Research on the Construction Path of Computer Application Technology Professional Group in Higher Vocational Colleges Under the Background of the Greater Bay Area

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ABSTRACT

Based on the background of serving the economic construction of the Greater Bay Area, this paper focuses on promoting the high-quality development of vocational colleges, deepening school-enterprise cooperation, high-quality employment of students, and building brand-specific majors, according to the principle of "similar positions, basic interoperability, and resource sharing" to form professional groups. In order to promote higher vocational colleges to improve teaching quality, achieve high-level employment of students, and create high-level professional groups, construction ideas and measures are put forward.

Keywords: *Greater Bay Area, Vocational Colleges, Professional Groups, Construction Paths.*

1. INTRODUCTION

In March 2019, the Ministry of Education and the Ministry of Finance put forward in the "Opinions on the Implementation of High-level Vocational Schools and Professional Construction Plans with Chinese Characteristics", "Concentrate on building a group of higher vocational colleges that lead reform, support development, Chinese characteristics, and world-class levels. Schools and professional groups" to drive vocational education to continue to deepen reform, strengthen connotation construction, and achieve high-quality development [1]. High-level professional groups are the key to the construction of high-level vocational colleges, which are closely related to the orientation of reform and development of colleges and universities, and are related to the direction and effectiveness of talent training and social services [2]. Starting from the actual situation of colleges and universities, with the direction of promoting the development of a new generation of information technology, based on the major of computer application technology, a number of similar majors form a professional group, and actively explore in personnel training, professional construction, teacher team construction, etc. Research the talent quality improvement path suitable for the characteristics of higher vocational education, and lay a solid foundation for the construction of high-level professional groups.

2. PROFESSIONAL GROUP CONSTRUCTION BACKGROUND

The development of the new generation of information industry is rising at an alarming rate every year. On a global scale, the rapid development of information technology is changing the world. From industry and operation mode, to consumption structure and way of thinking, information technology has an impact on urban areas and even The influence of the national development process will also become deeper and deeper. The Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area proposes to promote the development and growth of a new generation of information technology as new pillar industries. With the deepening of reform and the emergence of new formats such as the digital economy, the demand for talents in the new generation of information technology-related industries will be even stronger. In order to actively respond to the country's development requirements for building the Guangdong-

Hong Kong-Macao Greater Bay Area, according to the "Decision of the State Council on Accelerating the Development of Modern Vocational Education" and "Notice of the Guangdong Provincial Department of Education on Organizing the Construction of High-level Professional Groups in Higher Vocational Colleges in Guangdong Province" The spirit of the document and related policies, closely combining the needs of economic development and industrial transformation and upgrading in the Greater Bay Area, relying on the strategic location advantage of the Greater Bay Area, and closely surrounding the new generation of information technology and mobile Internet industries in strategic emerging industries, in order to serve the Greater Bay Area. Economic construction, set up a computer application technology professional group, focus on cultivating a new generation of information technology industry talents, and help the construction of the electronic information economic center in the Greater Bay Area.

3. PROFESSIONAL GROUP CONSTRUCTION IDEAS

The construction of professional groups should have a focusing role, a benchmarking role and a leading role in school teaching [3]. The computer application technology professional group should be formed according to the principle of "similar positions, basic interoperability, and resource sharing". In accordance with the principles of similar professional foundations, similar technical fields, related occupations, and sharing of teaching resources [4], the four majors of computer application technology, computer network technology, software technology, and cloud computing technology application are combined to form a computer application technology professional group. The professional group connects with the new generation of information technology mobile Internet industry chain in the Guangdong-Hong Kong-Macao Greater Bay Area, and strives to build an advanced electronic information industry center in the Greater Bay Area, promote the high-quality development of information technology, create an inclusive and common industry chain, and promote the transformation and upgrading of the Internet industry structure. This professional group uses the Internet + a new generation of information technology mobile Internet industry to form a new model of networked production, a new platform-based service format, and a new ecosystem of cross-border integration, positioning the goal of talent training to the service link and accurately connecting the electronic information technology industry chain. Set up a professional group to cultivate professionals who serve the new generation of information technology industry chain in the Greater Bay Area.
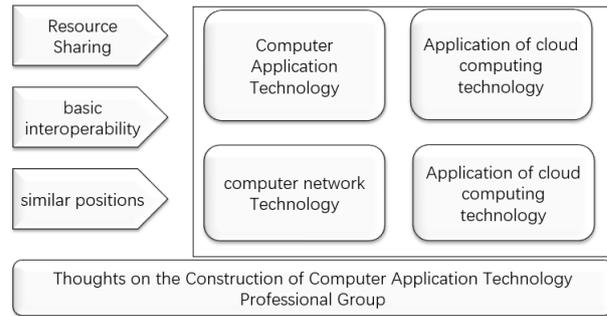

