Research on the Majors Setting in Colleges and Universities and Its Dynamic Adjustment Mechanism Based on Regional Economic Development—A Case Study of Jiangsu Province

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Abstract. Whether majors setting in colleges and universities can meet the human resource demands of regional economic development is related not only to the transformation of current regional economy and the adjustment of industrial structure, but also to the functional attributes of colleges and universities and their compliance with the requirements of “Double First-rate” construction in the reform of higher education. However, there are three major problems in the current majors setting of colleges and universities: firstly, there is short of overall planning and the homogenization is serious; another problem is that majors setting are arbitrary and blind; thirdly, professional division is too far elaborate, resulting in the narrow employment opportunities. Based on the problems of majors setting in colleges and universities and their properties, we put forward that it is necessary to establish the information sharing of majors in regional colleges and universities to solve the problem of information asymmetry, which is conducive to adjusting majors setting in time, thus forming a dynamic adjustment mechanism.

1. Introduction

Jiangsu Province is located in the Yangtze River Delta, and its economic development has been among the best in the country, even stimulating the economic growth in the surrounding areas. However, our country has been facing a trend of economic slowdown and structural adjustment in recent years, thus, Jiangsu Province with strong economy are supposed to play a leading role in the structural adjustment. The economic restructuring of Jiangsu Province will be deepened constantly, which trend is bound to bring about new demands and challenges to the province’s human resources. Therefore, colleges and universities responsible for the delivery of human resources for social economy should appropriately adjust the existing majors to adapt to the needs of structural adjustment.

In October 24, 2015, the State Council issued the \textit{Overall Plan for Promote the Construction of World-class Universities and World-class Disciplines}, in accordance with the “Four-Pronged Comprehensive Strategy” and the decision made by the Party Central Committee and the State Council: adhering to the construction of world-class universities with Chinese characteristics, setting high moral values and cultivating persons, pursuing an innovation-driven development strategy, serving social and economic development, adhere to the principles of “first rate-targeted, disciplines-based, considering performances as a lever and taking reform as the driving force”, so as to speed up the construction of world-class universities and world-class disciplines. How to set up majors of colleges and universities in accordance with the requirements of regional economic development and how to drive the design of dynamic adjustment mechanism of colleges and universities through economic transformation are related not only to the transition and transformation of regional economic structure, but also to the “Double First-rate” construction of constructing first-class universities with first-rate disciplines in responsible for the social responsibility and mission of the university, which is proposed by the Ministry of Education in
Working Focus of the Ministry of Education in 2016 issued in February 2016. Therefore, it is necessary to guarantee the professionals cultivated in colleges and universities to meet the demands of the current social and economic sustainable development, and the specific development of disciplines and majors is also an important means and inevitable step to rank among first-class universities with world-class disciplines.

2. Employing Regional Economic Development as the Basis of Majors Setting in Colleges and Universities

2.1 The majors setting in colleges and universities should meet the requirements of regional economic development

Today, the central government is vigorously promoting “Mass entrepreneurship and innovation”, and Jiangsu Province will also face economic transition from the factors-driving development model to the innovation-driven development model, where professionals are essential. Thus, there is a need for a timely transition in education keeping up with the pace of economic development and structural adjustment [1].

During the 12th Five-Year Plan period, Jiangsu Province has made the history of Jiangsu’s fastest development greatest change in the miracle, but with the vertical promotion of reform, the internal contradictions in regional economic transition are gradually revealed and the transition is still unstable and incomplete. Therefore, colleges and universities, as a base for personnel training, should take the initiative to study and consider the “13th Five-Year Plan” as a guidance document for professional development in Jiangsu Province. Colleges and universities can appropriately adjust the specific majors backed by the existing characteristic specialty and advantageous subjects, take the initiative to reduce the size of certain majors in accordance with the requirements of economic transition, as well as establish new majors to meet the needs of regional economic transition, provide the necessary of human resources and scientific research innovation for Jiangsu Province and surrounding regions [2].

2.2 The dynamic adjustment of majors in colleges and universities is an important link of higher education reform

In August 31, 2016, the State Council put forward in the Report on the Work Situation of Higher Education Reform and Development that higher education reform were supposed to take the initiative to adapt to social needs and optimize higher education construction, adapting to the needs of social and economic development and diversity of higher education while focusing on breaking the homogeneity of majors existing in the existence of higher education. In this way, colleges and universities are promoted to found a distinctive professional brand keeping up with the times, striving for first-rate colleges and universities with first-rate disciplines.

