Exploration of Building a Technology and Skill Innovation Platform under the Background of Provincial High level Professional Group Construction

Shuanglong Pang *
Information Engineering Institute, Guangdong Innovative Technical College, Dongguan, China

Abstract. This article takes the construction of provincial-level high-level professional groups as the background, with the main line of promoting high-quality development of vocational colleges, deepening school enterprise cooperation, high-quality employment of students, and creating brand characteristic majors. The goal is to build a technical skills platform for vocational college professional groups. In order to promote the improvement of teaching quality in vocational colleges, achieve high-quality employment for students, and focus on high-level professional groups, construction ideas and measures have been proposed to better build a platform for technological skill innovation.

1 Introduction

In March 2019, the Ministry of Education and the Ministry of Finance proposed in the "Opinions on Implementing the Plan for the Construction of High level Vocational Schools and Majors with Chinese Characteristics" to "concentrate efforts on building a group of vocational schools and professional groups that lead reform, support development, have Chinese characteristics, and are at the world level", in order to drive the continuous deepening of vocational education reform, strengthen connotation construction, and achieve high-quality development[1]. Our school's computer application technology professional group connects with the new generation of information technology industry chain in the Guangdong Hong Kong Macao Greater Bay Area, including five majors: computer application technology, computer network technology, software technology, Internet of Things application technology, and big data technology. We cultivate and develop emerging service formats, accelerate the integration of intelligent terminal products with big data, the Internet, and the Internet of Things. Efforts have been made to achieve remarkable results in the construction of talent cultivation models, curriculum and teaching resources, textbook and teaching method reforms, teacher teaching innovation teams, practical teaching bases, technical skills platforms, social services, international exchanges and cooperation, and sustainable development guarantee mechanisms for the computer application technology professional group[3].

2 Background of platform construction

The development of the new generation of information industry is climbing at an astonishing speed every year. On a global scale, the rapid development of information technology is changing the world. From industry and operational models to consumer structure and thinking patterns, the impact of information technology on urban areas and even on national development processes will become increasingly profound[4]. Our school's computer application technology professional group connects with the new generation of information technology industry chain in the Guangdong Hong Kong Macao Greater Bay Area, including five majors: computer application technology, computer network technology, software technology, Internet of Things application technology, and big data technology. We cultivate and develop emerging service formats, accelerate the integration of intelligent terminal products with big data, the Internet, and the Internet of Things. Efforts have been made to achieve remarkable results in the construction of talent cultivation models, curriculum and teaching resources, textbook and teaching method reforms, teacher teaching innovation teams, practical teaching bases, technical skills platforms, social services, international exchanges and cooperation, and sustainable development guarantee mechanisms for the computer application technology professional group. We will focus on creating high-quality practical teaching conditions for new generation engineering majors such as mobile internet, Internet of Things, cloud computing, big data, and artificial intelligence[5]. We will build a technology and skill innovation service platform based on new generation information technology, and cultivate intelligent terminal
technology talents in the information technology industry.

3 Innovative service platform construction ideas

3.1. The goal of construction

Strengthen the application for provincial and municipal platform construction, as well as the construction of school level scientific research and innovation platforms and collaborative innovation platforms, and improve supporting policies for full-time personnel allocation and fund utilization of scientific research platforms at all levels. By cultivating and supporting, we will enhance the level and level of scientific research platform construction, establish 1-2 provincial-level and 10-12 school level scientific research platforms, and build about 10 excellent teams for applied technology research and development, forming a structurally reasonable scientific research talent pool. The contribution to local economic and social development and industry influence have significantly increased, and it has entered the ranks of advanced scientific research in private vocational colleges..

3.2. Construction content

Adhere to an application-oriented research orientation, strengthen the construction of research platform teams, promote technology transfer, and enhance the overall strength of scientific research and the level of application research and development. Collaborate closely with well-known enterprises to establish corresponding engineering application collaborative innovation centers, engineering technology research and development centers, and technical service centers around computer application technology, software technology, and other specialties, establish key scientific research projects, and develop technical breakthrough projects. Strive for major breakthroughs in the increment, quality, and conversion of patents, and steadily build a high-quality, high-quality, stable, and competitive scientific research system that adapts to the development of the school's cause[6].

