrators and educators, and help promote the high-quality development of higher education.

## 2.Literature Review

### 2.1 Research on Digital Transformation in Education and Blended Teaching

Digital transformation is not merely a simple superposition of information technology, but a systematic and all-round reshaping of the educational ecosystem. It demands profound changes in higher education from concepts, models to governance structures (Zhang Hao, 2025) [8]. Du Wanjun et al. (2025) pointed out that Education Informatization is accelerating the transformation of colleges and universities from "informatization" to "digitalization"[4], with the core being data-driven to achieve intelligent and refined education management. In this process, blended teaching, with its flexibility, efficiency and ability to deeply integrate technological advantages, is widely regarded as the core teaching model for practicing the concept of digital transformation. Sun Daming et al. (2024) explicitly regarded blended teaching as an inevitable choice for educational reform in higher education

institutions. Its essence lies in organically integrating online learning with face-to-face teaching to create a more personalized and in-depth learning experience for students[6]. The practice of Zeng Rong et al. (2024) in engineering courses also indicates that blended teaching, with intelligent adaptive learning as the key, can help each student plan a unique learning path, which precisely reflects the core essence of digital transformation's pursuit of personalized development [1]. It can be seen from this that digital transformation provides a strategic direction and technical support for blended teaching, and blended teaching is an important foothold for digital transformation at the teaching practice level. The deep integration of the two jointly promotes the evolution of higher education forms.

### 2.2 Current Practices and Theoretical Perspectives of Blended Course Management in Higher Education

With the popularization of blended teaching, its management issues have gradually attracted attention. Existing research and practice have explored from different perspectives. At the practical level, numerous studies have focused on the innovation of management models for specific courses. For instance, Sun Daming et al. (2024) established a "four-in-one" teaching model in the "Innovation Management" course, comprehensively applying diverse digital means and a "three-dimensional" teaching resource library. They linked innovative practices through the form of "thesis + project + competition", demonstrating an attempt at refined management of the teaching process and evaluation methods. Coincidentally, Zeng Rong et al. (2024) in the reform of engineering courses, by introducing real problems in the industrial chain to carry out project-based teaching and reconstructing online courses, adopted a new model of "blended online and offline and industry-university cooperative co-construction of courses", which touched upon the level of course resource development and school-enterprise collaborative management [1]. Li Yue (2024) explored the "diversified mixed" teaching model and the "learning throughout the entire process" assessment mechanism for financial management courses in private colleges and universities from the perspective of integrating ideological and political education[5], focusing on value guidance and process evaluation in management.

From a theoretical perspective, some researchers have attempted to apply a more macroscopic theoretical framework to interpret the management changes brought about by digital transformation. Xiao Ruixue et al. (2025) introduced the "niche theory" and constructed a three-dimensional analysis framework of "space-function-relationship"[7] to explain how digital transformation drives local undergraduate universities to achieve niche leaps through three major mechanisms: spatial integration, functional upgrading, and relationship reconstruction. This theory provides a powerful analytical tool for understanding the transformation of strategic management at the institutional level. In addition, Chen Yuancao et al. (2025) analyzed the impact of digital transformation on cost management from the perspective of financial management[3], and proposed measures such as building a big data platform and developing a cost database. The concept of "data-driven decision-making" behind it is also a core principle of modern curriculum management. Zhang Hao (2025) directly explored the value of the transformation path of digital empowerment in higher education management, and analyzed the optimization of management structure and the realization basis of personalized management[8].

### 2.3 Research Gap

Although the existing research has provided valuable local experience and theoretical perspectives, there is still a significant research gap. Most current studies focus on the teaching methods at the micro-course level or the theoretical elaboration at the macro-strategy level, lacking a systematic management framework that can connect strategy with practice and integrate multiple dimensions.

Specifically, first, the existing research fails to fully clarify how to effectively convert the university's top-level digital strategy into a specific action roadmap for blended course management, resulting in a disconnection between strategy and management practice. Secondly, for how to break down the barriers among management departments (such as the academic affairs office, information center, departments, and finance office) and achieve true collaborative governance (Xiao Ruixue et al., 2025), the existing literature lacks practical solutions. Thirdly,

although many studies have mentioned the importance of resource construction, how to systematically build a dynamic and updated "three-dimensional" teaching resource library (Sun Daming et al., 2024)[6] and solve the existing "type imbalance and sharing barriers" (Chen Li, 2025) still requires in-depth discussion[2]. Finally, in terms of teacher motivation and development, as well as data-driven quality assessment and continuous improvement mechanisms, the existing research has not formed a complete system that integrates training, assessment, data collection and feedback loops.