Figure 1 Professional group formation idea map

3.1. Support each other within the group

From the analysis of professional fields, the four majors in the professional group belong to the computer category of electronic information, with similar professional foundations and similar technical fields. From the analysis of occupational positions, the professional group positions are closely related to software application development, big data and cloud computing, network operation and maintenance and management and other technical fields in the "new generation information technology industry chain". The occupational positions are complementary and highly related.

3.2. Professional resource sharing within the group

Professional group public platform courses, internal and external training bases, curriculum resources, scientific research platforms and other teaching resources to achieve co-construction and sharing. The four majors set up four professional group platform courses, "Programming Fundamentals", "Database Technology and Application", "Data Structure" and "Computer Network Technology Fundamentals". Collaborative construction and sharing of curriculum resources within professional groups, open sharing of scientific research platforms, teaching staff, training venues and other resources, and sharing of more than 80% of training bases inside and outside the school. The professional resources in the professional group are integrated, communicated, recognized and used. Teachers and students collaborate and innovate to carry out product research and development and technical services, and jointly improve the quality of talent training.

4. PROFESSIONAL TALENT TRAINING ORIENTATION

The computer application technology professional group follows the concept of "job sharing, collaborative service, and efficient application", and the professional group talent training is positioned to connect with occupational positions in the industry chain. Focusing on

the middle and lower end of the post chain of the "new generation information technology industry chain", professional groups are positioned and classified to cultivate three types of high-quality technical and technical talents of "development-testing-operation and maintenance". Computer application technology and software technology majors are connected to development, testing and technical support service positions in the middle reaches of the industry chain. The application of computer network technology and cloud computing technology is connected to the mobile Internet infrastructure technology and operation and maintenance service positions in the downstream of the industrial chain. The occupational positions corresponding to each major of the professional group are shown in Figure 2. The development positions mainly include: Java development engineer, cloud computing development engineer, Android development engineer and embedded system development. Testing positions mainly include: software test engineer, system test engineer. Operation and maintenance jobs mainly include: cloud computing operation and maintenance engineer, network maintenance engineer, server operation and maintenance engineer and network security engineer.
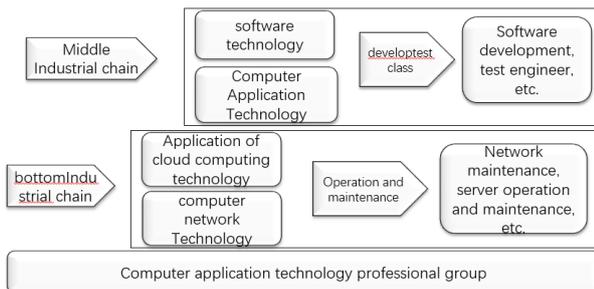

Figure 2 The relationship between the professional group and the industrial chain

5. PROFESSIONAL GROUP CONSTRUCTION GOALS

The construction period of professional groups is generally 5 years, following the construction principles of "steady progress, batch construction, dynamic management, and full monitoring", deepening the integration of production and education, and improving the vocational education and training system. Practice the education mechanism of combining work and study, create a comprehensive practice platform, and build a fruitful computer application technology professional group. On the basis of focusing on the new generation of electronic information technology industry, innovating the operation mode of the integrated development of higher vocational education and industry, and deepening the reform and innovation of the talent training mode, the professional group comprehensively improves the construction level of each specialty in the group. Make every effort to create an innovative model of higher

vocational education integration of production and education that supports the development of the information technology industry in the Guangdong-Hong Kong-Macao Greater Bay Area, and strive to build a batch of market-appropriate and influential professional talent training systems and curriculum resources. Continue to deepen school-enterprise cooperation and strengthen the construction of training bases inside and outside the school. Cultivate the Guangdong-Hong Kong-Macao Greater Bay Area to cultivate urgently needed high-quality technical and technical talents in electronic information, and build a professional group that is inseparable from the Greater Bay Area and recognized by the information technology industry.

