

Research on Higher Vocational Education Based on Industrial Transformation and Upgrading

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Keywords: Higher Vocational Education, Industrial Transformation and Upgrading, Professional Structure, Collaborative Development

Abstract: Transformation and Upgrading of Service Industry is the Eternal Theme of Higher Vocational Education Reform, Development and Innovation. Industrial Transformation and Upgrading Require Higher Vocational Education to Continuously Improve the Level of Personnel Training and Train More High-Quality Technical Talents with Market Competitiveness. However, Judging from the Current Situation of the Docking between Higher Vocational Education and Industrial Transformation and Upgrading in Our Country, There Are Still Some Problems Such as the Deviation of Talent Training Orientation from Industrial Transformation, the Mismatch between Professional Structure and Industrial Structure, the Curriculum Setting Lagging Behind the Requirements of Industrial Upgrading, and the Prominent Structural Contradiction between Talent Supply and Industrial Transformation and Upgrading. Therefore, in Order to Realize Its Own Development, Higher Vocational Education Must Change Its Concept, Adjust Its Orientation in Time, Take the Initiative to Adapt to the Development of Industrial Transformation and Upgrading, Dynamically Adjust the Structure of Courses and Specialties, Optimize the Layout of Education, and Accelerate the Collaborative Education of Production and Education, So as to Realize the Coordinated Development of Higher Vocational Education and Industrial Transformation and Upgrading.

1. Introduction

Industrial Transformation and Upgrading Refers to a Country or Region's Adjustment of Industrial Structure and Its Corresponding Policy and Institutional Arrangements. It is the Upgrading, Replacement and Reorganization of Industrial Structure Based on a Country or Region's Strategic Development. Then a More Reasonable, Integrated and Highly Developed Replacement and Renewal Process Can Be Formed to Meet the Needs of the Long-Term Development of the Industry [1]. Generally Speaking, Industrial Transformation and Upgrading Has the Following Characteristics: First, Industrial Transformation and Upgrading is a Process in Which the Secondary and Tertiary Industries Surpass and Replace the Primary Industry. the Proportion of the Primary Industry in the National Economy is Reduced to a Reasonable Proportion Space. Second, in the Industrial Structure, the Superiority of Primary Labor-Intensive Industries Has Gradually Been Replaced by Capital-Intensive and Technology-Intensive Industries. Third, the Superiority of Primary Product Production is Gradually Replaced by the Production of Intermediate Products and Final Products. Four, the Policy Deployment and System Construction of Industrial Upgrading Are More Perfect and Perfect, Thus Consolidating the Achievements of Industrial Transformation, Upgrading and Development.

Judging from the Development History of Various Countries in the World, the Higher a Country's Economic Development Level, the Better the Matching Degree of Its Industries, and the Higher the Level of Its Industrial Structure. Judging from the Current Industrial Development Situation in Our Country, Due to Relatively Backward Technology, Lack of Funds and Long-Term Influence of Traditional Closed Thinking, Domestic Economic Development is Largely Driven by Sufficient and Low-Cost Labor. According to a Study by Cai Fang (2010), Vice-President of the Chinese Academy of Social Sciences, "among the Contributing Factors to China's Economic Growth, the Contribution Rate of the Expansion of Labor Force to the Economic Growth Rate is