Therefore, the research gap of this study lies in the following aspects, bridging the gap between micro-teaching innovation and macro-strategy theory, constructing a systematic mixed course management strategy framework that integrates strategic planning, organizational collaboration, resource construction, teacher development, student support and evaluation and assessment, to address the comprehensive challenges brought by digital transformation.

## 3.Challenges Faced by Blended Course Management

### 3.1 Lack of Strategic Planning and Organizational Coordination

The blended curriculum reform in many colleges and universities lacks a clear top-level strategic design. Reforms are often initiated by individual teachers or departments on their own initiative and fail to effectively interact with the school's overall digital development strategy. This leads to insufficient impetus for reform and makes it difficult to sustain. A more prominent issue is the barrier to organizational collaboration. The responsibilities and authorities among the academic affairs department, the Information Technology Center, the Teacher Development Center and various colleges and departments are unclear and communication is not smooth. This fragmented state among departments has led to "information silos" and "management silos". For instance, the platform purchased by the information technology department may not meet the actual needs of educational administration, and the content of teacher training is seriously disconnected from teaching practice. Xiao Ruixue et al. (2025) pointed out that this kind of collaborative failure hinders the overall leap of the ecological niche of universities, making it difficult to consolidate the power of digital transformation[7].

### 3.2 Insufficient Construction and Sharing of Teaching Resources

Blended teaching is highly dependent on high-quality digital teaching resources. However, the current resource construction often faces structural contradictions. On one hand, there is an imbalance in resource types. Many resources are merely the electronic versions of traditional textbooks, lacking interactivity and innovation, and thus cannot meet the needs of blended teaching. On the other hand, there are huge barriers to resource co-construction and sharing. Resources developed by different teachers, different departments, or even different schools are stored on multiple platforms, lacking unified technical standards and metadata norms, making it impossible for resources to be effectively circulated and shared (Chen Li, 2025)[2]. This situation of "repeated construction" and "incomprehensibility" leads to huge waste of human and material resources, making it difficult for teachers to quickly obtain high-quality resources, and thus increasing the burden of lesson preparation.

### 3.3 Insufficient Digital Literacy and Support System for Teachers

Teachers are the key to the successful implementation of blended teaching However, many teachers are confronted with the challenge of insufficient digital literacy. They not only need to master the operation of new Technological tools, but also need to learn Technological Pedagogical Content Knowledge (TPACK) to redesign courses and teaching activities. This places very high demands on teachers. Meanwhile, the support system of colleges and universities is obviously insufficient. Targeted training often remains at the level of software operation and lacks in-depth guidance on aspects such as blended course design and student online engagement management. More importantly, there is a lack of an effective incentive mechanism for teachers' additional efforts. The development and teaching of blended courses require several times the time and effort of traditional courses. However, these efforts have not been fully recognized in the professional title evaluation and performance

assessment of many schools, seriously dampening teachers' enthusiasm for reform.

### 3.4 Insufficient Quality Assessment and Feedback Mechanism

The traditional course quality assessment mechanism is difficult to adapt to the characteristics of blended teaching. Most current evaluations rely on student reviews at the end of the term and a small number of class observations, which is a lagging and one-sided approach to assessment. It is unable to capture the quality of the online teaching process, nor can it monitor students' learning process in a timely and effective manner. Blended teaching generates a large amount of process data, such as students' video viewing duration, the number of forum speeches, and the completion status of homework, etc. However, these data are usually scattered across different systems and have not been effectively integrated and analyzed, thus failing to provide data support for teaching improvement (Du Wanjun et al., 2025)[4]. This leads to management decisions still relying on experience rather than evidence-based data, and it is impossible to form a continuous improvement cycle of "design-implementation-evaluation-feedback-optimization", which results in a slow improvement in course quality.

## 4.Systematic Management Strategy Framework in Context of Digital Transformation

### 4.1 Building Digital Strategy and Agile Organizational Support

Firstly, universities should formulate a clear top-level strategy for the development of blended courses, clearly defining its position, goals, and implementation roadmap within the overall digital development plan of the university. This strategy should provide direction guidance for all management activities and teaching reforms. In terms of organizational support, it is necessary to break down departmental barriers. A "blended teaching reform leadership group" or "digital teaching support center" led by university-level leaders and involving multiple departments such as the academic affairs department, information technology department, and teacher development center can be established. This institution is responsible for coordinating resource allocation, project advancement, and standard formulation. Xiao Ruixue et al. (2025) proposed "implementing agile organizational reengineering", which aims to enhance the organization's response speed and execution efficiency to technological changes and teaching demands, ensuring that the strategy can be implemented[7].

