The Improvement Path of Employment Quality for Rural Students in Vocational Colleges of Jiujiang under the Background of Digital Economy

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Abstract: *Against the backdrop of the digital economy reshaping vocational ecosystems and competency structures, the issue of employment quality for rural students in vocational colleges has become increasingly prominent. Digital positions are characterized by high renewal frequency and cross-platform collaboration, placing higher demands on workers' technical literacy and cognitive abilities. This study focuses on the structural dilemmas faced by rural students in terms of competency adaptation, cognitive transformation, and resource acquisition, and proposes a competency-generation path centered on the integration of digital literacy, multidimensional skill transfer, and the optimization of employment cognition systems. Based on a dynamic adaptation logic, it constructs an employment quality improvement strategy model that incorporates job-matching optimization, intelligent resource integration, and feedback-driven evaluation. The aim is to broaden the capability enhancement channels for rural students, improve their development potential within the digital employment ecosystem, and provide theoretical support and practical insights for the transformation and upgrading of the vocational education system.*

Keywords: *digital economy; rural students; vocational education; employment quality; competency structure; dynamic adaptation*

Introduction

The digital economy is reshaping traditional employment patterns and competency structures, accelerating the transformation of vocational education systems in terms of talent training objectives and pathway design. Rural students, due to weak digital skills, delayed cognitive adaptation, and limited access to resources, face significant challenges in employment adaptation and sustainable development. Existing research mostly focuses on overall employment trends and lacks in-depth analysis of this group's competency evolution and pathway mechanisms. Taking changes in vocational competency structures as the entry point, this study explores the adaptive obstacles and structural causes faced by rural students and proposes an adaptation path integrating competency module reconstruction, skill transfer, and cognitive optimization. Furthermore, it constructs an employment quality improvement strategy system that incorporates intelligent matching, resource integration, and feedback adjustment, aiming to provide a systematic competency enhancement and pathway optimization solution.

1. The Reconstruction Logic of Employment Structure for Rural Students under the Digital Economy Background

1.1 The Reshaping Mechanism of Vocational Competency Demand Structure Driven by the Digital Economy

As the core engine of the new round of industrial transformation, the digital economy has profoundly reconstructed social cognition and requirements regarding workers' competency structures. Under the traditional economic paradigm, vocational competency mainly emphasized stability, technical proficiency, and experience accumulation, focusing on the ability to execute standardized procedures. However, in emerging economic forms represented by platform economy, intelligent manufacturing, algorithmic recommendation, and data-driven processes, vocational competency is characterized by high comprehensiveness, dynamism, and renewability. Enterprises place greater value

on employees' system thinking, data processing, cross-platform management, and knowledge reorganization abilities beyond mere technical operations, which fundamentally challenges the traditional logic of vocational talent cultivation [1].

Meanwhile, the extensive application of digital technologies has given rise to a large number of hybrid positions dependent on technological collaboration, algorithm-driven processes, and virtual platforms. These positions often transcend traditional spatial and organizational boundaries, exhibiting features of "task distribution, process networking, and real-time outcome evaluation." In such an employment ecosystem, workers' core competitiveness no longer relies solely on single skills but on their ability to flexibly coordinate multiple technical tools, learn rapidly in uncertain environments, and develop solutions. Therefore, if the vocational education system fails to respond promptly to the transformation trend of competency structures, it will be difficult to cultivate talents suited for digital positions, and rural students' competitiveness in these new forms of employment will be further weakened.

1.2 The Internal Contradictions and Transformation Demands of Rural Students' Employment Structure

Rural students' adaptation difficulties within the employment structure primarily stem from structural contradictions, including competency mismatch, cognitive lag, and limited access to opportunities. Under the extensive penetration of the digital economy, job acquisition increasingly depends on information capture, data processing, and online resource integration capabilities, areas in which rural students are often disadvantaged. Due to limited exposure to digital technology application scenarios in their growth environment, they struggle to form an accurate understanding of digital economy job characteristics, leading to significant deviation or limitations in career goal setting and pathway selection. Additionally, within vocational colleges, rural students have comparatively weaker access to career development support, platform-based training opportunities, and personalized guidance, which further amplifies their marginalization in the employment structure.

