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RESEARCH-ARTICLE

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Research on the Mechanism and Path of Coordinated Development between Digital Transformation of Vocational Education and New quality Productivity under the United front

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Abstract

The accelerated formation of new quality productivity requires strong support from the digital transformation of vocational education. The accelerated upgrading of the digital transformation of vocational education relies on the driving force of the demand for new quality productivity. The two develop in coordination and promote each other. This paper systematically explores the internal mechanism and practical path of the coordinated development of the digital transformation of vocational education and the new quality productivity from the unique perspective of the united front, proposes a three-dimensional path system of "organizational coordination-talent transformation-resource innovation", and explores practical paths from the dimensions of policy support, technological innovation, and social participation, providing theoretical support and practical reference for the high-quality development of vocational education and the cultivation of new quality productivity, and promoting the sustainable development of China's economy and society.

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CCS Concepts

• Applied computing; • Education; • Computer-assisted instruction;

Keywords

United Front, Vocational Education, Digital Transformation, New Quality Productivity, Coordinated Development

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1 Introduction

My country's economy and society are at a critical stage of high-quality development. The construction of a strong country in education is closely related to the rise of new quality productivity. In September 2023, General Secretary Xi Jinping first proposed the important concept of "new quality productivity" during his inspection in Heilongjiang and emphasized the need to accelerate its formation and add new development momentum.[1] The 2024 "Government Work Report" clearly defined the acceleration of the development of new quality productivity as the primary task of government work. New quality productivity belongs to the new



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quality of productivity. Innovation and quality improvement are its core in the new era. It is driven by strategic emerging industries and future industries.[2] It has the ability to utilize and transform nature in an efficient and high-quality manner. It is a high-quality development engine jointly driven by revolutionary technological breakthroughs, innovative allocation of production factors, and deep transformation and upgrading of industries. It is an advanced productivity that is compatible with high-quality development and has the characteristics of integrated and cross-development.[3]

The report of the 20th CPC National Congress pointed out that education, science and technology, and talents are the strategic support for building a modern socialist country in an all-round way. The cultivation and development of new quality productivity must also adhere to the coordinated promotion of education, science and technology, and talents. General Secretary Xi Jinping has further emphasized that we must make the virtuous cycle of education, science and technology, and talents smooth according to the requirements of developing new quality productivity and improve the working mechanism of talent training, introduction, use, and reasonable flow. New technologies such as artificial intelligence and big data are developing rapidly. The development of new quality productivity has new demands and changes for high-quality technical and skilled talents. The traditional vocational education model has encountered bottlenecks.[4] In the era of digital economy, the digital transformation of vocational education is an important trend and strategic choice for vocational education reform. It is also an inevitable path to actively respond to the national education digitalization strategic action and improve the quality of education and meet social needs.[5] Obviously, the digital transformation of vocational education and new quality productivity promote each other, are deeply integrated, and are closely related. It is necessary to deeply understand the internal mechanism of the coordinated development of the two and explore feasible promotion paths.[6]

The Communist Party of China has the political advantage and strategic policy of the United Front to unite people and gather strength. The United Front in the new era has extensive connections, a wealth of talents, and is intellectually intensive. It can give full play to the advantages of mobilization, guidance, coordination, consultation and integration. This requires the support of the United Front departments. It is an important magic weapon to promote the high-quality development of vocational education.[7]

2 The internal mechanism of the digital transformation of vocational education and the coordinated development of new quality productivity under the united front

The United Front leads and promotes the coordinated development of the digital transformation of vocational education and the new quality productivity. The two have a close and profound internal mechanism. The rise of new quality productivity provides direction and impetus for the digital transformation of vocational education, allowing vocational education to carry out systematic changes in talent training models, curriculum system construction, and teacher team building, so as to better meet the needs of the new quality productivity for high-quality technical and skilled talents, as shown in Figure 1.[8] The digital transformation of vocational education

effectively supports the accelerated formation of new quality productivity by optimizing the allocation of educational resources, improving the quality of talent training, and promoting the deep integration of education and industry. When the two develop in a coordinated manner, the United Front brings together the forces of the government, enterprises, vocational schools, industry associations, etc. All parties form a strong synergy due to common goals, promote the deep integration and innovative development of vocational education and new quality productivity, and achieve high-quality economic and social development.[9]

2.1 New quality productivity leads the digital transformation of vocational education and systematically reshapes it

The rise of new-quality productivity has spawned new industries and occupations. Workers are required to have higher technical skills, innovation capabilities, and digital literacy. Vocational education must be systematically reshaped with the help of digital technology.[10]

