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## **The Challenges Faced By Double-Qualified Teachers in Technical and Vocational Education and Training (TVET) Institutions in Gansu Province, China**

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### **Abstract**

This systematic review aims to identify and analyze the influential factors that affect the work role transition competency of double-qualified teachers, as well as the challenges they encounter in Gansu Province, China. Double-qualified teachers, who possess both professional teaching qualifications and subject-specific expertise, play a crucial role in the education system. Understanding the factors that influence their work role transition competency is essential for improving their professional development and addressing the challenges they face. Through a comprehensive review of existing literature, this study synthesizes the key findings to provide insights into the unique context of Gansu Province.

**Keywords:** Systematic review; Influential factors; Work role transition competency; Double-qualified teachers; Professional teaching qualifications.

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## **1. Introduction**

Vocational education, encompassing vocational school education and vocational training, plays a vital role in providing individuals with the necessary knowledge, skills, and ethical values required for specific occupations [1]. Higher vocational education, as a form of postsecondary education, focuses on equipping students with practical occupational knowledge and skills that are directly applicable to the workforce [1]. Technical and Vocational Education (TVE) stands apart from the general education system as it places a strong emphasis on imparting technical skills and knowledge to students. While there are some similarities in the curriculum between the two systems, technical and vocational schools often offer subjects that are not commonly found in regular schools, focusing on specialized vocational training and practical applications. However, the core and compulsory subjects, including moral and civic education, are still an integral part of the education provided in technical and vocational schools.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) and the International Labour Organization (ILO) play significant roles in shaping and promoting Technical and Vocational Education (TVE) globally. In a joint effort, both organizations put forth recommendations in 2002, emphasizing the importance of tailoring TVE to meet the individual needs and aspirations of learners. The primary goal of TVE, as suggested by UNESCO and ILO, is not only to equip students with technical skills but also to foster their personal development, character building, spiritual growth, and inculcation of human values. Additionally, TVE should actively encourage the development of critical thinking abilities, enabling students to gain a deeper understanding of themselves and the world around them, thus preparing them for meaningful contributions to society and the workforce. Technical and vocational education and training (TVET) have been recognized as crucial in achieving the United Nations Sustainable Development Goals (SDGs), particularly in the field of education [3]. TVET encompasses various forms of education, such as technical education, vocational education, on-the-job training, and apprenticeship programs, among others, and plays a significant role in workforce development and economic growth in many countries. Countries like Germany, Switzerland, Japan, South Korea, Singapore, China, Australia, Canada, the United States, and the United Kingdom have well-established vocational education systems that integrate trade schools, apprenticeships, and industry training programs [4].

In the context of China, vocational education programs have made substantial contributions to the development of human capital [5]. However, attracting and retaining double-qualified teachers, who possess both academic qualifications and industry experience, presents a challenge [5]. These teachers are essential in delivering industry-relevant knowledge and skills to students, bridging the gap between theoretical concepts and practical applications. The specific challenges and influential factors affecting the work role transition competency of double-qualified teachers in Gansu Province, China, have not been thoroughly investigated. This systematic review aims to address this gap by synthesizing existing studies to identify key factors influencing the work role transition competency of double-qualified teachers and understanding the challenges they encounter. The study also intends to provide valuable insights to educational policymakers and institutions in Gansu Province regarding the recruitment and retention strategies for double-qualified teachers, thereby enhancing vocational education's effectiveness and contributing to regional economic growth.

## **2. Methodology**

For this systematic review, a comprehensive literature search was conducted to identify relevant studies exploring the work role transition competency of double-qualified teachers in Gansu Province, China. The search was performed in electronic databases, using specific keywords such as “double-qualified teachers,” “work role transition competency,” “influential factors,” and “Gansu Province.” The search aimed to encompass a broad range of published academic articles and research papers related to the topic.

To ensure the selected studies were directly relevant to the research question, predetermined inclusion and exclusion criteria were applied during the screening process. Articles that met the following criteria were included: (1) focused on double-qualified teachers and their work role transition, (2) examined influential factors affecting work role transition competency, and (3) were conducted in the context of Gansu Province, China. Studies that did not meet these criteria were excluded from the final selection.

Upon completion of the literature search and the application of inclusion and exclusion criteria, a group of relevant studies exploring the work role transition competency of double-qualified teachers in Gansu Province was identified. These studies encompassed various aspects related to the factors influencing their work role transition and the challenges they faced during the process.