6. PROFESSIONAL GROUP BUILDING MEASURES

6.1. Deepen school-enterprise cooperation

In order to realize the connection of professional groups with the new generation of information technology industry chain, improve the level of professional brand building, and improve teachers' cognition of industry development, the computer application technology professional group should select first-class professional groups from similar colleges and universities inside and outside the province as a benchmark for analysis. And organize and lead professional group directors and key teachers to conduct research, study and exchanges in benchmarking colleges and universities, improve the ability of professional group construction, and improve the professional technical level and innovative development ability of teachers.Based on the relevant studios in the professional group, the school-enterprise co-construction of majors, and the characteristic innovation class, the joint enterprise will use the scientific and technological innovation activity month, enterprise part-time courses (training courses), elite lectures and other activities to deepen the school-enterprise cooperation relationship. According to the characteristics of the regional economy and industry, create professional highlights, better serve the construction of the regional economy, and enhance the image and influence of the school.

6.2. Teaching team and resource building

Through internal and external training, strengthening school-enterprise cooperation, introducing high-level experts from enterprises to teach, full-time teachers use summer vacation time to participate in projects such as enterprise practice, special technical training, professional technical exchange meetings, etc. New technologies, new processes, new specifications, and new products are synchronized [5]. The construction of teaching resources is mainly based on professional group courses, which can be divided into three parts:

professional group platform courses, professional core courses, and post module courses. +X course certificate integration, adding elements such as course ideology and politics, and striving to build a number of high-quality courses, online resource courses, school-enterprise cooperation teaching materials and other resources.

6.3. Practice base construction

Taking the studio as the carrier, establish a school-enterprise collaborative education mechanism, strengthen the organic integration of classroom teaching and studio projects, jointly carry out project-based teaching, and implement a school-enterprise dual talent training and education model. It can not only cultivate information technology talents, but also improve teachers' ability in project development, teaching and research, and social services. Continue to deepen school-enterprise cooperation, strengthen ties with enterprises, actively explore new modes of school-enterprise cooperation in the construction of productive training bases inside and outside the school, and combine on-campus productive training with off-campus on-the-job internships to provide students with a good practice environment.

6.4. Deepen school-enterprise cooperation

Focusing on the differences in individual qualities and individual abilities of students from diverse sources, based on studios, experimental classes, and excellent classes, according to the characteristics of grades and learning levels, appropriately adjust the course evaluation standards, set different teaching goals, and build a progressive curriculum. The curriculum system adopts a flexible academic system and a flexible and diverse teaching model to improve the initiative and enthusiasm of students. At the same time, it actively carries out activities such as credit replacement and second class, so as to achieve the goal of gradual talent training and individualized talent training for students. The majors of the professional group carry out the construction of the style of study, and implement the management concept of "teaching, learning and management". Carry out teaching inspection activities, check the teaching situation of each major and each class, correct the inappropriate teaching style and study style, and actively encourage advanced classes, groups or individuals to establish models and play a leading role.

7. CONCLUSION

The computer application technology professional group focuses on the new generation of information technology mobile Internet industry group in the Guangdong-Hong Kong-Macao Greater Bay Area, seizes the historical opportunity, further deepens the reform and innovation of the talent training model, and comprehensively improves the construction level of the professional group. Efforts will be made to build and form a group of teaching resources such as professional standards, talent training models and curriculum systems for computer application technology professional groups with influence in the province, and initially reach the first-class school quality and teaching level. Provide talent support for accelerating the construction of the Guangdong-Hong Kong-Macao Greater Bay Area.

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