The Participation Mode and Benefit Analysis of Industrial College in the Construction of Industry-academic Integration Practice Center

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Keywords: Industrial college; Industry-academic integration; Participation mode; Benefit analysis; Cooperative innovation

Abstract: The purpose of this article is to explore the role and benefit of industrial college in the construction of the practice center of industry-academic integration, and provide theoretical support and practical reference for promoting the industry-academic integration through in-depth analysis of its participation mode, operation mode and actual effect. This article first introduces the basic concepts of industrial college and practice center of industry-academic integration, and then classifies and analyzes in detail the different modes of industrial college participating in the practice center of industry-academic integration-school-enterprise cooperation mode, work-study alternation mode, order-based training mode and so on. Through the analysis of the specific operation mode, characteristics, advantages and limitations of these modes, this article reveals the specific role of industrial colleges in improving students' practical ability, promoting employment and promoting industrial upgrading. The research shows that the participation of industrial colleges has greatly improved the practicability of education, enhanced the employment competitiveness of students, provided a stable source of talents for enterprises, and promoted technological innovation and industrial development. From the three dimensions of educational benefits, economic benefits and social benefits, the participation of industrial colleges has achieved remarkable results.

1. Introduction

In modern society, with the rapid progress of science and technology and the continuous optimization and upgrading of industrial structure, the close combination of institutions of higher learning and industry has gradually evolved into an inevitable development trend [1]. As an innovative educational concept, the industry-academic integration has achieved the best matching of educational resources and industrial resources by deepening the cooperation between schools and enterprises [2]. This has greatly improved the effectiveness and level of higher education, and injected a strong impetus into industrial innovation and progress [3]. This model gives students more opportunities to practice in actual combat and cultivates their practical ability and innovative consciousness. At the same time, it also provides enterprises with timely updated scientific research achievements and talent support, and promotes the optimization and upgrading of the industry [4].

As a key platform for the integration of industry and education, industrial college plays a bridge role between education and industry. It not only belongs to the higher education system, but also is closely connected with the industry [5]. The Institute of Technology has created a platform integrating Industry-University-Research by integrating school-enterprise resources, creating a broad space for practice, research and innovation for teachers and students [6]. It can also adjust the specialty setting and teaching content in time according to the needs of industrial development, and cultivate high-quality talents needed by the market.

It is of far-reaching significance to study the participation mode and benefit of industrial college in the construction of the practice center of industry-academic integration [7]. By analyzing the participation mode of industrial college, we can explore its effective mechanism and successful practices in school-enterprise cooperation, and provide learning examples for other educational institutions [8]. Evaluating the effectiveness of industrial college in the construction of the practice center of industry-academic integration is helpful to quantify its contribution to the social, economic and educational fields, and further highlight the importance of industry-academic integration. In

  DOI: 10.25236/ssehr.2024.016

view of this, this article is devoted to discussing the participation mode and benefit analysis of industrial college in the construction of the practice center of industry-academic integration. Data sources mainly include policy documents, academic papers, enterprise examples and practical experience of industrial colleges. Through in-depth research, this article hopes to provide theoretical support and experience for the practice of industry-academic integration.

2. Overview of industrial college and practice center of industry-academic integration

Industrial college was born in the soil of close integration of higher education and industry, representing an innovative form of educational institutions. It inherits the functions of traditional colleges and plays the role of a link between education and enterprises [9]. Guided by the actual needs of the industry, the Institute of Technology utilizes the educational resources of universities and the practical experience of enterprises, and realizes the effective integration of educational strength and industrial resources through school-enterprise cooperation and work-study combination. Its core purpose is to cultivate high-level talents with solid theoretical foundation and rich practical experience to meet the diverse needs of industrial development. In terms of characteristics, industrial colleges usually show clear industry orientation, flexible teaching methods, close school-enterprise partnership and sound practical education system.

