



Research on the improvement path of technical service level in higher vocational colleges under the background of digital transformation

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Abstract. Facing the arrival of the digital age in the international community, vocational education must update the education mechanism in a timely manner to serve the digital transformation and upgrading of the regional economy. This paper analyzes the problems existing in the technical services of Chinese higher vocational colleges under the background of the current digital transformation of Chinese society, from deepening the integration of production and education and school-enterprise cooperation, building a digital technology service platform, reforming the technical service evaluation system, and optimizing the innovation incubation mechanism of service projects. In terms of promoting the integration of science and education and serving the regional economy, the path to improve the technical service level of China's vocational colleges is studied, to help the digital transformation of the regional economy, and to promote the internationalization, specialization, high-level, and high-quality development of China's vocational colleges.

Keywords: Digitization, Vocational colleges, Technical Services

1 Research Background

Digital and intelligent development is the general trend of technological progress and industrial transformation and upgrading. The industrial R&D design, production, service and technological innovation models are being replaced by the new industrial revolution. In recent years, with the development of digital technologies such as big data, cloud computing, Internet of Things, artificial intelligence, and blockchain, countries around the world have formulated digital-related development plans, and China has also issued relevant policies. Actively promote digital technology in various fields and in the whole process, such as construction of ecological civilization and ecological civilization^[1].

Chinese President Xi Jinping pointed out in the report of the just-convened 20th National Congress of the Communist Party of China that "high-quality development is the primary task of comprehensively building a socialist modern country", "acceler-

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ating the development of the digital economy, promoting digital economy and Deep integration of the real economy". Chinese companies firmly grasp the historical opportunity period of digital development, change their production and marketing methods, carry out technological innovation, improve their production efficiency, promote their digital transformation, and empower their high-quality development with digitalization^[2].

The digital age calls for technology, which leads to enterprise transformation, enterprise transformation requires talents, and the development of talents comes from education. Vocational education aimed at cultivating high-quality technical and skilled talents needs to improve the level of scientific and technological services. Faced with the rapid development of digitalization, countries around the world have begun to study and formulate strategies related to digitalization, which are conducive to the "Internet +" thinking and methods, and promote the deep integration of science and technology information technology with economic society. China has also included "promoting the digitalization of education" in the report of the 20th National Congress of the Communist Party of China, pointing out the direction for the development of vocational education in China^[3]. In the face of challenges, China's vocational education must seize the opportunity, based on the strategic overall situation of the great rejuvenation of the Chinese nation and the great changes in the world that have not happened in a century, improve the service capabilities of vocational education, implement the strategy of rejuvenating the country through science and education, and rejuvenate the country with talents, and serve the domestic cycle. The main body, the domestic and international dual cycle mutually promote new development.

2 Current status of technical services in Chinese higher vocational colleges

With the advent of the digital age, vocational education follows the trend. In addition to delivering high-end technical and skilled talents with innovative spirit and practical ability to the society, it also provides high-end technological innovation and promotion services for the rapid development of enterprises and industries. The technical services of vocational education mainly include two aspects: one is the technical training and re-education of the employed, transferred and laid-off re-employees, so as to improve their technical skills and adapt to the requirements of the digital age as soon as possible; Cooperation, carry out scientific research projects and technological reforms, and serve industrial transformation and upgrading. At present, the following problems also exist in the technical services of higher vocational colleges.

2.1 Inaccurate positioning of scientific research work

In most of the higher vocational colleges in China, the teaching work is still the main work, the positioning of the scientific research work is not accurate, and the direction of scientific research is not clear. Resources provide technical services, affecting the research and development process of scientific research projects, resulting in the lack

of scientific research direction and motivation in higher vocational colleges. Most teachers focus too much on vertical education reform topics and the publication of core journal papers. They believe that as long as the papers are published and the projects are completed, they have created scientific research results, and they have in-depth research on the main direction of carrying out technological breakthroughs and serving enterprise technology upgrades. Not enough. Many teachers go to enterprises only to complete the tasks of "double teachers", not to recharge or exercise in the real sense, and to actually participate in enterprise scientific research projects seldom.

2.2 The technical service platform needs to be improved

The linkage between the school's existing technology platform and teaching is not deep enough, and the integration mechanism of science and education is not perfect^[4]. The technology platform and professional teaching should be closely integrated, and scientific research projects should be inserted into teaching, and the platform can be used to promote the improvement of teachers' teaching ability and students' innovation ability, realize the trinity of talents, majors, and scientific research, and open up the implementation path of the integration of science and education. However, at present, there is no benign interaction between the technical service platform and teaching in higher vocational colleges. Teachers and students do not participate in the platform, and cannot effectively play the educational function of the platform.

