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Exploration of the Training Model for Outstanding Talents in New Agricultural Sciences in Local Universities in the Guangdong-Hong Kong-Macao Greater Bay Area

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Abstract: In the context of the new agricultural science and rural revitalization era, there have been a series of changes in the demand for talent in agricultural science professional positions and their social service functions. In response to the problems of insufficient understanding of agriculture, rural areas, and farmers by teachers and students, inadequate curriculum system to meet the development needs of agriculture, rural areas, and farmers, insufficient extension of practical teaching links, and a shortage of agricultural talents who can practice and innovate, this study focuses on the cultivation of undergraduate talents in veterinary medicine. It proposes a new model for cultivating outstanding talents in agriculture in the Guangdong-Hong Kong-Macao Greater Bay Area, which is of great significance for promoting the rural revitalization of veterinary talents and improving the quality of talent training.

Keywords: New agricultural science; Veterinary medicine discipline; Talent cultivation mode

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1. Introduction

The construction of "new agricultural science" requires the cultivation of outstanding agricultural and forestry talents, focusing on improving students' innovation consciousness, innovation ability, and scientific research literacy, and cultivating a group of high-level, and international innovative talents [1]. New agricultural science marks the new era of China's higher education reform of agriculture and forestry, aims to cultivate innovative talents to meet the needs of modern agricultural development, pay attention to the integration and application of interdisciplinary knowledge, aims to cultivate students with good agricultural service quality, and can solve the problem of complex "three rural" comprehensive application talent [2,3]. As a systematic and multi-disciplinary intersection and integration, new agricultural science involves the crossover integration of

modern agricultural technology, leisure agriculture management, smart agriculture, and agricultural big data analysis [4].

Since 2019, under the backdrop of new agricultural and rural revitalization, there have been significant changes in the demand for agricultural professionals and the social service functions of agricultural professions. In response to these changes, China's higher education in agriculture and forestry has faced profound transformations and challenges related to quality enhancement. Agricultural universities have actively advanced the construction of new agricultural science, achieving notable phased results [5,6]. Agriculture-related colleges and universities undertake the important mission of cultivating high-level talents and providing intellectual support for rural revitalization. However, in the actual process of talent cultivation, the goals of training often deviate from the practical needs of society. The teaching content lacks integration with intelligent agriculture, and the disconnect between universities and enterprises, as well as between disciplines and industries, remains a prominent issue [7,8].

Accelerating the reform of new agricultural talent training in universities and realizing the synchronous development of new agricultural education and social reform is an effective way to solve the problem of disconnection between the current agricultural industry chain and the talent ecological chain [9]. The major of animal medicine at this university is the national first-class major construction point. In 2024, the top 150 veterinary disciplines entered the "World First Class Discipline Ranking" in the world. This study starts from the perspective of new agricultural science, based on the reform of new agricultural science talent training mode in the Guangdong-Hong Kong-Macao Greater Bay Area, and provides a reference for cultivating high-quality excellent veterinary professional talents of new agricultural science.

2. Optimize the talent training plan and innovate the talent training mode of "strengthening agriculture and developing agriculture"

2.1. Adhere to the guidance of the Communist Party of China (CPC) building and improve teachers' ideological and political education ability

Given the ideological and political guidance for addressing weak moral cultivation, the focus is on the "Double Leaders" Party Branch Secretary Studio cultivation project and the implementation of the ideological pilot mass project for teachers and CPC members. The key discourse of General Secretary Xi Jinping on education and the study of the "Four Histories" will be integrated into the daily lives of the teaching staff. The Party branch of the teachers will lead in strengthening their ideals, beliefs, and political direction. Attention will be paid to the publicity and development of the Huang Danian teaching team, as well as the establishment of the "Mentoring" Teaching Base in the teaching and research section. Furthermore, the strengths of provincial teaching experts will be leveraged to enhance the teaching and ideological education abilities of new and young teachers.

2.2. Adhere to a learning-oriented curriculum and establish the main framework for the "production, learning, and research" course

Agricultural programs at local colleges and universities serve regional agricultural economic development. They actively leverage school educational resources and think tanks to promote agricultural development, which is key to the transformation and upgrading of agriculture. The integration of production and talent training is central to the deepening of educational reform at local universities and the realization of high-

quality, applied personnel training that meets social demands.

