

Research on the Training Mechanism of Rural Veterinary Talents Based on OBE Concept

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Abstract: Rural veterinarians are the basic system in China's animal epidemic prevention system, playing an important role in animal disease prevention, animal disease diagnosis and treatment, public health safety in animal husbandry, and safety assurance of animal derived food. This article uses the OBE concept to analyze the mechanism for cultivating rural veterinary talents. Research suggests that distinctive rural veterinary talent training programs should be implemented in different regions; Use "Internet plus" tools such as university network teaching platform to fully realize the theoretical knowledge of rural veterinary medicine; Establish animal husbandry and veterinary industry associations to enhance the professional skills of rural veterinarians.

1. Introduction

Rural veterinarians refer to those who have not yet obtained professional veterinary qualifications and are engaged in animal husbandry and veterinary work in townships and villages. They are an important force in the prevention and treatment of animal diseases in rural areas. According to the data released by the World Organisation for Animal Health, at least 75% of new human infectious diseases originate from animals, and 60% of the known infectious diseases are zoonoses. With climate change, expanding international trade and personnel circulation, and the emergence of more new livestock and poultry viruses, it has brought significant challenges to the prevention and control of animal diseases at the grassroots level in rural areas^[1]. The scope of job responsibilities of rural veterinarians is no longer limited to basic activities such as animal disease prevention and diagnosis or treatment, but extends to areas such as public health safety and the safety of animal derived food industry chains. Therefore, rural veterinarians are not only the foundation for animal disease prevention and control, but also the first line of defense for public health and safety, and an indispensable force in the development of modern animal husbandry.

However, through field research, it has been found that rural veterinary personnel are gradually being marginalized. Due to the monotony of rural veterinary work, irregular working hours, and unstable income sources, many young people are unwilling to engage in the veterinary profession. The aging level of the rural veterinary team is gradually deepening, with the vast majority of on-the-job veterinarians over the age of 50. In addition, there are significant differences in the

professional skills of rural veterinary personnel, with some rural veterinarians only mastering simple diagnostic and treatment techniques, unable to cope with complex animal disease situations, and unable to assume the responsibility of defense for public health and safety. Therefore, it is particularly important to cultivate a group of rural veterinary teams with excellent professional qualities and continuously optimize the professional qualities of rural veterinary practitioners. The OBE education concept (result oriented education) was first proposed by American scholar Spady and has been applied in various fields such as engineering and clinical medicine^[2]. The OBE concept emphasizes a student-centered teaching philosophy, emphasizing the cultivation of students' knowledge transfer ability and the ability to internalize learned knowledge into work practice. The use of OBE teaching philosophy, combined with tools such as the internet, will help cultivate the rural veterinary talent team.

2. Implementing rural veterinary talent training programs tailored to local conditions in different regions

Firstly, for regions with obvious characteristics of animal husbandry, local agricultural universities can design targeted talent training programs based on local needs and development characteristics of animal husbandry. For example, from the 2022 national animal husbandry statistics, it can be seen that animal husbandry in various regions has obvious regional characteristics. The total proportion of live pig production in Sichuan, Hunan, Henan, Yunnan, Shandong, Hubei, and Guangdong provinces in China is 50.81%; The total proportion of milk production in Inner Mongolia Autonomous Region, Hebei, Heilongjiang, and Shandong provinces, Ningxia Hui Autonomous Region, Xinjiang Uyghur Autonomous Region in China is 67.42%; The beef production of Inner Mongolia Autonomous Region, Xinjiang Uyghur Autonomous Region, Shandong, Hebei, Heilongjiang, Jilin, and Yunnan provinces accounts for a total of 52.97% of the national total. For areas where animal husbandry and veterinary medicine are in short supply, "order based" talent training agreements can be signed with animal husbandry and veterinary universities. Secondly, with the help of the OBE concept, we will reform the training system for applied talents in the field of animal husbandry and veterinary medicine. Animal husbandry and veterinary majors have strong applicability, and the daily teaching system in universities should be student-centered, with clear teaching objectives, rich teaching methods, and changes in teaching methods. Cultivate the practical ability of students majoring in animal husbandry and veterinary medicine by Flipped classroom, heuristic teaching and other ways. For example, "why cows have difficulty in giving birth" and "why horses are prone to miscarriage", use these heuristic questions to guide students to delve into professional courses^[3]; You can also use the animal husbandry and veterinary simulation training system to improve the practical ability of veterinary talents.

