

DIGITAL LEADERSHIP COMPETENCIES FOR ADMINISTRATORS IN VOCATIONAL UNIVERSITY

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ABSTRACT

Driven by global digital transformation and China's national educational digitalization strategy, digital reform has become essential for vocational education modernization. Administrators' digital leadership directly determines the quality of institutional digital construction, teaching innovation and smart campus governance. This study systematically clarifies the concepts and theoretical foundations of digital leadership and competency. It summarizes four key problems among vocational college administrators: inadequate strategic recognition of digital transformation, insufficient technical application capacity, unscientific digital planning, and weak intelligent governance. Corresponding optimization and cultivation paths are proposed. The findings provide theoretical and practical references for enhancing administrators' digital governance, promoting in-depth integration of digital technology and vocational education, and supporting the sustainable high-quality development of vocational digital education.

Keywords: Digital Leadership Competencies; Vocational Colleges; Principals; Educational Digital Transformation

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INTRODUCTION

Digital technology has reshaped global educational development, and China has prioritized educational digitalization as a national strategy. Different from general education, vocational education emphasizes practical training and industry integration, presenting unique digital transformation demands. Administrators' digital leadership is decisive for institutional reform effectiveness. However, existing studies mainly focus on basic and general higher education, with limited research on vocational university administrators. This study explores their leadership deficiencies and improvement strategies to fill the research gap in vocational educational digital governance.

CONCEPTS ABOUT DIGITAL LEADERSHIP

Digital leadership is an emerging governance capability integrating digital technology and educational administration, which updates traditional leadership paradigms for the digital era. Unlike routine administrative management, it focuses on data-driven strategic planning, digital teaching innovation, teacher digital literacy cultivation and intelligent campus operation.

In vocational education, administrators' digital leadership refers to the integrated capacity to allocate institutional resources, advance digital teaching reform, optimize school operation, and adapt talent cultivation to industrial digital upgrading. It includes five core dimensions: digital strategic cognition, technical application, overall planning, innovative team leadership and digital governance, covering the full process of institutional digital transformation.

THEORIES ABOUT DIGITAL LEADERSHIP

Digital leadership theory is established based on multiple educational management theories. Organizational change theory and transformational leadership theory constitute its core theoretical framework, while educational informatization theory and digital governance theory provide complementary support for digital school reform.

Educational informatization theory explains the internal logic of technology-enabled educational innovation, supporting the theoretical origin of digital leadership. Digital governance theory emphasizes data-based refined management, defining the practical orientation of modern school digital operation.

Combined with the above theories, digital leadership breaks the limitations of empirical management. It empowers comprehensive school governance upgrading through technological application, educational innovation and systematic organizational coordination.

CONCEPTS AND THEORIES ABOUT COMPETENCIES

Competency refers to a stable, multi-dimensional comprehensive quality integrating professional knowledge, operational skills and cognitive literacy, which supports efficient task completion and organizational development. It differs from single technical skills and focuses on situational practical performance.

Leadership competency reflects managers' comprehensive ability in strategic formulation, resource coordination and problem-solving. Vocational administrators' digital leadership competency is a scenario-oriented capacity system, which takes digital cognition and technology application as the foundation, strategic innovation as the core, and team empowerment and intelligent governance as the goal.

Competency theory indicates that leadership improvement depends on the upgrading of cognition, thinking and practical ability rather than simple skill training. It provides theoretical basis for analyzing administrators' digital capacity deficiencies and constructing targeted cultivation paths. Organizational change theory guides organizations to respond to external changes and improve operational efficiency. Educational digital transformation represents comprehensive innovation in

educational concepts, management modes and learning experiences through digital technology, covering infrastructure upgrading, digital resource development, teaching innovation and teacher literacy improvement (Qi et al., 2025). Zhang (2025) proposed that digital leadership derives from educational informatization and transformational leadership theories, which promotes educational innovation through data analysis, technology integration and systematic thinking. It empowers scientific teaching decision-making, resource sharing and learning optimization, positioning school leaders as technological innovators and learning community organizers.

Transformational leadership theory, proposed by Burns in the 1980s, includes four dimensions: inspirational motivation, individualized consideration, intellectual stimulation and idealized influence. It effectively improves principals' informational leadership and optimizes organizational goals for vocational college digital transformation (Qin et al., 2025). Inspirational motivation stimulates teachers and students' transformation initiative through shared values. Individualized consideration respects teachers' dominant status and supports personalized digital teaching reform. Intellectual stimulation activates campus innovation through academic exchanges and practice incentives. Idealized influence enables principals to regulate digital ethics, standardize digital education and build positive digital campus culture. The four dimensions jointly optimize school organizational governance and support vocational colleges' digital high-quality development.

THE CONTEXT OF VOCATIONAL UNIVERSITY

Vocational universities focus on cultivating high-level technical talents to serve industrial upgrading and regional economic development. Different from research-oriented universities, they prioritize practical teaching, skill training and school-enterprise cooperation, which raises higher requirements for digital transformation adaptability.

With continuous industrial digital upgrading, the market demand for compound digital talents has grown rapidly, urging local vocational colleges to promote digital reform in curriculum design and practical training. Current digital construction has achieved basic infrastructure popularization, but most applications remain superficial, lacking deep integration with professional teaching and school-enterprise cooperation.

In this context, administrators' digital leadership should transcend routine digital management. It requires leaders to grasp industrial digital trends, align talent cultivation with enterprise demands, and promote systematic digital upgrading of vocational education systems to serve regional economic development.

