

Research on Coordinated Development of Xi 'an Vocational Education and Regional Economy

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Abstract: As a form of education closely related to regional economic development, vocational education plays an important role in training high-level labor force and promoting economic development. Since the "14th Five-Year Plan", with the upgrading and adjustment of the industrial structure in Shaanxi Province, the industry boundary has been continuously expanded and the interdisciplinary integration has been deepening. The demand for hybrid, applied and innovative high-skilled talents is constantly increasing, so the development of vocational education plays an important role in promoting the reasonable and efficient growth of regional economy. This paper analyzes the mechanism of coordinated development between vocational education and regional economy, analyzes the problems existing in vocational education in Xi 'an City, and looks for ways to make economic development and vocational education fit together, so as to promote the economic development of Xi 'an.

1. Introduction

With the continuous development of social economy and the upgrading of industrial structure, the shortage of highly skilled personnel has become an important constraint restricting social and economic development. Accelerating the development of modern vocational education is an important strategic deployment for the country to further implement innovation-driven development, maintain demographic dividend, and achieve sustainable development. Currently, Vocational education in Xi 'an has made some progress. The talents trained by vocational education are more in line with the talents needed for local economic development. It provides effective human resources support for local enterprises and institutions and plays an important role in promoting regional economic development. However, there are also some problems that need to be solved urgently, such as backward vocational education running concept, insufficient investment in vocational education funds and low social recognition of vocational education. Therefore, it is a very important topic to study the interaction between the development level of vocational education in Xi 'an and the development of regional economy, and to better play the role of vocational education in serving the development of regional economy.

2. Mutual promotion mechanism between vocational education and regional economy

2.1. Vocational education promotes regional economic development and industrial structure optimization

Vocational education is an important force to promote regional economic development and industrial structure transformation. On the one hand, vocational colleges promote regional economic development and industrial upgrading and transformation by cultivating talents needed by the region, on the other hand, through school-enterprise collaborative education, colleges make full use of the theoretical knowledge, practical skills, experimental equipment and other hardware facilities learned in schools, transform into actual productive forces, and accelerate the development of regional economy^[1].

For example, the South Korean government had so-called "order classes" since the 1990s, The

government has given vocational schools great autonomy in setting up majors, and enterprises can set up majors according to the number, specifications and characteristics of the market demand for jobs. In the process of professional development, the school always maintains a very close cooperation with enterprises in terms of human and material resources, and timely understands the needs of actual positions. This "customer oriented" talent training mode makes vocational colleges and enterprises achieve a win-win situation. For a long time, Australia has also adopted various measures to accelerate the development of vocational education. At present, 13% of the total student population is enrolled in vocational schools, and nearly half of the high school students are receiving vocational education. The penetration rate of vocational education ranks first in the world. Germany's "dual" vocational education model, its core is also school-enterprise cooperation, with teachers including teachers who teach theoretical knowledge in schools and corporate mentors who conduct internship work guidance in enterprises. Germany's industry-university-research cooperation system not only ensures the close integration of vocational education with the needs of enterprises, can help young people smoothly realize the transition from school to the labor market and shorten the employment period, but also effectively promotes the scientific and technological innovation and industrial competitiveness of local colleges and universities, and realizes the transformation and docking of school-enterprise scientific research and scientific and technological achievements^[2]. Effectively promote the rapid development of regional high-tech industries.

In addition, vocational colleges can also develop the skills needed according to regional industries. Vocational colleges provide various vocational skills training for graduates, on-the-job employees, and transferred employees, so as to improve the comprehensive quality of regional labor force and better promote regional economic development.

2.2. Regional economy affects the scale of vocational education and the direction of personnel training

The development level of regional economy affects the educational level, development level, specialty setting and curriculum system of vocational education, etc. Therefore, in terms of personnel training, scientific research, social services, cultural inheritance and innovation, and internationalization, vocational colleges should first consider the development of regional industries, taking into account the docking of established majors and social needs, and the logical starting point for all professional setup should be the job needs of enterprises. All talent training programs and curriculum systems should be designed to meet the needs of local parks and industries. Therefore, the development direction of vocational education should first consider serving the industrial development of Xi'an, Shaanxi and even the west. Therefore, the integration of production and education and school-enterprise cooperation are two aspects that must be paid attention to in the development of vocational education. Only by following the two aspects of educational logic and industrial logic, can we train talents well, develop education well, and serve the industry better.