To achieve the new agricultural talent training goals, the 2022 version of the talent training program will be divided into general education courses, subject-based core courses, professional core courses, and specialized courses. The program is designed to train "applied, innovative, and entrepreneurial" talents, with a modular curriculum system that integrates both general and professional education, making it easier for students to understand.

Emphasis will be placed on practical teaching. Some traditional experimental courses will be adjusted to combine experimentation with hands-on practice, and new practice-based courses, such as cognitive practice, will be added to enhance students' practical abilities. The construction of teaching practice bases will be actively promoted, with agreements signed with several units. The practice base will serve as a platform for building an integrated practice teaching system of "production, learning, and research," jointly guiding practice to ensure a seamless connection between practice and employment.

2.3. Adhere to demand-driven guidance and establish a talent training model based on the needs of the new agricultural science industry

Training new agricultural talents should focus on serving rural revitalization, with the integration of industry and education and collaborative education as key priorities. This approach should explore new training models for agricultural talent that respond to the innovation-driven development of agriculture and rural areas, aiming to cultivate interdisciplinary talents who can meet the demands of agricultural and rural development in the new era.

Key enterprises in the veterinary medicine industry should be consulted to understand their needs better. Enterprises' expertise should be fully utilized, and employers' feedback on graduates' quality should be valued. Collaboration between educational institutions and enterprises should be strengthened. The curriculum system should be employment-oriented, aligning closely with societal and industry needs, providing students with opportunities to select curriculum modules and career pathways, and fostering the development of students' individual talents.

2.3.1. Focus on integrating scientific research and teaching to educate through the synergy of science and education

Rooted in veterinary medicine, the discipline blends engineering and agricultural characteristics, demonstrating strong interdisciplinary attributes. Graduate supervisors' research, innovation, entrepreneurship training, and enterprise collaboration projects serve as key drivers. A tutorial system guides students beyond the classroom—into laboratories and research groups [11]. Grounded in practical clinical challenges, students engage deeply in scientific research by identifying problems, exploring solutions, summarizing findings, and refining approaches. This process fosters their curiosity and ability to pursue knowledge independently.

Efforts are directed toward integrating educational and research resources, selecting and training dual-role mentors, and supporting student internships and employment. By leveraging industry advantages and professional expertise, collaboration with rural science and technology correspondents is organized to involve students in exploratory practices during summer and winter. These activities, in partnership with government, enterprises, and research institutes, contribute to rural revitalization and agricultural development. Through innovative projects and collaborations, students transition from campus to real-world applications, fostering

creative thinking. The model of collaboration between schools, enterprises, government, and students ensures a mutually beneficial outcome.

2.3.2. Enrich practical platforms to enhance innovation and entrepreneurship skills

Starting from the entry point of professional education, students should be encouraged to actively participate in national, provincial, and school-level innovation and entrepreneurship competitions, as well as discipline-specific contests. Events such as the "Challenge Cup" Extracurricular Academic Science and Technology Competition, "Youth Internet +" competition, business plan competitions, discipline-specific skills competitions, social practice initiatives, and career planning activities serve as platforms for innovation and entrepreneurial practice. Through preparation and participation in these activities, students can enhance their professional skills and foster their capacity for innovation and entrepreneurship.

To support career development and comprehensive skill-building, three key lecture series are established: the "Enterprise Aviation Lecture Hall," the "Easy Wisdom Lecture Hall," and the "Student Science Lecture Hall." These platforms aim to broaden students' horizons, enhance their academic abilities, and develop their professional competencies. Since the establishment of the Animal Husbandry and Veterinary Seminar in 1997, this initiative has functioned as a "second classroom," inviting industry experts and enterprise leaders to the university. These events offer a series of professional academic and practical activities designed to improve students' professional skills, enhance their practical knowledge, and cultivate their overall career readiness.

