

Research on the Current Situation and Countermeasures of Speciality Setting in Higher Vocational Colleges in Chongqing

Shuang Wang^{1,*}, Huaxi Yang¹

¹Chongqing Medical and Pharmaceutical College, Chongqing 401331, China

*Corresponding author. Email: 3577180@qq.com

ABSTRACT

The speciality setting of higher vocational colleges should serve the development of regional industrial structure. Through the investigation and analysis of the regional economic development trend and the current situation of speciality setting in higher vocational colleges in Chongqing, it is found that there are some problems in the speciality setting of higher vocational colleges in Chongqing, such as the low degree of fit between the speciality structure and the region, the homogeneity of the speciality setting, and the lack of dynamic balance mechanism of the speciality structure. This paper puts forward the countermeasures and suggestions to adjust the speciality setting of higher vocational colleges in Chongqing.

Keywords: higher vocational college, speciality setting, current situation, countermeasures

I. INTRODUCTION

"Implementation Plan for National Vocational Education Reform" clearly puts forward that higher vocational colleges should cultivate high-quality technical and skilled personnel to serve regional development. In the final analysis, the economic development is the competition of talents. Therefore, the speciality setting of higher vocational colleges in Chongqing has become the key factor affecting the industrial upgrading and regional economic structure adjustment in Chongqing.

II. THE TREND OF REGIONAL ECONOMIC DEVELOPMENT IN CHONGQING

In 2018, Chongqing will focus on high quality, supply side and intelligence, achieving the total output value of 2036.319 billion yuan. Among them, the total output value of the primary industry reached 137.827 billion yuan, an increase of 4.4%; the total output value of the secondary industry reached 832.879 billion yuan, an increase of 3.0%; the total output value of the tertiary industry reached 1065.613 billion yuan, an increase of 9.1%; and the structure ratio of the three industries was 6.8:40.9:52.3 (as shown in "Table I").

TABLE I. GDP OF CHONGQING IN 2018

	Total output value (100 million yuan)	Proportion (%)
Primary industry	1378.27	6.8
Secondary industry	8328.79	40.9
Tertiary industry	10656.13	52.3
Gross value of production	20363.19	100

Among the "6 + 1" pillar industries, the added value of the electronic manufacturing industry increased by 13.6%; the added value of the material industry increased by 11.0%; the added value of the chemical and medical industry increased by 4.9%; the added value of the equipment manufacturing industry increased by 3.2%; the added value of the consumer goods industry increased by 1.9%; the added value of the energy industry increased by 1.7%; and the added value of the automobile manufacturing industry declined by 17.3%. Except for the automobile manufacturing industry, the other industries have increased. The added value of strategic emerging manufacturing industry has increased by 13.1%, which is the main driving force for industrial economic growth. Among them, the new generation of information technology industry, biological industry, new materials industry and high-end equipment manufacturing industry increased by 22.2%, 10.0%, 6.5% and 13.4% respectively. The output of new products increased rapidly. Among them, new energy

*Fund: Chongqing higher education and teaching reform project (203597); Decision-making consultation and management innovation project of Shapingba District, Chongqing (Jcd201974)

vehicles increased by 33.0%, smart phones increased by 59.4%, LCD screens increased by 56.2%, industrial robots increased by 68.8%, wind turbines increased by 45.2%, and medical instruments and equipment increased by 74.1%.

III. THE CURRENT SITUATION OF SPECIALITY SETTING IN HIGHER VOCATIONAL COLLEGES IN CHONGQING

A. General structure of speciality

As of September 2019, there are 40 higher vocational colleges in Chongqing, accounting for 61.5% of the total number of ordinary colleges and universities in Chongqing, becoming an important place for Chongqing to cultivate high-quality talents.

