Innovation in Talent Development Model for Vocational Undergraduate Business Administration under the Digital Economy

Sen Huang
Hainan Vocational University of Science and Technology, Haikou, Hainan 571126, China

Abstract: The digital economy is profoundly transforming the job responsibilities of frontline management positions in enterprises, requiring managers to possess new competencies such as operating digital tools, interpreting data, and coordinating online teams. However, current talent development models for vocational undergraduate programs in business administration commonly suffer from vague training objectives, outdated curricula, and weak practical teaching, making it difficult to meet the workforce demands of the digital economy. This paper systematically analyzes the competency requirements for frontline management roles in the digital era and proposes that curricula should shift from disciplinary logic to work-based logic, reorganizing content modularly according to management task scenarios and integrating digital tool usage into every core course. Additionally, support must be provided through three key areas: building a dual-qualified faculty with digital expertise, establishing industry-academia collaborative education communities, and implementing a competency-based, diversified evaluation system. The aim of this paper is to offer theoretical guidance and practical pathways for curriculum reform in business administration programs at vocational undergraduate institutions.

Keywords: Digital economy; Vocational undergraduate; Business administration; Talent development model

1. Introduction

The rapid development of the digital economy is profoundly reshaping industrial structures and occupational divisions, imposing new demands on the qualities and capabilities of technical and skilled professionals. Meanwhile, accelerated enterprise digital transformation has created an urgent need for employees to master digital tools, analyze and interpret data, and coordinate online teams effectively. As a key educational level prioritized by the state in recent years, vocational undergraduate education bears the critical mission of cultivating "high-level technical and skilled talents", with business administration programs serving as core platforms for supplying personnel directly into entry-level management positions within enterprises. However, current talent development models in vocational undergraduate business administration programs exhibit significant lag. The prevailing "broad management, weak digital" approach adopted by institutions leaves graduates at a disadvantage in the job market—outperformed by undergraduates in theory and surpassed by associate-degree holders in practical skills [1,2]. Therefore, systematically exploring innovations in talent cultivation models for vocational undergraduate business administration

programs under the context of the digital economy holds important theoretical and practical significance for improving educational quality and supporting regional economic development. This paper will systematically discuss four dimensions—redefining educational objectives, optimizing curriculum systems, upgrading practical teaching, and strengthening support mechanisms—with the aim of providing a theoretical framework and practical reference for teaching reforms in business administration programs at vocational undergraduate institutions, thereby fostering high-quality entry-level managers who truly meet the demands of the digital economy.

2. Challenges of Digital Economy to the Talent Development of Vocational Undergraduate Business Administration

2.1 Evolving Competency Requirements for Frontline Management Positions in the Context of the Digital Economy

The impact of the digital economy on corporate management models extends beyond strategic and organizational levels, profoundly transforming the daily responsibilities and competency demands of frontline management roles.

The first significant shift is the expansion of management focus from people and physical assets to data and processes. Traditionally, frontline managers dealt with equipment status, inventory levels, employee attendance, and work performance. In a digital environment, however, enterprise resource planning systems, customer relationship management platforms, and collaborative office tools have become foundational infrastructure for management activities [3]. Frontline managers now frequently monitor key performance indicators on operational dashboards—such as hourly sales, inventory turnover rates, and order fulfillment times—and make rapid adjustments accordingly. This means that data interpretation skills are no longer exclusive to data analysts but have become essential competencies for frontline managers. A store manager who cannot identify abnormal fluctuations in sales reports by category will fail to adjust product displays or promotional strategies in time; a production team leader unable to anticipate equipment failure risks from operational data will miss opportunities for preventive maintenance. Data is no longer just material for post-hoc analysis—it has become the basis for real-time decision-making.

The second major change lies in the transition of management methods from experience-based judgment to tool-driven operations. While traditional frontline managers relied on tools such as meetings, reports, and inspection logs, today they must be proficient in operating various digital management systems. The deeper implication here is that digital tools are not merely efficiency enhancers—they also serve as vehicles of managerial authority. Managers who lack system operation skills risk losing their ability to participate effectively in critical management activities.