The technical service platform lacks in-depth cooperation with scientific research institutions and enterprises. The scientific research conditions and scientific research process of school-enterprise cooperation are not perfect enough, and the platform construction is not perfect enough, so teachers in higher vocational colleges cannot really participate in scientific research work. Teachers are often looking for enterprises and scientific research institutions individually. After the end of a single service, the project also ends and cannot be continued. This situation is not conducive to the accumulation of technology in higher vocational colleges, scientific research institutions and enterprises, and it is impossible to conduct in-depth exchanges with enterprise technical staff and researchers in scientific research institutions, and it is impossible to form a long-term and stable innovation team. Services are limited.

The lack of an effective platform for the transformation of technological achievements has resulted in many scientific and technological achievements not being able to be used for enterprise transformation in real time. Through data query, it is found that the average conversion rate of patents in Chinese vocational colleges is less than 1%.

2.3 The social service evaluation mechanism needs to be improved

Higher vocational colleges lack overall guidance for teachers' research directions, which leads to divergent research topics. Some teachers choose some "short, flat, and fast" research topics just to complete tasks or evaluate professional titles, and the research results are out of the market. targeted. The process evaluation, result evaluation, and incentive measures for research topics are too simple, causing many teachers

to piece together the results to cope with the assessment, and the scientific research results cannot be truly transformed.

2.4 Teachers have heavy teaching tasks

Teachers have heavy teaching tasks and lack of energy for scientific research. As a result, they cannot participate in scientific research training organized by colleges and universities, and cannot form scientific research teams. Teachers' enthusiasm for scientific research cannot be effectively stimulated. With the rapid development and expansion of vocational education in China, the teaching staff cannot keep up with the development needs of schools, and the number of professional teachers is seriously insufficient. The teaching tasks are heavy, and the time for lesson preparation has increased significantly. Coupled with other routine work, "can't take care of it" and "no time" have become the words most often mentioned by teachers.

3 The path to improve the technical service level of higher vocational colleges

In view of the above outstanding problems, schools should adapt to the development of the times, change their development ideas, further promote the integration of production and education and school-enterprise cooperation, build a technical service platform for the integration of science and education, reform and innovate the scientific research evaluation system, strengthen the practice of professional teachers in enterprises, and formulate policies in line with higher vocational education. The technical service system with college characteristics improves the technical service level of higher vocational colleges.

3.1 Deeply promote the integration of production and education, and school-enterprise cooperation

Vocational colleges should combine their own professional advantages, continuously deepen school-enterprise cooperation and integration of production and education, actively absorb industry and enterprise engineering and technical personnel to participate in vocational college talent training, and build a promotion mechanism for the integration of production and education with the participation of the government, schools, industries, and enterprises. Both schools and enterprises cooperate to educate people, implement normalized technical exchange job exchanges between school teachers and enterprise engineers, timely ensure that school professional teachers learn and master new digital technologies in industries and enterprises, promote teachers' professional skills, and improve teachers' technical service capabilities^[5]. Promote professional teachers to enter enterprises to participate in the production process, project development and technological innovation, so as to realize the organic connection between professional technical skills and industry and enterprise development.

3.2 Build a digital technology service platform

Utilize advanced technical means to build a regional network communication platform to ensure tripartite interaction among schools, enterprises, and scientific research institutions, resource sharing, data sharing, complementary advantages, and win-win cooperation. According to the technical service demand information released by enterprises on the communication platform, schools, scientific research institutions and enterprises are connected in a timely manner to carry out technology research and development. At the same time, schools and scientific research institutions can also publish the latest scientific research information on the platform, and enterprises can actively connect and use it rationally according to their own development needs. Schools, enterprises, and scientific research institutions work together to build courses, complete teaching and training, and jointly develop a digital sharing platform. On the platform, the proportion of high-quality resource sharing courses should be increased, so that those who are laid off, unemployed, re-employed, and those in need of technical improvement can learn by themselves; innovate online learning, recording, and evaluation models, and complete the learning achievement records and application scenarios. Build a new model of cooperation, exchange, training and learning based on the digital technology service platform. Give full play to the advantages of the vocational education group, build a multi-party cooperation platform for industries, schools, enterprises, etc. for the purpose of production, learning, research, use, and innovation, highlight the effect of service agglomeration and integration, and provide technical needs for industries, enterprises, especially small, medium and micro enterprises. Technical services, project support, solving technical problems in the production process, and carrying out technical consultation and training on new technologies and processes.