More critically, the employment structure shaped by the digital economy values not only the ability to "perform tasks" but also to "understand, collaborate, and adapt," imposing multidimensional transformation demands on rural students. Structurally, their original competency system is inclined toward rule-following and procedural execution, lacking autonomy, reflexivity, and systemic capability structures, which makes it difficult for them to fulfill role transitions within complex task systems. From a pathway perspective, rural students urgently need to shift from mere "skill acquisition" to "competency generation" during their professional learning stage, constructing a transferable and iterative digital competency system. Such a transformation is essential for breaking through bottlenecks in job adaptation, career mobility, and workplace stability, thus advancing toward high-quality employment goals [2].

1.3 An Analysis of the Matching Degree between Vocational Education Supply Systems and Employment Structures in Jiujiang

The current vocational education system in Jiujiang still operates within a traditional industrial logic regarding curriculum structure, teaching methods, and competency evaluation mechanisms, failing to establish a systematic supply framework deeply integrated with the digital industry. This supply-demand mismatch results in rural students struggling to develop competencies that align closely with job requirements when entering the labor market. On one hand, teaching content fails to adequately cover emerging professional skills in digital contexts, such as data modeling, platform management, and digital tool coordination, causing rural students to experience technological cognition gaps during employment. On the other hand, the curriculum system generally lacks modular, task-based, and project-based organizational forms, which hinders students' understanding of real work scenarios and limits the development of their practical and application transfer abilities.

Furthermore, current employment-oriented teaching design emphasizes short-term skill output while neglecting the construction of cognitive structures, thinking flexibility, and learning abilities necessary for future job ecosystems. This is particularly significant for rural students, who rely more heavily on educational systems for guidance and support in capability reconstruction. To optimize the matching degree, it is urgent to establish a dynamic curriculum reconstruction mechanism and introduce industry scenario-based competency evolution models to promote deep coordination between educational supply and employment demand. Additionally, digital literacy should be strengthened as a

foundational competency logic, enabling students to develop rapid learning, flexible adaptation, and sustainable growth abilities across different job systems, thereby achieving a structural leap from "job adaptation" to "career development."

2. Employment Adaptability Enhancement Path in Digital Competency Generation

2.1 Modular Reconstruction of Vocational Competency under the Embedding of Digital Literacy

Digital literacy, as the fundamental competency system for adapting to the digital economy, has gradually become an important indicator for assessing vocational college students' employability. For rural students, the relatively delayed exposure to technology determined by their growth environment necessitates systematic educational intervention to achieve the orderly embedding of key competency dimensions. Introducing a "digital literacy-embedded" competency construction model into vocational education can promote students' mastery of essential units such as basic digital tool operation, data acquisition and analysis, and information filtering and judgment through curriculum restructuring, instructional task design, and intelligent learning resource allocation, ultimately enabling effective adaptation to vocational scenarios.

The construction of a modular competency structure should not remain at the tool level but should follow an integrated "knowledge–skills–literacy" pathway to strengthen students' ability to switch competency combinations under different job logics. By integrating professional courses with digital technology application scenarios, a three-dimensional synergistic system of "technical foundation module, industry cognition module, and task execution module" can be formed, equipping students with both technical transfer and situational adaptability for emerging employment positions. Meanwhile, the generation process of vocational competency modules should emphasize embedding a dynamic feedback mechanism, guiding students to identify their weaknesses and fine-tune competencies during project-based tasks, so as to meet the composite requirements of digital positions for comprehensive qualities and rapid iteration [3].

2.2 Supporting Role of Multidimensional Skill Transfer Mechanisms in Enhancing Employment Flexibility

Employment flexibility, as a core indicator of an individual's ability to survive and develop sustainably in uncertain labor environments, relies on the capacity to transfer and integrate multidimensional skills. In the context of rapidly updated job types and continuously fragmented task structures under the digital economy, vocational college students, especially rural students, need to possess cross-discipline, cross-tool, and cross-platform skill transfer abilities to achieve flexible transitions from single positions to multiple task forms. The effective construction of skill transfer mechanisms should follow the path of "contextual reproduction–competency matching–cognitive integration," guiding students to reposition the functions of existing skills in new contexts by simulating real vocational task scenarios.

