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Strategic Analysis on the Construction of Dynamic Adjustment Mechanism for Higher Vocational Specialties under the Background of Big Data

Xiaomei Jiang*

Guangdong Teachers College of Foreign Languages and Arts, Guangzhou 510000, Guangdong, China

***Corresponding author:** Xiaomei Jiang, jiangxm@gtcfla.edu.cn

Abstract: Under the background of big data, with the rapid development of new technology and the explosive growth of data volume, the employment demand proposed by all walks of life has changed obviously, which poses new challenges to higher vocational education. In order to meet the needs of social development, and improve students' comprehensive literacy and employment competitiveness, higher vocational schools should take effective measures to build a dynamic adjustment mechanism of majors. In this regard, this paper first expounds the connotation and tasks of the dynamic adjustment mechanism of the construction of higher vocational majors, and then analyzes the necessity of the construction of the dynamic adjustment mechanism of higher vocational majors under the background of big data, and then puts forward effective construction strategies, in order to provide some references for relevant education researchers.

Keywords: Big data; Higher vocational education; Professional dynamic adjustment mechanism; Construction strategy

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1. Introduction

With the rapid development of information technology, big data has become an important force to promote social progress and industrial upgrading. In the field of higher vocational education, the application of big data has not only changed the traditional teaching mode, but also provided strong data support for the dynamic adjustment of higher vocational majors. Therefore, ways to make full use of big data resources and build efficient and flexible dynamic adjustment mechanism of higher vocational majors have become an urgent problem to be solved in current higher vocational education [1]. Therefore, higher vocational schools and teachers should take the initiative to change their educational concepts, fully realize the advantages of big data technology, and actively think about ways to adopt strategies to build a dynamic adjustment mechanism for professional majors.

2. Connotation and tasks of the dynamic adjustment mechanism for the construction of higher vocational majors

The dynamic adjustment mechanism of majors mainly refers to the continuous active and planned adjustment of majors by the school based on the in-depth research and analysis of market demand and trend, according to changes in talent demand, industrial structure and other factors, and on this basis adopt corresponding supporting measures to achieve dynamic adjustment of majors. First of all, in terms of the adjustment content, higher vocational schools should pay attention to the adjustment of major structure and layout from the macro level. At the middle level, higher vocational schools should pay attention to the adjustment of specialty direction, caliber and category, while at the micro level, higher vocational schools need to pay attention to the adjustment of specialty connotation and curriculum system. In addition, vocational colleges should base on in-depth research to build a dynamic mechanism of majors and build a systematic mode of operation around major structure layout, major direction setting, major addition, major early warning and withdrawal mechanism, etc. The mechanism includes a dynamic adjustment decision-making mechanism of majors, research mechanism, data analysis mechanism, early warning mechanism, evaluation guarantee mechanism and withdrawal mechanism, etc. to cultivate professional talents to meet the needs of industrial development and continue to improve the quality of higher vocational schools [2].

The main task of establishing the dynamic adjustment mechanism for majors in higher vocational schools is to strengthen the guidance and regulation of specialty settings, improve the system of specialty admission, early warning and withdrawal, and adjust the number of majors reasonably, to ensure that the professional structure system is more reasonable, with distinctive characteristics and outstanding advantages, and matches with the industry demand, industrial structure and regional economy. Higher vocational schools improve the mechanism of specialty admission, early warning and withdrawal, strengthen the review and control of specialty settings, and prevent the waste of human, material and other resources. In addition, higher vocational schools should reasonably control the number of majors, avoid the blind expansion of majors and the overlap of disciplines, and fully highlight the characteristics of specialty construction. In addition, a professional structure system with reasonable structure, distinctive characteristics and outstanding advantages should be formed to build high-level majors (groups). At the same time, the establishment and improvement of a dynamic adjustment mechanism for professional construction in higher vocational schools is conducive to raising the level of higher vocational education, promoting the sustainable development of higher vocational education, effectively promoting industrial transformation and upgrading, and meeting the needs of industrial development and social and economic development [3].

