

Exploration of an Innovative Talent Cultivation Model for Collaborative Education in Double Innovation of professional groups in Private Universities from the Perspective of Industry-Education Integration

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Abstract: *Adopting the industry-education integration framework, this study systematically investigates current implementation gaps in collaborative education mechanisms for cultivating dual-innovation (innovative and entrepreneurial) talents within disciplinary clusters at private universities. In addition, it puts forward some perfect countermeasures focusing on the setting of characteristic majors and the construction of Double Innovation teachers, hoping to build a more novel talent training model and cultivate more talents with innovative and entrepreneurial spirit, so as to provide impetus for the coordinated and unified development of education and regional economy in various periods.*

Keywords: *integration of production and education, Professional group double innovation, Collaborative education*

1. Introduction

As the focus of the reform and development of higher education, innovation and entrepreneurship is also the key path to strengthen the cultivation of high-quality talents. However, in terms of the past practice, double Innovation is still out of step with professional education in the concrete and it is difficult to fully penetrate professional education and teaching in ordinary times. In order to improve this situation, private colleges and universities should pay attention to the integration of production and education, build a more perfect collaborative education training model by making full of existing resources and forces, and train more high-quality talents by implementing Double exploring professional education innovation, and deeply integrating the two.

2. Problems existing in double Innovation collaborative education of professional groups in private colleges and universities from the perspective of production-education integration

2.1 Professional characteristics are not consistent with the development needs of industry enterprises

In the face of the increasing demand for high-quality talents from all walks of life, colleges and universities have not updated their own ideas in time, and have less cooperation and exchanges with industrial enterprises, which will restrict the realization of double Innovation education collaborative education of professional groups to a certain extent, as well as the innovation and adjustment of talent training mode. At the same time, it will also affect the continuous improvement of innovation and entrepreneurship capacity of various industries and countries in the subsequent society, and further optimization is needed.

2.2 Lack of double Innovation faculty

In recent years, colleges and universities have been committed to building a more perfect talent training mechanism. However, the establishment of these systems always lacks the active participation of some high-level technical personnel in the industry, which limits the reasonable optimization of the teaching staff structure of double Innovation to a certain extent. At the same time, the professional training organization for existing teachers also has insufficient attention, which makes it difficult for

teachers to obtain comprehensive and scientific guidance, and thus affects the comprehensive development of students' comprehensive literacy.

2.3 Not enough attention has been paid to the collaborative development of Industry-university-research transfer creation

Ignoring the coordinated development of Industry-university-research transfer creation will easily lead to the inability of talents cultivated by schools to meet the employment needs of various industries. For both enterprises and industries, talents are the key to enhance their competitive strength and achieve innovative development. If the coordinated development of Industry-university-research transfer creation cannot be realized, it will not only affect the employment and development of high-quality talents. At the same time, it will also restrict the reform of higher education and the coordinated development of regional economy.

2.4 Insufficient attention to ideological and political education

The integration of production and education teaching model has not been implemented and continuously optimized in some colleges and universities, and the insufficient attention paid to ideological and political education is one of the reasons. The teaching of novel and superb knowledge and technology is important, but without the help of noble moral sentiments, it is difficult to have ideal employment development prospects, and it can not bring help to the innovation and development of the industry^[1].

3. The significance of collaborative education of professional groups in private universities

3.1 Break through the difficulties of traditional education

The Double Innovation collaborative education model serves both as a supplement to the traditional education system and a breakthrough in educational development. Within conventional teaching frameworks, the integration of theory and practice often exhibits inherent lag and disconnection, particularly in technology-intensive and application-oriented fields. Students frequently struggle to directly bridge classroom-acquired knowledge with real-world industry demands. The Double Innovation collaborative education model, through the integration of innovation and entrepreneurship, creates an educational environment that delivers cutting-edge knowledge while strengthening practical capabilities. Within this framework, students not only gain a profound understanding of core theories in modern disciplines but also acquire valuable hands-on experience through enterprise internships and entrepreneurial projects. This experiential learning approach enables students to master textbook knowledge while deepening their awareness of industry requirements, equipping them with exceptional adaptability. The dual-driven mechanism of innovation and entrepreneurship builds a bridge between academic theories and societal needs, establishing a comprehensive development platform for students^[2]. By participating in the education process, enterprises can obtain high-quality innovative talents with the help of scientific research achievements and technical support of universities to meet their needs in the field of technology and management. School-enterprise cooperation not only improves the competitiveness of students' employment, but also promotes the timely updating of educational content, so that the teaching content of colleges and universities can keep pace with social needs.