Proceeding from the specific situation of economic development in Jiangsu Province, higher education reform and development inevitably need to comply with the local economic structure and industrial needs and take the initiative to create new majors that the emerging industries need. At the same time, the existing majors should be closely linked to industries. Besides, the disciplines related to some important industries and basic industries should be given more support to build a framework of majors in which some majors are weakened, some supported and others cultivated. Pareto optimality of educational resources, which refers to an ideal state of resource allocation from one distribution state to another, making at least one person better under the premise of making nobody worse, can be achieved by some ways of Pareto improvement, such as, dynamically adjusting majors, establishing an access mechanism for majors, and others, which is bound to make contributions for colleges and universities to establish world-class universities and world-class disciplines, stimulating colleges and universities and achieving the ultimate goal of higher education reform.
3. Deficiencies of Majors Setting in Colleges and Universities

Currently, the economic reform has reached the deep water area. After more than 30 years of rapid development, problems have gradually emerged in coastal provinces in eastern China represented by Jiangsu Province. The traditional industrial structure has been unable to gain new growth momentum and it is also extremely urgent to upgrade industrial structure, which requires professional new-type talents of high-quality. Colleges and universities are responsible for the cultivation of social talents, so the majors setting of colleges and universities is particularly important in the economic transition and the suitable majors setting will play an indispensable role in economic transition. But so far, our research on the majors setting and dynamic adjustment in colleges and universities under the regional economic development is not perfect, which is mainly reflected in the following three problems:

3.1 Overall planning is lacking and the homogenization is serious in majors setting of colleges and universities in Jiangsu Province

After the Ministry of Education launched the Action Plan for Invigorating Education Facing 21st Century in 1999, colleges and universities ushered in the golden age of scale expansion, colleges and universities in Jiangsu Province have also renamed and expanded and enrollment has increased year by year so that more students can enter into the university [3]. However, it is obvious that the majors setting in colleges and universities have serious homogenization given that the department has no overall planning for majors setting. Too many majors are set in a same region, and popular majors are set in too many colleges and universities, so it is easy to ignore the comprehensive development of regional economy, which problem is unavoidable. Popular majors set in too many colleges and universities focus primarily on humanities and management majors having low requirement for equipment and capital. For example, English, law, business administration, administration, tourism management, accounting and other majors are set with high repetition rate. In contrast, some other majors are left in the cold. Take marine majors as an example.

In recent years, for lack of talent training base of marine-related majors undergraduate and above, Jiangsu Province need to recruit talents from the universities distinctive for marine majors, such as, Dalian Maritime University, Jimei University and others, which severely restricts the development of ocean-related industries in our province. The good news is that we learned the plan of establishing Jiangsu Ocean University has been passed in the discussion of colleges and universities establishment schedule organized by adopted by Development and Planning Division of the Ministry of Education. Jiangsu Province is expected to fill in the gap of this industry and profession, enhancing the strength of marine specialty group, which is an important step for the overall planning of majors setting.

3.2 Majors Setting Have an Arbitrary and Blind Trend, Lacking of Market Research

At present, the number of college graduates has reached a record high, but there is always labor shortage in the labor market and it is prominent that majors are not in demand, which shows that there is a serious structural imbalance between majors and employment imbalance. In 2001, Professor Gu Shengzu pointed out that there existed a phenomenon of “Eight Abundances and Eight Lacks” for talents, which still exists until now. It illustrates that there still exists disorder of majors setting in Jiangsu Province, even the whole country. This is because the managers of colleges and universities blindly pursue the width of discipline construction and they are keen to build comprehensive universities in replace of universities with characteristic specialties. For example, universities characterized in agriculture, forestry, science and engineering, finance and others have spent most of the funds on the construction of non-characteristic specialties, which wastes the scarce educational resources. In addition, these non-characteristic specialties don’t have satisfactory results, making no good response in the circle. At the same time, the phenomenon of following the trend in majors settings is rather severe. “Hot majors” have emerged for several times [4]. Some colleges and universities follow the trend of popular majors without considering their own school conditions. For instance, during the period of economics craze, almost all colleges and universities
in Jiangsu Province set up majors related to economics, but supporting teachers and learning materials were not offered in time, which was irresponsible for students and would lead to growth spurt of the number of undergraduates after four years, increased the difficulty of their employment. Furthermore, the market demand signal is also rarely considered by colleges and universities in majors setting. Educators have no deep understanding of industries and their demonstration of majors is not sufficient because the investigation procedures before majors setting are useless, which will eventually cause separate between major training and social and industry demands.

