

Research on the path of university-enterprise co-construction of industrial college under the background of integration of industry and education

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Abstract: The university-enterprise co-construction of industrial college is the product of the development of The Times to a new stage, and is an important means to realize the integration of production and education. This paper analyzes the key problems to be solved in the school-enterprise co-construction of industrial college, explores the path of school-enterprise co-construction of industrial college under the background of the integration of industry and education, and provides support for improving the quality of school-enterprise collaborative education.

Key words: Integration of industry and education; Industrial college; Collaborative education

1. Introduction

The co-construction of industrial college is the product of the development of The Times to a new stage, and is an important means to realize the integration of production and education. "Integration of production and education" has risen to the basic system of national vocational education reform and human resources construction. The construction of "industrial college" marks the push of the "integration of industry and education" system into the deepwater zone. The school-enterprise co-construction industrial college will combine professional knowledge and practical ability, and truly realize the integration of production and education from the early stage of talent training, highlighting the people-oriented teaching concept, all students as the core, the enterprise element and the campus teaching system based on student training and development, and cultivate composite, applied, innovative high-quality talents.

2. The key problems to be solved by the school-enterprise co-construction industrial College

2.1 Multi-channel cooperation to solve the problem that the single demand standard leads to the narrowing of talent training objectives and the incomplete integration of talent training with industrial needs

The new generation of the College of Information Technology Industry "one platform, two subjects, three integration" school-enterprise collaborative education model, to carry out multiple professional and multiple enterprises, multi-level, multi-form, multi-field school-enterprise cooperation, to avoid the single enterprise demand standard leads to narrow talent training objectives, talent training objectives can not represent the industry's new situation of talent demand. The cultivated students can not always dominate in the job competition. The "one platform, two subjects, three integration" school-enterprise collaborative education model of the new generation of information technology Industry College, accurately docking industrial chain, real-time adjustment of practical training cases according to market demand, to achieve seamless docking with enterprise employment standards and industry operating standards, so as to solve the problem of talent training and industrial demand disconnect.

2.2 "two-way flow" mechanism to build a "double teacher and double ability" teacher team, to solve the problem of insufficient practical ability of school teachers and poor theoretical experience of enterprise teachers

By means of mutual integration and communication between schools and enterprises, external introduction and internal training, mixed recruitment and mutual employment, the school can realize the two-way flow of teachers and enterprises, and build a first-class "double teacher and double ability" team with professional and professional combination, reasonable structure, division of labor and cooperation, advanced concept, excellent ability and broad vision. Full-time teachers participate in the real project development of enterprises through platforms such as "Skill Master Studio", "Excellent Workshop" and "productive practical training teaching base", and improve the project management level, project development technology level, teaching and research level and practical teaching ability of full-time teachers; Enterprise engineers give lectures to students and lead students to develop projects. At the same time, with the help of professional teachers, they can rapidly improve their education and teaching ability and level. Through the "two-way flow" mechanism of school-enterprise talents, school-enterprise teachers can empower and promote each other in the interaction of teaching guidance, division of labor, cooperation, communication and sharing, promote the improvement of teachers' skills and engineers' teaching level, and fundamentally solve the problem of school teachers' practical ability and enterprise teachers' insufficient theoretical experience.

2.3 Connect the industrial chain, design a "four-level progressive" practical teaching system with multi-post collaborative training, and solve the problem of disconnection between practical resources and real post skills

Practical teaching is the key link to improve students' vocational ability and professional skills. In order to realize the integration of production and teaching, not only to ensure the quality of teaching, but also to reflect the actual requirements of production, the curriculum is designed comprehensively. Docking the industrial chain, through off-campus practical training, post practice and other ways, bring together the practical teaching projects of enterprise work tasks to create a four-level ability progressive practical teaching system of "general ability practice, professional direction comprehensive practical training, production project comprehensive practical operation, vocational ability post innovation". The course content and post work content docking, realizing the organic integration of teaching and production practical

training. Solve the problem of disconnection between practical resources and real job skills, and improve the quality of talent training.