On a global scale, the growth momentum of industrial colleges and practice centers for the industry-academic integration is strong. On the international stage, many famous universities have set up industrial colleges that are closely related to the industry, and through in-depth cooperation, jointly promote scientific and technological innovation and talent development. In China, with the state's attention and support to the policy of industry-academic integration, the construction mode of industrial colleges is being explored by more and more universities and enterprises, and remarkable results have been achieved. These successful cases cover the innovation of school-enterprise cooperation mechanism, the improvement of practical education system, the co-construction and sharing of teaching staff and so on. Nevertheless, some challenges have emerged in the development process, as shown in Figure 1. These problems need to be solved urgently.

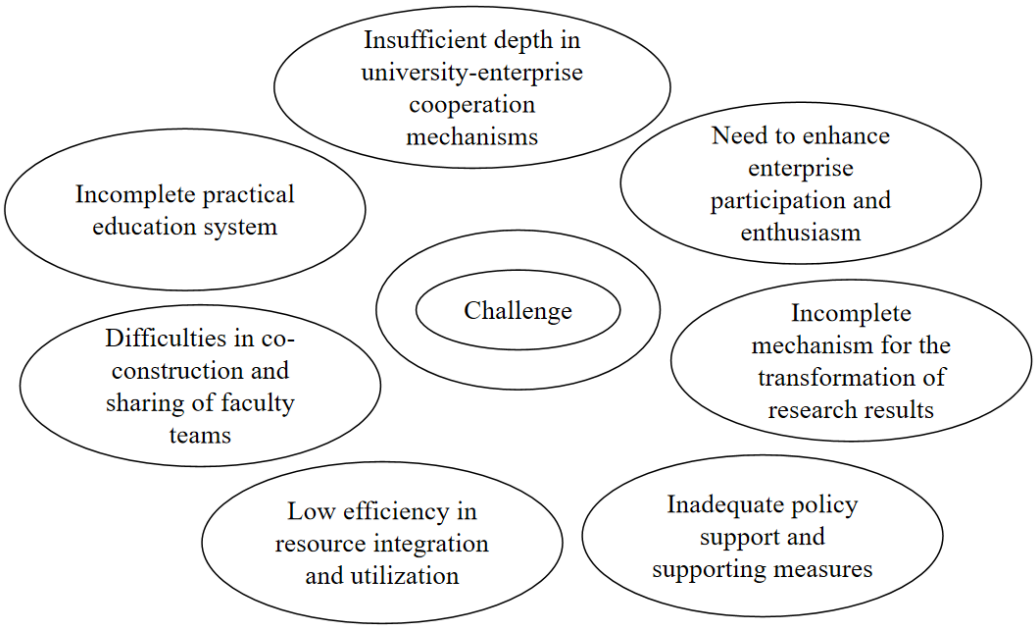

Figure 1 Challenges faced by the development of industrial colleges

In the process of constructing the practice center of industry-academic integration, the role of industrial college is very important. It constitutes the skeleton of the practice center, which is responsible for integrating the cutting-edge technology, advanced technology and specific needs of the industry into teaching activities, so that students can learn and exercise in a simulated or real industrial environment. Through close cooperation with enterprises, the Institute of Technology jointly develops courses, compiles teaching materials and implements practical projects to ensure

the timeliness and foresight of teaching content. At the same time, it also serves as a bridge for information circulation, resource sharing and talent interaction between universities and enterprises. Therefore, it is of great significance to strengthen the role and function of industrial college in the construction of the practice center of integration of industry and education, so as to promote the deep integration of education and industry and cultivate high-quality talents.

3. Participation mode of industrial college in the construction of practice center of industry-academic integration

The industrial college has adopted various participation modes in the construction of the practice center of industry-academic integration. Among them, school-enterprise cooperation mode, work-study alternation mode and order-based training mode are typical ones.

(1) School-enterprise cooperation mode refers to the close cooperation between industrial colleges and universities and enterprises to jointly promote the construction and development of the practice center of industry-academic integration. In this mode, colleges and universities provide educational resources and teachers, while enterprises provide practical places and practical experience. The two sides realize the organic connection of education chain, talent chain, industrial chain and innovation chain by jointly developing courses, building training bases and sharing scientific research results. The advantage of this model is that it can give full play to the respective advantages of universities and enterprises and form a complementary and win-win situation. Its limitation is that there may be differences in goals, interests and culture between the two parties, and it is necessary to establish an effective communication mechanism and coordination mechanism.