The third notable transformation involves the reconfiguration of management span and collaboration modes. Digital technologies transcend physical boundaries, requiring frontline managers to simultaneously oversee on-site and remote teams, and to collaborate with partners across departments or even different organizations within shared digital workflows. This demands strong online communication and coordination skills, enabling managers to build team trust, resolve conflicts, and advance tasks without relying on face-to-face interactions.

Overall, the digital economy is reshaping the competency profile of frontline management positions—from the conventional model emphasizing obedience, reliability, and business familiarity—to a more integrated skill set that includes data literacy, digital tool proficiency, and collaborative capabilities. This evolution constitutes a direct external driver for innovation in the

talent development model of vocational undergraduate business administration programs.

2.2 The Positioning Dilemma and Practical Contradictions of Vocational Undergraduate Business Administration Programs

As a relatively new educational level promoted by recent policies, vocational undergraduate education has yet to establish clear boundaries with higher vocational colleges and applied undergraduate programs. In the field of business administration, many vocational undergraduate institutions exhibit two typical path dependencies in their curricula: one is an extended version of the associate-degree program—adding a few theoretical courses and extending internship periods onto the existing associate curriculum, maintaining the overall logic of "just enough for practical skills"; the other is a downgraded version of applied undergraduate programs—adopting the general undergraduate course structure but reducing theoretical depth and assessment standards, resulting in a simplified, awkward imitation of undergraduate education. Neither approach adequately addresses a fundamental question: what kind of professionals should vocational undergraduate business administration programs actually cultivate, and where exactly lies their irreplaceable competitive advantage?

Moreover, the misalignment between educational objectives and actual employment outcomes exacerbates this dilemma. Surveys show that a significant proportion of graduates from vocational undergraduate business administration programs end up in entry-level positions such as sales representatives, administrative assistants, or customer service roles—far removed from the "management" positioning implied by their degree. This is not due to student incompetence, but rather because the current curricula fail to equip students with the skill sets required for digitalized frontline management roles. While students study subjects like principles of management, marketing, and human resource management, these courses are organized according to academic disciplines rather than real-world job requirements, making it difficult for students to apply the knowledge effectively in actual work settings. Meanwhile, employers increasingly value candidates' proficiency in digital tools and data interpretation for frontline management roles—areas precisely where traditional curricula fall short. This creates a paradox: vocational undergraduate students spend more time studying than their associate-degree counterparts, yet they compete with them for similar entry-level jobs, often without a clear advantage in practical competence [4].

A deeper issue lies in the lack of independent professional teaching standards and quality evaluation systems for vocational undergraduate business administration programs. Currently, most instructional guidelines for these programs largely follow those of either higher vocational colleges or regular undergraduate programs, failing to reflect the unique transitional role of vocational undergraduate education. Institutions lack clear, differentiated guidance on curriculum design, practical training, and faculty development, leading to a homogenized model across universities—resulting in a "one-size-fits-all" approach to talent cultivation.

3. Innovation Dimensions of Talent Development Model for Vocational Undergraduate Business Administration

3.1 Reconstruction of Educational Objectives

Educational objectives serve as the logical starting point of talent development models, determining the fundamental direction of curriculum design, teaching methods, and evaluation mechanisms. Traditionally, vocational colleges have defined their business administration programs

using generic statements such as holistic development in morality, intelligence, physical fitness, aesthetics, and labor, mastery of foundational management knowledge, and acquisition of entry-level managerial skills. While these descriptions are safe and widely accepted, they lack distinctiveness and clear guidance. In the context of the digital economy, the core task of reconstructing educational objectives is to shift from job-oriented goals to competency-based frameworks—clearly defining what graduates of vocational undergraduate business administration programs can actually do and where they excel compared to others [5].

The construction of a competency framework should follow the principle of "downward compatibility and upward differentiation". Downward compatibility means students must possess core operational skills at the junior college level, including proficiency in mainstream enterprise management software, ability to perform routine data processing and report generation, and understanding of basic workflows at the operational level. Upward differentiation implies that beyond technical skills, students should demonstrate higher-order competencies than those of associate degree holders—such as systems thinking and analytical capabilities—enabling them to identify issues within business processes, propose data-driven optimization strategies, and coordinate cross-functional collaboration. This higher tier of competence represents the key differentiator between vocational undergraduate and junior college graduates. Based on this principle, a three-tiered competency framework can be established.