3.2 To build connections between universities, society and enterprises

The double innovation collaborative education model builds a closer cooperation platform between universities, society and enterprises. With the advancement of economic globalization and scientific and technological innovation, the demand for talents in society and industry is changing day by day, and relying solely on traditional education model can no longer meet the diversified needs of the market. Under this background, private colleges and universities make use of the double innovation collaborative education model to actively connect with social needs and closely connect teaching content with market dynamics. Universities are not only knowledge providers, but also key participants in the cooperation between education and industry. Through in-depth cooperation with enterprises, colleges and universities adjust the curriculum in a timely manner according to the needs of the industry, and cultivate innovative talents who meet the requirements of social and industrial

development.

3.3 Promoting innovation in college teaching

The double innovation collaborative education model plays an active role in promoting the internal teaching innovation in colleges and universities. Under this educational model, universities are encouraged to examine their own teaching concepts and methods to promote the innovative development of educational concepts. The double innovation collaborative education emphasizes the cultivation of innovative thinking, not only focusing on the teaching of professional knowledge of disciplines, but also paying more attention to students' ability to deal with practical problems and improve interdisciplinary ability. In practical teaching, students adopt methods such as teamwork and project practice, and comprehensively apply multidisciplinary knowledge to solve complex problems. Therefore, colleges and universities should diversify the curriculum, strengthen the interdisciplinary curriculum content, create flexible teaching methods, and pay attention to cultivating students' independent learning ability and innovation ability. The double innovation collaborative education model promotes the transformation and upgrading of university teaching, so that education is no longer limited to the transfer of single knowledge, but focuses on the cultivation of students' innovative ability and the accumulation of practical experience. This education mode encourages students to deepen knowledge understanding in practice, strengthen problem-solving ability, comprehensively improve the quality of education, and cultivate innovative talents in line with the needs of modern society.

4. The innovation of talent training mode

4.1 Professional characteristics to accurately docking industry enterprises

Universities, industries, and the government should pay close attention to the construction of professional groups in colleges and universities, integrate forces to improve the construction of industry chain exhibition groups, clearly understand the needs of industries and enterprises for mass innovation talents at different stages, provide references for the formulation and adjustment of subsequent talent training goals, and build and improve feasible school-enterprise order-type cooperation mechanisms. On the one hand, make a detailed analysis of different regional economic pillar industries, and then contact the industry chain to identify the corresponding professional groups, and provide the job groups that can achieve docking to everyone; On the other hand, the present and future development trends of various industries are reasonably predicted, the professional structure and groups are adjusted according to the results, and the curriculum system is improved, so that each professional group can train talents with high comprehensive quality closely according to the market development needs.

4.2 Attach importance to the construction of innovation and entrepreneurship teaching staff

In the exploration of talent training in different periods, private colleges and universities should have an accurate grasp of the concept of talent helping regional economic development, especially the communication with the local pillar industries must be in-depth and comprehensive, so as to achieve an accurate grasp of the needs of various talents in different periods of the enterprise industry, so as to make reasonable adjustments to the follow-up talent training goals. Therefore, private universities and industrial enterprises should deepen cooperation, integrate existing resources and conditions, and establish a team of innovative and entrepreneurial teachers as soon as possible. While enriching the teaching of theoretical knowledge is important, the training of professional skills and professional qualities should not be ignored. Regular teacher skills competition activities can be organized to provide teachers with more opportunities to take temporary training in cooperative enterprises, ensure that teachers can timely master the latest professional knowledge and skills, and effectively impart the new knowledge and skills accumulated by learning to students on the basis of continuous improvement of professional quality, so that teaching activities in each period can highlight the characteristics of combining theory with practice. This is also very beneficial to the future employment development of all professional talents. It is also possible to introduce more outstanding talents from industries and enterprises in practical teaching, so that the teaching team of private colleges and universities can continue to have fresh blood to join, and to continuously improve the level of "double teacher" team construction to ensure that students learn and accumulate the most novel professional knowledge and skills, so that students can show high innovation and entrepreneurship awareness and skills in various positions after graduation^[3].

4.3 Realize the coordinated development of Industry-university-research transfer creation

In the process of cooperation with Industry enterprises, private colleges and universities should focus on the actual needs, optimize the construction of the industry-university-research transfer creation collaborative development system, and continue to deepen the integration of production and education to help private colleges and universities implement the talent training of professional group mass innovation education collaborative education. In the implementation and optimization of this education model, it is necessary to show multi-form and diversified characteristics, so as to cultivate high-quality talents with rich knowledge and various skills for all sectors of society. During this period, the orientation of coordinated development should be accurately found, and personnel training and regional economic development in each period should be closely linked, so as to facilitate mutual promotion and support in subsequent development.