24%, the Contribution Rate of the Improvement of the Overall Quality of Labor Force to the Economy is 24%, While the Contribution Rate of Labor Force Transfer to Economic Growth is 21%, and These Three Types of Factors Account for about 70% of All the Contributing Factors to Promote Economic Growth.” Although This Single Low-Cost Competitive Strategy Relying on Cheap Labor Has Enabled the Domestic Economy to Maintain Rapid Development for Decades, It Has Created the Myth of the World's Manufacturing “Factory Factory”. However, This Manufacturing Advantage Built on Low-Cost Labor Has an Adverse Impact on the Technological Transformation of Enterprises, Which Will Cause Enterprises to Focus Only on Low-Cost Labor, and Fall into a “Comparative Advantage Trap” [3]. So That It is At a Relatively Low Level and Position in the World Industrial Value Chain, and is Caught in the Competitive Pattern of “Low-End Design, Weak Brand, and Low Profit”. in Order to Improve the Level of China's Industrial Value Chain, in Order to Adapt to the Development Needs of Global Competition, We Must Vigorously Promote the Adjustment of Industrial Structure and the Transformation and Upgrading of Enterprises. from the “Factor-Driven” Based on Low-Cost Labor to the “Innovation Drive” That Utilizes Technological Innovation and Management Innovation to Improve Efficiency, It Has Shifted from Relying Too Much on “Demographic Dividend” to a “Technical Dividend” Based on Technological Innovation. the Transformation of Economic Growth Mode Will Be Taken as the Main Line and Key Task of China's Economic Growth Reform, and the Strategic Adjustment of Economic Structure and Technological Change and Innovation Will Be the Key Support for China's Industrial Transformation and Upgrading.

Pa Sorokin, a Sociology Professor At Harvard University, Puts Forward in His Book “Social Mobility”: “the Social Mobility of the Population and the Development of the Industrial Form Have a Positive Relationship to a Certain Extent, That is, the Higher the Degree of Social Development, the Rate of Change in the Work of Workers and the Rate of Industry Conversion Will Be Greater [4]. Lipsett Pointed out in the Book “Social Flow in Industrial Society”: “after Industrialization, the Social Occupational Flow is Unprecedentedly Fierce, and Vocational Education and Training Must Be Consistent with the Changes in Positions” [5]. Blau and Duncan (1978) Proposed That Industrial Transformation and Upgrading and Social Mobility Are Mainly Reflected in Vocational Education and Training [6].

2. The Inherent Requirement of Industrial Transformation and Upgrading for the Development of Higher Vocational Education

2.1 Industrial Transformation and Upgrading Needs Higher Vocational Education to Cultivate More Talents with Market Competitiveness

The process of industrial transformation and upgrading in China is simply the process of industrial composition moving to high-end, and the following three aspects should be realized: first, the transformation from extensive industry to intensive industry; second, the transformation from low value-added industry to high value-added industry; third, the transformation from high pollution and high energy consumption industry to low pollution and low energy consumption industry. The core of industrial transformation and upgrading lies in technological innovation. Through continuous improvement and innovation of traditional outdated technological projects, a new industrial upgrading system is created. The industrial upgrading must rely on the enhancement of talent strength, which should be closely linked with the training of Higher Vocational and technical personnel, the training of enterprise employees, and the re employment training of labor force. On the one hand, the most significant impact of industrial transformation and upgrading on the labor market is the emergence of a large number of “labor shortage”. Especially for some traditional manufacturing enterprises, they are facing the actual development requirements of industrial transformation, but the speed of transformation and upgrading is slow due to the lack of high-quality technical workers. The problem of “labor shortage” in enterprises is not the shortage of labor supply, but the shortage of labor quality [7]. On the other hand, the transformation and upgrading of the industry also requires corresponding adjustment or even restructuring of the

employment structure of the industry, which is mainly reflected in the further widening of the difference in the level and proportion of demands for talents in various industries. The demand for skilled workers in the primary and secondary industries is more vigorous, while the demand for high-end intellectual service population in the tertiary industry is also increasing day by day. With the deepening of industrial restructuring, the talent gap in this area will gradually widen. Therefore, industrial transformation and upgrading need to establish a more scientific personnel training mechanism to ensure the supply of technical personnel, and require higher vocational education to give more prominence to the training of talents with market competitiveness.