According to the "Catalogue of Higher Vocational Education (junior college) of General Institutes of Higher Education" published by the Ministry of Education in 2019, the speciality setting of Higher Vocational Colleges in Chongqing in 2019 covers 19 major categories, with the coverage rate of 100%. There are 80 secondary professional categories, with a coverage rate of 78.4%. There are 340 speciality distribution points, with a coverage rate of 44.2%. The distribution of speciality structure is shown in "Table II". According to the analysis on the setup of the relevant specialties in the three industries, the number of specialties in the primary industry is relatively small, accounting for only 3.24%. And the ratio of professional distribution points of secondary industry and tertiary industry is 35.58% and 61.18% respectively, as shown in "Fig. 1".

TABLE II. SPECIALITY STRUCTURE LAYOUT OF CHONGQING HIGHER VOCATIONAL COLLEGES IN 2019

Code	Major categories	Number of secondary speciality	Ratio of secondary speciality	Number of specialties	Ratio of speciality distribution points
51	Farming, forestry, husbandry and fishing	4	5.00%	11	3.24%
52	Resource environment and security	7	8.75%	18	5.29%
53	Energy power and materials	4	5.00%	16	4.71%
54	Civil construction	7	8.75%	27	7.94%
55	Hydraulic engineering	3	3.75%	7	2.06%
56	Equipment manufacturing	6	7.50%	28	8.24%
57	Biology and Chemical Engineering	1	1.25%	5	1.47%
58	Light and Textile Industry	4	5.00%	6	1.76%
59	Food, medicine and grain	3	3.75%	14	4.12%
60	Transportation	5	6.25%	38	11.18%
61	Electronic information	3	3.75%	32	9.41%
62	Medicine and health	7	8.75%	27	7.94%
63	Finance and business	9	11.25%	34	10.00%
64	Tourism	3	3.75%	8	2.35%
65	Culture and art	4	5.00%	27	7.94%
66	News transmission	2	2.50%	11	3.24%
67	Education and Sports	4	5.00%	19	5.59%
68	Public Security and Justice	1	1.25%	1	0.29%
69	Public administration and services	3	3.75%	11	3.24%
Total		80	100%	340	100%

^a Note: the data is from the "Catalogue of Higher Vocational Education (junior college) of General Institutes of Higher Education" (2019) and the record results of speciality setting of higher vocational education in 2019 by the Ministry of Education.

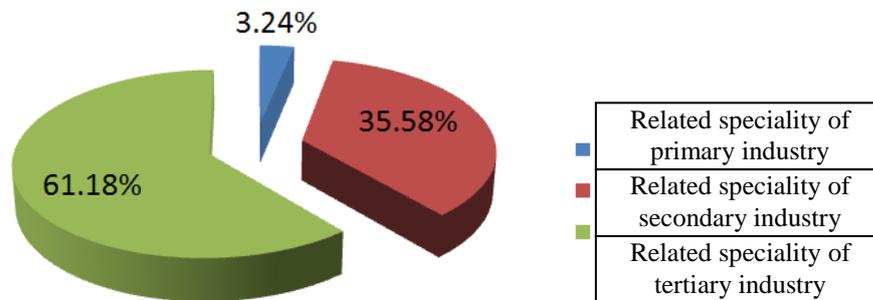


Fig. 1. The setup of relevant specialties in Chongqing's three industries in 2019.

^a Note: the data is from the "Catalogue of Higher Vocational Education (junior college) of General Institutes of Higher Education" (2019).

B. Speciality distribution

According to the distribution of major categories set up by each college, the major category with the largest setup is electronic information category. Among the 40 higher vocational colleges, 34 colleges have set up related majors, accounting for 85% of higher vocational colleges in Chongqing; 33 colleges set up finance and commerce, accounting for 82.5%; 31 colleges set up equipment manufacturing, accounting for 77.5%; only one college sets up public security and justice, accounting for 2.5% (as shown in "Fig. 2").

According to the analysis of speciality distribution, the top ten majors in Chongqing vocational colleges involve five major categories: electronic information, finance and commerce, equipment manufacturing, tourism and civil construction, with a total of 206 distribution points, accounting for 60.59% of the total number of speciality distribution. Among them, the speciality with the largest setup is big data technology and application, which is set up in 70% of the 40 higher vocational colleges, followed by marketing and accounting, accounting for 55% and 52.5% respectively (as shown in "Table III").