The first layer is basic professional qualities, which include professional ethics and compliance awareness, communication and coordination skills, as well as teamwork and responsibility. This set of abilities is not unique to business administration majors but is a common foundation for all undergraduate graduates in various fields. However, it is particularly important in management-related majors because grassroots managers are at the critical juncture of transmitting and receiving information. Their professional conduct and communication skills directly affect the execution efficiency and organizational atmosphere of the team. The second layer is professional core competencies, which constitute the main part of the ability spectrum. Specifically, it includes five abilities: first, the ability to apply digital tools, such as ERP, CRM, and collaborative office platforms, to operate enterprise-level management software proficiently and understand the data flow relationships among various systems; second, the ability to analyze and interpret data, capable of using Excel and BI tools to summarize, clean, and visually present sales data, inventory data, and personnel data, and be able to identify anomalies and trends from the data; third, the ability to optimize business processes, capable of drawing business process diagrams, identifying bottlenecks and waste in the process, and proposing feasible improvement plans; fourth, the ability of digital team management, capable of using digital tools to assign tasks, track progress, and provide performance feedback, and managing team collaboration in remote or hybrid working scenarios; fifth, the ability to observe customers and the market, capable of understanding customer behavior patterns through system data and adjusting service or sales strategies based on data feedback. The third layer is development potential, including learning transfer ability and cross-domain understanding. This set of abilities is oriented towards students' long-term career development, enabling them to maintain adaptability in the face of technological iterations and job changes, rather than merely serving their first job.

3.2 Curriculum System Reconstruction

Reconstructing educational objectives inevitably requires corresponding adjustments to the

curriculum system. Traditional curricula are organized according to disciplinary logic, with courses relatively independent of one another and knowledge points scattered or duplicated. Although students acquire a series of concepts and theories after completing these courses, they often struggle to integrate and apply knowledge from different courses when facing real-world business management challenges. The solution lies in shifting from "disciplinary logic" to "work logic". Specifically, curriculum reconstruction can be advanced simultaneously along three dimensions: modularization, digitalization, and project-based learning.

Modular restructuring forms the backbone of curriculum innovation. Based on the theory of systematic work processes, core content of business administration programs can be integrated into several work modules, each corresponding to a typical managerial task scenario. Taking the "Digital Operations Management" track as an example, five core modules can be established: Module 1 focuses on data-driven operations analysis, integrating foundational statistics, management information systems, and operations management, emphasizing how to collect, process, interpret business data, and support operational decision-making; Module 2 covers digital supply chain and inventory management, integrating procurement, warehousing, and logistics management, focusing on using ERP systems for inventory monitoring, replenishment calculations, and supplier collaboration; Module 3 addresses digital team management and performance feedback, integrating organizational behavior, human resource management, and communication management, emphasizing the use of digital tools for task assignment, progress tracking, and performance communication; Module 4 centers on digital customer relationship management, integrating marketing, customer service, and sales management, focusing on leveraging CRM systems for customer segmentation, touchpoint strategy design, and service quality management; Module 5 deals with business process optimization and problem-solving, integrating production and operations management, quality management, and project management, emphasizing identifying process bottlenecks, designing improvement plans, and driving implementation.

Digital integration is the soul of curriculum innovation. Its core idea is embedding digital tools into every course rather than offering isolated digital courses. In Module 1's operations analysis course, students directly use Excel or BI tools to process real or simulated sales data, completing the entire workflow—from data cleaning and visualization to generating analytical conclusions. In Module 2's inventory management course, students perform operations such as receiving, shipping, stocktaking, and reordering within a simulated or actual enterprise ERP system, understanding the correspondence between system logic and business actions. In Module 3's team management course, students use collaborative office software to assign tasks, coordinate work, and report progress, experiencing firsthand how digital tools enhance management efficiency. In Module 4's customer relationship management course, students enter customer data, set tags, record communications, and analyze outcomes within a CRM system. Through this high-intensity, context-rich, repetitive practice, using digital tools ceases to be merely a course requirement and becomes a natural part of students' thinking and action.

