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Research on the Practical Path of Collaborative Innovation Talent Training in Supply-Side Applied Undergraduate Colleges

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Abstract: The cultivation of supply-side collaborative innovation talents mainly focuses on four elements: labor, capital, technology, and system. The improvement of these four elements is essentially a long-term process, which determines the potential growth rate in the medium and long term. In this paper, we analyzed the current situation, put forward two major problems, the low degree of specialization and insufficient participation, and focus on the research on the practical path of collaborative innovation talent training in applied undergraduate colleges from the perspective of the system.

Keywords: Supply-side; Collaborative innovation

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1. Introduction

China is currently in an era of accelerated industrial upgrading and gradual deepening of economic restructuring. “Green growth” is becoming the theme of the development of the times. The relationship between the supply and demand of talents in China has also undergone significant changes, and there is an urgent need to increase the supply of high-quality collaborative innovative talents to meet the present needs of economic and social development. The reform of collaborative innovation education is imminent. As an important breakthrough in the new round of comprehensive reform of higher education, aiming at cultivating students’ innovative spirit, entrepreneurial consciousness, collaborative innovation ability, and team collaboration, considering all students, paying attention to classified training methods and individualized methods, combining disciplines and specialties, and strengthening practical operation and application are initiatives to promote students’ all-round development [1].

The essence of supply-side reform is to promote the cultivation of innovation ability. Collaborative innovation is the power source of the social economy. In the face of the social and economic structure adjustment of the supply-side reform, colleges and universities play a fundamental task in moral education, conscientiously implementing the national innovation-driven development strategy and the strategic deployment of mass entrepreneurship and innovation, and in ensuring appropriate school development strategy and talent training goal orientation. Under the background of supply-side reform, talents possess characteristics of innovation, professionalism, cross-cutting, and synergy. In the process of cultivating innovative and compound talents, colleges and universities should aim at the industrial structure and development layout at home and abroad.

2. Analysis of the current situation of supply-side reform on collaborative innovation education in applied undergraduate colleges

2.1. Low degree of specialization in universities as suppliers of collaborative innovation talents

Under the background of supply-side reform, the space for collaborative innovation development is given, but the problems existing in the construction of collaborative innovation specialization in local application-oriented universities are worthy of attention. First, the understanding and positioning of collaborative innovation education are relatively vague, and collaborative innovation education is out of touch with professional education. Collaborative innovation education and classroom knowledge teaching are considered two completely independent systems, causing the curriculum construction of collaborative innovation and professional practice teaching to lack effective professional method training. Moreover, the professional connotation construction around technological innovation and connection with entrepreneurship are lacking, affecting the cultivation of innovation ability and the improvement of entrepreneurial skill training. Collaborative innovation education requires teachers with both the theoretical basis and practical experience. Second, the practical value of collaborative innovation education lacks attention to practical action. As an open system, the cultivation of collaborative innovation talents requires the joint participation and cooperation of all levels of society. The insufficient technical connection between collaborative innovation and social subjects, the imperfect mechanism of collaborative education, the lack of technological innovation and achievement transformation platform construction, the futile professional technology research and development (R&D) and service, as well as the inadaptability of enterprises to the demand for talents, result in a disconnection between theory and practice, indicating that the collaborative innovation education in many applied undergraduate colleges in China is relatively simple and there is a considerable gap to the goal of supply-side reform [2].

2.2. Insufficient participation of enterprises as collaborative innovation demanders

The cultivation of talents in colleges and universities follows the law of the development of higher education. At present, in the process of transformation and development of application-oriented colleges and universities, although there is a certain gap between talent training and the demand for talents such as new social industries and high-tech talents, enterprises, as the talent demand side, have not actively participated in collaborative innovation talent training, which is also the reason for the imbalance of talent supply structure. The unclear definition of the responsibility of enterprises and other stakeholders in providing resources leads to problems such as resource allocation deviation, or non-docking; thus, the potential and literacy of collaborative innovation talents cannot be brought into full play. At the same time, the R&D of high-tech projects and the transformation of achievements into economic benefits are affected. As known to all, talent training requires financial, material, and human input, and being a long-term entity, it is slow to take effect, but its future potential development and social benefits have a significant impact. As an economic organization, the essence of enterprises is to pursue profit maximization as the goal and "cost-benefit" as the dominant principle as well as to actively invest in industries with fast returns. Generally speaking, enterprises do not intervene much in the training of collaborative innovation talents, thus rendering low participation. Therefore, the synergy, openness, and innovation of talent training are lacking to varying degrees [3].

3. Practical path of supply-side reform on collaborative innovation education in applied undergraduate colleges

Under the background of supply-side reform, there is a gap between talent training in colleges and universities and the demand for talents with social and economic development. Therefore, by adjusting the talent training structure to solve the problem of mismatch between supply and demand, colleges and

universities take collaborative innovation as a breakthrough in the reform of higher education, thus meeting the needs of industrial transformation, upgrading, and restructuring. In order to promote the construction of a collaborative innovation talent training system, it is necessary to improve the quality and ability of talent training, integrate collaborative innovation education and professional education into the whole process of talent training, highlight the characteristics, and achieve results in the practice of education and teaching reform, create conditions for the development of application-oriented undergraduate colleges, and provide support for practical programs. From the perspective of supply-side reform, on the one hand, colleges and universities shoulder the important historical responsibility of cultivating high-quality technical and skilled talents for economic and social development. On the other hand, for college students to learn innovation and entrepreneurship as well as participate in collaborative innovation activities, colleges and universities play a role in structural adjustment in terms of educational content and helping entrepreneurship meet their specific needs.