The systematic review categorized the influential factors affecting work role transition competency into two main dimensions: individual and contextual factors. Individual factors included aspects such as the teachers' educational background, the availability of professional development opportunities, their industry experience, and their self-efficacy levels. On the other hand, contextual factors comprised elements like the support provided by educational organizations, the integration of curriculum between academic and practical components, and the impact of cultural and societal norms on their transition.

## **3. Literature Review**

### ***3.1. TVET Education in Gansu, China***

The TVET system in Gansu Province, China, has undergone significant transformations since the mid-1980s, initially focusing on technical and vocational skills to create a skilled labor force supporting economic development. In recent years, the Chinese Ministry of Education has introduced various policies to strengthen vocational education, emphasizing the importance of a “double-qualified” teacher team with both higher education and vocational expertise.

One such policy is the “National Vocational Education Reform Implementation Plan” issued in January 2019, which sets new objectives and requirements for vocational higher education. The plan aims to improve the quality of vocational education, cultivate applied talents, and enhance teacher training, while stressing the need for a high-quality vocational education system tailored to Chinese characteristics [6].

Over the years, China's TVET system has evolved from solely focusing on technical and vocational skills to adopting a more comprehensive approach, driven by the demand for highly skilled workers in a globalized

economy and the recognition of the importance of innovation and technological advancement in economic growth [6]. Consequently, China's TVET system is now highly developed, offering diverse educational programs at primary, secondary, and tertiary levels to meet the varying needs of the labor market.

However, implementing TVET reforms in less developed provinces like Gansu has proven challenging. To address these challenges, the Chinese government has taken steps to improve higher TVET in Gansu, such as increasing funding for TVET institutions, establishing technology transfer centers, and providing incentives to local businesses for setting up training centers. These efforts aim to enhance TVET infrastructure and provide better opportunities for vocational education in the region [6].

Gansu's TVET system plays a crucial role in providing educational opportunities to both the majority Han Chinese and minority populations, contributing to poverty reduction and expanding employment prospects in the region. By offering technical training, the TVET system equips students with the skills needed to secure jobs in the local economy, making it a vital component of Gansu's economic and social development.

To further enhance the TVET system in Gansu, research suggests focusing on improving teacher qualifications and fostering industry partnerships. Ensuring that teachers possess both higher education knowledge and vocational expertise allows the TVET system to offer more relevant and up-to-date training to students. Industry partnerships are also essential to align the curriculum with industry needs, providing students with the skills and knowledge demanded by the job market.

Strengthening TVET infrastructure and providing more financial support are critical aspects that will improve the quality of training and education, ensuring students receive a comprehensive learning experience. Moreover, enhancing the link between TVET and industrial enterprises will help align the education provided with the demands of the labor market.

In conclusion, Gansu's TVET system has significantly evolved, responding to the demands of a globalized economy by adopting a comprehensive approach. While it has contributed to China's economic growth by producing a skilled workforce, further efforts and reforms are necessary to address challenges and ensure the system's quality and relevance in sustaining economic development. By continuing to strengthen TVET infrastructure, improving teacher qualifications, and promoting industry partnerships, Gansu can enhance its TVET system and provide valuable educational opportunities for its population.

### ***3.2. The Challenges of double-qualified teachers in Gansu Province, China***

In China, higher and further vocational education is subject to a complex structure. China's current system of higher vocational education has several problems, including the lack of qualified teachers, variable educational quality, lack of training, unified structure, and lack of capacity [7].

In order to enrich the theory of vocational education, promote the reform of higher vocational education, and improve the quality of higher vocational education in China, it is necessary to focus on the problems that need to be urgently solved and take an interest in higher vocational education in China [8]. Many Chinese vocational

education programs focus on entry-level skills rather than professional development. China's human resource planning strategy laid the foundation for the development of vocational schools [9]. Despite efforts to expand the curricula of vocational schools, the level of qualification is not high enough to meet the changing economic landscape and provide Personalized with economic development. In addition, curriculum development does not address leading technology companies or economic growth, and entrepreneurship and innovation are neglected [10]. It is difficult to construct a "double-qualified" teaching team in vocational schools because the identification standards for "double-qualified" teachers are not clear, there are only single recruitment channels, and the training systems are inefficient. More specifically, there are three main issues that affect the professional competence of doubled qualified teachers as below:

a. Lack double-qualified teachers at higher vocational institutions and low quality of these teachers