Project-based learning serves as the practical lever for curriculum innovation, addressing how knowledge is integrated and applied. It is recommended that each semester include a comprehensive, cross-module project that links together the core competencies developed across the semester. The key to project-based teaching lies in authenticity—real business contexts, real data, and real constraints. Only when students face imperfect data, ambiguous requirements, and limited time can they truly develop the ability to solve complex problems.

3.3 Reconstruction of Practical Teaching

Practical teaching is the lifeline of vocational undergraduate education and its most distinctive feature compared to conventional undergraduate programs. However, traditional practical teaching systems commonly suffer from the problem of "strong at both ends, weak in the middle": first-year students participate in cognitive internships and fourth-year students engage in on-the-job training, but the daily practice activities during the second and third years often remain superficial. A deeper issue lies in the difficulty of ensuring quality in on-the-job internships. The solution is to establish a full-cycle, hands-on training system that spans all four years, progresses in stages, and involves collaborative efforts between schools and enterprises [6].

This system can be structured as a "four-stage progressive" model. The first stage focuses on cognitive experience, aiming to help students develop a foundational understanding of enterprise management in the digital economy era. Activities include company visits, lectures by managers, and job-shadowing days. Before each visit, students must complete preparatory tasks to understand the company's core business and management processes; during the visit, they are required to conduct structured observations; afterward, they write analytical reports describing the company's use of digital management tools and reflecting on their observations. The key output of this stage is not technical skills, but rather "problem awareness" and "professional insight".

The second stage centers on simulation training, designed to allow students to practice management decision-making and tool usage in a safe and controlled environment. Specific formats include business simulation exercises, ERP sandbox simulations, and case analysis competitions. Compared to the cognitive experiences in the first year, the core value of simulation training lies in providing opportunities for "learning through failure." This stage should incorporate a "debriefing process," requiring students to submit post-simulation reflection reports after each exercise, analyzing reasons behind successes or failures and transforming experiences into knowledge.

The third stage is the project practical stage, with the goal of allowing students to complete a complete management project in a real or highly simulated business environment. This is the most crucial part of the full-cycle training system and also the part that best reflects the characteristics of vocational undergraduate education. The specific forms include enterprise proposition projects, operation of on-campus productive training bases, and innovation and entrepreneurship projects, etc. The core value of enterprise proposition projects lies in "real constraints": the enterprise will not provide perfect data or give clear problem boundaries. Students must make judgments under conditions of incomplete information, limited time, and resource constraints. This ability is difficult to cultivate in traditional classrooms.

The final stage is on-the-job internship, aimed at providing comprehensive training in actual entry-level management positions. Unlike traditional internships, this stage requires establishing strict quality standards and review mechanisms. First, an "eligible internship position list" should be developed, clearly specifying which roles qualify as professional internships. Second, a "dual mentorship system" should be implemented, assigning each student one industry mentor and one academic mentor. Third, key milestones should be set: students must submit personal goals and learning plans before starting the internship, present mid-term reports evaluated by their industry mentors halfway through, and finally submit comprehensive reports and defend them upon completion. Through this mechanism, on-the-job internships are ensured to genuinely support talent development objectives, rather than merely serving as low-cost labor arrangements.

4. Support System and Implementation Pathways for Innovation in Talent Development Models

4.1 Restructuring the Faculty Team

Any innovation in talent development models ultimately depends on teachers' instructional practices. However, current faculty teams in vocational undergraduate programs in business administration face two structural contradictions: first, most teachers were trained within traditional academic education systems and lack practical experience in digital management; second, part-time instructors with industry backgrounds possess real-world expertise but often lack teaching design and student mentoring skills. Resolving these issues requires systematic advancement across three dimensions: empowering existing faculty, recruiting new faculty, and reforming evaluation mechanisms.

Empowering existing faculty with digital capabilities is an urgent priority. The concept of a "digital dual-qualified teacher" goes beyond merely mastering a few software tools—it involves upgrading competencies across three levels. First is tool proficiency: the ability to skillfully use enterprise-level management software such as ERP, CRM, BI, and collaborative office platforms, along with understanding how these systems are deployed and applied across different types of enterprises. Second is data interpretation and case development: the capacity to extract teaching cases from authentic corporate data and design data-driven management decision-making simulations. Third is project guidance: the ability to provide effective professional mentorship during students' completion of industry-based projects, including defining problems, selecting methods, managing processes, and evaluating outcomes.