3.3 Reform the technical service evaluation system

Improve the system for teachers to participate in social services, revise and improve institutional documents such as school social service revenue generation management methods, scientific research workload accounting methods, etc., and improve the long-term incentive mechanism for teachers to carry out social services. Gradually improve the income distribution system for scientific and technological innovation and achievement transformation project personnel, the transformation and reward system of scientific and technological achievements, refine the incentive measures for teachers to actively carry out social services, and incorporate the effectiveness of social service work into the evaluation and assessment of teachers, teaching innovation teams, and scientific research innovation teams. And linked with performance work, the scientific research achievements and social technical services are converted into teaching hours and included in the overall performance distribution of each department. and other evaluation basis, included in the priority evaluation conditions.

3.4 Optimizing service project innovation incubation mechanism

Reform the scientific and technological talent evaluation and assessment mechanism to stimulate high-level achievement output. Optimize and adjust the evaluation and employment methods for professional and technical positions, incorporate in-service doctorate teachers and introduced high-level talents into the management team of scientific research teachers, formulate methods for the evaluation, appointment and promotion of scientific research teachers, adjust the teaching requirements of scientific research teachers, and guarantee scientific research teachers Conduct scientific research continuity. Strengthen the assessment and management mechanism for high-level talents with agreed salary and annual salary system, and clarify the output of high-level achievements^[6]. Funds support scientific research teachers to carry out basic research and applied research, accelerate the construction of doctoral studios and high-level scientific research and innovation teams, focus on high-end industries and high-end industries, and accelerate theoretical innovation and technology research and development around new technologies, new processes, new equipment, and new products , actively carry out horizontal subject research and apply for high-level vertical scientific research projects above the provincial level, encourage scientific research teachers to serve as vice presidents of science and technology and technical consultants of enterprises, innovate and incubate high-level school-city integration projects and accelerate the transformation of scientific research results, and serve the innovative development of enterprises in the industry.

3.5 Enhancing Teacher Enterprise Practices

The development of vocational education relies on professional teachers, and a high-quality teaching team is an important support for the high-quality development of vocational education and digital transformation. Encourage teachers to go to the production line of the enterprise to practice and exercise, adapt to the needs of the digital age, innovate and diversify the teaching mode, master the technical means of rapid development, and further improve the theoretical and practical ability, so as to cultivate more high-quality technical and skilled talents, skilled craftsmen, Great country craftsmen.

Transform the traditional teacher enterprise practice and technical service form, establish a "teacher workstation" practice platform in the enterprise, and deepen the content of teacher enterprise practice and technical service^[7]. Through the "workstation" to build a platform for the interaction between production units and college teachers, on the one hand, teachers should go deep into the production line, understand the latest technology, coordinate school resources, carry out technical services and achievement transformation project services; on the other hand, use digital technology to serve the industry , Enterprises cultivate talents with digital technology skills, and truly become "double-qualified" teachers in the digital age.

3.6 Promote the integration of science and education and serve the regional economy

The integration of science and education is the integration of science and technology and education and teaching. As far as vocational education is concerned, it is to integrate the power of science and technology into the model of talent cultivation and education, and cultivate newcomers with the spirit and ability of innovation in science and technology. In the digital age, schools should use the integration of science and education as the carrier, innovate talent training models, implement scientific research to feed teaching, promote professional intelligence upgrades and digital transformation, and face small, medium and micro enterprises in the region, adhere to application-oriented scientific research and innovation, and integrate science and education For a new direction, focus on technological innovation, technical services and achievement transformation, etc., give full play to the advantages of platform resource aggregation and integration, promote the transformation of new and old kinetic energy in the region, and the digital transformation and upgrading of enterprises. At the same time, teachers are guided to transform the cases of technological development, technical services, and achievement transformation undertaken into teaching projects, integrate them into courses, upgrade teaching content, promote scientific research activities and education and teaching to form a virtuous cycle, and realize the integration of science and education and the integration of production, learning and research^[8].

4 Epilogue

The development of a new generation of digital technology, especially 5G, cloud computing, big data, artificial intelligence and blockchain technology, has pushed the world economy into a new stage of digital development. Vocational colleges must seize the opportunity to build a transformation in the digital age The education and teaching model needed to establish a technological innovation platform in the digital age, improve the level of social services, serve the transformation and upgrading of regional industries, and promote the high-quality and high-level development of vocational colleges.

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