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Exploration on the Reform of Practical Teaching in the Course of Traditional Chinese Veterinary Medicine in Colleges and Universities

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Abstract: As an important part of the traditional Chinese medicine of the Chinese nation, Traditional Chinese Veterinary Medicine (TCVM) has a development history of thousands of years and has accumulated rich theoretical and practical experience in the prevention and treatment of animal diseases, animal health care, and other aspects. This paper conducts an in-depth discussion on the practical teaching of the TCVM course in colleges and universities, and analyzes the existing problems in current teaching, such as outdated practical content, a single teaching method, and an imperfect assessment and evaluation system. By introducing diversified teaching models such as case teaching, simulated diagnosis and treatment, and school-enterprise cooperation, and optimizing practical teaching content and assessment mechanisms, this paper aims to improve students' practical operation ability and clinical thinking level, promote the organic integration of traditional TCVM theories and modern veterinary clinical practice, and provide teaching reform ideas and practical references for cultivating high-quality TCVM professionals who meet the needs of the new era.

Keywords: Colleges and universities; Traditional Chinese veterinary medicine course; Practical teaching; Teaching reform; Talent cultivation

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1. Introduction

In recent years, with the increasing emphasis on green breeding and animal welfare, as well as the recognition of traditional medical culture, Traditional Chinese Veterinary Medicine (TCVM) has shown great application potential and development prospects in the modern animal husbandry and veterinary industry due to its unique theoretical system, advantages of natural medicines, and the thinking mode of holistic view and syndrome differentiation and treatment. However, the current teaching of TCVM courses in colleges and universities has problems such as the disconnection between theory and practice and the imperfection of the practical teaching system, resulting in insufficient practical ability of students, which makes it difficult for them to meet the industry's demand for professionals [1]. Therefore, carrying out the reform of practical teaching in college TCVM

courses and constructing a scientific and reasonable practical teaching system are of great significance for inheriting and innovating TCVM culture, cultivating TCVM professionals with a solid theoretical foundation and strong practical ability, and promoting the modernization development of the TCVM industry.

2. Current situation and problems of practical teaching in veterinary courses in colleges and universities

2.1. Outdated practical teaching content, disconnected from industry needs

At present, the teaching of Chinese veterinary medicine in colleges and universities mainly focuses on traditional theoretical verification experiments, such as the verification of Chinese veterinary prescription compatibility and the demonstration of traditional Chinese medicine processing methods. Although these operational experiments are conducive to students' mastery of basic theories, they are far from meeting the needs of modern animal husbandry for Chinese veterinary diagnosis and treatment of difficult and diverse symptoms, as well as the increasing emphasis on green and environmental protection treatment and the regulation of animal sub-health [2]. However, colleges and universities have not timely integrated the innovative applications of Chinese veterinary medicine in modern agriculture into teaching content, such as the use of traditional Chinese medicine in non-pharmaceutical production and breeding, the application of acupuncture in animal sports injury recovery. As a result, students' knowledge and skills cannot be well applied to practical work [3].

2.2. Single teaching method, low students' enthusiasm for practice

The traditional teaching form of Chinese veterinary medicine is single, usually featuring teacher demonstration and student imitation, lacking interactivity and interest. In the teaching process of drug identification, teachers generally let students observe the shape and properties of drugs and explain their efficacy, while students only passively accept knowledge without opportunities for independent exploration and personal experience. This boring and one-way teaching method is difficult to arouse students' learning enthusiasm, making students feel tedious in practice, hard to master and flexibly apply Chinese veterinary medicine knowledge, thus affecting the effect of experimental teaching.

2.3. Insufficient practical teaching resources and limited training conditions

Improving the quality and effect of Chinese veterinary academic education requires sufficient educational resources, such as traditional Chinese medicine samples, acupuncture tools and diagnostic instruments. However, due to funding constraints, some schools have limited and outdated traditional Chinese medicine samples, and acupuncture instruments are also scarce, which cannot meet students' experimental needs. In addition, the school's laboratory equipment is not perfect, failing to provide a sufficient simulated diagnosis and treatment environment, making it difficult for students to complete diagnosis and treatment work in a real atmosphere. Furthermore, these schools have not established close connections with off-campus internship bases, and the internships are not systematically and targetedly designed. As a result, most students only watch instead of personally participating, which affects the improvement of their practical skills [4–6].

2.4. Imperfect assessment and evaluation system, failing to fully reflect students' practical abilities

At present, the assessment of Chinese veterinary training mainly relies on experimental reports and practical skill

tests, emphasizing students' mastery of theoretical knowledge and the standardization of operating procedures, while ignoring their clinical thinking ability and innovative ability [7]. In the practical skill test, students get corresponding scores after operating according to the prescribed procedures. They are not required to analyze or evaluate the problems encountered in the operation process and possible solutions, which cannot fully and objectively reflect their training level and comprehensive quality. This is not conducive to the improvement of students' practical skills and teaching quality.