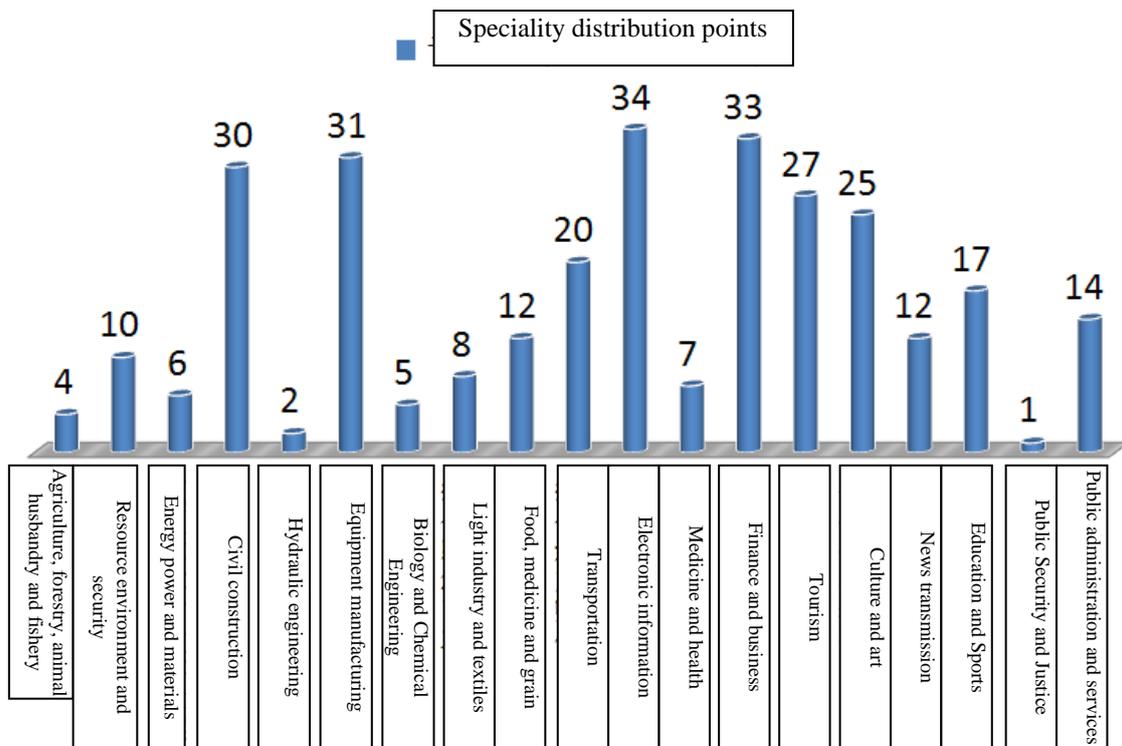


Fig. 2. Layout of major categories in higher vocational colleges in Chongqing.

^a Note: the data comes from the record results of speciality setting of Higher Vocational Education in 2019 by the Ministry of education.

TABLE III. TOP 10 SPECIALITY DISTRIBUTION IN CHONGQING IN 2019

Ranking	Major category	Speciality	Name	Number	Setup ratio
1	Electronic information	Computers	Big Data technology and application	28	70.0%
2	Finance and business	Marketing	Marketing	22	55.0%
3	Finance and business	Financial accounting	Accountant	21	52.5%
4	Tourism	Tourism	Tourism management	20	50.0%
5	Electronic information	Electronic Information	Internet of Things application technology	20	50.0%
6	Finance and business	E-commerce	E-commerce	19	47.5%
7	Civil construction	Construction engineering management	Building cost of projects	19	47.5%
8	Equipment manufacturing	Automation	Industrial robot	19	47.5%
9	Equipment manufacturing	Automation	Mechatronics	19	47.5%
10	Equipment manufacturing	Automobile making	New energy automobile	19	47.5%

IV. PROBLEMS IN SPECIALITY SETTING OF HIGHER VOCATIONAL COLLEGES IN CHONGQING

By comparing the speciality structure and distribution of higher vocational colleges in Chongqing in 2019 with the industrial structure, employment structure and regional economic characteristics of Chongqing, the following problems are found:

