

# On the Relationship between Vocational Education and the Development of Digital Economy

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**Abstract:** In the current context of China's economic development and transformation, the digital economy is experiencing rapid growth, with the proportion of GDP increasing year by year. Vocational education can provide human capital for economic development, and digital empowerment of vocational education requires that vocational education must keep pace with the times and technology. This paper analyzes the relationship between vocational education and the development of the digital economy, combines the shortcomings in the current teaching process in vocational colleges, and gives suggestions for the development of vocational education in the context of the digital economy, so that vocational education and the development of the digital economy can coordinate and promote the development of the entire social economy.

**Keywords:** vocational education, development of digital economy, digital empowerment

## 1. Introduction

Vocational education, as a type of education closely related to various levels of education and various aspects of society, is a very important organic component of the national education, technology, and talent innovation system. Many scholars at home and abroad have made different interpretations of vocational education. China's vocational education system is a multi-dimensional, multi-level, and diverse comprehensive structure [1], which is divided into two major parts: school vocational education and social vocational training. This paper limits the scope of vocational education studied to school vocational education, specifically referring to the vocational skills, knowledge, and ethics required by the educated to engage in a certain occupation or career development educational activities carried out based on comprehensive qualities such as scientific culture and professional knowledge. Vocational education and general education are different types of education, but they have the same important status. As an important component of the national education system and human resource development, it is an important way for the country to cultivate diverse talents, inherit technical skills, and promote employment and entrepreneurship. It plays an important role in promoting social development and economic progress.

The report of the 20th National Congress of the Communist Party of China proposes to coordinate the collaborative innovation of vocational education, higher education, and continuing education, promote the integration of vocational education, industry and education, science and education, and optimize the positioning of vocational education types. In the process of Chinese path to modernization, education is considered as a whole, and the type orientation of vocational education is reflected, consolidated and optimized. This will break the structural employment contradiction, stimulate the vitality of vocational education, release more powerful comprehensive social effects, and provide a steady flow of talent capital for China's economic development. Digital enabling vocational education provides support for further research on vocational education and the development of the digital economy.

The digital economy is based on digital knowledge and information as key production factors, with digital technology innovation as the core driving force, and modern information networks as an important carrier. Through the deep integration of digital technology and the real economy, it continuously improves the level of digitalization and intelligence of traditional industries, accelerating the reconstruction of economic development and governance models, and innovative economic forms. According to the "White Paper 2022 on China's Digital Economy Development Report" released by the China Communications Research Institute[2], through analyzing the digital economy and GDP in the

past five years, it is found that China's digital economy is developing steadily and rapidly, and its position in the national economy is becoming increasingly stable.

The digital economy includes four major parts: digital industrialization, industrial digitization, digital governance, and data value. Among them, industrial digitization is the main engine for the development of the digital economy. With the continuous transformation of industrial digitization, its leading position has also been increasingly consolidated. In recent years, local governments at all levels have successively issued policies related to the digital economy, increased the layout of the digital economy, and promoted the sustainable development of the digital economy. The east is the engine of China's digital economy development, the middle is the bridge of China's digital economy development, and the west is the depression of China's digital economy development. In terms of the overall digital economy, China's urban spatial traction pattern has formed a cascade traction pattern centered on first-tier cities such as Beijing, Shanghai, and Shenzhen.

In the research on the factors influencing the development of China's digital economy, Jiao and Sun [3] believe that the development of the digital economy depends on "four needs", namely, the development and improvement of the digital foundation, the expansion and deepening of digital applications, the expansion and assistance of digital innovation, and the transformation and rise of the digital industry, in order to achieve the transformation and efficiency improvement of the entire society and the entire industry. Wang [4] believes that the main factors affecting the development of the digital economy include: digital resource development capabilities, core technologies and equipment, natural environment, infrastructure construction, relevant policies and regulations, and the human environment.

According to existing data and research, the digital economy has significantly promoted the high-quality development of China's economy and is becoming an increasingly important driving force for global economic growth. It is continuously playing an important role in improving labor productivity in existing industries, cultivating new markets and new growth points in industries, and achieving inclusive and sustainable growth.

## **2. The relationship between vocational education and the development of the digital economy**

### ***2.1 The accelerated development of the digital economy determines the adjustment of professional construction in vocational education***

In recent years, China is in a critical period of economic restructuring, with industrial and social structures constantly changing. In order to meet the needs of the development of the digital economy, the newly revised Occupational Classification Code of the People's Republic of China Occupational Classification Code in 2022 added the logo of digital occupations for the first time. The new occupations of professional and technical personnel are also mainly concentrated in the field of digital technology, such as password engineering technicians, carbon management engineering technicians and financial technologists. The emergence of new professions and new skills means that vocational education should closely follow the development of the economy of the times and even be forward-looking. Vocational colleges should timely adjust and add relevant majors, strengthen the construction of digital talent teams, accelerate digital technological innovation, smooth the path of career development, and accelerate the development of the digital economy.

The relevant policy documents on vocational education also point out that in the current digital economy context, in the implementation of vocational education informatization, attention should be paid to the deep integration of information technology and education and teaching. Actively adapt to the constantly changing social and economic structure, promote the upgrading of traditional majors with "information technology+", and timely develop emerging majors generated by the digital economy. In addition, when setting up majors in vocational education, it is also necessary to adapt teaching plans, teaching content, and related scientific research activities to the needs of enterprises and markets in the region. Vocational colleges are encouraged to use modern information technology to promote the reform of talent training mode, meet the diverse learning needs of students, vigorously promote the new form of "Internet plus" and "intelligence+" education, and promote the reform and innovation of education and teaching. In addition, it is important to guide vocational schools to carry out information based training for all staff, improve the information technology capabilities of teachers and management personnel, and enhance the ability of students to use network information technology and high-quality online resources for autonomous learning.