Regional economic development is an important economic foundation and material support for the high-quality development of vocational education. With the transformation of Xi'an economic development mode and the adjustment of industrial structure, it is urgent for vocational education to adjust the mode of personnel training, train high-skilled talents that meet the needs of social development, improve the quality of personnel training, and enhance the ability to serve regional economic development. Therefore, adapting to the new needs of regional economic development is not only the fundamental purpose of vocational education, but also the ultimate direction of vocational education development^[3].

3 The status of vocational education and regional economic development in Xi'an

3.1. The development scale and economic development of vocational colleges

Vocational education in Xi'an began in the 1990s. Formally developed in the early 2000s, From the construction of demonstration colleges to backbone colleges, to the "Innovation and

Development Action Plan", the construction of high-quality campuses, and then to the implementation of the "double-high colleges and universities" plan in 2019, after 30 years of continuous accumulation and development, a complete vocational education system has been initially formed, and great progress has been made in hardware and software. In 2022, Xi 'an has a total of more than 200 technical schools, vocational high schools, vocational secondary schools and higher vocational schools (Detailed data are shown in Table 1).The number of schools and the scale of student training have steadily increased, and the talent training mode of school-enterprise cooperation has basically taken shape, providing a large number of high-quality skilled talents for the economic development of Xi 'an and the development strategy of western Shaanxi Province. At present, Xi 'an is in an accelerated period of high-quality development, with increasing per capita income and expanding industrial scale, and the demand for highly skilled applied talents is becoming more and more urgent. The basic and overall characteristics of education are more obvious^[4].

Table 1 The status of Xi 'an vocational high school and economic development.

Year	2017	2018	2019	2020	2021
Number of schools (several)	62	60	60	57	55
Number of graduates (persons)	14325	14064	12559	16028	16415
Enrollment (persons)	17080	17295	19797	22359	23364
Number of students enrolled(persons)	45145	46380	52553	58444	64996
Number of faculty (persons)	3318	3499	3801	4790	5373
Number of full-time teachers (persons)	2405	2584	2685	3421	3767
GDP(Hundred million yuan)	7418.04	8499.41	9399.98	10023.73	10688.28
Per capita GDP(yuan)	66649	73113	77494	79208	83689

3.2. Policy support for vocational education

In recent years, the development of vocational education has been supported by many policies, and the status of vocational education as a type education in Xi 'an has been consolidated and strengthened. As mentioned in the "14th Five-Year Plan" education development Plan of Xi 'an City in 2022, improving the quality and efficiency of vocational education is one of the key projects during the "14th Five-Year Plan" period. As stated in the implementation plan of "Famous school +" in Xi 'an vocational education, it is necessary to give full play to the advantages of teaching and research, characteristic specialties and integrated training of talents in higher vocational colleges. In 2023, the key points of vocational education and adult education in Shaanxi province said that it is necessary to promote the quality and excellence of vocational education, value-added and enabling, and train more excellent technical skills for economic and social development. In 2023, all eight "Double High Plan" colleges and universities in the province were rated "excellent"^[5].

3.3. Distribution of vocational education majors

In 2021, there will be 120 vocational universities in Shaanxi Province, with a total of 333,200 graduates, of which 38 are vocational colleges (29 are public vocational colleges and 9 are private vocational colleges). There are 122,400 students in higher vocational colleges and universities in Shaanxi Province, accounting for 36.72%. The majors of the graduates mainly involve 85 professional categories such as finance and commerce, medicine and health, and 407 majors, among which the number of graduates in medicine and health, transportation, finance and commerce, education and sports, and electronic information ranks the top five, accounting for 70.63% of the total number of higher vocational graduates. The employment rate of graduates is 89.56%, higher

than PhD graduate (83.11%) and undergraduates (84.32%), and lower than that of master students (91.43%).

4. The problems of vocational education in serving regional economic development

4.1. School concept positioning is not accurate, Social recognition of graduates is not high

Xi 'an is the capital city of Shaanxi Province, and its economic development is better than that of other regions. However, there is still a considerable gap between Xi 'an and developed coastal cities. People's cognition of the level of vocational education is greatly influenced by traditional concepts, and they believe that vocational education is lower education than ordinary undergraduate education, and it is the last choice for students who fail the high school entrance examination or college entrance examination. Parents of candidates also generally believe that the quality of students, teaching level, hardware facilities of vocational colleges are lower than other ordinary colleges, and the personal development prospects of students are generally not optimistic. Some enterprises also have traditional prejudices against the talents cultivated by vocational education, believing that the comprehensive abilities of vocational college students such as theoretical knowledge and practical operation are not as good as those of undergraduate graduates, ignoring that vocational college students usually have higher practical ability and more solid practical operation skills. But nowadays, more and more attention is paid to modern knowledge, Experts from developed countries such as Germany, Singapore and Australia generally believe that vocational education is as important as academic education, and vocational education should be regarded as one of the forms of high-quality education.