3. Explore the path of university-enterprise co-construction of industrial college

3.1 The new generation of information technology industry college “one platform, two subjects, three integration” school-enterprise collaborative education model

Taking the students of Information engineering Department of Shandong Vocational and Technical College of Labor as the research object, in order to achieve the cultivation of outstanding innovative skills for students to start work immediately after graduation, the school-enterprise cooperative education model of “one platform, two subjects and three integration” of the new generation of information technology industry college is implemented through deepening the integration of production and education and school-enterprise cooperation. According to the actual needs of the new generation of information technology industry talents, taking the new generation of information technology industry college as the platform, the implementation of “double main body” management, school-enterprise collaborative education, forming a diversified, normalized and sustainable school-enterprise collaborative education cooperation community of school-enterprise resource integration, standard integration and cultural integration. Introduce enterprise teachers, promote “entrepreneurs and craftsmen into the campus”, carry out theme activities, spread corporate culture, cultivate students’ entrepreneurial spirit of “professional excellence, professional expertise”, and create a deep integration of production and education development pattern and an educational ecological chain that ADAPTS to industrial development.

3.2 The four-layer professional group structure of industrial college is progressive, which includes “college’s thick foundation, base training skills, post promotion and post experience”

Keep close to the development of the new generation of information technology industry, comprehensively analyze the job clusters of information technology professional groups, optimize the structure of professional groups, build computer network technology, software technology, computer application technology as the foundation, cloud computing technology, big data technology, artificial intelligence technology, blockchain technology emerging majors as the core, It is composed of three parts: “campus basic teaching, park training base and industrial actual post station”, and explores the four-layer professional group structure of “college solid foundation, base training skills, post improvement and post experience”. According to the information network in the middle and lower reaches of the new generation of information technology industry chain and the new generation of information technology application and service industry chain, the core technology of the professional group has been established as a number of career experience centers such as data collection, network transmission and data analysis. The professional group of the School of Industry is oriented towards the development and testing, management and operation and maintenance, information technology support and service and other job groups. Based on the job group, the talent training objectives of the school of industry are positioned, so as to establish the professional talent training program and each professional curriculum system. The construction of the four-layer professional group structure of “college thick foundation, base training skills, post improvement, and top post experience” provides guarantee for training a new generation of innovative, composite and development-oriented high-quality technical skills talents in the field of information technology service, promotes the development of a new generation of information technology industry, and helps the transformation of old and new momentum.

3.3 The construction of “double qualified and double capable” faculty team based on the “two-way flow” mechanism of talents from the university and enterprise

As a cooperation platform for deepening the integration of industry and education and sharing the interests of all parties, industrial colleges should accurately grasp the needs of all parties to cooperate, and jointly build and share the teaching staff. By means of mutual integration and communication, internal training, mixed recruitment and mutual employment, the school should realize the two-way flow of teachers and enterprises, and build a first-class “double teacher and double ability” team with professional and professional combination, reasonable structure, division of labor and cooperation, advanced concept, excellent ability and broad vision. Through the joint construction of specialties, resources, teacher workstations and other projects, increase the strength of enterprise masters and craftsmen deeply embedded in the talent training process of industrial college. To strengthen practical experience, engineering background and industry practice ability through teachers’ practice training in enterprises. Relying on the “double-qualified and double-capable” teachers, we will strengthen the construction of application-oriented courses. The curriculum system of “platform + module” is constructed. The theoretical teaching platform consists of general education module, subject foundation module and professional education module. The practical teaching platform consists of the practical teaching module and the personality development module. To carry out real project teaching in enterprises, the team of double-qualified and double-capable teachers has been trained. Through the “two-way flow” mechanism of school-enterprise talents, school-enterprise teachers can empower and promote each other in the interaction of teaching guidance, division of labor, cooperation, communication and sharing, promote the improvement of teachers’ skills and engineers’ teaching level, and cultivate students’ professional skills and professional quality imperceptibly.