Government departments should play the role of policy guidance, formulate supporting policies and increase investment, so as to promote the construction of digital infrastructure for vocational education and improve teaching level. Vocational colleges should strengthen the construction of digital infrastructure and introduce cutting-edge technologies to build an intelligent learning environment, optimize the curriculum system, adjust professional settings, and strengthen practical teaching to enhance the digital capabilities of the teaching staff. Enterprises actively participate in it, providing technical equipment support for curriculum construction and teaching reform and jointly carrying out technical research and development projects. Industry associations play a bridging role, organizing exchanges and cooperation, and formulating standards and specifications to guide healthy development. The digital transformation of vocational education requires collaboration from all parties to meet the talent needs of new quality productivity.

2.2 The digital transformation of vocational education provides strong support for accelerating the formation of new quality productivity

The formation of new quality productivity is due to the digital transformation of vocational education, which is strongly supported by optimizing resource allocation and improving the quality of talent training.[11] Government departments promote the coordinated development of digital transformation of vocational education and new quality productivity through policy guidance and financial support, formulate policies to encourage cooperation and increase investment in the construction of training bases and innovation platforms. Vocational colleges use digital technology to optimize the curriculum system, adjust the professional settings, strengthen practical teaching to cultivate high-quality technical and skilled talents, and improve the digital capabilities of the teaching staff. Enterprises and vocational colleges cooperate deeply, provide practical platforms and technical support, and jointly carry out technology

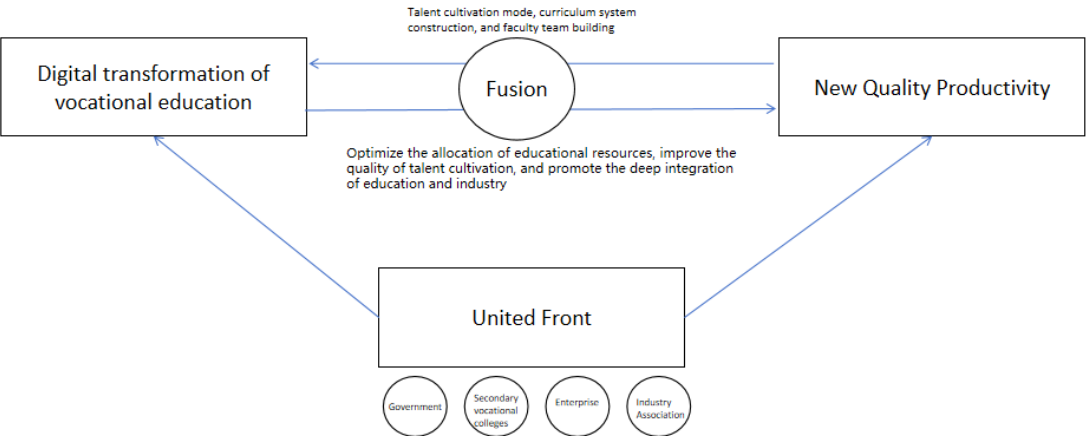


Figure 1: The internal mechanism of the digital transformation of vocational education and the coordinated development of new quality productivity under the united front

Table 1: Comparison of the three major paths for the United Front to empower the digital transformation of vocational education

Path Type	Core Mechanics	Participating entities	Key role	Expected Results
Organizational Collaboration Path	Government-Industry-Academia-Research-Application Community	Government, enterprise, school, scientific research institution	Resource integration and synergy	Improve system collaboration efficiency
Talent transformation path	Digital Skills Conversion Funnel	Non-Party experts, teachers, and students	Knowledge Filtering and Education Transformation	Shorten the time lag of technical education
Resource innovation path	Education Discount Model	New class people, vocational colleges	Technology Value Education Monetization	Reduce resource acquisition costs

research and development projects to promote technological innovation and achievement transformation. Industry associations organize exchanges and cooperation and formulate standards and specifications to guide the healthy development of digital transformation of vocational education. All parties cooperate with each other to provide intellectual support and technical guarantees for the development of new quality productivity, and promote the rapid formation and development of new quality productivity.

3 The path of the United Front empowering the digital transformation of vocational education and the coordinated development of new quality productivity

The coordinated development of the digital transformation of vocational education and new quality productivity requires a systematic path design. Due to the unique advantages and practical needs of the united front, this study has constructed a three-dimensional path system including organizational coordination, talent transformation and resource innovation, providing an operational implementation plan for the deep integration of the two.[12] The comparison of the three major paths for the united front to empower the digital transformation of vocational education is shown in Table 1.