A. The fit degree of professional structure and region is not high enough

First, the speciality structure does not fit in with the industrial structure, and the speciality setting of the primary industry is obviously less, which cannot meet the development needs of the primary industry, while the speciality setting of the tertiary industry is more,

which is inconsistent with the actual development of the industry. Second, the degree of fit between speciality structure and employment structure is low, and the ratio of industrial structure is 3.24 : 35.58 : 61.18. The ratio of the employment population in the three industries is 27.2 : 25.9 : 46.9. The data shows that the demand for talents in the primary industry is very large, but the talent training in the secondary and tertiary industries is oversupply (as shown in "Fig. 3"). Third, the matching degree of speciality distribution with regional economic characteristics is relatively low. Among the top ten specialties with the largest distribution points, only the electronic information, automobile and equipment industries in the "6 + 1" pillar industry and the Internet of things in the ten strategic emerging industries are involved. However, there are still 21 colleges offering accounting and other majors with less obvious contradiction between supply and demand.

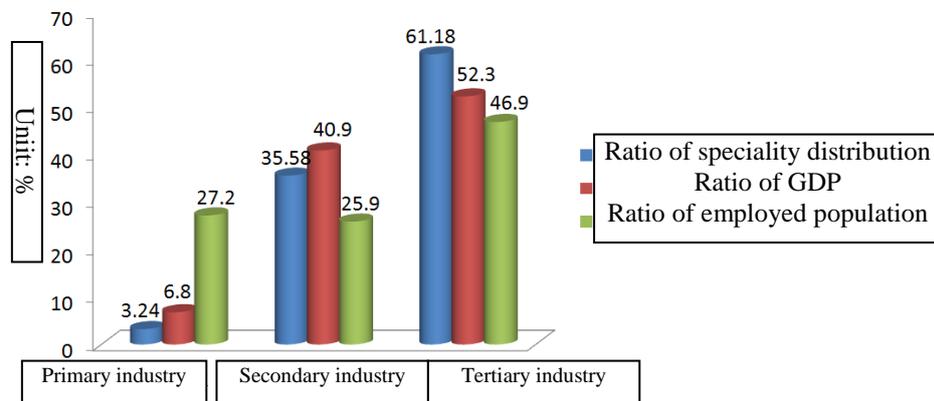


Fig. 3. Comparison of speciality structure of three industries with GDP and employed population.

^a Note: the data comes from the "Chongqing Statistical Yearbook in 2019" and the record results of the speciality setting of higher vocational education in 2019 of the Ministry of Education.

B. The homogeneity of speciality setting is serious

Through the analysis on the current situation of the speciality setting of higher vocational colleges in Chongqing, it is found that there is the phenomenon of repetition and homogeneity in the speciality setting. There is a lack of overall planning and full demonstration in speciality setting, which is arbitrary and lacks school-running characteristics. Colleges and universities are keen on majors with less investment, low cost and hot demand, such as marketing, accounting and other majors in the tertiary industry. More than 50% of colleges and universities have opened the above majors, and the number of speciality distribution shows an obvious trend of concentration.

C. Speciality structure lacks dynamic balance mechanism

The rapid changes and interweaving of industrial and technological changes are bound to bring about the deconstruction and reconstruction of existing majors. This dynamic adjustment process requires that the speciality setting must be flexible and developmental, so as to form a benign mechanism that resonates with the industrial reform. At present, there is a lack of dynamic balance mechanism in the speciality setting of higher vocational colleges in Chongqing, and the speciality adjustment is arbitrary, which results in many maladjustments between speciality and regional industrial structure and social development, and there is a large deviation between training and employing personnel.

