

# Research on Clustering Innovation and Entrepreneurial Talents Cultivation Model of Biopharmaceutical Industry under the Collaboration of Universities and Enterprises

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**Abstract.** This article points out that university-enterprise collaboration is the best model for modern talents cultivation. In particular, biopharmaceutical companies are at the forefront of social needs. In the context of industrial clusters, the development of enterprises should also provide market information to universities in a timely manner. As a platform for practice, enterprises can integrate practical skills into the personnel training system so as to achieve the goal of training innovative and entrepreneurial talents.

## 1. Introduction

Synergistic theory has been gradually formed and developed on the basis of scientific researches since the 1970s. It is a concept proposed by Professor Stuttgart of the Federal Republic of Germany and the famous physicist Hermann Haken in 1971 [1]. Although Western developed countries have different understandings and developments of school-enterprise synergy education systems, they all have formed a set of typical and representative models that meet the actual conditions and characteristics of their own countries. Each model provides us with many Lessons learned [2].

Guo Guangyin, a Southeast University teacher in China, believes that universities and colleges are both the gathering place for innovative talents and the source of innovation. How to use high-level innovations and high-quality innovation and entrepreneurial talents to serve the development of the country's new economic normality is the key to the problem. Chen Jiefang pointed out that cooperative education is a necessary talent training mode for the development of modern market economy [3].

The cooperation also plays an important role in the development of the enterprise chain, that is, the industrial clusters show clear evolutionary rules during the development process. The innovation and entrepreneurship talents, as an important talent resource for the industrial cluster, can positively promote the evolution of the industrial clusters [4]. At the same time, biopharmaceutical industry clusters can also rely on various internal network resources to influence the development of innovative entrepreneurial talents, and there are certain differences in the impact of biopharmaceutical industry clusters on the quality of innovative entrepreneurial talents at different stages of evolution. Therefore, it is of great theoretical value and practical significance to deeply study the influencing factors of the quality of innovation and entrepreneurial talents at different stages of the evolution of biopharmaceutical industry clusters [5-8].

## 2. The Key Features of the Research

From the point of view of cultivating innovation and entrepreneurship, this paper has studied how to integrate the model of industrial clusters, namely, the mode of mutual integration, the interconnection of many types of institutions, and the refinement of the theory and practice design of the biopharmaceutical industry. The industrial cluster chain formed during the pharmaceutical process is modeled and set up in practice to form a step-by-step link model that is easy-to-hard and wide-to-professional. Students are allowed to experience each node in person and build innovation

and entrepreneurship through the accumulation and practice of professional knowledge. Confidence; Secondly, the subject research encourages students to go out of class, go out of the campus, and enter the community after school hours, help students find social practice opportunities in the cluster of biopharmaceutical industry clusters, and “accumulate for others” to accumulate experience in social work. From seeing to thinking, it is the best way to cultivate students' awareness of innovation and entrepreneurship.

In terms of cultivating innovation and entrepreneurship, this paper has studied how to integrate the advantages of industrial clusters, namely, the natural selection mechanism of “survival of the fittest” formed in the cluster, so that students can understand the competitiveness and variability of the biopharmaceutical industry and motivate students to participate in biology. The desire of pharmaceutical innovation and entrepreneurship, through innovation and entrepreneurship training platform for innovation and entrepreneurship training, to understand social needs and their own advantages and disadvantages, in order to expand the selection and learning of innovative entrepreneurial skills knowledge, enhance their own competitiveness. On the basis of innovation and entrepreneurship awareness, it will enhance its innovation and entrepreneurship capabilities. Second, this will encourage students to use the “Undergraduate Project for Innovation and Entrepreneurship” as a platform to carry out cooperative mechanisms for mutual assistance and collective action, so as to make the cluster competitive, even competitors can Come together to learn the role of industrial clusters in knowledge transfer, develop students' tacit knowledge sharing, share skills and resources, improve their innovation and learning economic capabilities, and increase their experience in innovation and entrepreneurship in order to reduce the cost of innovation and entrepreneurship. In order to enable students to lower the investment, it's better to advance into innovation and entrepreneurship, innovation and entrepreneurship so that more practical actions can be oriented.

From the cultivation model of biopharmaceutical talents in featured agricultural colleges and universities, this research investigates whether “biopharmaceutical + production practice + innovation and entrepreneurship skills” type of talent meets the needs of society, and finds out what needs and needs of this model Based on the agricultural characteristics of our school, pilot courses such as innovation and entrepreneurship have been piloted in the senior year of bio-pharmaceuticals. Second, the paper has studied the proportion of courses that are reasonably set in three directions, especially the orientation of innovation and entrepreneurship skills courses. Involving the number of majors, and at the same time, it carried out follow-up investigations on the subjective acceptance and effectiveness of the reforms, and conducted data analysis using objective scientific methods, establishing a scale-up, advancing, and agricultural characteristic bio-pharmaceutical talent dynamic training mode.

### **3. The Research Significance**

The theoretical significance of this paper lies in the study of the talent cultivation mode from the perspective of practical knowledge, which allows us to see the true causes of many malpractices in the training mode of pharmaceutical engineering talents in China, so as to find a more reasonable path for reform, and to educate innovative and entrepreneurial pharmaceutical engineering personnel training methods. Practical issues provide a theoretical basis for true explanatory power.

The practical significance lies in the fact that the school-enterprise cooperation, innovation, and entrepreneurship training is conducive to changing the phenomenon of the disconnection between China's higher education teaching and practice. It will help improve college students' learning ability, innovation ability, practical ability, communication ability and social adaptability. It is an inevitable choice for colleges and enterprises to achieve a win-win situation. At the same time, it provides university teachers with the opportunity to practice in the enterprise, improves the ability of combining teachers' theory and practice, and promotes the transformation of scientific research achievements. School-enterprise collaborative innovation and entrepreneurship training is an inevitable trend in education development. The completion of the school-enterprise collaborative

innovation and entrepreneurship training system is conducive to the in-depth development of China's education reform and lays a solid foundation for the implementation of education reform.

#### **4. Conclusion**

The research value of this paper is to put forward the characteristics and target orientation of innovative entrepreneurial pharmaceutical engineering talents according to the needs of China's industries. After in-depth analysis of the successful experience of foreign innovation and entrepreneurial pharmaceutical engineering personnel training, based on learning from the reference, design suitable the training plan of university-enterprise collaborative entrepreneurial engineering talents in China's national conditions provides a clear path for the practice of reforming the pharmaceutical engineering education and training model in colleges and universities.

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