

Coordination Analysis of Higher Education Subject Structure and Industrial Economic Structure Based on Integration

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Abstract: At present, the adaptability of higher education layout structure and provincial economic structure in different regions of China is not strong, which shows that the level of running higher education is lower than that of industry, there are fewer high-level universities, and the regional distribution of higher education is unbalanced, which cannot meet the needs of coordinated development of regional economy. Optimizing the structure of disciplines and specialties and adapting to industrial transformation and upgrading are important supports for the connotative development of higher education. On this basis, the author examines the development status and problems of the higher education department structure and industrial economic structure in China. The results show that the coordination of China's higher education department structure and industrial economic structure has an important impact on China's industrial economy.

1. Introduction

China's economic development has entered a new normal, and new opportunities, new adjustments, and new environments have gradually become a new pattern of economic development [1]. The pace of structural adjustment and management lags behind the needs of industrial structure and human resources market. The resulting structural unemployment problem of college students has become the focus of the government and society. In recent years, the employment problem of college graduates has increasingly become a serious social problem, and the unemployment of college students is largely structural unemployment [2]. The reason behind this is that the educational structure and the economic structure are not compatible and uncoordinated, resulting in an imbalance in the supply and demand for knowledge and talent. The regional economic structure refers to the spatial distribution and interrelationship of different regions with their own characteristics in terms of natural resources, location advantages, and future industrial development directions within a country or region [3]. In the coordination analysis of scientific structure, the main method at present is to calculate some key indicators. For example, the graduation implementation rate, the combination rate of learning and application and the over-education rate of Postgraduates in different disciplines reflect the coordination between the structure of disciplines and the economic and industrial structure, and the development of science and technology [4]. In recent years, the discipline structure of higher education in China has been constantly improved, and a relatively complete discipline structure with engineering as the main subject has been formed. Generally speaking, every adjustment, reform and optimization is to meet the needs of economic and social development at that time [5].

The neglect of social needs in the setting of disciplines and majors in Colleges and universities is a persistent problem in Higher Education in China for a long time. In this context, the strategic adjustment of economic structure has become the focus of accelerating the transformation of economic development mode [6]. This development trend is reflected in the coordination between higher education in coastal areas and local social, political, economic, cultural, scientific and technological factors. It also shows the coordination among the factors of scale, quality, benefit and structure of higher education in coastal areas [7]. As an important part of China's higher education system, in the tide of enrollment expansion, there is inevitably a deviation between the educational structure and the forestry industrial structure, which has a negative impact on the forestry economy [8]. The layout structure of regional higher education is restricted by various factors such as the

local natural environment, population, cultural traditions, and economy. Among them, economic factors play the most fundamental role. This method of reversing the coordination of the departmental structure from the micro level of postgraduate employment has a strong intuitiveness, but it is influenced by many aspects such as the macro background of economic development, changes in market supply and demand, and individual employment intentions of graduate students [9]. At the same time, the increasingly diversified social occupational division of labor in the external labor market has, to a certain extent, influenced the choice of students and their related knowledge. The talent training activities within the university also show more and more distinct professional education. Orientation [10].

2. Methodology

The coordination between postgraduate education and economy and science and technology is an important criterion for judging the development of a country's economic society and postgraduate education. Different regions have different requirements in terms of the scale, level and type of talent demand due to their respective characteristics in terms of economic development level, industrial structure status and future development trend. As the economic foundation, the economic structure determines or restricts the educational structure and then the disciplinary professional structure of the school, and the educational structure should be actively adjusted to adapt to the continuous evolution of the economic structure. The National Medium- and Long-Term Education Reform and Development Outline proposes the development goal of “accommodating the needs of national and regional economic and social development, establishing a dynamic adjustment mechanism, continuously optimizing the structure of higher education, and optimizing the discipline, type, and structure of disciplines”. The adjustment of industrial structure will inevitably bring about changes in technological structure and employment structure, which will affect the demand structure of human resources. Many researchers have studied the coordination between higher education and economic development. This decision is in line with the reality of China's economic development and higher education development, and is also the trend of world economy and higher education development. This is an ideal model, a process of development, more often just a trend, has not yet become a reality, need to take various measures to promote.

From Figure 1, we can see that the development process of China's industrial structure conforms to the theoretical law of industrial structure evolution and is consolidating the "321" pattern.