Unlike traditional linear skill training pathways, competency transfer in a digital environment emphasizes the integration of multi-source knowledge and cross-domain reorganization of experience. Students need not only specific operational skills but also abstract abilities to determine the required skills for new tasks and the capacity for rapid learning. The teaching process should focus on explicit training of transfer strategies by introducing cross-disciplinary project collaboration and cross-platform task exercises to enhance students' comprehensive coordination of technologies, resources, and roles in complex situations. Multidimensional skill transfer not only strengthens rural students' self-regulation ability in response to job changes but also provides the necessary competency foundation for future vertical promotion and horizontal expansion.

2.3 Reconstruction of Employment Cognition Systems and Generation of Pathway Decision-Making Competence

The construction of an employment cognition system determines students' abilities in goal setting, opportunity identification, and pathway selection during career development. Under traditional education models, rural students generally show single-structured employment cognition, insufficient depth of career understanding, and vague pathway planning, making it difficult to make efficient judgments and rational decisions in a complex employment ecosystem. The vocational system in the

digital economy emphasizes task deconstruction ability, scenario recognition ability, and trend perception ability, requiring students to possess multidimensional information integration awareness and forward-looking pathway evaluation capability, which raises higher demands for the reconstruction of their cognition systems.

Effective cognitive system reconstruction should follow a systematic pathway of "cognitive activation–information modeling–strategy generation." By constructing multi-scenario simulation spaces and career selection experimental platforms, students can be guided to build a three-dimensional understanding of digital job characteristics, task logic, and development cycles in dynamic decision-making contexts, thereby forming clear career positioning and development roadmaps. In generating pathway decision-making competence, a data-driven feedback mechanism should be embedded to help students revise preset cognition through continuous trials and improve decision-making efficiency and accuracy through task experience accumulation. Students with stable employment cognition structures and flexible pathway selection abilities are more likely to achieve high-quality job matching in the highly volatile and rapidly evolving digital economy environment [4].

3. Employment Quality Improvement Strategy Model Based on Dynamic Adaptation

3.1 Job-Matching Strategy Optimization Model Oriented to the Digital Ecosystem

With the deep restructuring of industrial structures driven by digital technologies, job creation mechanisms and competency requirements have become highly uncertain and fluid. Numerous positions in the digital ecosystem depend on platforms, algorithms, and project-based collaboration models, requiring workers to possess rapid responsiveness, cross-domain transfer, and system integration abilities.

This highly dynamic job ecosystem challenges traditional static employment-matching models, making strategies based solely on single resume submissions and linear job recommendations inadequate to meet multidimensional matching needs in terms of competencies, cognition, and goals. For rural students in particular, insufficient timeliness and accuracy of information acquisition often cause delays in job decision-making, resulting in low matching efficiency and limited career development paths.

To achieve dynamic alignment between competency structures and job ecosystems, it is necessary to construct a job-matching optimization model supported by big data and driven by intelligent algorithms. This model should integrate key variables such as students' competency profiles, career preferences, and development paths and establish real-time linkage with industry job databases. Through machine learning and semantic recognition technologies, it should enable in-depth deconstruction and precise matching of job information. In practical application, the model should focus not only on technical skill alignment but also incorporate implicit traits such as cognitive styles, task resilience, learning curves, and development potential, thus transforming employment matching logic from "job orientation" to a multidimensional paradigm of "competency-driven, path generation, and task co-construction."

Moreover, the optimization model should possess a self-adaptive adjustment mechanism capable of dynamically updating according to changes in the job ecosystem, industry trends, and students' competency growth. By establishing data interfaces with platform enterprises and digital job clusters, the model can continuously expand its sample base and rule library, enhancing system learning capacity and matching precision. This strategy not only improves rural students' entry efficiency into digital job systems but also provides data support and predefined pathways for subsequent job transitions and career advancement [5].