3. Strategies for the reform of practical teaching in veterinary Chinese medicine courses in colleges and universities

3.1. Optimizing practical teaching content to keep up with industry development needs

Nowadays, veterinary Chinese medicine is rapidly developing towards green and intelligent directions, and the traditional content of veterinary Chinese medicine courses has long been unable to meet the practical needs of the times. Colleges and universities need to reform the teaching methods of veterinary Chinese medicine courses on the basis of inheriting the culture of traditional Chinese medicine (TCM), so as to meet the requirements of serving the development of real industries and promote the application of veterinary Chinese medicine in modern production [8].

Firstly, it is necessary to fully grasp the current development trend of the animal husbandry industry, which has shifted from prioritizing experience accumulation in the past to prioritizing technological development now. In addition to imparting conventional knowledge in veterinary Chinese medicine courses, it is also necessary to rebuild a new teaching content system for veterinary Chinese medicine courses. For example, the "integration of production, education, research and application" teaching method should be applied in the teaching of Chinese herbal medicines in TCM. Taking the research on drugs for treating classical swine fever as an example, students should not only complete the TCM technical operation of formulating appropriate drugs based on basic TCM theories, but also use advanced HPLC and GC-MS chromatographic detection equipment to determine the quantitative analysis of active ingredients in the raw materials of Chinese medicines.

Secondly, a case database of veterinary Chinese medicine knowledge should be established, covering large-scale farm epidemics, pet hospital difficulties, etc. [9–11] Multiple teaching methods can be used in the diagnosis and treatment of dairy cow mastitis: infrared thermal imaging can be used to analyze and display the thermal distribution in mastitis-inflamed areas, and a tongue image analyzer can be used to collect information on tongue color and coating. The etiology can be identified based on data collected through different diagnostic methods. This helps to strengthen students' diagnostic and treatment thinking that integrates veterinary Chinese medicine and improves their ability to handle clinically difficult problems. In the teaching of animal health protection and environmentally friendly breeding, the "one livestock, one strategy" plan can also be adopted. For laying poultry, based on the TCM theories of "kidney governing reproduction" and "spleen governing transportation and transformation", a comprehensive health care and treatment plan can be implemented, combining TCM prescriptions with sunlight conditioning and administration of probiotics. At the same time, green breeding methods should be promoted, such as animal welfare breeding and the development of non-pharmaceutical technologies. For instance, moxibustion at the Baihui acupoint can be used during beef cattle breeding to enhance gastrointestinal peristalsis; massage can be applied to promote digestion in beef cattle and alleviate fatigue from long-distance transportation, thereby achieving the goal of antibiotic-free breeding and helping students become practitioners of modern green breeding technologies.

3.2. Innovating teaching methods to stimulate students' learning interest

A single educational model cannot meet students' knowledge needs. It is necessary to reform and innovate the teaching methods of traditional Chinese veterinary medicine technology and skills training, and use flexible and diverse teaching methods to build an interactive and dynamic classroom learning environment. This enables students not only to understand the basic theories and skills of traditional Chinese veterinary medicine, but also to develop their thinking and abilities in independent learning, research, and exploration, thereby improving their clinical skills.

First, establish a "three-level progressive case teaching" approach: basic case learning to consolidate fundamental knowledge, complex case learning to reinforce basic skills, and forward-looking case learning to broaden horizons. At the basic stage, common cases such as canine wind-heat cold can be used for teaching, allowing students to master the basic diagnosis and treatment steps of "observation, auscultation & olfaction, inquiry, pulse-taking & palpation – syndrome differentiation – prescription selection and medication". At the complex case stage, complicated cases, such as equine acute abdominal syndrome, are added to guide students to identify different types of cases. A team discussion model is adopted to help students learn and understand the causes and mechanisms of different diseases. Forward-looking cases focus on TCM health preservation for animals, such as the treatment of canine hip dysplasia with acupuncture combined with rehabilitation training, to stimulate students' deeper interest and research motivation in the course.

Second, advanced case simulation diagnosis and treatment teaching towards intelligence and immersion. Through the establishment of a real-time update mechanism for case databases, clinical cases provided by front-line units such as enterprises and animal hospitals are continuously incorporated to ensure the timeliness and advancement of teaching cases. With virtual reality medical systems, students can enter scenes of virtual breeding houses or pet hospitals through head-mounted devices, and use fingertip recognition technology to complete medical consultations and acupuncture treatments for animals and plants. For example, when piglets have diarrhea in a virtual pig farm, students can determine prevention and control plans through virtual sampling, laboratory testing, and diagnostic analysis. The system records students' operations and generates skill reports, which help teachers accurately identify students' knowledge weaknesses. In addition, the online-offline blended teaching method should also build an "OMO" (Online-Merge-Offline) ecological environment. Online services include a 3D traditional Chinese veterinary medicine sample database, VR videos of acupuncture points, and digital textbooks of classic traditional Chinese veterinary medicine. Students can access and view learning resources such as the microscopic structure of medicines and meridian operation through their mobile phones at any time. On campus, "question chain" teaching is adopted in classrooms. For example, when teaching "TCM prevention and treatment of animal stress syndrome", teachers can set progressive questions such as "What are the TCM etiologies of stress?" and "How to conduct synergistic intervention through traditional Chinese medicine and acupuncture?" to guide students to search online resources in groups, carry out experimental research, and finally present their learning results through offline reports, to achieve the goal of acquiring knowledge and improving abilities [12].

