

Serving the National Strategy and Empowering Talent to Development in Vocational Colleges - A Case Study of a Polytechnic College in Chongqing

Hui Xiong^{1,2*}, Xiaoning Zhou², Han Deng²

¹Chongqing Industry Polytechnic College, Chongqing 401120, China

²Wuhan Junying Fusion Information Technology Co., Ltd., Wuhan 430074, Hubei Province, China

*Corresponding author: Hui Xiong, huixiong@hust.edu.cn

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Abstract: This paper explores how vocational education reform and service to the national strategy can provide strong talent support for the construction of the Chengdu-Chongqing Economic Circle, using a polytechnic college in Chongqing as an example. By analyzing the strategic background and development needs of the Chengdu-Chongqing Economic Circle, specific measures are proposed in areas such as policy support, school-enterprise cooperation, curriculum system reform, and digital transformation. The discussion is supported by a detailed case study of a vocational and technical college in Chongqing. The paper concludes with a summary and an outlook on the future direction of higher vocational education in western China.

Keywords: Chengdu-Chongqing Economic Circle; Vocational education; School-enterprise cooperation; Digital transformation

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1. Strategic background of the Chengdu-Chongqing Economic Circle

With the deepening of globalization and changes in the global economic landscape, China needs to further strengthen the coordinated development within its internal regions to enhance national competitiveness overall. The implementation of the Belt and Road Initiative has provided new development opportunities for China's western region. As an important corridor connecting Eurasia, the strategic importance of the Western region has been increasing^[1]. On May 17, 2020, the Central Committee of the Communist Party of China and the State Council released "Guiding Opinions on Forming a New Pattern by Promoting Large-Scale Development in the West in the New Era," which has clarified the direction, specific goals, and tasks for large-scale development in the west in the new era. The release of this policy document marks that the Western region of China welcomes a new round of development opportunities. Higher vocational colleges need to closely align with national strategic needs, adjust their professional offerings, deepen cooperation between

schools and enterprises, and cultivate more high-quality technical and skilled talents, providing strong human support and technical guarantees for the socio-economic development of the Western region.

As an important economic growth pole in Western China, the Chengdu-Chongqing Economic Circle's strategic position has become increasingly prominent. Covering Sichuan Province and Chongqing Municipality, it is a key node in China's implementation of the Belt and Road Initiative, the Yangtze River Economic Belt development strategy, and the new ten-year plan for large-scale development in the West. In this context, higher vocational education, as an important means of cultivating high-quality technical and skilled talents, plays an irreplaceable role in supporting regional economic development and promoting industrial upgrading ^[2].

On April 23, 2024, President Xi Jinping chaired a symposium on promoting large-scale development in the West in the new era in Chongqing and delivered an important speech, clarifying the direction and setting specific goals and tasks for improving the socio-economic development level of the Western region and achieving regional coordination and sustainable development. Higher vocational education in the Chengdu-Chongqing region, as an important means of cultivating high-quality technical and skilled talents, plays a crucial role in this process. It needs to closely align with national strategic needs, adjust professional offerings, deepen cooperation between schools and enterprises, expand openness and exchange, and cultivate more technical and skilled talents that meet the needs of industrial development in the Western region.

2. School-enterprise cooperation and integration of education with industry

2.1. Innovation in school-enterprise cooperation models

(1) Establishment of automotive industry college

With the advancement of the development strategy for the Chengdu-Chongqing Economic Circle, the collaboration between vocational colleges and enterprises has grown increasingly close. To better serve local socio-economic development, vocational colleges in the Chengdu-Chongqing area are actively exploring new models of school-enterprise cooperation ^[3]. A certain vocational college in Chongqing is one of the first national-level demonstration vocational colleges and a construction unit under the national "Double High Plan" for building high-level institutions (Category B). Chang'an Auto is one of the four major automotive groups in China, with a history spanning 162 years and 40 years of automobile manufacturing experience, boasting 12 manufacturing bases and 22 factories worldwide. Through joint efforts such as establishing an automotive industry college and co-formulating talent cultivation plans, both parties ensure that teaching content keeps pace with the evolving demands of the automotive industry, laying a solid foundation for nurturing high-quality technical and skilled talents.