### 4.2 Constructing an Integrated Platform and Dynamic Resource System

The technical platform is the support. Universities should strive to build or integrate a unified integrated smart teaching platform to avoid data fragmentation and cumbersome operations caused by multiple systems operating simultaneously. This platform should seamlessly integrate functions such as course recording, learning management, interactive communication, data analysis, and resource library. In terms of resource construction, a "three-dimensional" dynamic resource system should be established (Sun Daming et al., 2024). This means establishing unified resource construction standards and encouraging teachers to jointly build and share resources [6]. The concept of "blockchain" technology can be introduced to build a distributed resource co-construction platform (Chen Li, 2025)[2], which, while protecting intellectual property rights, promotes the safe sharing and trusted authentication of high-quality resources among different departments and even different universities, ultimately forming a continuously growing and continuously optimized resource ecosystem.

### 4.3 Implementing Teacher Development and Incentives for Innovative Teaching

For teacher development, universities need to provide systematic rather than fragmented support. Training programs should be based on the TPACK framework, integrating technology, teaching methods, and subject content, covering advanced topics such as blended course design, online activity organization, and student motivation. At the same time, a strong incentive mechanism must be established, including the development hours of blended courses, teaching achievements, and award situations, to be fully incorporated into the performance evaluation, professional title assessment, and salary system of teachers, fundamentally recognizing their additional efforts and stimulating their intrinsic innovation motivation. Only in this way can teachers transform from "passive recipients" to "active

innovators", and the blended teaching reform can obtain continuous human resource support.

### 4.4 Implementing Data-driven Evidence-based Evaluation and Continuous Improvement

Universities should fully utilize learning analytics technology to analyze the process data collected in the integrated platform, enabling real-time monitoring and early warnings of teaching effectiveness. For instance, automatically identify students who are lagging behind in their learning progress, and promptly send reminders to teachers and the students themselves, providing personalized support. In terms of the evaluation mechanism, a multi-dimensional comprehensive evaluation system should be established, integrating process data (online participation, homework quality) and outcome data (final exam scores), and incorporating multi-party evaluations from students, peers, and experts to comprehensively and objectively measure teaching quality and learning outcomes. Ultimately, all these evaluation data should form a closed loop, used for regular review and reflection, driving the continuous iterative optimization of course content, teaching methods, and evaluation methods (PDCA cycle) to achieve a spiral improvement in course quality.

## 5.Conclusion

This study systematically explores the challenges and strategies faced by university hybrid course management in the context of digital transformation. The research shows that effective management is no longer a simple administrative task, but a strategic core related to the success or failure of hybrid teaching reforms. The traditional, fragmented management model cannot meet the new requirements. Universities must undergo systematic paradigm shifts, moving from decentralized experience management to integrated strategic governance. The framework constructed in this study covers key dimensions from top-level strategic design to specific practical support, aiming to provide managers with a comprehensive action perspective. It should be noted that this study is based on a literature review, and the proposed framework still requires subsequent empirical research and case applications for testing and refinement. Future research can further explore the application of artificial intelligence technology in personalized course management path generation, automated learning warnings, and the construction of a hybrid course management maturity model to continuously promote the theoretical development and best practices in this field.

## Reference:

[1] Zeng Rong,Li Suhua.Curriculum Reform of Automotive Engineering Economics and Management in the Context of Digital Transformation[J].Automobile Practical Technology,2024,49(02):149-153.

[2] Chen Li.Exploring the Management Path of Ideological and Political Elective Courses in Higher Vocational Education Enabled by New Media[J].Journal of Journalism Research,2025,16(15):157-161.

[3] Chen Yuancao,Zhu Yang.Research on Countermeasures for Strengthening University Cost Management in the Context of Digital Transformation[J].Journal of Guangxi Open University,2025,36(02):29-33.

[4] Du Wanjun,Shen Hong,Zhang Bin.Practical Exploration on the Construction of Informationization in University Teaching Management under the Context of Digital Transformation[J].China Information World,2025,(07):174-175.

[5] Li Yue.Research on the Multidimensional Blended Teaching Model of Financial Management Course in Private Universities[J].Talent Intelligence,2024,(22):157-160.

[6] Sun Daming,Zhao Xia,Zheng Zolong.Practice and Exploration of Blended Teaching for the"Innovation Management"Course in Universities under the Background of Digital Transformation[J].Industry and Science& Technology Forum,2024,23(14):142-144.

[7] Xiao Ruixue,Wang He,Liang Jianming.Research on the Mechanism and Pathways of Digital Transformation Enabling the Ecological Position Shift of Local Undergraduate Universities[J].Heilongjiang Higher Education Research,2025,43(09):59-64.

[8] Zhang Hao.The Transformative Path and Value of Digitalization in Enhancing University Education Management [J].Shanxi Youth,2025,(13):70-72.