4.4 Intensify efforts to build the connotation of the education system

The school introduces the spirit of entrepreneurship, entrepreneurship, and excellent industrial culture in innovative classroom teaching, so that students can be positively influenced by spirit and culture in the process of learning and accumulating rich professional knowledge, so that the training goal of high-quality and compound skill masters can be successfully implemented, and students of all majors are encouraged to combine the knowledge accumulated at the current stage to innovate and create. In addition, teachers can naturally introduce the concept of creative education and its related content into the ideological and political teaching activities organized in peacetime, effectively implement the national education policy, and let the fundamental goal of cultivating people be fully implemented.

4.5 Establish a school-enterprise joint curriculum system

The establishment of school-enterprise joint curriculum system has obvious significance in promoting the integration of production and education. In professional groups education, curriculum modules are carefully designed in accordance with industry needs and technological development trends to ensure that the course content is forward-looking and practical^[4]. Skillful integration of enterprise technical content, the course content is constantly updated, to ensure that students learn knowledge to keep up with industry trends. The school-enterprise joint design curriculum mode not only focuses on the cultivation of students' basic theories, emphasizes the improvement of practical ability, is driven by practical projects, students are exposed to real industry scenarios, and theory and practice are scientifically combined. Enterprises participate in the course design and teaching process to realize the integration of the latest technology and methods of the industry into teaching, and students fully understand and master advanced vocational skills to adapt to the needs of the workplace. This curriculum system significantly improves students' professional quality, enhances their sensitivity to market needs, creates opportunities for seamless connection in the industry, and strengthens students' comprehensive ability to remain competitive in their subsequent careers.

4.6 Strengthen the School-Enterprise Collaborative Education Mechanism

Strengthening the school-enterprise cooperative education mechanism is an important plan to form double Innovation education for professional groups in private colleges and universities under the background of the integration of production and education. On the one hand, the establishment of school-enterprise co-construction platform to achieve collaborative education. Universities take the initiative to connect industry leading enterprises, scientific and technological innovative enterprises, and regional key industries, and sign long-term cooperation agreements to clarify the responsibilities and obligations of both sides in personnel training. The construction of the platform should focus on resource sharing, with enterprises providing resources such as technology, equipment and cases, and schools giving full play to their advantages in scientific research and teaching to form a two-way complementary cooperation model. Introduce enterprise mentors to participate in teaching design and practical guidance, and regard it as a key measure to improve the effectiveness of education. Enterprise tutors should have rich industry experience and professional skills, and deeply participate in course development, textbook preparation and teaching implementation. In the theoretical teaching, the enterprise tutor combined with practical cases to analyze the development trend and technical difficulties of the industry; The practical part guides the students to complete the project design, product development and marketing, and helps the students to transform their theoretical knowledge

into practical ability. On the other hand, business mentors participate in the evaluation and guidance of students' innovation and entrepreneurship projects and provide professional advice. Relying on enterprise resources, carrying out project-based teaching is the core link of school-enterprise collaborative education. Universities and enterprises jointly design close to the actual topic, around product research and development, process improvement, market research and other fields. Under the guidance of corporate tutors and school teachers, students complete the project tasks in team form. This mode exercises students' professional skills and improves their ability of teamwork, communication and problem solving. The project results are connected with the specific needs of the enterprise, and some excellent results can even be directly applied to the production of the enterprise, realizing the dual transformation of educational value and economic value. At the same time, joint seminars between schools and enterprises can be held regularly to promote the dynamic docking of teaching content and industry needs. In the seminar, enterprise executives, technical experts, university teachers and student representatives were invited to participate in in-depth discussions on topics such as industry hot spots, technology frontiers, and talent training. After discussion, colleges and universities timely understand the industry trends, adjust the teaching content, methods; Enterprises feedback talent needs, put forward targeted suggestions. Two-way interactive mechanism to ensure that the direction of talent training and market development, enhance the practicality and foresight of education.

5. Conclusion

With the deepening of the integration of production and education, private colleges and universities have achieved remarkable results in the collaborative education of mass innovation and innovation. However, the exploration of innovative talent training mode is a continuous process, which needs to constantly sum up experience and optimize the mechanism. Private colleges and universities should continue to strengthen close ties with enterprises, industries and society, deepen cooperation between industry, university and research, and promote the effective docking of professional groups with industrial chains and innovation chains. At the same time, focus on cultivating students' innovative spirit and practical ability, build a diversified and open education platform, and train more high-quality innovative talents for economic and social development. Through continuous efforts, it is believed that private colleges and universities will achieve more fruitful results in the collaborative education of mass creation under the perspective of the integration of production and education.

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