V. COUNTERMEASURES AND SUGGESTIONS ON ADJUSTING THE RATIONALITY OF SPECIALITY SETTING IN HIGHER VOCATIONAL COLLEGES IN CHONGQING

A. The administrative departments of education should strengthen the guidance and scientifically plan the setting of regional specialties

During the "13th Five-Year Plan period", Chongqing will accelerate the promotion of new industrialization, develop strategic emerging industries, transform and upgrade traditional manufacturing industry, accelerate the development of modern service industry, and accelerate agricultural modernization as the development goal. Chongqing Commission of Education should make a reasonable unified planning and guidance according to the industrial development trend during the "13th Five-Year Plan period", strengthen the top-level design of the higher vocational speciality setting in the whole city, give strategic guidance to the colleges in terms of increasing or decreasing speciality approval and enrollment quantity control, establish adjustment mechanism for speciality

setting, and hold regular seminars and exchange meetings to share the data of regional industrial structure, higher vocational speciality setting, enrollment and graduation situation, so as to provide data support for the speciality setting of higher vocational education.

B. Establishing a dynamic adjustment mechanism of speciality structure based on the platform of group running school

The speciality setting should follow the principles of demand, characteristics and cooperation. Relying on the regional industrial development planning, higher vocational colleges should give full play to the advantages of group running school, improve the professional construction steering committee jointly established by industrial experts, enterprise (hospital) elites and school personnel, guide the development of industrial research, talent demand survey, and establish quantifiable professional evaluation indicators. Through seminars, visits, data reports, consultation and suggestions, professional evaluation is carried out on a regular basis, and the evaluation results are taken as an important basis for speciality addition, change, support and retirement, and the professional structure is continuously optimized.

C. Taking "double high-level plan" as an opportunity to deepen professional connotation construction

Speciality construction should fully meet the national professional teaching standards, industrial development needs, and the new requirements of "1 + X" certificate system, so as to change the focus of speciality construction from quantity expansion to quality improvement. Ten higher vocational colleges in Chongqing have entered the national "double high-level plan", and 12 speciality groups have become the project construction speciality group of "double high-level plan", which will form a new situation of speciality construction in higher vocational colleges in Chongqing. The speciality group of "double high-level plan" should give full play to the leading role. And it is required to summarize and refine the replicable experience and practice in the talent training mode, curriculum resources construction, teacher team construction, technical skills service and other aspects. And then, it can realize the resource sharing with other majors, radiate other majors and other higher vocational colleges, and comprehensively improve the professional construction level of higher vocational colleges in Chongqing.

VI. CONCLUSION

The speciality setting of higher vocational colleges must be scientific and reasonable. It is required to adjust the speciality structure, deepen the professional

connotation development, serve the industry, and promote the employment of students and the sustainable development of the college based on the regional industrial development planning.

References

- [1] Chongqing Bureau of Statistics, Chongqing Survey Team of the National Bureau of Statistics. 2018 Statistical Bulletin of Chongqing's National Economic and Social Development. [EB/OL]. [2019-03-19]. http://tjj.cq.gov.cn/tjsj/shuju/tjgb/201903/t20190319_454564.htm
- [2] Chongqing Municipal People's Government. The 13th Five-Year Plan for Chongqing's National Economic and Social Development [EB/OL]. [2016-03-21]. <http://cq.people.com.cn/n2 /2016/0321/c367697-27973963.html>
- [3] Tang Jihong. Analysis on the current situation and countermeasures of the establishment of higher vocational education in Chongqing [J]. *Education and Vocation*, 2012, (5): 28-29. (in Chinese)
- [4] Tian Feng. Research on the professional layout and optimization strategy of higher vocational colleges based on the adjustment of Chongqing's industrial structure [J]. *Contemporary Vocational Education*, 2017, (5): 63-67. (in Chinese)
- [5] Zhou Shuhui, Zhong Wenting, Li Hong. Research on the professional setting of higher vocational colleges to adapt to regional economic development [J]. *Education and Vocation*, 2018, (7): 53-58. (in Chinese)
- [6] Li Jun, Cao Yuping. Research on the optimization of professional structure in the construction of higher vocational colleges under the supply-side reform—Taking higher vocational colleges in coastal areas of Jiangsu as an example [J]. *Vocational & Technical Education Forum*, 2018, (9): 127 -132. (in Chinese)