2.2 Industrial Transformation and Upgrading Urgently Require Higher Vocational Education to Upgrade the Training Level of Technical Talents

The development practice of developed countries and regions in the world shows that with the in-depth development of industrial economy, the society's demand for applied talents is more diversified, and vocational education schools are also showing a multi-level development trend [8]. Germany started to set up an applied science and technology university in the middle and late 20th century, which is a combination of ordinary universities and colleges. It is specially used to cultivate applied talents at undergraduate level to meet the demand of industrial development for high-level technical talents. In the 1970s, according to the requirements of industrial development in the region, Taiwan changed most of the specialized colleges into vocational and technical colleges, and then upgraded some of the technical colleges into universities of science and technology, establishing a comprehensive training system for skilled talents from secondary, tertiary, undergraduate to postgraduate levels. Generally speaking, a complete applied talents training system should include different levels and categories such as specialist, undergraduate and graduate students. However, the scale and structure of social demand for applied talents at different levels mainly depend on the stage of industrial development. And the industrial development is a dynamic process, which requires the training of applied talents to be adjusted dynamically.

At present, China is in a critical period of industrial transformation and upgrading, and the demand structure for applied talents has changed significantly. Especially with the rise of new industries such as energy conservation and environmental protection, information technology, biology, high-end equipment manufacturing, new energy and new materials, there is an urgent demand for higher-level applied talents. In recent years, although most of China's higher vocational colleges have strengthened the training of "highly skilled" talents, they have taken this as the direction to carry out educational and teaching activities. However, the ability of higher vocational graduates in knowledge renewal and skill conversion is still relatively weak, which is difficult to meet the actual needs of industrial development and innovation and personal future career development. There is no doubt that with the overall adjustment of China's industrial structure, the current level of talent training in higher vocational colleges has been unable to fully meet the needs of enterprises for technical application-oriented talents. Judging from the talent supply situation in China's three industries, the shortage of high-tech skilled talents has become a common problem, and the training level of higher vocational education talents needs to be improved urgently.

2.3. The Industrial Transformation and Upgrading Requires That the Professional Setting of Higher Vocational Education Be Highly Matched with the Industrial Chain

With the development of China's emerging industries, advanced manufacturing industries and modern service industries, the past situation of relying solely on labor-intensive production and low-cost labor to obtain market competition has been reversed, and new technologies or improved production technologies have been used to enhance the docking effect of various links in the industrial chain. The application of new technology, new technology and new technology has greatly improved the development efficiency of the industry, and has put forward higher requirements for the professional ability, professional accomplishment and professional level of human resources. The renewal and reconstruction of the industrial chain also put forward corresponding requirements for the professional setting of higher vocational colleges. Once the specialty setting of higher vocational colleges deviates from the industrial development, a large

number of educated people will fall into structural unemployment, resulting in waste of talents in the labor market, and the demand for industrial development cannot be effectively met. Judging from the current professional setting of higher vocational education in our country, most of them are concentrated in traditional basic disciplines, and there is still a certain gap with the requirements of industrial transformation and upgrading, especially there is still a long way to go in the construction of new professional groups. Only when the specialty setting of higher vocational colleges matches the demand of industrial chain can it better play its role in the transformation and upgrading of service industry [9]. At the same time, it is not only a realistic need for industrial transformation and upgrading, but also an inevitable requirement for improving the competitiveness of higher vocational education.

3. An Analysis of the Coordinated Development of Higher Vocational Education and Industrial Transformation and Upgrading

3.1 The Orientation of Higher Vocational Education Personnel Training Deviates from the Actual Requirements of Industrial Transformation and Upgrading

The effectiveness of industrial transformation and upgrading depends to a large extent on a country's human resource situation, relying on the comprehensive literacy of new technologies, new technologies and laborers [10]. At the present stage, China's industrial structure is rapidly changing towards technology-intensive and knowledge-intensive, and the demand for applied talents in science and technology shows a trend of diversification. However, most higher vocational colleges in our country have failed to keep up with the pace of industrial adjustment and still focus on traditional labor-intensive industries or capital-intensive industries in personnel training, which, to a certain extent, deviates from the actual needs of industrial transformation and upgrading.