(2) Joint formulation of talent cultivation plans

In terms of curriculum design, based on the development trends of the automotive industry and the specific needs of Chang'an Auto, vocational colleges and the company have jointly developed a series of specialized courses. These courses not only cover fundamental theoretical knowledge but also include the latest industry technologies and application cases. For example, cutting-edge courses have been set up in areas like new energy vehicles and intelligent connected vehicles, ensuring students can grasp the most advanced technologies and development dynamics. Additionally, to improve students' practical abilities and professional qualities, both sides have implemented a dual-mentor system where each student is jointly guided by a teacher from the college and an engineer or technician from the enterprise. This model helps students better understand

and master professional knowledge and skills while also providing valuable career development advice. Moreover, both sides have jointly invested in constructing several high-level practical training bases equipped with advanced automotive testing equipment and simulation systems, offering students real-world practice environments. These training bases not only serve as essential teaching venues but also act as platforms for faculty and students to participate in research projects and technological development.

(3) Resource sharing and career development

Resource sharing is a critical aspect of school-enterprise cooperation. Some vocational colleges in Chongqing and Chang'an Auto encourage and support faculty and students in participating in the company's R&D activities, conducting joint research to promote the application and transformation of scientific and technological achievements. For example, they engage in deep cooperation in fields such as new energy vehicles and intelligent connectivity, enabling the complementary advantages of the school's educational resources and the company's technological resources. Furthermore, both sides focus on faculty training, regularly organizing school teachers to undertake internships and technical training at Chang'an Auto while inviting corporate experts to teach at the school, maintaining the freshness and practicality of teaching content. Regarding employment and career development, they target specific job needs by setting up "order classes" to tailor-made train talents according to corporate requirements, ensuring graduates can seamlessly integrate into job positions. At the same time, they provide career planning guidance services to help students clarify their personal development goals and offer ongoing support for their subsequent career growth. This comprehensive cooperation model not only enhances students' professional quality and employment competitiveness but also provides Chang'an Auto with a steady source of talent, achieving a win-win situation.

2.2. Characteristic development through the integration of education and industry

Some vocational colleges in Chongqing have not only established various school-enterprise cooperation models domestically but have also taken firm steps towards internationalization^[4]. By promoting international exchanges and cooperation among vocational institutions, the school continuously improves its educational quality and international influence.

(1) International operations and faculty exchange

Through multiple forms of international cooperation, the vocational college in Chongqing has promoted the internationalization of vocational education. First, the school, in collaboration with Chongqing Chang'an Auto International Sales Co., Ltd., established an "Overseas Talent Training Base in Saudi Arabia," providing local vocational training and supporting Chinese enterprises in their "Going Out" strategy. The base offers customized courses that combine local market needs with the latest automotive technology knowledge and management experience. Additionally, the school actively explores new models of overseas operations, establishing cooperative relationships with many foreign institutions to jointly conduct professional construction, course development, and share teaching resources. For example, it collaborates with governmental, educational, and business entities in countries along the "Belt and Road" initiative, such as Sri Lanka, to jointly build digital rural projects, promoting the integration of education and industry. In terms of faculty exchange, the school dispatches excellent teachers to overseas bases to teach and disseminate advanced vocational education concepts and techniques while actively introducing foreign experts and teachers to enrich its faculty and improve the level of internationalized teaching.

(2) Student training and research collaboration

The school has adopted a series of international measures in student training. It has signed cooperation

agreements with vocational colleges in multiple countries, regularly organizing student participation in international exchange programs to broaden their international perspectives and enhance cross-cultural communication abilities. Furthermore, the school encourages and supports students to pursue overseas internships and employment, particularly in countries and regions along the “Belt and Road.” It has established cooperative relationships with multiple multinational companies, providing rich overseas internship opportunities for students. These initiatives not only enhance students’ overall quality but also increase their employment competitiveness. In terms of research collaboration, the school engages in joint research projects with foreign universities and research institutions, especially in areas like new energy vehicles and intelligent connectivity. Through international research cooperation, the school stays updated with international frontiers in technology and research dynamics, maintaining its leading position in relevant fields.