One obstacle hindering the growth of higher vocational education in China is the lack of doubled-qualified teachers at higher vocational education institutions and the low quality of those teachers [11]. Vocational schools focus on developing vocational and technical talents, and the key to developing technical and skilled talents is a 'doubled-qualified' teaching team that has both theoretical understanding and technical application skills. Vocational schools strive to represent new science and technology teaching characteristics and promote a group of advanced new technical skills that integrate production, construction, management and service [12]. The doubled-qualified teaching team developed in practice is essential. If vocational schools want to develop great technical skills that also address social needs, a 'doubled-qualified' teaching team is required.

b. Single structure and lack of capacity

In China, most teachers in vocational schools are hired after graduating from colleges and universities and do not have practical skills. However, teachers recruited from enterprises often have little theoretical knowledge [13]. There are few "doubled qualified" teachers who truly combine practice and theory. As a result, some theoretically trained teachers do not understand the practical problems that may arise from improper application of theoretical knowledge, and some practical teachers do not know how to use theoretical knowledge to explain the problems and reasons for experiments [14]. Teachers in enterprises also often lack pedagogical skills. There are not enough excellent teachers and few training opportunities, resulting in relatively backward teaching concepts and simple teaching methods among teachers in rural primary and secondary schools. There is a shortage of specialized teachers.

The vocational education system in Gansu cannot succeed if there are not enough qualified teachers who can go to enterprises, while at the same time more enterprise personnel are coming to vocational education institutions. "Doubled qualified" teachers are needed to teach and train students in both schools and enterprises. However, the proportion of "doubled qualified" teachers in vocational secondary schools is too low, 28.43% [15]. In order to ensure the successful implementation of vocational education reform in Gansu, the Ministry of Education of Gansu Province needs to increase the number of "doubled qualified" teachers. To this end, the Gansu provincial government should provide additional financial support and training for existing teachers and recruit new teachers; provide incentives for teachers to enter the industry, such as higher salaries and more training

opportunities; work with industry to provide internship opportunities for teachers to gain industry-relevant experience, and develop and implement a comprehensive strategy for recruiting and retaining qualified teachers.

c. Lack of training system and the incentive mechanism is immature

Currently, training for “doubled qualified” teachers is mainly in the form of short-term, concentrated training and on-the-job practice. Enterprises are not actively involved in training doubled qualified teachers [16, 17].

Temporary employment in enterprises is essential for the development of “doubled-qualified” teachers. However, the existing practice platforms and opportunities that enterprises can provide are inadequate, which is not conducive to improving the practical skills of teachers in higher vocational schools.

It is a uniform training method that lacks an overarching concept, and the training effect is difficult to monitor. It cannot meet the actual needs of teachers in vocational schools. The method solves the problem of the number of doubled qualified teachers, but many teachers or vocational schools still do not realize the importance of teacher training, resulting in low quality of “doubled qualified” teachers.

In order to meet the increasing demand for doubled qualified teachers in higher vocational schools while there is a shortage of such teachers, scholars need to research and propose a new theory on the human resource development of doubled qualified teachers at the theoretical level.

This theory should then be able to guide the practice of human resource development of doubled qualified teachers in China’s higher vocational education system. Considering this objective requirement, the purpose of this study is to find a solution to the issues raised by the expansion of higher vocational education in China. The purpose of this study is to develop a conceptual model for the synergistic growth of doubled qualified teachers.

#### **4. Results and Discussion**

The findings from this systematic review emphasize the importance of providing targeted support for double-qualified teachers to ensure a successful work role transition. As these teachers possess a unique combination of academic qualifications and industry experience, they are well-positioned to deliver practical and industry-relevant instruction to students in vocational education settings.

However, the review also highlights the challenges faced by double-qualified teachers during their work role transition. These challenges include role ambiguity, conflicting expectations from various stakeholders, workload imbalances, and cultural barriers that can affect their effectiveness in the classroom.

In response to these identified challenges, the study suggests the implementation of tailored strategies by educational policymakers and institutions in Gansu Province. Such strategies could address role conflicts and enhance organizational support for double-qualified teachers, ultimately leading to improved vocational education outcomes.