3.1. Attach importance to system management construction in collaborative innovation education

The performance of collaborative innovation education is an important part of teachers' professional title evaluation, job promotion, and performance appraisal. In terms of policy measures, institutional settings, funds, personnel, venues, and other aspects, schools provide a guarantee, act as the "combination punch" to promote collaborative innovation education, form a long-term mechanism to promote collaborative innovation education, and ensure the smooth progress of collaborative innovation education. At the same time, in order to strengthen the organization and management, a leading group of collaborative innovation education has been established, and the "top project" has been implemented to ensure that all departments work together for in-depth, sustainable, and efficient development of collaborative innovation education. According to the requirements of the new situation and the reality of each school, a collaborative innovation college can be established as an important carrier and practical platform for the school to carry out collaborative innovation education.

3.2. Construction of a collaborative development system in collaborative innovation education

The construction of a collaborative development system is mainly to promote the reform of the collaborative innovation talent training mode, integrate collaborative innovation education with disciplines, entrepreneurship education, and entrepreneurship competition, as well as integrate practical teaching and training.

3.3. Strengthen the construction of collaborative innovation education teachers

According to the professional-based principle, full-time and part-time combination, the idea of strengthening the practice of teachers, the selection of scientific and technological commissioners, and the employment of enterprise technical backbones, entrepreneurs, entrepreneurial successes, *etc*., a "double-qualified and double-skilled" collaborative innovation education and entrepreneurship employment guidance team, comprising teachers, is established, thus strengthening the collaborative innovation employment guidance. In order to improve the professional and technical title evaluation and performance appraisal standards, the performance of collaborative innovation education is included as a part of the important indicators: teachers' professional and technical title evaluation, employment, and performance appraisal. Relying on teachers' teaching and education development center, teachers are trained in the teaching concept, teaching reform, and teaching ability of collaborative innovation education. By arranging teachers to work in enterprises, teachers are encouraged to participate in the collaborative creation of social industries.

3.4. Innovative teaching management system and mechanism

Taking students as the focus, we have carried out heuristic, discussion-based, case-based, and research-based teaching, focusing on cultivating students' critical and creative thinking, and overcoming the issue of traditional classroom teaching prioritizing knowledge transmission and curriculum teaching over skill training and practical teaching. In the selection of "famous teachers for teaching," "famous teachers for collaborative innovation education" has been added to commend and reward those who have made outstanding achievements in collaborative innovation education and teaching. In addition to the efforts made, we are expanding the scope of small class teaching, encouraging teachers to introduce scientific research projects, industrial technology, and academic frontier achievements into the classroom, and working on inspiring students for collaborative innovation. Moreover, a collaborative innovation credit accumulation and conversion system has been established, and students are continually encouraged to obtain credits through invention, technology development, and entrepreneurial practice. Students participating in collaborative innovation are encouraged to transfer to relevant majors, and they are allowed to apply for collaborative innovation practices and projects as their graduation internships and thesis. The implementation of a flexible school system allows students to leave school to start their businesses or work while learning, extending the undergraduate period to 8 years [4].

3.5. Carry out collaborative innovation guidance services and research

In addition to conventional entrepreneurship courses and career planning guidance, a relatively ideal collaborative innovation guidance service system and innovation and entrepreneurship mentor system have been established to provide guidance services to all students as well as targeted and continuous assistance to students with entrepreneurial intentions and potential.

Through the whole-process guidance and one-stop services, special tracking guidance and expert guidance can be arranged for entrepreneurs with special needs, and "greenhouse" efforts can be carried out for small and micro enterprises that are venturing into science parks and incubators, with the provision of comprehensive care to help them grow. Each collaborative innovation case is recorded in detail, with the lessons learned summarized, the demonstration effects exerted, and the innovation and entrepreneurship success rate improved. Careful consideration is given to collaborative innovation education theory and practice research and the establishment of collaborative innovation education special research.

4. Conclusion

Guided by the supply-side reform and looking forward to the future, we will further deepen the reform of the talent training mode, attach importance to the talent training process and the formulation of quality standards, improve the collaborative innovation education integration mechanism, as well as strengthen students' innovative spirit, entrepreneurial awareness, and collaborative innovation ability. We will also further strengthen the construction of the collaborative innovation education practice platform and explore the use of social capital to establish a collaborative innovation practice platform for college students; improve the innovation and entrepreneurship education operation mechanism by establishing a management system and operation mechanism with "streamlined organization, efficient operation, clear rights and responsibilities, and clear goals"; continue to adhere to the implementation of the national innovation development strategy and the mass entrepreneurship innovation strategy; and forge ahead toward regional economic and social development and industrial transformation and upgrading with high-quality collaborative innovation talents. In short, the integration of supply-side reform and collaborative innovation education in colleges and universities can cultivate new talents that meet the requirements of the times.

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Disclosure statement

The authors declare no conflict of interest.

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