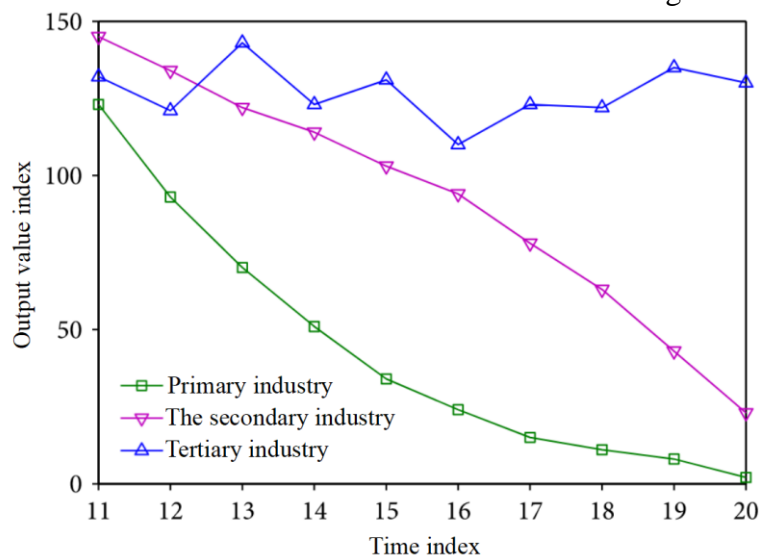


Fig.1. Trends in the Proportion of Three Industries' Output Value in China

Economic structure and educational structure are interrelated and mutually reinforcing. Provincial economy is an extended concept of regional economy. It is a regional economy with distinct regional characteristics and complete functions, taking specific provincial administrative divisions as geographical space, provincial regimes as the main body of regulation and control, and

market-oriented allocation of resources. At the same time, the development level of postgraduate education in China is measured by the number of Postgraduates in schools, which includes not only the total number of Postgraduates in schools, but also the number of Postgraduates in various disciplines. Subject structure is the horizontal structure for higher education to train specialized talents. It reflects the types of higher education talents and the self-development of subject structure. It has a direct relationship with the development direction of higher education, the type of personnel training and the development direction of school scientific research. Higher education can only fully utilize its functions of promoting regional economic development and achieve its own sustainable development only by adapting to the different requirements of higher economic resources for regional economic development. First of all, regional economic construction cannot be separated from local higher education that trains high-level professionals. Regional social progress cannot leave local higher education that inherits culture and creates knowledge. Human capital provides intellectual support for the transformation and upgrading of industrial structure, and is the key factor to promote the optimization and upgrading of industrial structure. Its quantity, type and structure affect the speed of industrial structure optimization and upgrading.

Judging from the development trend of statistically significant international comparisons, countries with a higher proportion of output value of the secondary industry, or countries with higher output value of the primary and secondary industries, have gradually increased their proportion of science and engineering students. As shown in Table 1, the statistics of the output value of China's industry from 2013 to 2018.

Table 1 China's industrial structure and employment composition (unit:%)

Project	Primary industry		The secondary industry		The service sector; the tertiary industry	
	2013	2014	2015	2016	2017	2018
Proportion of output value	16.3	9.0	46.2	43.1	35.7	41.9
Employment composition	57.3	35.2	21.6	28.4	24.2	39.8

3. Result Analysis and Discussion

Higher education bears the basic functions of cultivating the talents needed for industrial transformation and upgrading. To this end, it is necessary to examine and examine the current status and development trends of higher education science and technology in the context of the evolution of industrial and human resources employment structures in countries, especially high-income countries, from an international perspective. In order to promote the coordinated development of China's science and technology structure and the industrial and human resources employment structure, it provides useful reference and inspiration for better supporting national strategy and social needs. At the same time, in the interactive development, a dynamic mechanism of mutual restraint and mutual promotion is formed, as well as a coordinated development trend of mutual support and openness. Generally speaking, the current research literature mostly discusses the coordination relationship between the economic structure and the educational structure in general, while the specific research literature on the relationship between the internal structure of an industry and the corresponding educational structure is less. Therefore, whether the layout structure of higher education adapts to the layout structure of regional economy is not only related to the survival and development of Guangxi higher education, but also affects the economic construction and social development of Guangxi. To enrich the research on the coordinated development of local economy and society. Coordination is one of the themes of current social science research. Economic development is the basis of the development of social factors. Without economic growth and development, the development of other social factors cannot be started.

Similar to the development of higher education in China, the development of subject structure of higher education also shows the same trend. As shown in Figure 2.