At the same time, some vocational colleges lack the awareness of serving the local economy in terms of talent training. Lack of in-depth understanding of local industrial changes and scientific and technological innovation, still use closed teaching mode, less update of teaching content, teaching method and teaching mode, lack of close connection between educational mechanism and social practice, backward teaching content, so that students still have to spend a lot of time to learn job knowledge after graduation. It does not reflect the accurate positioning of its own school, nor does it reflect the value of the development of the service economy.

4.2. Funding for vocational education is insufficient

Government financial expenditure on education is mainly for general undergraduate education, less money goes into higher vocational education, Compared with economically developed areas, Shaanxi Province receives limited state funding and allocates less funds for vocational education. The lack of multiple sources of funds restricts the improvement of school infrastructure and office conditions, and also restricts the sustainable development of vocational education. In 2022, China's fiscal education expenditure will account for 4.006% of GDP. Among all levels of education, the average annual growth rate of secondary vocational schools is 7.9%, which is relatively fast, but still lags behind the world average of 4.3% and the OECD average of 4.9%. As the capital city of Xi 'an, although the proportion of education expenditure in GDP has increased year by year, but it is still less than 2.5%. Whether it is with the average level of Shaanxi Province, the national average level, or the global average level, it is obviously low, there is a problem of insufficient investment in education funds(Detailed data are shown in Table 2).

Table 2 The proportion of education expenditure to GDP in Xi 'an.

Year	GDP/ Hundred million yuan	Education expenditure / Hundred million yuan	The proportion / %	Education expenditure as a share of GDP in Shaanxi province/%
2017	7418.04	133.89	1.80	3.86
2018	8499.41	157.19	1.85	3.64
2019	9399.98	201.9	2.15	3.69
2020	10023.73	233.37	2.33	3.84
2021	10688.28	255.94	2.39	3.44

Data source: Shaanxi Provincial Statistical Yearbook, Xi 'an Statistical Yearbook

4.3. Vocational education is not deeply integrated with enterprises and industries

At present, Xi 'an vocational colleges offer more than 400 majors, but the setting of some majors does not meet the market demand. The reason is that enterprises do not participate in the formulation of professional personnel training programs and the setting of curriculum systems, and most of the cooperation is limited to co-construction of courses or co-construction of practice and training bases. It is insufficient for in-depth cooperation mode such as order type, work-study combination and post practice. On the one hand, the quality and structure of the "double-qualified" teaching staff cannot meet the requirements of vocational education. More than half of the new teachers are mostly master's graduates from ordinary colleges and universities, with solid theoretical knowledge. However, the growth path from "school to school" lacks working experience in the practical part of production. On the other hand, most small and medium-sized enterprises too pursue short-term economic benefits, the understanding of school-enterprise cooperation is one-sided, and the cooperation enthusiasm is not high. Most of the cooperation only stays in the form, the performance is more passive, and the actual in-depth cooperation in joint training, curriculum construction and other aspects is less, not aware of the important role of science and technology and human resources of vocational colleges on the long-term development of enterprises, resulting in the economic benefits of vocational colleges are not high, and enterprises' enthusiasm for joint training students is gradually declining.

5. Conclusion

The development of vocational education provides necessary talents support for regional economic development, it is one of the important conditions to promote the development of regional economy, and the development of regional economy provides the necessary material guarantee for the development of vocational education. Both promote and influence each other. At present, the development of vocational education in Xi 'an has made certain achievements, but there are still many problems, such as: inaccurate positioning of school philosophy, low social recognition of graduates, insufficient investment in education funds, and insufficient integration of vocational education with enterprises and industries, etc., which need to be further improved.

As the country's awareness of the importance of vocational education increases, many schools are constantly improving their school-running philosophy, improving their school-running conditions, and improving the quality of personnel training. However, because vocational colleges have a relatively short history of running schools and a weak foundation for running schools compared with ordinary colleges, there are many difficulties in attracting high-quality students and introducing high-level teachers. Therefore, in addition to the existing guidance and encouragement policies, laws and regulations on school-enterprise cooperation should also be improved to provide a platform for the sustainable development of school-enterprise cooperation. Through incentive policies, enterprises should be guided to actively participate in the school-enterprise collaborative education model, which promotes the in-depth development of school-enterprise cooperation. Improve the ability of vocational education to serve economic development and realize the "triple win" of school-enterprise administration.

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