## **5. Conclusion and Discussion**

The findings of this systematic review highlight the importance of addressing multiple factors to enhance learning engagement among private college and university students in Xi'an, China. Educational institutions should consider adopting student-centered teaching approaches, fostering a supportive learning environment, and promoting positive peer and teacher-student relationships. By doing so, students' motivation, self-efficacy, and overall engagement in learning can be improved, leading to better learning performance.

China's higher and further vocational education system faces several critical issues that hinder its effectiveness in preparing students for the dynamic job market and economic development. Let's delve deeper into each of these issues and explore how the suggested solutions can bring about positive changes:

### **1. Lack of Qualified Teachers:**

The shortage of well-qualified teachers is a significant challenge in the vocational education system. Skilled and knowledgeable teachers are crucial for delivering quality education and fostering students' professional growth. Without sufficient qualified instructors, students may not receive the necessary guidance and mentorship, affecting their learning experiences and future career prospects.

To address this issue, investing in comprehensive teacher training programs is essential. Such training should focus on enhancing teachers' subject matter expertise, pedagogical skills, and industry knowledge. Continuous professional development opportunities can help teachers stay updated with the latest industry trends and teaching methodologies, ensuring they are better equipped to prepare students for real-world challenges.

### **2. Variable Educational Quality:**

The inconsistency in educational quality across different vocational institutions can lead to inequalities in students' skills and knowledge levels. This discrepancy can be detrimental to students' employability and overall career prospects.

To tackle this problem, implementing quality assurance mechanisms is crucial. Standardizing educational content, delivery methods, and assessment procedures can help maintain consistent educational standards across all vocational institutions. Regular evaluations and audits can identify areas that need improvement, thereby enhancing the overall quality of vocational education.

### **3. Lack of Training and Unified Structure:**

The absence of standardized training programs and a unified structure can create a mismatch between vocational education offerings and industry demands. It is vital to align vocational education with the requirements of the job market and society to ensure students are well-prepared for employment.

By establishing a unified structure, vocational education can be more responsive to industry needs. This can

involve collaboration with industry stakeholders and employers to identify current and future skills requirements.

Such partnerships can lead to the development of curricula that encompass the latest technologies and industry practices, enhancing the employability of vocational graduates.

#### 4. Lack of Capacity:

Limited resources and infrastructure can constrain the vocational education system's capacity, restricting its ability to accommodate a sufficient number of students. As a result, many potential learners may miss out on valuable vocational training opportunities.

To address this issue, increased funding and resource allocation are necessary. By investing in vocational education, the system can expand its capacity, build better facilities, and ensure that more students have access to quality vocational training. Focusing solely on entry-level skills in vocational education can limit students' career growth and advancement opportunities in rapidly evolving industries. To remain competitive in the job market, students need to acquire more than just basic skills.

To overcome this limitation, introducing modules or courses that emphasize innovation, creativity, and entrepreneurship is vital. Such additions to the curriculum can equip students with a broader skill set, fostering their adaptability and ability to thrive in a dynamic job market.

An inadequately designed curriculum may not prioritize entrepreneurship and innovation, which are critical drivers of economic growth. Neglecting these aspects can hinder students from becoming job creators and innovative contributors to the economy.

Integrating modules or courses that foster entrepreneurial thinking and innovation is necessary to address this issue. These additions can encourage students to think creatively, identify opportunities, and develop solutions that contribute to economic development.

Creating a teaching team with both teaching and practical industry experience can be challenging due to unclear standards, limited recruitment channels, and inefficient training systems. To overcome these challenges, it is essential to establish clear criteria and standards for "double-qualified" teachers. Creating efficient training programs and identifying multiple recruitment channels can attract experienced industry professionals to become teachers. These efforts can lead to the development of a well-rounded teaching team that combines academic knowledge with real-world expertise. In conclusion, addressing the issues in China's higher and further vocational education system requires comprehensive and strategic efforts. By enhancing teacher qualifications, standardizing educational quality, aligning education with industry needs, and emphasizing innovation and entrepreneurship, the vocational education system can better prepare students for successful careers in an ever-changing job market. Moreover, increased funding, employer engagement, student support programs, and the integration of digital learning technologies can collectively contribute to a more effective and responsive vocational education system in China.



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