DIGITAL LEADERSHIP COMPETENCIES FOR ADMINISTRATORS IN VOCATIONAL UNIVERSITY

5.1 Insufficient Recognition of Strategic Value

China's 2022 national educational digitalization strategy clearly prioritizes educational informatization and digital resource construction. School administrators should regard digitalization as a fundamental educational reform trend and update educational concepts accordingly. Nevertheless, some vocational college principals misunderstand digital leadership as simple technical operation, ignoring its strategic value in educational innovation and institutional reform.

Digital transformation relies on conceptual innovation rather than mere technology use. Principals' digital leadership significantly affects teachers' digital teaching performance. Insufficient strategic cognition has become a major barrier to digital education implementation. Yang (2025) pointed out that most vocational colleges undervalue digital literacy education, which is currently delivered only through limited general elective courses, failing to support teachers and students' long-term digital development.

5.2 Deficient Information Technology Application Competence

Most vocational college principals master basic digital tools but lack the ability to integrate technology into strategic management and curriculum construction. School governance still relies on traditional experience and administrative orders, resulting in insufficient data-driven scientific decision-making and slow digital construction progress (Zhang, 2025). Weak technical application hinders the effective operation of intelligent teaching platforms and restricts teachers' innovative teaching development.

To address this problem, schools need strengthened technical and financial support to coordinate infrastructure construction and leadership upgrading. Yang (2016) summarized two core digital leadership capabilities for principals: proficient information literacy to promote tech-education integration and data-driven decision-making to seize digital development opportunities; and comprehensive judgment, innovation and learning capabilities to adapt to iterative digital technologies.

Generally, college administrators' digital leadership remains at a low level. Xie (2024) proposed three improvement paths: transforming digital thinking to guide targeted reform, formulating unified digital construction standards to avoid fragmented development, and building professional data teams to realize data-based refined management. Wang (2025) further emphasized three implementation dimensions: empowering teachers through hierarchical digital training and incentive mechanisms, constructing interdisciplinary digital support teams, and integrating government and enterprise resources to improve the efficiency of digital resource utilization.

5.3 Lack of Scientific Planning for Digital Transformation

Digital planning capability refers to administrators' ability to arrange long-term institutional digital development covering school operation, teacher-student development and curriculum construction. Many local vocational college principals lack initiative, humanistic awareness and adaptability in digital planning (Liu & Zhu, 2025).

Most existing plans overemphasize hardware procurement and laboratory construction while ignoring the educational value of digital technology. Many plans are formulated without considering school foundation and teachers' digital literacy, resulting in blind and inefficient digital construction.

As a systematic project, educational digital transformation requires scientific overall planning rather than simple hardware superposition. Principals should update digital concepts to enhance planning initiative, adhere to people-oriented educational orientation to avoid technology-education disconnection, and formulate hierarchical, adaptive digital construction plans to improve transformation quality and efficiency.

5.4 Improvement Paths for Digital and Intelligent Transformation Capabilities

Digital and intelligent transformation has become an inevitable trend of global educational reform. Big data and artificial intelligence reshape school governance modes and raise higher requirements for principals' digital comprehensive capabilities. Vocational college administrators need forward-looking strategic vision and innovative thinking to lead institutional intelligent development.

Local vocational colleges face multiple digital transformation challenges, including backward educational concepts, insufficient teaching research, inadequate classroom reform and imperfect evaluation systems. Zhao (2024) proposed that principals should fulfill four core roles to improve digital intelligent leadership:

Advocate: Update digital thinking through academic training and pilot practice to lead institutional digital upgrading.

Innovator: Cooperate with teachers and experts to formulate scientific school digital development plans.

Organizer: Build digital teaching research communities, explore human-computer collaborative teaching modes, and optimize school-based teaching systems.

Guarantor: Promote school-enterprise cooperation to build intelligent learning spaces, improve data-based management systems, ensure technical security and stimulate campus innovation vitality.

5.5 Cultivation Paths of Principals' Digital Leadership

Zhang (2026) indicated that targeted digital teaching research serves as an effective path for principals to improve digital leadership and guide teachers' educational innovation.

First, technology-empowered empirical teaching research. Principals should build a multi-stage collaborative teaching research model based on intelligent platforms. Through cyclic problem diagnosis, data analysis, scheme optimization and achievement iteration, schools can realize integrated personalized and large-scale teaching research, forming reusable digital teaching resources.

Second, organizational reflection and reconstruction. Principals should promote dual upgrading of organizational structure and teacher teams. At the institutional level, build hierarchical digital management and research teams. At the teacher level, establish talent echelon training systems, provide personalized development guidance based on platform data, and improve the overall digital literacy of teaching teams.

CONCLUSION

Digital leadership competency has become an essential quality for vocational college administrators under the national educational digital strategy. This study summarizes four major deficiencies of local vocational principals: insufficient strategic cognition, inadequate technical application capacity, unscientific digital planning and weak intelligent governance capability. These problems originate from cognitive bias, ability deficiency and unreasonable institutional planning.

To promote high-quality digital transformation, administrators must renew digital strategic cognition, improve data-driven governance capacity, and formulate scientific and adaptive digital development plans. By fulfilling the roles of digital advocates, innovators, organizers and guarantors, and relying on empirical teaching research and organizational optimization, principals can continuously upgrade their digital leadership competencies.

In future practice, vocational college administrators should take talent cultivation and regional industrial service as the core orientation, deepen the integration of digital technology and vocational education, and promote the standardized, systematic and sustainable development of vocational educational digitalization.

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