(2) Work-study alternation mode is an educational mode that combines theoretical study with practical operation. In this mode, the industrial college will arrange for students to learn theoretical knowledge on campus and practice in enterprises to realize "learning by doing, learning by doing". The characteristic of this model is that it enables students to better apply theoretical knowledge to practice and improve their practical and innovative abilities. At the same time, enterprises can also get in touch with outstanding talents in advance through this model, laying the foundation for future recruitment and training. However, the work-study alternation mode also needs to solve the problems of student management, teaching arrangement and practice quality.

(3) Order-based training mode, that is, the industrial college tailor-made talent training plan according to the specific needs of enterprises, aiming at accurately training qualified high-quality talents for enterprises. Under this mode, the industrial college and the enterprise jointly signed a cooperation agreement on personnel training, which specified the training objectives, contents and methods in detail. The advantage of this model is that it can accurately meet the needs of the market and enhance the accuracy and practicability of talent training. Its potential limitation is that it may pay too much attention to the current needs of enterprises and fail to fully consider the personal development and overall quality improvement of students.

In the process of industrial college participating in the construction of the practice center of industry-academic integration, universities, enterprises and industrial college should clearly define their respective roles and responsibilities. Colleges and universities are responsible for providing teaching resources and teachers, and undertaking students' theoretical education and management responsibilities; The enterprise is responsible for providing internship sites and practical experience, and for students' practical guidance and internship arrangements; Industrial college plays the role of coordinator and connector, promotes the cooperation between universities and enterprises, and promotes the construction and development of the practice center of industry-academic integration. All parties also need to build an effective interest balance mechanism to ensure that the interests of all parties are fully guaranteed and realized. Only by clarifying the role orientation, responsibility division and interest balance mechanism can the industrial college give full play to its role in the construction of the practice center of industry-academic integration.

4. Benefit analysis of industrial college in the construction of practice center of industry-academic integration

Industrial college participates in the construction of the practice center of industry-academic integration, and its benefits are reflected in many dimensions, mainly including educational benefits, economic benefits and social benefits.

(1) From the perspective of educational benefits, the participation of industrial colleges has greatly improved students' practical ability. Through in-depth cooperation with enterprises, students have the opportunity to personally participate in the real working environment and apply what they have learned to practice. This can deepen the understanding of professional knowledge and train students' practical skills and problem-solving ability. This accumulation of practical experience makes students more competitive in the job market and promotes their smooth employment. According to the market demand, the industrial college has customized the talent training scheme, which makes education closer to reality and improves the pertinence and practicability of education.

(2) In terms of economic benefits, the participation of industrial colleges has contributed to the optimization and upgrading of industries and economic growth. On the one hand, through cooperation with universities, enterprises have obtained cutting-edge scientific research achievements and technical support, promoted technological innovation and product development, and enhanced their market competitiveness. On the other hand, the industrial college has delivered stable reserve talents for enterprises, reduced recruitment costs and improved work efficiency. The construction of the practice center of industry-academic integration has also promoted the joint development of enterprises in all links of the industrial chain, created a healthy industrial ecology, and further promoted the prosperity of regional economy.

(3) On the social benefit level, the participation of industrial colleges has promoted education equity and the stability of the job market. Through the industry-academic integration, more students from different backgrounds have the opportunity to receive high-quality education and training, which improves the overall quality of the population. The close cooperation between industrial colleges and enterprises also provides more employment opportunities for graduates, relieves employment pressure and maintains social stability.

In order to further enhance the benefits of industrial colleges participating in the practice center of industry-academic integration, we can adopt strategies and suggestions as shown in Figure 2. Through these measures, we can continue to promote the role of industrial college in the construction of the practice center of industry-academic integration, and realize the comprehensive improvement of education, economy and social benefits.