3.2 Structural Integration of Employment Support Resources and Digital Empowerment Pathway

In the employment environment shaped by the digital economy, the generation and transformation of individual competencies no longer depend on single teaching sessions but require a full-cycle, systematic, and intelligent support system. Rural students, due to limited information sources and uneven resource allocation, are particularly marginalized in traditional employment support systems. Most existing support systems still rely on fragmented and static supply, lacking resource integration capabilities for diverse scenarios and dynamic demands, thus failing to provide highly adaptive and personalized development support. Consequently, it is urgent to reconstruct the logical structure of

employment support resources and establish a digital empowerment pathway characterized by integration, connectivity, and intelligent feedback.

The core of this pathway lies in building a centralized and open digital employment support platform that systematically integrates curriculum resources, competency evaluation systems, job information, career counseling, alumni networks, and enterprise collaboration modules to realize dynamic resource flow and efficient allocation. Functionally, the platform should support personalized career assessment, competency diagnosis, matching recommendations, and growth portfolio management, forming a service mechanism optimized by data analytics and algorithms. By utilizing multi-source data fusion and visualization technologies, the platform can track students' competency changes and job demand trends in real time, achieving precise resource delivery and strategic guidance, thereby enhancing students' autonomous decision-making capabilities at key development stages.

To improve system responsiveness and predictive capacity, AI-based learning behavior analysis and trajectory modeling tools can be introduced to identify critical variables and potential risks in students' competency development, enabling early intervention and dynamic optimization of employment paths. For rural students, differentiated support models should be designed based on their background characteristics and competency gaps, promoting the transition of employment services from uniform supply to targeted empowerment. A data-driven support pathway not only increases resource accessibility but also helps establish a sustainable competency foundation for students in a complex employment environment.

3.3 Dynamic Updating of Employment Quality Evaluation Systems and Construction of Feedback Mechanisms

In traditional educational logic, employment quality evaluation is often simplified to static indicators such as employment rate, job relevance rate, or initial salary, neglecting aspects such as career development continuity, job growth potential, and competency evolution paths. However, the nonlinear growth, multi-platform mobility, and skill reconstruction features emphasized by the digital economy require the evaluation system to possess high dynamism and structural sensitivity. Constructing an employment quality evaluation mechanism centered on competency development, supported by data-driven approaches, and guided by feedback optimization is a fundamental prerequisite for promoting the mutual advancement of individuals and job systems.

The evaluation system should follow a "structural dynamism–process tracking–feedback adjustment" logic, systematically collecting key behavioral and competency performance data throughout students' journeys from enrollment to employment. By building competency growth curves and task response trajectories, and applying algorithmic models, it should quantitatively assess job-matching levels, skill utilization frequency, horizontal transfer efficiency, and vertical promotion potential, thereby achieving deep structural analysis of employment quality. Additionally, a multi-stakeholder feedback channel involving educational institutions, employers, and students should be established to enhance system openness and adjustment capabilities, enabling dynamic optimization based on market feedback and individual development [6].

Evaluation results should serve as an important basis for curriculum optimization and personalized employment services, fostering a closed-loop mechanism of "goal setting–competency generation–process tracking–result feedback–path adjustment" in vocational education. For rural students, this system helps identify developmental bottlenecks, provide targeted growth recommendations, and enhance self-regulation and sustainable development abilities. Through a precise, sustainable, and adaptive evaluation framework, education supply and job demand can be more effectively aligned, promoting higher-quality career progression within the digital vocational system.

Conclusion

Driven by the digital economy, the employment pathways of rural students in vocational colleges are shifting from traditional models to new models centered on competency structure reconstruction and platform ecosystem adaptation. The study points out that the key to improving employment quality lies in systematically promoting the transformation of competency construction logic, achieving a shift from static adaptation to dynamic competence through modular digital literacy training, multidimensional skill transfer mechanisms, and cognitive system reconstruction. Strategically, it is necessary to strengthen the precise mapping between job information and competency structures, build

an integrated employment support platform, and realize intelligent and personalized resource allocation. In addition, establishing a dynamically updated employment quality evaluation and feedback mechanism contributes to improving the responsiveness of education and the ability of students to adjust their career paths. Future research can further explore the interactive mechanisms between platform ecosystems and students' competency development, investigate personalized employment support models driven by multi-source data, and examine differences in employment structures among rural students with varying regional or disciplinary backgrounds, thereby promoting both equity and adaptability in vocational education systems under the digital economy.

Fund Projects

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