## ***2.2 Vocational education promotes the development of the digital economy***

A large amount of research evidence has shown that vocational education promotes economic growth by promoting technological progress and human capital accumulation, and also provides protection for the development of the digital economy. The link between vocational education and economic development is based on the cultivation of high-quality workers. Gao and Tao [5] believe that developing the digital economy is a strategic choice to seize the new opportunities of a new round of technological revolution and industrial transformation. The key lies in promoting the deep integration of digital technology and the real economy, enabling the transformation and upgrading of traditional industries, and supporting the improvement of workers' digital literacy and skills. Liu [6] believes that vocational education is the fundamental support for achieving high-quality development of the manufacturing industry, and also an important foundation for maintaining social vitality. In addition, it provides a strong guarantee for optimizing the business environment. According to the Global Competitiveness Report 2018 [7], cultivating and forming high-quality human resources must be based on high-quality vocational education that meets the requirements of the digital economy. At the enterprise level, in order to achieve a high-quality business environment, it is necessary to develop high-quality vocational education. Zhu and Xiong [8] believe that vocational education must closely follow the pulse of economic and social development of the times, adapt to social and market needs and "change", follow the adjustment and upgrading of industrial structure, and strive to explore innovative development models such as "urban-rural linkage", "college local linkage", "university enterprise linkage", in order to meet the development needs of China's economic and social development. In fact, the skill level of workers plays a decisive role in economic development, and vocational education is just the main way to cultivate professional and high-quality talents, occupying an important position in the development process of human resources.

In addition, vocational education talent cultivation should focus on cultivating various types of talents in new technologies and fields generated under the catalysis of the digital economy based on the characteristics of regional economic development. The development of vocational education should actively participate in talent cultivation for the optimization and upgrading of the structure of the digital economy, with quality education as the core and market demand oriented, to enhance students' professional and technical abilities and meet the current development needs of the digital economy.

## **3. Suggestions for the development of vocational education in the context of the digital economy**

### ***3.1 Improvement of vocational education system under the empowerment of digital economy***

Since the reform and opening up, vocational education has trained a large number of highly skilled talents, which has played an important role in promoting social and economic development. Under the current industrial transformation, compared with the goal of building an educational power and a modern economic system, China's vocational education still has problems such as imperfect systems and mismatched supply and demand. In view of this, domestic scholars need to pay attention to the connotation research of vocational education enabled by the digital economy, explore relevant vocational education teaching theories that match the digital economy, propose talent cultivation models that adapt to digital technology, build a vocational education system in the context of the digital economy, and quickly build a digital talent cultivation sharing platform.

### ***3.2 Strengthen the digital construction of vocational colleges***

In the current digital context, higher vocational colleges have opened or upgraded emerging disciplines and professional groups related to "the Internet of Things, big data, cloud computing, industrial robots, blockchain, and intelligent construction" based on the development needs of the digital economy, but the construction of professional digital content is not deep enough. For example, some colleges and universities have only changed their professional names and have not yet constructed "digital industry digital industry digital enterprise digital profession digital specialty" as a systematic interactive coupling mechanism [5], resulting in slow development of curriculum systems that adapt to regional digital development and lagging construction of digital teaching resources. In view of this, vocational colleges urgently need to deeply study the connotation of digital majors, follow the operational coupling mechanism of digital specialization, accelerate the construction of curriculum systems that adapt to the development of the digital economy, and improve relevant digital teaching resources; it is also possible to carry out digital upgrading and transformation on the basis of existing

teaching resources, and use digital technology to achieve intelligent and simulated teaching and training processes. In addition, in cultivating digital talents, vocational education should not only focus on the mastery of digital skills, but also pay attention to the formation of digital thinking patterns and literacy, in order to meet the challenges posed by future industrial changes.

During the epidemic prevention and control period in recent years, in order to meet the normal operation of teaching, online classes have become the norm, and the trend of the era of digital vocational education is becoming increasingly evident. This requires vocational colleges to carefully summarize the problems encountered by teachers in online teaching, sort out the difficulties in the process of digital teaching, and combine relevant policies to improve and innovate the top-level design of digital vocational education [6], accelerate the promotion of the online vocational education model in the digital economy.

### **3.3 Quickly building a teaching staff under the digital economy**

The teaching staff is the foundation and guarantee for the rapid development of vocational education enabled by the digital economy. Currently, there are widespread problems in vocational colleges such as weak teaching staff and insufficient digital teaching capabilities. The digital "double qualified" teaching team can ensure the adaptability of teaching quality in vocational education enabled by the digital economy [9]. The so-called digital "dual qualification" refers to the comprehensive literacy level that requires teachers to have a high reserve of professional theoretical knowledge, and the practical level that requires teachers to have practical and management skills in digital teaching. Therefore, in order to adapt to the digital enabled vocational education and teaching activities, teachers need to go deep into the front line of enterprises to conduct practical learning, master digital teaching capabilities, and cultivate digital literacy. They should also always pay attention to new industries and skills in the digital economy, and keep up with the progress ahead of the digital economy era.

## **4. Conclusion**

There is a dialectical relationship between vocational education and the digital economy that promotes and restricts each other. Among them, the economic level determines the scale and level of vocational education, which provides support for the development of the digital economy by improving human capital and the comprehensive quality of workers. Under the current economic restructuring and industrial transformation, improving the teaching system of vocational education in the context of the digital economy, the networked model of vocational education, the systematic professional coupling mechanism, and the training of digital double qualified teachers will contribute to promoting the digital development of vocational education and enhancing China's future international competitiveness.

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