The criteria for recruiting new faculty also need adjustment. Traditional hiring emphasizes academic qualifications, research publications, and teaching experience while undervaluing industry experience. In recruiting faculty for vocational undergraduate business administration programs, "practical work experience in enterprise digital management roles" should be a primary requirement, not just a bonus. Specifically, two parallel recruitment pathways can be established: an academic track for candidates holding master's or doctoral degrees with some teaching experience, who must complete enterprise practice assignments and obtain relevant industry certifications within two years of employment; and a practice-oriented track for candidates with over five years of experience in digital operations or management consulting, who demonstrate potential for teaching. For this track, educational requirements may be relaxed, and teaching competence can be developed through pedagogical training after hiring. This dual-track system ensures both academic rigor and valuable industry experience.

More fundamentally, evaluation and incentive mechanisms must be reformed. If institutions continue to base tenure reviews, performance allocations, and awards primarily on research papers, grant projects, and teaching hours, faculty motivation for engaging in industry practice and teaching innovation will remain weak. It is recommended that a "contribution to experiential teaching" dimension be added to faculty evaluation systems, weighted at no less than 30%. This dimension should include specific indicators such as enterprise practice experience, case development achievements, quality of project mentoring, and acquisition of industry certifications.

4.2 Deepening Industry-Academia Collaboration

Collaboration between schools and enterprises is the soul of vocational undergraduate education. However, for a long time, it has faced the predicament of "schools being enthusiastic while enterprises are indifferent". The lack of enterprise participation is mainly due to the fact that the

design of the cooperation model fails to fully address the core demands of enterprises. Transforming school-enterprise cooperation from the superficial model of "signing agreements, setting up signs, and sending students" to a learning community of "co-construction, co-education, and sharing" requires institutional innovation at three levels: cooperation carriers, cooperation mechanisms, and cooperation policies.

Upgrading collaboration platforms is foundational. More sustainable platforms include jointly establishing industrial colleges or digital management workshops. In physical space, universities provide premises and basic equipment, while enterprises contribute software systems and anonymized operational data needed for real business scenarios. Regarding dual teams, both parties form joint management committees responsible for strategic planning, resource coordination, and quality oversight. In terms of co-developing courses, enterprises transform real business processes, management systems, and operational standards into teaching modules, while schools adapt these materials according to educational principles to form standardized course packages. Regarding shared benefits, enterprises gain priority access to hire outstanding graduates, receive management optimization recommendations based on student project outcomes, and derive brand and social value from participating in curriculum development.

Deepening the collaboration mechanism is essential. Specifically, four regular-running mechanisms can be designed. The first is the "Enterprise Proposition Database" mechanism. At the beginning of each semester, the cooperating enterprises propose a batch of real management problems. The granularity of these problems should be suitable for students to complete within the prescribed period. The school organizes teachers to screen and transform the propositions for teaching purposes, forming a list of projects for students to choose from. The second is the "Dual Mentors Joint Guidance" mechanism. Each student project team is equipped with a school-based mentor and an enterprise-based mentor. Both parties maintain communication through an online collaboration platform and jointly participate in the mid-term reports and final defense of the projects. The third is the "Two-way Transformation of Achievements" mechanism. The excellent achievements of student projects not only serve as course grades but are also submitted to the enterprises in the form of management proposals. After the enterprises adopt them, they should give the student teams certain material rewards and proof of achievements. The fourth is the "Apprenticeship + Project-Based" dual-track mechanism. For outstanding students in the upper grades, they can be selected to enter the "Management Trainee" training track of the enterprise, receiving dual guidance from school teachers and enterprise mentors. Students rotate and learn in real positions, and upon passing the assessment, they can directly join the enterprise.

Supportive cooperation policies serve as a guarantee. Vocational undergraduate institutions should proactively leverage national incentives for industry-education integration to create tangible benefits for enterprise participation. According to relevant policies, enterprises certified as part of the industry-education integration program are eligible for tax reductions, including exemptions from education surcharges and local education surcharges. Institutions can establish dedicated university-enterprise cooperation offices to assist partner companies in applying for certification, thereby converting policy benefits into direct motivation for corporate engagement. Additionally, institutions can jointly apply with partner enterprises for various industry-education integration projects, teaching achievement awards, and scientific research programs to secure financial support. By leveraging policy instruments, the cost of collaboration for enterprises can be reduced, enhancing their willingness for long-term investment.