3.1 Organizational Collaboration Path: Building a "United Front + School-Enterprise + Scientific Research" Government-Industry-Academic-Research-Application Community

Building a community of government, industry, academia, research and application is the core organizational guarantee for the United Front to empower the digital transformation of vocational education. This path emphasizes the United Front’s integration of resources from multiple parties such as government, industry, schools, and scientific research institutions to form a joint force for coordinated advancement.

The operation mechanism of the "United Front + School-Enterprise + Scientific Research" community has three key links. The first is a demand docking mechanism that relies on a digital platform to achieve intelligent matching of industrial policies and corporate needs. The second is a resource sharing mechanism that breaks through departmental barriers to optimize the allocation of equipment, data, talents and other factors. The third is to build a results transformation mechanism to transform scientific research results into teaching resources and a fast track for productivity.

This organizational collaborative path has shown implementation effects in three aspects: the adaptability of vocational education has been improved, the professional settings and talent training are more closely aligned with the development needs of new quality productivity, and the pertinence of scientific and technological innovation has been enhanced.[13] Scientific research activities focus more precisely on industrial development technology bottlenecks, and resource utilization efficiency has been improved, and repeated investment and resource waste have been avoided. Community construction must adhere to the principle of "united front leadership, market dominance, school subject, and enterprise participation" to form a sustainable development mechanism.

3.2 Talent transformation path: the "digital skills transformation funnel" mechanism of the non-Party talent think tank

The United Front has an innovative design to promote the cultivation of new-quality productive forces, namely the digital skills conversion funnel mechanism. The technical expertise of high-level non-Party talents is systematically converted into vocational education and teaching resources through this mechanism. It includes five progressive links: technology identification, education adaptation, curriculum development, teaching implementation, and industry verification. The essence of the funnel mechanism is the process of knowledge filtering and transformation. After being processed by pedagogy, cutting-edge technical knowledge is transformed into content and forms suitable for vocational education and teaching.

The United Front has extensive contacts with experts and scholars, and the technology identification link relies on these experts and scholars to establish a dynamic monitoring network for emerging industry technologies to capture the forefront of technological development. In the education adaptation stage, education experts and technical experts work together to analyze the educational value of the technical content and check its degree of fit with vocational education. In the curriculum development process, technical knowledge should be reconstructed in accordance with the laws of vocational education to form modular and project-based teaching resources. The construction of a "dual-qualified" teaching team is emphasized in the teaching implementation link. Teachers in vocational schools must have digital teaching capabilities and technical backbones of industry and enterprises must also participate in teaching practice. The key closed loop of the funnel mechanism is the industry verification link. The teaching effect is tested by the students' application performance in actual jobs and the course content is optimized based on this feedback. This complete chain allows the value to circulate from technology to education and then to industry, effectively solving the contradiction between vocational education content lagging behind technological development.

3.3 Resource innovation path: the "education discount" model of technology dividends for people from new social classes

In response to the problem of low efficiency in converting technology patents into teaching resources, some people have proposed an

innovative solution, the education discount model. The core of this solution is to convert the technology patents in the hands of new social classes (such as management and technical personnel of private enterprises and foreign-invested enterprises, practitioners of intermediary organizations and social organizations, freelancers, new media practitioners, etc.) into vocational education and teaching resource packages in accordance with a certain "discount formula". After all, discounting is to realize value in advance and release the potential educational value of technology for utilization in the present. In promoting the education discount model, the role of the United Front is irreplaceable. The United Front Department can start from two aspects. On the one hand, it can mobilize the enthusiasm of new social classes to participate in vocational education through political guidance and policy incentives; on the other hand, it can establish a standardized discount process and a standardized benefit distribution mechanism to protect the rights and interests of all parties and achieve sustainable development.

4 Practical strategies for collaborative development paths

The construction of a comprehensive support system is necessary for the coordinated development of the digital transformation of vocational education and new quality productivity. Starting from the four dimensions of policy support, technological innovation, talent cultivation and social participation, this chapter deeply explores the principles for building a coordinated development path, practical models and guarantee mechanisms, so as to provide a systematic solution for promoting the transformation of theory into practice.

4.1 Construction of policy support system

To promote the digital transformation of vocational education and the coordinated development of new quality productivity, policy drive is the primary guarantee. Building a sound policy support system requires starting from top-level design and departmental coordination (Chen , 2025) .

