

Innovative Research and Exploration on Cultivation of Plant Protection Talents Under the Mode of School-Enterprise Collaborative Education

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ABSTRACT

School-enterprise collaborative education is one of the directions of China's higher education reform, and an important means of cultivating applied talents. This article analyzes the problems of school-enterprise collaborative education, and proposes methods and measures for school-enterprise collaborative education based on the characteristics of plant protection talent training. Based on the school-enterprise collaborative education model, this article discusses the construction of a comprehensive assessment system with students as the main body, aiming at further improving the ability and quality of cultivation of plant protection professionals and meeting the social needs of plant protection professionals.

Keywords: *school-enterprise collaborative education, plant protection, talent training, innovative research*

I. INTRODUCTION

School-enterprise cooperation is an important mode for colleges and universities to train high-quality skilled talents, and also the basic way to achieve the training goals of colleges and universities. The school-enterprise cooperation is a collaborative model established by schools and enterprises [1]. In today's increasingly fierce competition, in order to seek development, local ordinary colleges and universities and vocational education colleges, etc. adopt a way of docking with enterprises, train application-oriented professionals for the society, and pay attention to the practicality and effectiveness of talents. The school-enterprise docking reflects the "win-win" mode of focusing on training quality, focusing on school learning and enterprise practice, and focusing on school and enterprise resource and information sharing. The school-enterprise docking has achieved a brand-new educational concept that

integrates with the market and combines production practice with theoretical teaching.

In the context of the construction of new agricultural sciences, how to innovate the cultivation model of plant protection talents and cultivate compound and applied talents who "understand agriculture, love the countryside, and love farmers" with sentiment and practical ability are the problems that need to be solved urgently [2]. In 2019, Wu Yan introduced eight new measures to implement the construction of new agricultural sciences, including the collaborative education and strengthening action in the "Beidacang Action" [3]. As early as 2017, the State Council issued a document and clearly pointed out that "it is necessary to deepen the integration of production and education, and promote the organic connection of the education chain, the talent chain, the industrial chain, and the innovation chain" [4]. With the guidance and support of a series of favorable policies, it provides a good opportunity for deepening the integration of industry and education and the reform of innovation and entrepreneurship education in universities.

Based on the school-enterprise collaborative education model, this paper explores the teaching and practice of plant protection major that focuses on the cultivation of students' ability, which has important practical significance for improving the quality of undergraduate talents in plant protection.

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II. PROBLEMS EXISTING IN SCHOOL-ENTERPRISE COLLABORATIVE EDUCATION

A. Solving the problem of "integration" in the cultivation mode of plant protection

Talents are the foundation for a good relationship between schools and enterprises. Schools train talents for enterprises, and enterprises provide training bases for schools to participate in the cultivation of talents [5]. Local agricultural colleges and universities take agricultural science, education and industry-university-research collaboration as the link to promote innovation and entrepreneurship education, so as to achieve an integrated training path for the triple ability of teaching, practice, and scientific research. Therefore, it is necessary to solve the problem of "integration" of talent training and social needs.

B. Establishing a cooperation mode to solve the phenomenon of "enthusiasm school and lukewarm enterprise" in the integration of production and education

It is required to achieve collaborative education in the construction of new agricultural science through school-enterprise cooperation and integration of production and education. At present, the school-enterprise cooperation in the process of plant protection personnel training is mainly carried out in the form of professional practice cognition and graduation practice. The time for students to participate in enterprise production practice is short, and the activities of teachers and students in the enterprise are difficult to integrate with the actual production of the enterprise. As a result, the enthusiasm of enterprises to participate in talent training is not high. Therefore, the school needs to strengthen the connotation development, enhance the hard power, and establish a win-win cooperation mode between school and enterprise.

C. Exploring to establish the sharing and transformation mechanism of various elements of the integration of production and education

The sharing and transformation of resources, platforms and talents is the way to achieve a win-win situation between schools and enterprises. However, in practice, there are still some problems in the construction of practical teaching resources between schools and enterprises, such as insufficient sharing power, uneven sharing demand, insufficient sharing scope, and poor sharing mechanism.

III. INNOVATIVE RESEARCH ON THE CULTIVATION OF PLANT PROTECTION TALENTS UNDER THE MODE OF SCHOOL-ENTERPRISE COLLABORATIVE EDUCATION

A. Constructing the curriculum module of plant protection talents training against the background of new agricultural science

The college invited industrial experts from Hunan Haili high-tech industry group, Hunan Academy of Agricultural Sciences, Hunan Agricultural University and well-known plant protection enterprises to participate in the improvement of training program of plant protection professionals, the formulation of training objectives and the selection of teaching syllabus, so as to formulate program documents for training talents meeting the industrial needs. The plant protection discipline of Hunan University of Humanities, Science and Technology held the forum of plant protection application and "excellent talent training forum of plant protection specialty under the background of new agricultural science construction". Experts, scholars and technical talents in the field of plant protection were invited to put forward opinions on the positioning, construction ideas and measures of plant protection application disciplines, and carried out discussion on plant protection personnel training, so as to provide strong support for the cultivation of high-level and application-oriented agricultural innovative talents.