3.2 The Mismatch between the Professional Structure and Industrial Structure of Higher Vocational Education

The mismatch between the professional structure and the industrial structure of higher vocational education is in fact that the talents trained by higher vocational colleges are inconsistent with the needs of the industry, and the professional setting of higher vocational colleges fails to keep pace with the adjustment of the industrial structure. With the initial establishment of China's modern industrial system, great changes have taken place in the industrial structure. Generally speaking, the proportion of the primary industry in the national economy is continuously decreasing, while the secondary industry remains stable or slightly shrinks, while the tertiary industry is developing rapidly and its proportion in the national economy is increasing year by year. However, at the present stage, China's higher vocational colleges lack planning in specialty setting and specialty expansion, and specialty setting tends to be popular. For example, various higher vocational colleges are not less enthusiastic about pursuing traditional hot majors such as computer, electronics, machinery, accounting, commerce and tourism. However, the industrial development has limited capacity to absorb popular majors, which eventually leads to an oversupply of some professionals. In addition, the transformation and upgrading of the industry have a greater demand for high-level talents in emerging industries such as new materials, new energy, communications, bio-pharmaceutical technology, etc. Due to the limited strength and resources of higher vocational education, there are few colleges and universities that offer relevant specialties. On the premise of rapid changes in the composition of the industry, the professional structure of higher vocational education must be adjusted and reconstructed in time in order to keep in line with the demands of talents for industrial development.

3.3. Higher Vocational Education Curriculum Lags Behind the Requirements of Industrial Transformation and Upgrading

As the support of talent cultivation, the quality of curriculum setting directly affects the quality of talent cultivation. At present, the curriculum setting of higher vocational education in China lags

behind the requirements of industrial structure adjustment to a certain extent. Industrial transformation and upgrading not only require workers to have strong job skills, but also must have the independent learning, thinking and creative ability needed to adapt to future industrial development and innovation. Therefore, the development of the times has put forward stricter standards for the curriculum of higher vocational education. However, due to the influence of school-running conditions and historical factors, the current curriculum system of higher vocational colleges in our country is almost a continuation of the traditional “third stage” model dominated by theory. The curriculum lacks market orientation, which makes it difficult to make timely adjustments in keeping with the market demand of industrial development. From the teaching level, the teaching mode of higher vocational education is still relatively fixed, outdated and inflexible. The teaching mode only focuses on the classroom, teachers and teaching materials to carry out personnel training activities. Students are in a passive state of acceptance in the process of higher vocational teaching. To a certain extent, the curriculum and teaching arrangement of higher vocational education neglect the cultivation and shaping of students' independent learning ability, innovative spirit and lifelong learning concept. It is difficult to cultivate compound talents with solid post skills and excellent comprehensive quality that match the needs of industrial transformation and upgrading.

4. Conclusion

At present, China is in the throes of economic structural adjustment, the shift of economic growth rate and the digestion period of early stimulus policy, which coincide with each other. It is also the key stage for economic development to enter the new normal. Industrial transformation and upgrading is an inevitable choice to adapt to the new normal of economic growth, which requires higher vocational education to provide a large number of high-level skills application talents to support, so as to promote the transformation of innovation achievements into real productivity. In order to better adapt to the new normal of economic growth and serve the transformation and upgrading of industries, higher vocational education must change its development mode, gradually shift its focus from traditional scale development to connotative development, further promote the reform of education and teaching, and improve the quality of running schools and the level of personnel training. According to the existing foundation and actual conditions of higher vocational education, on the basis of clear self-orientation, we will actively promote the coordinated development of higher vocational education and industrial transformation and upgrading.

Acknowledgement

This paper is the result of the 2017 scientific research project of Shaanxi Provincial Department of education “Research on dynamic adjustment mechanism of Shaanxi University Specialty Based on industrial transformation and upgrading”. (Project No.: 17jk1090)

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