3.3. construction path

3.3.1. Docking development and serving enterprises

To connect with the trend of technological development, with the accumulation of technical skills as the link, we will build a talent cultivation and technological innovation platform that integrates talent cultivation, team building, and technical services, with resource sharing, flexible mechanisms, and efficient output. We will promote the industrialization of innovative achievements and core technologies, and focus on serving enterprises, especially small and medium-sized enterprises, in technology research and development and product upgrading.

3.3.2. Strengthening cooperation and upgrading industries

Strengthen deep cooperation with local governments, industrial parks, and industries, build a platform that combines scientific and technological research, think tank consulting, talent cultivation, and innovation and entrepreneurship functions, reflecting the characteristics of the school's industry education integration, and serving regional development and industrial transformation and upgrading.

3.3.3. Building a platform to enhance development

Further enhance the development capacity of professional groups and the ability to provide supporting services, deepen cooperation with industry-leading enterprises, build a technical skills platform that combines product research and development, process development, technology promotion, and master cultivation functions, and serve the development of key industries and pillar industries.

4 Building an innovative service platform

4.1. Teaching Method Design

This course adopts a task driven and project led approach. The growth of "dual teacher" teachers is a cultural ecological process. Schools should increase efforts to promote and guide, actively create a good environment that respects knowledge, talents, labor, and academic achievements, encourage teachers to go deep into society, familiarize themselves with the actual operation processes of enterprises and markets, form strong professional practical abilities and rich practical experience, and inspire teachers to learn basic knowledge and atmosphere of scientific research for emotional motivation. Especially the guiding role between superiors and subordinates, encouraging academic and cultural exchanges, and forming a free and equal discussion atmosphere in teaching and academia[7]. Strengthen the management of practical activities for full-time teachers in enterprises, promote school enterprise cooperation, promote teaching construction and reform, strengthen the construction of dual teacher teams, support teachers to deepen their practical experience in enterprises during winter and summer vacations, and require full-time teachers to accumulate no less than two months of professional practice time each year.

4.2. Improve the scientific research management system and build a good academic ecological environment

According to the relevant documents of the school, combined with the actual scientific research development of the school, improve the organizational
structure of the school's academic committee, and fully leverage the functions of the academic committee and subject groups in the school's scientific research development, management, and evaluation[8]. Further revise and improve the scientific research management documents in six aspects: scientific research funding management, scientific research project management, scientific research awards, scientific research innovation platform construction, and scientific research innovation team construction. Encourage teachers to actively participate in scientific research work, standardize scientific research funding management, and create a good academic ecological environment that is actively innovative, standardized, orderly, and open and free.

4.3. Optimizing technology and skill innovation research platforms to promote the development of scientific research innovation

Strengthen the construction of school level scientific research and innovation teams, focus on supporting the growth of young academic talents, rely on the innovation practice foundation of studios, and form a structurally reasonable scientific research talent pool. Optimize the application for school research projects into two categories: research platforms and research projects. The research project category includes key research projects, school level general research projects, and youth talent projects. Each professional group should establish a professional technology innovation project team, with joint participation from school and enterprise personnel; Introduce a special management and incentive system, attach importance to cultivating scientific research personnel, support outstanding young faculty and academic innovation teams, support innovative technology projects, and regularly organize teachers to participate in scientific research activities. Encourage vertical and horizontal project applications, carry out joint patent applications with enterprises, and support cross unit and cross industry project teams. For provincial-level and above research projects that have been completed through application, support and rewards will be provided in accordance with the relevant regulations of the school. Policy support will be given to horizontal research projects to ensure the annual growth of vertical and horizontal research projects.