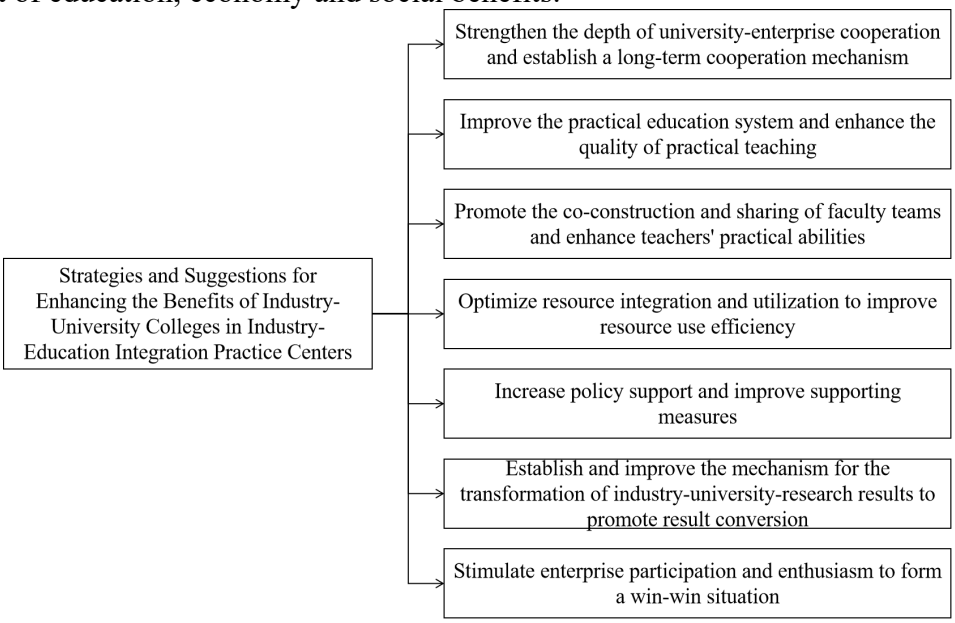

Figure 2 Strategies and suggestions on improving the benefits of industrial college in the practice center of industry-academic integration

5. Conclusions

As a link between education and industry, industrial college plays a vital role. It is a bridge, connecting the academic hall with the actual battlefield, and it is also a strong driving force to promote the industry-academic integration, improve the quality of education and promote economic development. In close cooperation with enterprises, the Institute of Technology deeply understands the needs of the industry and integrates the latest technical trends and market trends into the teaching system, so that students can get in touch with the real working environment and projects during their school days, and effectively improve their practical ability and professional quality. By working out training plans with enterprises, sharing teaching resources and jointly developing scientific research projects, industrial colleges make the education of colleges and universities closer to reality and more in line with market demand. At the same time, through in-depth cooperation with enterprises, industrial colleges can timely understand and master the cutting-edge technologies and development trends of the industry, and provide intellectual support for technological innovation and industrial upgrading of enterprises. Talents trained by industrial colleges often become an important driving force for regional economic development. They bring new ideas and skills to all walks of life and contribute to the prosperity and development of regional economy. Therefore, industrial college plays an irreplaceable role in promoting the industry-academic integration, improving the quality of education and promoting economic development, and is an important bridge connecting education and industry.

With the continuous progress of science and technology and the rapid development of industry, the practical mode of industry-academic integration will be more diversified and in-depth. Industrial college should continue to give full play to its unique advantages in the industry-academic integration, constantly innovate cooperation modes, expand cooperation fields and deepen cooperation connotation. Governments, enterprises, universities and other parties should also strengthen communication and cooperation to jointly build a more perfect and efficient ecosystem of industry-academic integration. We believe that in the future development, industrial college will play a more important role in the construction of the practice center of integration of industry and education, and make greater contributions to cultivating more high-quality and innovative talents and promoting industrial transformation and upgrading and economic and social development.

Acknowledgements

2023 Philosophy and Social Science Research Project for Jiangsu Universities “Exploration and Practice of the Construction of Industry-Education-Research Collaborative Education Platform for Applied Talents Training” (2023SJYB1645)

2023 Research Project Proposal for Higher Education Teaching Reform in Jiangsu Province “Research and Empirical Path on the Educational Model and Strategy of the Integration of Industry and Education in the 'Information Technology + X Industry' Community in Vocational Colleges in the New Era” (2023JSJG545)

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