3.3 Professional Division is Too Far Elaborate and Employment Opportunity is Narrow

That professional division is too far elaborate small is a historical factor. The university personnel training model then is set up based on the planning by then government. First, there is industry demand, then professional training, thus majors setting of colleges and universities is apparently job-targeted, resulting in more than 1000 kinds of majors in the country in 1980 professional, several times higher than the Western countries. Now, major category has been adjusted and reduced, which is closely related to the great changes of employment situation of college students. College students choose their own career, so extending the professional range of majors is conducive to improving the competitiveness of employment. But the problem has not been fundamentally resolved; most of the curriculum setting has little difference with past. The range of professional knowledge is relatively narrow, and the level of compound talents is relatively low [5]. Accounting, for example, is a major greatly demanded. Any company has accounting positions. The number of enterprises in Jiangsu Province is also among the largest in the country, which brings about a huge demand for accounting professionals. However, curriculum for the accounting of many colleges and universities in Jiangsu Province only includes financial management, cost accounting, auditing and other main courses, but economics and law related knowledge is generally included in the optional courses. No rigid request for learning leads to narrow range of learning, and students cannot have a solid grasp of the quantitative analysis of accounting or adapt to the current changing legal provisions. Therefore, students cannot meet enterprises’ demands of high-quality accounting talents. However, enterprises are more inclined to recruit graduates who get CPA from all majors, thus increasing the difficulty of employment for accounting graduates.

4. The Design of Dynamic Adjustment Mechanism of Majors Setting in Colleges and Universities Based on Regional Economic Development

On the issues of majors setting in colleges and universities, it is pointed out through investigation and analysis that majors setting, adjustment and revocation in colleges and universities should take regional economic development as the starting point [6]. Universities, as a link in the social operation, cannot master social needs in detail and in time. Therefore, there is a need for establishing a professional information sharing platform for regional colleges and universities led by local government-led, in which all circles of society participate.

4.1 Establish a professional information sharing platform for regional colleges and universities

Majors setting should be market demand-oriented to effectively cultivate talents for the community. But the emerging of market demand often takes some time, which is what we call the time lag, so the “invisible hand” of government is required to play a role. In general, majors setting needs to refer to the economic data of province or even the country’s, in order to grasp the overall macroeconomic environment, and regional reference information includes: regional industrial structure, investment ratio, industrial added value, the growth rate of the proportion of service industry, wages and the number of professional enrollment and employment of peers and other relevant data. These data come from different departments and industries, increasing the difficulty of understanding the relation between supply and demand in time. In order to solve the problem of information asymmetry, it is necessary to break the barriers among departments and industries, establishing information communication channels and professional information sharing platform for regional colleges and universities [6]. The platform should be led by the Department of Education,
representing government in the education system. Government can invite industry associations and local colleges and universities to the platform, setting the appropriate authority, clearing their rights and obligations. And the operating steps of the platform are as follows: Firstly, industry associations released the development prospects of the industry and the corresponding professional needs, then, the government departments sort out the corresponding information and open to the local colleges and universities providing a basis for majors setting.

4.2 Establish dynamic adjustment mechanism of majors setting in colleges and universities

When setting up majors in colleges and universities, not only do we need to consider the market demand regional economic restructuring and development, but also we should discuss and plan scientifically for the professional curriculum setting with forward-looking ideas. Correspondingly, the success of major adjustment also has a certain role in promoting the existing industrial structure and economic transformation. Therefore, the major adjustment must be consistent with the regional market mechanism, the reform orientation and the industrial structure. The communication among government, universities and industry associations is conducive to timely adjust, recall or create the professional curriculum, achieve dynamic adjustment mechanism between majors setting and regional economic development. The process of dynamic adjustment mechanism go like this: after receiving the industry development report and talent needs plan, government departments integrate and summarize the information and then, put it into the platform and make copies for the local colleges and universities. Next, after receiving the information, functional departments in colleges and universities need to routinely organize teacher representatives, industry representatives to carry out demonstration and research on the professional planning and adjustment, producing a consensus on whether to adjust majors and how to adjust, finally submitting to the higher departments to apply for an evaluation.

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