3.4 Construction of the professional group course system of “bottom sharing, middle distribution and personality expansion” integrated with “Post course competition Certificate”

According to the typical tasks and post ability requirements of the new generation of information technology post group, the vocational skill level standard is organically connected with the professional teaching standard, the content of vocational skill competition is introduced into classroom teaching, the content of certificate training is organically integrated into the talent training plan, and the ideological and political education is integrated into the whole process of talent training, and the ideological and political elements of professional courses

are explored. To build a professional course system of “bottom sharing, middle distribution and personality development”, and provide an advanced and effective path for the sustainable development of students.

3.5 Docking the new generation of information technology industry chain and research on the “four-level progressive” practical teaching system

According to the corresponding job groups of the industrial chain, the core technologies of the professional groups of the four-tier progressive industry College are connected, typical work tasks are analyzed, key technology application capabilities are summarized, practical teaching projects of enterprise work tasks are gathered, skills training modules are developed, and a “four-level progressive” practical teaching system is constructed. The practice of general ability mainly corresponds to the basic practical training of all majors in the industrial college, and cultivates students’ general ability; The comprehensive practical training of the professional direction corresponds to the middle-level shunt module of the professional curriculum system to cultivate students’ special ability; The comprehensive practical training of production projects corresponds to the real production projects of enterprises and cultivates students’ comprehensive ability; Vocational ability and job innovation cultivate students’ ability to adapt to the development of new business forms and technological progress with new technologies and new norms, and improve students’ innovation ability. Through the four-level ability progressive practice teaching system of “general ability practice, professional direction comprehensive practical training, production project comprehensive practical operation, vocational ability post innovation”, the training quality of technical skills is constantly improved.

Research on school-enterprise management and operation mode of “Co-construction, co-management and win-win”

Based on the concept of “school-enterprise community of common destiny”, the management and operation mode of “Co-construction, co-management and win-win” of industrial colleges is studied. The two sides of the school and enterprise mainly focus on the industrial college to jointly plan, jointly organize, jointly build, jointly manage, jointly cultivate talents, share results and share responsibilities. Cooperate in training base construction, specialty co-construction, curriculum co-construction and other contents. Through in-depth cooperation between schools and enterprises, we will promote the integration and mutual stimulation of talents, intelligence, technology and other resource elements in education and industrial systems. To build an organizational platform integrating “production, learning, research, training and innovation”, which is complementary, mutually beneficial, interactive and all-win. We will promote the integration and mutual development of university-enterprise culture, and cultivate more high-quality technical and skilled personnel with professionalism, professionalism and craftsman spirit.

4. Summary

“Industrial College” and the “three education reform” concept of vocational education to achieve high-quality development of vocational education is closely related. This paper proposes a new generation of information technology industry college “one platform, two subjects, three integration” school-enterprise collaborative education model, relying on the “classroom + workshop + enterprise” education platform, accurate analysis of post ability. To promote the deep integration of “post courses, competition courses and certification courses”. We will use “industry colleges” to lead the reform of vocational education and teaching, deepen the integration of industry and education and school-enterprise cooperation, achieve cooperation between industry, university and research, and help the reform of the three education sectors.

According to the needs of the industry, the school and enterprise cooperate to build a professional group course system of “bottom sharing, middle level distribution and personality development” integrating “post course competition Certificate”, firmly establish the concept of moral cultivation and comprehensive education, and the module is set in the vertical to realize the continuous advanced training of students’ human quality, professional quality and professional ability, and the horizontal to realize the multi-dimensional cross-border ability training. Loose coupling between modules and courses, which can dynamically adjust the course setting according to industrial development. Form a strong adaptability of modular curriculum teaching, improve the training ability of high-skilled talents, compound talents and innovative talents for sustainable development and all-round development.

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This paper is the research result of the education reform and development project of “Integration of Industry and Education, School-Enterprise Cooperation” in 2022 (project No. : Ciel2022214, Ciel2022216)

The second batch of research project on the construction of industrial colleges in technical colleges and universities (ZH Mi Zi [E2023] No. 7) Project name: Exploration and Practice of the Education Model of Industrial Colleges in Technical Colleges and Universities with “Dual Entities, Seven Links, and Multiple Channels” Big Data and Artificial Intelligence