2.4. Building an innovation and entrepreneurship platform through school-enterprise cooperation

To strengthen innovation, entrepreneurship, and employment education, we invite entrepreneurial leaders and enterprise experts to serve as off-campus employment mentors. Leveraging various "cloud platforms," we enhance online teaching, guidance, and interaction. A "Five Online" platform is developed, incorporating online courses, projects, mentorship, training, and competition preparation. Universities, research institutes, enterprises, and training bases collaborate to foster talent development, actively engaging in innovation and entrepreneurship competitions. This approach continuously optimizes the construction and application of comprehensive online education platforms.

The school-enterprise cooperation model is expanded through a "Four-Linkage" collaborative education framework: connecting schools and enterprises, teachers and students, on-site and remote learning, and classrooms with teaching practice bases. This model integrates clinical production practices, enhancing students' innovation abilities and entrepreneurial qualities. By aligning school teaching with clinical practice, we ensure the integration of knowledge and the achievement of shared educational goals.

Under the "Intelligent +" Internet of Things framework, the strengths of schools and enterprises are combined to create a complementary education platform. This platform stimulates students' enthusiasm and awareness for innovation and entrepreneurship while supporting the development of new, high-quality agricultural talent.

3. Conclusion

In the Guangdong-Hong Kong-Macao Greater Bay Area, the training model for exceptional agricultural

professionals emphasizes school-enterprise cooperation. By utilizing "cloud platforms" for innovation, entrepreneurship, and employment education, we strengthen the integration of agriculture, science, and education. Collaboration across government, industry, academia, and research enhances innovation. The "Five Online" entrepreneurship platform and "Four-Linkage" collaborative education model further support the development of veterinary professionals and agricultural talent, advancing education and social service initiatives in local universities.

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Disclosure statement

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References

[1] Lv X, Zhang Z, Hou T, et al., 2019, Research on the Training Mode of Agronomy and Innovative Professional Talents Under the Background of "New Agricultural Science". Education Modernization, 6(68): 16–18.

[2] Lu E, Guo Y, 2024, The Role and Challenges of the Laboratory in Intelligent Agriculture Innovation and Entrepreneurship Education Under the Background of New Agricultural Science. Smart Agriculture Guide, 4(19): 1–5.

[3] Hao P, Sun L, Wang H, 2021, Discussion on the practical teaching mode of Top-Notch Innovative Outstanding Agricultural Talents— Take Nanjing Agricultural University as an Example. Education and Teaching Forum, 2021(2): 137–140.

[4] Liu Z, Fan S, 2024, Research on the New Agricultural Science Talent Training Mode in Agriculture-Related Universities Under the Background of Rural Revitalization. Rural Practical Technology, 2024(9): 58–60.

[5] Cen S, 2023, Thinking on Veterinary Professional Training and Social Service Function Based on New Agricultural Science. Smart Agriculture Guide, 3(1): 97–100.

[6] Li E, Pan H, Feng R, et al., The Construction of New Agricultural Science and the Transformation and Development of Higher Agriculture and Forestry Education—The 20th Meeting of the Joint Meeting of China Higher Agriculture and Forestry Education Schools (Colleges) and the Overview of Chinese and Foreign

Agricultural Education Forum. Chinese Agricultural Education, 23(6): 1–9.

[7] Li H, Li C, 2024, Exploration and Practice of the Education Mode of "De-Technology Practice" in Local Agriculture-Related Universities Under the Background of New Agricultural Science. Journal of Suihua College, 44(09): 131–134.

[8] Cao X, 2022, Research on the Cultivation Path of New Agricultural Science Talents Under the Background of Industry-Education Integration. Modern Agricultural Research. 28(1): 8–10.

[9] Huang T, 2024, Practical Exploration of the Cultivation of Applied "New Farmers" at the Undergraduate Level Under the Background of New Agricultural Science. Mass Technology, 26(05): 160–164.

[10] Sun D, 2020, Innovative Research on the Teaching Methods of Ideological and Political Courses in Universities Under the Mode of Industry-University-Research Integration Talent Training. Journal of Hubei Second Normal University, 37(03): 32–36.

[11] Tan Y, Yan C, Wang H, et al., 2022, Take the Food Quality and Safety Major of South-Central University for Nationalities as an Example. Anhui Agricultural Science. 50(20): 277–279, 282.