3. The necessity of establishing a dynamic adjustment mechanism for higher vocational colleges under the background of big data

3.1. It can effectively promote the development, transformation and upgrading of the industrial economy

In order to actively respond to the call of the state, regional industries need to continue to upgrade and transform to meet the needs of national development, higher vocational schools should optimize and adjust professional construction according to market demand, and transport talents for enterprises and industries that meet the needs of positions. In addition, under the background of "Made in China 2025," China's manufacturing industry, intelligent industry and new energy have gradually become China's priority development industries. Local

governments will make reasonable planning and setting for the development direction of emerging industries in the region according to their respective location conditions and the actual situation of the industry, and set up appropriate industrial clusters. In order to promote and cope with the development and transformation and upgrading of regional industrial clusters, higher vocational schools need timely and efficient adjustment of professional settings to comply with market requirements and supply relations, so that the trained professionals can match the needs of industrial development and job demand, and then contribute a force to the development of regional industrial economy [4].

3.2. Effectively break through the difficulties of dynamic construction of higher vocational majors

Compared with developed countries, China's higher vocational education started late, its professional development is not perfect, and it lacks rich experience in professional dynamic adjustment, so there are the following problems in professional dynamic adjustment: professional groups lack overall planning, market research is not thorough enough, and industrial development is disconnected from the regional economy. At present, the professional construction of higher vocational schools mostly starts from the campus, ignoring the real needs of the industry and the industry, resulting in the disconnection between the professional setup of higher vocational schools and the development of the industry. In addition, there are some problems in the dynamic adjustment of professionals, such as teaching evaluation systems and professional early warning. Therefore, to effectively solve the above problems, higher vocational schools need to build a dynamic adjustment mechanism to meet the needs of industrial development and post needs to ensure that the difficulties in the construction of higher vocational majors can be effectively solved [5].

3.3. Alleviate the structural unemployment of labor talent

At present, vocational college students' employment skills are difficult to effectively connect with job demands, resulting in a prominent problem of structural unemployment. The main reasons are as follows:

(1) Vocational colleges can train a large number of professionals, but the market demand is little or no demand, which makes it difficult for some students to find suitable positions [6];

(2) There is a shortage of specific talents required by some industries, which makes it difficult for enterprises to select and hire suitable talents, resulting in a lack of coordination between supply and demand.

In order to fundamentally solve the problem between structural unemployment and the imbalance between supply and demand, higher vocational schools should scientifically and reasonably predict the development trend of the industry and social demand, keep up with the pace of industrial transformation and upgrading and social development, and build a dynamic adjustment mechanism for majors. At the same time, through statistics and analysis of the employment situation of graduates, vocational colleges determine the degree to which the specialty setting is compatible with the job demand to realize the reasonable allocation of professional teaching resources, and then cultivate the high-quality talents to meet the needs of social development [7].

4. Strategies for the construction of dynamic adjustment mechanism of higher vocational majors under the background of big data

4.1. Establish a data center to realize data sharing and integration

In the context of big data, the establishment of a data center is the primary condition for the establishment of a

professional dynamic adjustment mechanism in vocational colleges. The platform has modules such as student learning performance analysis, employment analysis, and industrial demand analysis. At the same time, the data center has a strong information integration ability to form a more comprehensive information database, which is convenient for schools to discover more valuable information in this data. The details are as follows:

(1) The data collection system in the data center should cover the fields of student study, employment and industry dynamics, which can not only ensure that the data in the information base is true and effective but also the information data is more continuous and complete, providing effective data support for the follow-up dynamic adjustment of majors [8].

(2) The data processing and analysis function of the data center should also be strong enough to independently explore, integrate, and clean massive data, extract valuable information for the dynamic adjustment of higher vocational majors, and accurately locate market demand, thus improving the pertinence of professional dynamic adjustment. In addition, the data center should also support the visual display of data, present the results of complex data analysis intuitively and understandably, help school administrators quickly understand the meaning behind the data, to make more scientific and reasonable decisions, and then comprehensively improve the quality of talent training in higher vocational schools [9].

4.2. Using big data analysis technology to accurately target market demand

Big data analysis technology is an important means for higher vocational schools to build a dynamic adjustment mechanism for majors. By using advanced big data analysis technology, higher vocational schools can deeply explore valuable information in the data to better grasp the market demand and industrial development trends. In this regard, higher vocational schools can further analyze market demand, industry development trends, student employment and other aspects through cluster analysis, association rule mining, trend prediction and other big data analysis technologies to determine which specialties have good development prospects and which specialties need to be adjusted and optimized [10]. In addition, in order to better construct the dynamic adjustment of majors, higher vocational schools should accurately locate the market demand. For example, for majors with large market demand and good employment prospects, schools should increase the number of majors or expand the scale of enrollment. For the majors with low market demand and poor employment prospects, higher vocational schools need to make corresponding adjustments or even cuts, so as not to cause waste of educational resources and increase the difficulty of students' employment. At the same time, through big data analysis, vocational colleges can accurately grasp important information such as industrial development trends and the emergence of new technologies, and provide forward-looking guidance for professional adjustment and optimization. Moreover, by tracking the latest trends in industries and emerging technologies in real-time, vocational colleges can accurately predict the subsequent market demand, and make advance arrangements for related majors and courses. Thus, laying a solid foundation for students to achieve sustainable development [11].