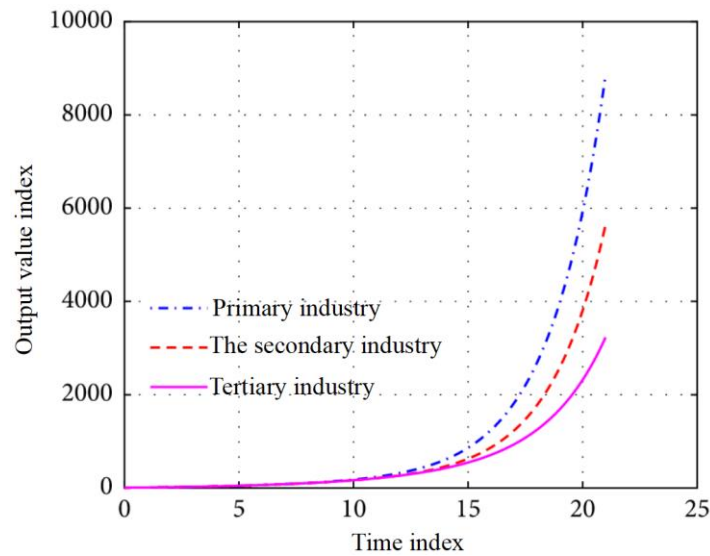


Fig.2. Evolution of Three Industrial Structures

The distribution structure of higher education mainly refers to the distribution of different types, levels and disciplines (specialties) of higher education in regional space in a country or region. We separate the number of Postgraduates in engineering and agronomy, and merge the number of Postgraduates in other disciplines besides engineering and agronomy into one category, which is referred to as other disciplines hereinafter. There is a systematic relationship between regional higher education and economic society. They are interdependent and need coordinated development. Regional economic and social development will inevitably put forward higher and newer requirements for the labor force and talent structure of regional society, and then require regional society to correspondingly improve the personnel training specifications and expand the scale of higher education. In particular, the post-development areas are urgently required to provide technical support and intellectual support for the goal of catching up with developed regions. China is in a critical period of accelerating the transformation of economic development mode and promoting industrial transformation and upgrading. It is imperative to optimize the structure of human resources employment through the adjustment of higher education department structure so as to better realize the benign interaction with economic development. Therefore, the author analyzes the trend of industrial changes from a structural perspective, and demonstrates the adaptability of the discipline structure and industrial structure changes in higher education. Therefore, in order to achieve the balanced development goal of Guangxi's higher education layout structure, we must take the road of unbalanced development.

4. Conclusion

The central government should strengthen macroeconomic regulation and control, plan the layout of disciplines in a unified manner, and clarify the key points and levels of discipline development. In view of the characteristics of China's current social transition period, there must be a gradual process for the change of the appropriate industrialization of the traditional centralized culture. At the same time, the self-discipline incentive mechanism of colleges and universities has not been established and improved universally. It is necessary for the government to moderately intervene in the setting of science and engineering majors, professional placement and enrollment. China's economy is growing rapidly, and there is a certain consistency with the growth of the national economy, but the fluctuations are more intense. Although China's industrial structure is constantly being optimized, it is still not reasonable, and the proportion of the tertiary industry has been low. The author believes that the following measures can be taken in the layout strategy of higher education: first, the government and enterprises should run schools in the joint industry. Through the joint operation of the government and enterprises, higher vocational colleges can not only train talents for enterprises, but also improve the quality of local residents. Secondly, we

should adjust the professional structure of colleges and universities in the original industries, highlighting the specialties with local characteristics, such as mineral resources, hydro-energy, tourism industry and so on. Therefore, the training and employment guidance of high-level innovative talents in the University plus industry system is very necessary. The society should also provide more technical posts for high-level innovative talents in the industrial field, not just for sex civil servants.

References

- [1] Satoshi Kagami, Tomonobu Kitagawa, Koichi Nishiwaki, Tomomichi Sugihara, Masayuki Inaba, Hirochika Inoue. A Fast Dynamically Equilibrated Walking Trajectory Generation Method of Humanoid Robot [J], 2002.
- [2] HIROKIK, MINORUA, YASUOK, ET al. RoboCup: a challenge problem for AI and robotics. Hiroki K. RoboCup-97: Robot Soccer World Cup [C]. Berlin: Springer, 1998.38-43.
- [3] Zhizhong Yin. Application of FPGA control DC motor servo system [J]. Inner Mongolia Science and Technology and Economy, 2008 177 (23) 101-103.
- [4] Joerg Christian Wolf, Phil Hall, Paul Robinson, Phil Culverhouse. Bioloid based Humanoid Soccer Robot Design, 2007.
- [5] Wu Chuan-yu, He Lei-ying, Design and Realization of Instructional RPPR-Robot, Research and Exploration in Laboratory. 2007, 26(10)
- [6] Nishiwaki K, Kagami S. High Frequency Walking Pattern Generation based on Preview Control of ZMP, IEEE International Conference on Robotics and Automation. 2006.
- [7] Chen Nan and so on. For the field of industrial and highly interconnected, TI launched a new Sitara ARM9 microprocessor. [J]. Global Electronics, 2010 (5) 86-87.
- [8] Vision Heading Navigation Based on Navigation Curve [A]. Proceedings 2010 International Conference on Intelligent Computing and Integrated Systems[C]. 2010.
- [9] Chen Nan and so on. For the field of industrial and highly interconnected, TI launched a new Sitara ARM9 microprocessor. [J]. Global Electronics, 2010 (5) 86-87.
- [10] Jonghoon ZMP Park, Youngil Youm. General ZMP Control for Bipedal Walking. IEEE International Conference on Robotics and Automation. 2007.
- [11] Chunmei Xu. Mechanical servo system based on fuzzy neural network for complex control [J]. Control Engineering .2010:17 (2):146-148.
- [12] Zhijun He. LM629-based motor servo control system design [J]. Mechanical design and manufacture .2009 (2) 40-42.