(3) Technology transfer and innovation

The vocational college in Chongqing has established close relationships with research institutions and enterprises in multiple countries, accelerating its technological progress through joint research and technology exchanges. In the field of intelligent manufacturing, the school collaborates with overseas enterprises to develop advanced automated production lines, significantly enhancing production efficiency. In service innovation, the school works with enterprises to explore new service models and delivery methods to meet new customer demands. In the area of after-sales service for Chang’an Auto’s overseas markets, the school collaborates with enterprises to develop smart diagnostic systems based on big data analysis, improving service response speed and customer satisfaction. With the continuous deepening of globalization, the school continues to deepen international cooperation, innovate cooperation models, and nurture more high-quality technical and skilled talents with an international perspective. This comprehensive international cooperation not only aligns with the direction of national vocational education reform but also provides valuable experience for the international development of vocational education in China.

3. Digital transformation and employment and entrepreneurship for university students

Schools have effectively promoted the digital transformation of vocational education by strengthening digital infrastructure and developing high-quality digital teaching resources^[5]. The information and intelligent management levels of the school have been significantly enhanced, providing students with more opportunities to engage with cutting-edge technologies and gain practical experience, thereby further improving their overall quality and employment competitiveness.

(1) Modernization of infrastructure

During the process of digital transformation, some vocational colleges in Chongqing have vigorously advanced the modernization of their infrastructure. The school has built a green and environmentally friendly data center with two sets of private cloud virtualization environments, supporting over 30 cloud-based systems, and providing an efficient and stable service platform for all faculty and students. Additionally, the school has constructed a 2.5D geographic information foundation, comprehensively collecting facility and spatial data within the campus, integrating this data with business processes and management services, achieving one-screen displays of campus operations, one-click access to all services, and immediate insights into panoramic data. Through these measures, the school has created a borderless 3D digital campus 2.0, significantly improving the school’s intelligence management level.

(2) Development of digital teaching resources

In terms of digital teaching resource development, the school utilizes information technology to comprehensively transform and reconstruct professional courses, adding new course content based on big data analysis and industry needs. Meanwhile, the school has entered into a deep collaboration with Chongqing Hualongwang Group Co., Ltd., a leader in digital media in Chongqing, to establish the Liangjiang Digital Economy Modern Industrial College, focusing on teaching resource development in the fields of advertising art design and digital media technology. This school-enterprise cooperation model enriches the teaching content and enhances students' practical abilities and employment competitiveness. Additionally, the school has established several open cross-sectoral practice platforms, such as the "Digital Technology Engineering Research Center," where students can participate in actual enterprise R&D projects, solve real-world production problems, and enhance their digital original capabilities.

(3) Enhancing employment and entrepreneurship opportunities

Through the construction of digital infrastructure and the development of teaching resources, the school has cultivated a large number of students proficient in the most advanced digital technologies and tools, making them more competitive in the job market ^[6]. Through deep cooperation with enterprises, students can gain experience in real projects, understand industry trends, and improve their problem-solving abilities, thus making it easier for them to secure high-quality job opportunities. The digital transformation provides a broad space for innovation and development opportunities for university students. The digital platforms and resources established through school-enterprise collaboration provide students with learning and experimentation opportunities and offer the necessary digital technology support for entrepreneurship. The school encourages students to use digital technology for innovation and entrepreneurship, assisting them in transforming ideas into reality through various competitions, incubators, and entrepreneurship guidance services. In the past five years, the employment rate of graduates has reached over 96%, with employers such as Chang'an Auto, China Engineering Physics Research Institute, Chengdu Aircraft Industry (Group) Co., Ltd., and Wuhan Junying Fusion Information Technology Co., Ltd., giving high evaluations of the graduates' comprehensive quality.

Since the 18th National Congress of the CPC, the strategic backdrop of the Chengdu-Chongqing Economic Circle has provided ample space and clear direction for the development of higher vocational education. Higher vocational education is an important means of cultivating high-quality technical and skilled talents and a key force in supporting regional economic development and promoting industrial upgrades. By strengthening school-enterprise cooperation, deepening curriculum reform, and advancing digital transformation, vocational colleges can better serve national strategic needs and inject new momentum into the high-quality development of the Chengdu-Chongqing Economic Circle. In the future, with the continued support of national policies for the large-scale development of the Western region and the rapid development of the regional economy, higher vocational education will play an even more significant role in the Chengdu-Chongqing Economic Circle.

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