3. Use Internet to help existing rural veterinarians enrich their theoretical knowledge

First of all, with the help of internet technology, the excellent online education resources of agricultural colleges and universities are used to realize the network sharing of curriculum resources. At present, China Agricultural University, Sichuan Agricultural University, Northeast Agricultural University, South China Agricultural University and other agricultural universities have built online teaching platforms. The animal husbandry and veterinary bureaus of each district and county can calculate the theoretical learning needs of rural veterinarians in their respective regions, and then contact various universities in a targeted manner. According to the actual situation, various universities have opened online teaching platforms for rural veterinarians to learn. Due to the well-established course resources on online teaching platforms in universities, rural veterinarians can break through geographical and temporal limitations and achieve "learning anytime, anywhere, and repeatedly". Secondly, the animal husbandry and veterinary bureaus of each district and county can combine the characteristics of local animal husbandry development to set up targeted

agricultural technology course videos, so that rural veterinarians can understand the key precautions for local animal disease prevention and animal diagnosis and treatment in rural areas. For example, the Chongqing Animal Disease Prevention and Control Center, in collaboration with the Chongqing Veterinary Medicine and Feed Testing Institute, has launched the "Agricultural Technology MOOCK", which presents knowledge about the use of veterinary drugs and animal disease prevention and control in the form of videos. With the development of the Internet, the theoretical knowledge learning channels for rural veterinarians are gradually diversified. With the help of internet, the animal husbandry and veterinary bureaus of all districts and counties can broaden the learning channels of rural veterinarians in their own regions and help rural veterinarians further enrich their theoretical knowledge.

4. Establish animal husbandry and veterinary industry associations to enhance rural veterinary professional skills

Establish rural animal husbandry and veterinary industry associations based on towns. Industry associations can gather practicing veterinarians and rural veterinarians scattered in various villages (villages) to carry out technical exchanges, talent training, and other activities. Due to the significant differences in the development of animal husbandry in each town, the animal husbandry and veterinary industry associations in each town should adhere to the principle of "being practical and effective", and aim to enhance the practical ability of rural veterinarians by organizing technical training activities. Let rural veterinarians learn whatever they do and make up for whatever they lack. Industry associations can mobilize animal husbandry and veterinary resources throughout the town, and compared to government led animal husbandry and veterinary stations, they also have the flexibility that civil organizations have. Based on the Animal Husbandry and Veterinary Industry Association, it can supplement the existing animal husbandry and veterinary technology promotion models, facilitate the diffusion of animal husbandry and veterinary industry technology, and enhance rural veterinary professional skills.

The Veterinary Industry Association should actively organize training and learning activities to enable veterinarians to fully understand and master the characteristics of new pathogens and the prevention and control measures of animal diseases, and enhance their epidemic prevention awareness to ensure the safety of rural aquaculture and prevent unnecessary generation and transmission of pathogens. And pay attention to the assessment of veterinary learning content, improve the technical level of veterinarians, cultivate professional ethics, and cultivate excellent veterinary teams for rural animal husbandry^[4]. In addition, veterinary associations need to establish standardized organizational structures and operational models. The organizational form of foreign veterinary associations is generally in the form of committees, including the board of directors, secretariat, administrative committee, several professional committees, and special working groups. Township veterinary associations can adopt a streamlined model by establishing a secretariat and several special working groups. The Secretariat is responsible for daily affairs such as finance and liaison, and the special working group provides targeted services to farmers in each village based on the actual situation in the town.