4.3. Establish a professional early warning and withdrawal mechanism to ensure the rationality of professional settings

In order to further improve the effectiveness of the dynamic adjustment mechanism of higher vocational majors, it is particularly important to establish a professional early warning and withdrawal mechanism. Vocational schools can find and warn of potential problems in time by regularly evaluating the operation status of each major, market demand, student employment and other factors, to ensure the rationality and adaptability of the specialty setting. In terms of professional early warning, the school can set up a special evaluation team or

institution, which is responsible for collecting and analyzing relevant data and using scientific methods and models to conduct a comprehensive evaluation of each major [12]. Among them, the evaluation indicators may include but are not limited to the employment rate of the major, student satisfaction, industry matching degree, faculty strength, etc. By comparing historical data and industry standards, the evaluation team can find and identify problematic majors in a timely manner and send out early warning signals. Once a major is alerted, the university should immediately start relevant procedures for the withdrawal mechanism. This includes organizing experts to conduct a review, listening to the opinions of teachers and students, and making a detailed withdrawal plan. The exit plan should specify key matters such as time node, resource allocation, and student placement to ensure a smooth and orderly exit process. At the same time, schools should also actively communicate and negotiate with relevant departments and industries to seek maximum support and understanding. By establishing a professional early warning and withdrawal mechanism, the university can be more flexible in responding to changes in market demand and challenges of industry development, and ensure the rationality and foresight of the professional setting. This will not only help improve the quality and efficiency of talent training but also promote the optimal allocation of educational resources and the sustainable development of higher vocational education [13].

4.4. Improve the evaluation system and feedback mechanism to promote continuous improvement of the profession

In the era of big data, higher vocational schools need to continuously innovate and optimize the teaching evaluation system to effectively guarantee the advanced and scientific nature of the dynamic adjustment mechanism of majors. The details are as follows:

(1) Multiple evaluation subjects

Multiple evaluation subjects mainly refer to school administrators, teachers, students, enterprises and other subjects, because different stakeholders will carry out multi-dimensional evaluation according to the evaluation objectives based on their views and interests, thus ensuring the objectivity and comprehensiveness of the evaluation results.

(2) Multiple evaluation methods

Multiple evaluation means the combination of qualitative evaluation, formative evaluation and teacher evaluation, self-evaluation and external evaluation. Various evaluation means and methods complement and assist each other to avoid the inaccuracy of evaluation results caused by a single evaluation method to ensure the accuracy and reliability of evaluation results [14].

(3) Dynamic and sustainable evaluation methods

In the professional dynamic mechanism, vocational colleges should make reasonable use of online evaluation systems, big data analysis, cloud computing and other information means to carry out professional evaluation dynamically and sustainably, to improve the quality and efficiency of professional dynamic adjustment evaluation, reduce the influence of human and subjective factors on the evaluation results, and carry out real-time and dynamic evaluation. More targeted adjustment and optimization of the professional dynamic adjustment mechanism [15].

5. Summary

With the help of big data technology, higher vocational schools can grasp the market dynamics more accurately, optimize professional settings, and improve teaching quality and employment competitiveness. By building

a comprehensive information database, vocational colleges can gain an in-depth understanding of students' academic performance, employment trends and industrial demand, providing strong support for decision-making. At the same time, using big data analysis technology, the university can accurately locate the market demand, rationally adjust the layout of majors, and ensure that talent training is closely connected with the market demand. In addition, the establishment of a professional warning and withdrawal mechanism as well as the improvement of the evaluation system and feedback mechanism will further promote the continuous improvement and optimization of the major and promote the sustainable development of higher vocational education. In the future, with the continuous maturity and application of big data technology, the dynamic adjustment mechanism of majors in higher vocational schools will be perfect, laying a solid foundation for training more high-quality and skilled talents to meet the market demand.

Disclosure statement

The author declares no conflict of interest.

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