B. Strengthening ideological and political courses, improving professional interest, and expanding professional cognitive vision

By inviting well-known industrial experts and outstanding graduates to the University, people can share the needs of research and production practice. In the past three years, nine university students majoring in plant protection have won state-level funding in terms of innovation and entrepreneurship training and scientific research projects. Six teams have been selected to participate in the micro landscape competition of plant protection specialty in Hunan Province, and won three third prizes, two winning awards, one excellent prize in general entomology and general plant pathology, and the college has won the excellent organization award. In recent three years, the students have participated in the National College Students' Life Science Innovation and Entrepreneurship Program, National College Students' Life Science Competition and Hunan "Challenge Cup" Entrepreneurship Project for more than 50 times. They have won 2 first-class prizes, 12 second-class awards and 10 third-class awards. In recent three years, 6 students' undergraduate theses have been rated as excellent undergraduate thesis of the University.

Through these activities, the school can strengthen students' professional cognitive practice, expand their professional cognitive vision and improve their professional interest.

C. Establishing a practical teaching platform and system to achieve mutual benefit between schools and enterprises, integration of production and education, and meet the needs

Relying on the teaching and scientific research platforms such as "double first-class" application discipline of plant protection, "collaborative innovation center of farmland weed prevention and control technology and application", "key laboratory of harmless application of pesticide", "school-enterprise cooperation talent training demonstration base of Agronomy and Biological Sciences", the University actively applied for school-enterprise cooperation projects with cooperative enterprises and institutions, jointly applied for 8 scientific research projects of provincial science and technology department with cooperative enterprises and institutions, and have won 3 provincial and ministerial awards. It is required to set up school-enterprise cooperation service team, discuss the problems encountered in production, such as the promotion of agricultural technology, let students know more about agricultural production, understand and solve the problems in the production of enterprises, grass-roots agricultural technology departments and cooperatives. It is better to employ experienced technical personnel and special skilled personnel as practice guidance teachers, impart practical experience, operation skills and new technology to students, and make the improvement and complementation with teachers, so as to promote the combination of teaching and practice. More than 10 science and technology commissioners from provinces and cities have been to the towns and villages of science and technology service for many times to carry out agricultural technical guidance, training and investigation activities to solve practical problems in agricultural production for farmers. Through school-enterprise cooperation, it also provides professional teachers with a platform for scientific research, production practice and rich experience. It is necessary to solve the phenomenon of "enthusiasm school and lukewarm enterprise" in the process of school-enterprise cooperation, achieve "mutual benefit and win-win" in school-enterprise cooperation, and enhance the enthusiasm of school-enterprise cooperation in running schools.

D. Establishing the sharing and transformation mechanism of all elements of the integration of production and education

In order to realize the sharing of teaching and scientific research resources between colleges and enterprises, the enthusiasm of both universities and

enterprises should be brought into full play. In the construction of practical teaching resources, colleges and enterprises should adhere to the co-education of teachers, equipment sharing, rules and regulations, platform construction and cultural integration, so as to realize the sharing of human resources, hardware resources, institutional resources, information resources and cultural resources between colleges and enterprises. The college has purposefully planned to send young teachers to the enterprises, actively participate in the production, operation and management practice of enterprises, so that teachers can master more production technology and management skills closely combined with the market, and enhance their practical ability. The college employs some technical personnel or industry experts with rich practice and management experience in the enterprise as the practical teaching instructors. The teaching and scientific research should be combined. At the same time, the cutting-edge scientific research achievements are "transformed" into the classroom, and an environment for teachers and students to share scientific research achievements will be created. Scientific research and enterprises are combined to promote and apply scientific research achievements to agricultural production through enterprises, so as to realize the cooperation and sharing of scientific research between schools and enterprises.

E. Multi-dimensional evaluation method and multi-channel feedback mechanism of talent training quality

Through multi-dimensional and multi-channel survey and feedback evaluation of talent quality, it is necessary to investigate the participation and achievements of students participating in research projects, innovation and entrepreneurship competitions and practical activities. It is carried out through the employment feedback of the cooperation with enterprises and institutions. Moreover, through the employment rate of graduates, professional matching degree and job adaptability, people can understand the satisfaction of students and evaluate the quality of talent training. In 2020, the postgraduate entrance examination rate of plant protection will be 40%, and the employment rate will be 97%.

IV. CONCLUSION

Through the path of industry-teaching integration and industry-university-research collaboration, local agricultural colleges and universities have significantly improved the quality of students' innovation and entrepreneurship education, helped the interdisciplinary development of "New Agricultural Sciences", and boosted the advanced demand of compound agricultural management talents through the innovation and entrepreneurship education system integrating practice, guidance and assistance, teaching reform and cultural

guidance. To improve the quality of personnel training is the foundation of colleges and universities, and the quality of personnel training is restricted by the talent training mode to a certain extent. The talent training of agricultural colleges and universities is positioned at the compound applied talents, that is, to train the talents needed by enterprises [7], [8]. Practice teaching is an important part of school-enterprise cooperation and an important part of talent training program of plant protection. Practice teaching not only enables students to learn knowledge, exercise skills, cultivate their ability to analyze and solve problems, but also can cultivate students' sense of innovation and entrepreneurship, and improve their comprehensive quality. Through the cooperation between school and enterprise, remarkable results have been achieved, but there are also some problems and deficiencies. The enterprises cooperated with are basically new small and micro enterprises and specialized farmers cooperatives, and there are some deficiencies in operation, management and auxiliary teaching concepts. In addition, local colleges and universities need to strengthen the connotation development, enhance the hard power, and establish a new mode of win-win cooperation between schools and enterprises. All these need to be improved and perfected in the future work.

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