5. Establish scholarships and tuition support to cultivate rural veterinary talents

The government should recognize the important position of animal husbandry in the rural economy and take further measures to cultivate rural veterinary talents. Firstly, it is necessary to create a good working environment for rural veterinarians^[5]. For example, rural veterinary clinics should have fixed workplaces and necessary work equipment, especially to provide support to economically underdeveloped areas^[6]. Secondly, rural veterinary talents can be cultivated through the establishment of scholarships and tuition support. Tuition support is mainly aimed at veterinary students on campus, with the condition of paying tuition fees to attract students to work as

veterinarians in rural areas or serve for a few years after graduation. Those who want to work as rural veterinarians can retake their studies on campus by self-study, taking entrance exams. The government provides funding to these individuals through scholarships. In short, cultivating veterinary talents in rural areas is not easy and requires joint efforts from universities, governments, and other parties. Although there are still many shortcomings in the rural veterinary industry at present, with the development and progress of society, the continuous attention of the government, universities, and the general public, the cultivation of rural veterinary talents will usher in good development.

6. Conclusion

At present, small and medium-sized livestock farmers still account for a large proportion in animal husbandry, and there is still a certain gap in the demand for rural veterinarians. Rural veterinarians play an important role in the prevention and treatment of animal diseases, public health and safety in animal husbandry, and the safety guarantee of animal derived food. Rural veterinarians are the basic system in the animal epidemic prevention system and an important Channel for small and medium-sized farmers to obtain epidemic prevention measures and knowledge^[7]. In the United States and the European Union, community epidemic prevention systems are relatively sound, with almost every community equipped with community veterinary officers, which is conducive to precise epidemic prevention. The Ministry of Agriculture and Rural Affairs and other relevant national departments have also introduced regulations to legally protect the rights of rural veterinarians. However, the cultivation of rural veterinary talents needs to be carried out simultaneously from two dimensions: the cultivation of veterinary talents in school and the improvement of professional skills of existing rural veterinary talents. Therefore, it is recommended to implement a distinctive rural veterinary talent training program based on results oriented education (OBE), utilizing online education and town animal husbandry and veterinary industry associations to enhance existing rural veterinary business skills.

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References

- [1] Guo Liang. *Reflections on the Construction of Rural Animal Husbandry and Veterinary Technology Promotion System* [J]. *Northern Animal Husbandry*, 2022 (12): 14.
- [2] Hu Xingang, Xu Yuliang. *Strategies for Building a Village level Animal Epidemic Prevention Team in China in the New Era* [J]. *Chinese Journal of Veterinary Medicine*, 2020, 56 (10): 109-111.
- [3] Rao Jiahui, Li Zhaohui, Liu Mingyuan. *Construction and Practice of a Veterinary Talent Training System Based on the Concept of "Total Health"* [J]. *Chinese University Teaching*, 2022 (Z1): 26-30.
- [4] White BJ, Gwinner KP, Andrus DM, Prince JB. *Unique educational methods to improve the veterinary employment selection process for rural mixed-animal practices*. *Journal of veterinary medical education*. 2007; 34(4):517-23.
- [5] Palacios-D úz MDP, Mendoza-Grim ón V. *Environment in Veterinary Education*. *Veterinary sciences*. 2023; 10(2): 146.
- [6] Windsor P. *Can curriculum innovations create incentives for young veterinarians to practise in remote rural areas?* *Revue scientifique et technique (International Office of Epizootics)*. 2009; 28(2):689-97.
- [7] Walker WL, Villarroel A, McDonald SR, Dewell RD, Dewell GA, Kaiser L. *Shortage of Rural Veterinarians: Real or Perceived?* *Online Journal of Rural Research & Policy*. 2010; 5(7).