4.3 Reconstructing the Evaluation Mechanism

The evaluation mechanism acts as the guiding force behind talent development models, determining what teachers teach and what students learn. The core direction for reconstructing this mechanism is shifting from "score-oriented" to "competency-based assessment," establishing a diversified, process-focused, and evidence-based evaluation system.

Introducing formative assessment is the first step. It is recommended that the final grade for each course be divided into three components: 20% for regular performance, 40% for skills assessment, and 40% for project outcomes. The key here is that "skills assessment" and "project outcomes" replace traditional final exams as the main components of grading. Skills assessment takes the form of "practical demonstration," where students complete specific management tasks within a designated time frame. This method directly aligns with job competencies, making it impossible for students to pass through last-minute memorization; instead, mastery requires consistent practice throughout the semester. Project outcomes are assessed through "group presentation + defense," evaluated jointly by instructors, industry mentors, and peers from other groups, fostering students' communication skills and openness to feedback.

The establishment of the digital management capability profile is the second step, which represents the advanced form of the evaluation mechanism innovation. The capability profile is an electronic system for recording learning achievements. From the time of enrollment, each student continuously accumulates the following types of evidence in the profile: a list of digital tools mastered, each tool needs to be accompanied by an operation demonstration video or a project outcome link; a list of enterprise proposition projects completed, each project needs to be accompanied by a project report, the evaluation by the enterprise mentor, and proof of outcome adoption; vocational skill level certificates and competition awards obtained; enterprise evaluation reports and sample work results during the internship. When applying for a job, the capability profile can be submitted as an attachment to the resume, allowing employers to directly understand the practical skills and real projects completed by the candidate. The establishment of the capability profile requires the support of a corresponding IT platform, which can be developed independently by the school or purchased a mature electronic portfolio system.

Quality monitoring and the closed-loop improvement mechanism constitute the final part of the evaluation system. The effectiveness of the training model ultimately depends on the employment quality and career development of the graduates. It is suggested to establish a tracking and feedback system for graduates, conducting regular follow-ups for students who have graduated for 1 year, 3 years, and 5 years. Collect data from the following dimensions: the relevance of job positions to the major, the salary level of the first job, the promotion situation within three years after graduation, the evaluation of the employers on the graduates' abilities, and the feedback from the graduates on the training program. After summarizing and analyzing these data, an annual talent cultivation quality report is formed, serving as the basis for the revision of the next round of training programs. Through the closed-loop mechanism of "training - employment - feedback - improvement", it is ensured that the training model can continuously adapt to changes in industry demands, avoiding the rigid situation of "one set of plans used for ten years".

References

[1] Fu Xiaolong. Innovation of Vocational College Business Management Professional Training Model in the Context of Digital Economy [J]. Modern Commerce and Industry, 2026, 47(3): 33-35.

[2] Ma Yanqin. Research on Digital Talent Training Path in Vocational Colleges under the Context of Digital Economy - Taking Business Management Major as an Example [J]. Jiangsu Business Discussion, 2025, (11): 115-118.

[3] Hu Xiaoling. Research on the Reform of Business Management Professional Training Model in Applied Undergraduate Colleges under the Context of Digital Economy - Based on the Perspective of New Liberal Arts Construction [J]. Journal of Chongqing Electric Power College, 2025, 30(1): 57-61.

[4] Zhang Yi. Analysis of the Training Model of Business Management-related Majors in the Digital Economy Era [J]. China Management Informationization, 2024, 27(22): 239-241.

[5] Jiang Chunhui. Construction of the Digital Practical Teaching System for Business Administration Disciplines in Vocational Undergraduate Education[J]. Journal of Modern Educational Theory and Practice, 2025, 2(11).

[6] Heng Xi, Yan Wang and Rui Wu. Analysis on the Construction Paths of Business Administration in the Digital Economy [C]//Proceedings of 2nd International Symposium on Economics, Management, and Sustainable Development (EMSD 2021). 2021: 124-135.