4.4. Deep integration of schools and enterprises, co building a scientific and technological innovation team

The school has formulated special documents to support the joint construction of research centers by schools and enterprises, guide the joint construction of research centers by schools and enterprises to undertake projects externally, reflect their own characteristics, strengthen the promotion of scientific research applications, enhance the transformation of scientific research achievements, expand the influence of the school on enterprises and society, achieve comprehensive improvement of the school's scientific research ability and technological skill innovation level, serve local technological development, and establish the school's brand image. Professional groups should establish professional scientific and technological innovation and research teams, with the participation of school and enterprise personnel. Special management and incentive systems should be introduced, and emphasis should be placed on cultivating scientific research personnel to support outstanding young faculty and academic innovation teams. Support innovative technology projects, regularly organize teachers to participate in scientific research activities, encourage vertical and horizontal project applications, carry out joint patent applications with enterprises, and support cross unit and cross industry project teams. Build a multi form, diversified, and multi topic scientific and technological innovation base both on and off campus, and jointly build a research team.

4.5. Building a mechanism for transforming scientific research achievements and serving local economic development

Adhere to the principle of "resource integration, mutual benefit and win-win", strengthen deep cooperation between industry and education, carry out the transformation mechanism of scientific research achievements and the construction of research platforms for school enterprise cooperation, and promote the implementation of scientific research achievements. Pay attention to establishing close contacts with production enterprises and social institutions, actively seek scientific research projects, maintain close contact with relevant government departments, actively apply for government service project approval and application, and promote development[8]. Strengthen deep cooperation with local governments, industrial parks, and industries, and focus scientific research on technology research and product upgrading for enterprises, especially small and medium-sized enterprises[9]. Based on the modern industrial system, form an applied scientific research system led by the government, industry participation, and school enterprise integration. Integrate advantageous resources, achieve resource sharing, deepen school enterprise cooperation, and promote the integration of government, enterprise, academia, and research, becoming a new model of collaborative development between industry, education, and academia. Open up campus resources to communities, industries, and enterprises to further improve resource utilization; Actively participate in local management decision-making consultation, fully leverage the role of think tanks and think tanks, promote the transformation of scientific research achievements and technological skill innovation into productivity, serve local economic development, broaden technological skill innovation platforms, and enhance the ability to transform scientific and technological achievements.
4.6. Strengthen the technical skill innovation service platform and tap into the scientific and technological innovation capabilities of teachers and students

Micro courses are a new type of online video courses developed actively. Carry out the "College Student Science and Technology Innovation Festival" technology competition platform, carry out campus innovation and entrepreneurship competitions, and stimulate the atmosphere and enthusiasm of teachers and students to participate in scientific research activities through "Golden Ideas", "Science and Technology Forum", and "Campus Innovation and Entrepreneurship Competition". At the same time, in conjunction with the "College Student Science and Technology Innovation Festival" competition jointly organized by the Education Bureau, Science and Technology Bureau, and Human Resources and Social Security Bureau of Dongguan City, we organize teachers and students to actively participate, explore new achievements in college student science and technology innovation through "small inventions" and "small creations", enhance students' enthusiasm for participating in scientific research activities, and expand the brand influence of the school.

5. Conclusion

The construction of a technology and skills innovation platform closely revolves around the construction of a provincial-level professional group computer application technology professional group, serving the industrial group of the new generation of information technology mobile internet in the Guangdong Hong Kong Macao Greater Bay Area, seizing historical opportunities, further deepening the reform and innovation of talent training models, and comprehensively improving the level of professional group construction by building a skills platform. We will make every effort to build a higher vocational education brand that supports the development of the information technology industry in the Guangdong Hong Kong Macao Greater Bay Area, as well as a model for integrating industry and education in higher vocational education, and strive to build a professional group technology and skill innovation service platform. To accelerate the construction of the Guangdong Hong Kong Macao Greater Bay Area, create a cluster of advanced electronic information manufacturing industries, and provide talent support to enhance competitiveness..

Acknowledgments

This article was funded by the Provincial High-level Professional Construction Project of Guangdong Education Department: Computer Application Technology Major Group of Guangdong Innovative Technical College, No. GSPZYQ2021046, Guangdong Provincial Department of Education 2023 Higher Vocational Colleges and Universities Curriculum Civics Demonstration Program Project: Linux operating system application, No. KCSZ04015, and 2023 Guangdong Provincial Education Science Planning Project: Exploration of Talent Training Path for the Integration of "Post Course Competition Certificate" in Artificial Intelligence Technology Application Major Based on Huawei Standards, No. 2023GXJK1075.

References