The top-level design should clarify the development direction, goals and tasks, and the policy design should adhere to the "3I" principle of "integration, intelligence, and internationalization" to adapt to the new trend of the national education digital strategic action. The key to departmental coordination is to break down the policy barriers between departments such as education, science and technology, and industry and establish a mechanism for coordinating the united front. The United Front Department should play the role of a bridge and link to promote policy synergy and prevent multiple policies and dispersion of resources. The effectiveness of the policy support system depends on three key factors, namely, the systematic nature of the policy (requiring coordination and cooperation of various policy tools), the precision of the policy (differentiated measures need to be formulated according to the needs and characteristics of different entities), and the dynamic nature of the policy (timely adjustment and optimization based on technological development and industrial changes). The United Front has extensive connections and can provide more comprehensive information when formulating policies, making decision-making references more scientific.

4.2 Technological innovation and talent cultivation

In the digital transformation of vocational education, technological innovation and talent cultivation are dual engines that promote and support each other. From a technical perspective, digital transformation is a "epoch-making systematic innovation process enabled by technology"¹, which requires all-round support from new-generation information technologies such as artificial intelligence, big data, and cloud computing. In terms of talent, the development of new-quality productivity requires a large number of high-quality technical and skilled talents with digital literacy. Building a virtuous cycle mechanism for two-way empowerment of technology and talent is the key to empowering the united front.

The establishment of a new mechanism for integration of industry and education is a necessity for the coordination of technological innovation and talent training. The specific paths are as follows: first, joint construction of majors, adjusting the major settings according to the development trends of new technologies; second, sharing courses, inviting industry and enterprise experts to participate in course development and teaching implementation; third, sharing bases, jointly building a training base with both teaching and production functions by schools and enterprises; fourth, joint cultivation of talents, promoting modern apprenticeship and new enterprise apprenticeship.

4.3 Social participation and resource sharing

The social foundation for the sustainable development of the digital transformation of vocational education is social participation and resource sharing. The unique advantages of the united front's extensive connections and intellectual density enable it to mobilize all parties to participate in the digital transformation of vocational education, and thus form a multi-governance pattern.

The focus of social participation is to build a collaborative network of multiple entities. We must give full play to the intellectual advantages of democratic parties and non-party intellectuals, provide consulting services and technical support for digital transformation, mobilize the enthusiasm of the Federation of Industry and Commerce and private economic personnel, let enterprises invest in the digital construction of vocational education, and guide new social classes, especially new media practitioners, to participate in the development and dissemination of digital teaching resources.

The key to resource sharing lies in building an open and win-win resource circulation mechanism. The construction method is as follows: Create a digital resource library for vocational education to enable high-quality resources to be shared across regions and schools, establish unified resource standards and interface specifications to ensure that all types of resources are compatible and interoperable, explore resource rights confirmation and transaction mechanisms based on blockchain technology to safeguard the legitimate rights and interests of resource providers, and encourage enterprises to transform production resources into teaching resources to achieve dual utilization of resources. In this process, the united front has a unique role in coordinating the interests of all parties and can promote a balance of interests when sharing resources.

5 Conclusion

This paper systematically discusses the internal mechanism and practical path of the United Front empowering the digital transformation of vocational education and the coordinated development of new quality productivity, constructs a theoretical framework, and proposes practical countermeasures, revealing the unique value and mechanism of the United Front in promoting the coordinated development of educational reform and industrial upgrading, and providing useful references for relevant policy formulation and practical exploration. The study shows that the United Front empowering the digital transformation of vocational education and the coordinated development of new quality productivity is a systematic project, which requires the participation of the government, enterprises, schools, scientific research institutions and all sectors of society. The main conclusions are as follows: First, in terms of internal mechanism, the new quality productivity leads the digital transformation of vocational education to be systematically reshaped, and the digital transformation of vocational education provides strong support for the accelerated formation of new quality productivity; second, in terms of theoretical construction, a three-dimensional path system of "organizational coordination-talent transformation-resource innovation" is proposed to enrich the theoretical connotation of the digital transformation of vocational education; third, in terms of practical paths, policy support, technological innovation, talent training and social participation are proposed. This paper aims to provide theoretical support and practical reference for the high-quality development of vocational education and the cultivation of new quality productivity, so that China can seize the initiative in the new round of scientific and technological revolution and industrial transformation to achieve sustainable economic and social development.

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