3.3. Strengthen the construction of practical teaching resources and improve practical training conditions

Practical educational resources are the guarantee of teaching quality. To address the predicament of outdated on-campus facilities and short-term off-campus internships, it is necessary to vigorously integrate resources and pursue technological innovation, and build a practical learning platform with a linkage between on-campus and

off-campus, to provide students with a high-level practical teaching environment and consolidate practical skills training. Specifically, on-campus laboratories follow the principle of "functional differentiation and functional integration". The Chinese Medicine Specimen Museum is built as a "one museum, three zones and one platform": the specimen exhibition area displays dried specimens and soaked specimens; the digital interaction area is equipped with a panoramic projector, which can fully present the morphology and efficacy of medicinal materials; the rare medicinal materials replacement research area explores artificial breeding methods for animal medicinal materials; and the specimen database platform realizes intelligent specimen retrieval and enhanced display functions. The acupuncture teaching laboratory has introduced a simulated acupuncture system, which uses force sensors to reflect the intensity of acupuncture manipulation and myoelectric signal sensors to sense the strength of acupoint stimulation. Students can repeatedly practice needle withdrawal, reinforcing twirling, reducing twirling, reinforcing lifting and thrusting, reducing lifting and thrusting, etc., on virtual animal models, and the computer will automatically give scores and improvement suggestions. The clinical training room is equipped with 5G telemedicine equipment, which can contact cooperative farms, pet hospitals, etc., in the first place, to carry out remote diagnosis teaching and integrate students into clinical conditions. The "dual-tutor system + project internship" means that school teachers and company experts implement a dual-tutor system for off-campus internship bases. When students intern in companies, school teachers and company experts provide special teaching assistance to students to complete designated tasks, forming a joint force [13]. A set of internship quality monitoring measures based on online submission of internship diaries, phased teacher evaluations and internship result displays shall be established to ensure the quality of internships.

3.4. Improve the assessment and evaluation system to comprehensively evaluate students' practical abilities

Scientific assessment and evaluation an important means to test teaching outcomes. Higher vocational colleges should establish a diverse assessment system and adopt industry-recognized standards to more comprehensively and objectively evaluate students' professional competence, so as to more effectively guide their career development [14].

First, school teachers should design a "three-dimensional and five-link" assessment system. The three dimensions refer to: the basic dimension (understanding of Traditional Chinese Veterinary Medicine), the ability dimension (practical skills and clinical thinking ability), and the character dimension (professional ethics and team spirit); the five links mean: 20% for classroom learning, 20% for laboratory assignments, 25% for simulated diagnosis and treatment, 25% for internship operation, and the remaining 10% for technological innovation. Scores for classroom learning will use online classroom platforms to monitor students' participation; laboratory assignments will be subject to anonymous random checks, with grading jointly conducted by school and enterprise teachers; standardized patient (SP) technology will be applied, where trained personnel simulate animal owners to evaluate students on multiple indicators such as communication skills and accuracy in diagnosis and treatment locations; blockchain technology will be used in internship assessment to ensure its immutability; technological innovation will be evaluated based on students' applications for entrepreneurship patents, publication of papers, participation in competitions, etc.

In addition, industry standards can be introduced to design a set of standards for recognizing the level of practical ability in Traditional Chinese Veterinary Medicine. Based on the national vocational certification National Vocational Skill Standard - Animal Disease Prevention and Control Worker and combined with the characteristics of Traditional Chinese Veterinary Medicine, three-level evaluation indicators are proposed:

primary (basic operations), intermediate (clinical diagnosis), and advanced (technological innovation). The evaluation includes practical operation assessments of TCM (Traditional Chinese Medicine) identification, acupuncture techniques, and clinical case discussions. After achieving these goals, students will obtain industry-recognized qualification certificates [15]. Furthermore, the evaluation results should be fed back to students, and personalized study suggestions should be given based on their shortcomings. For example, if students' practical operations are not up to standard, corresponding video tutorials should be provided; if students lack clinical thinking ability, they should learn to analyze a database of typical cases. In this way, the assessment can give full play to its advantages, not only guiding the direction of student training but also improving students' abilities, thus laying a solid foundation for their future employment.

4. Conclusion

In summary, the reform of practical teaching for TCVM courses in colleges is a key link in cultivating high-quality TCVM professionals. Through reform measures such as optimizing practical teaching content, innovating teaching methods, strengthening the construction of practical teaching resources, and improving the assessment and evaluation system, the quality of TCVM practical teaching can be effectively improved. These measures help cultivate students' practical operation abilities and clinical thinking levels, and promote the integration and innovation of traditional TCVM theories and modern veterinary clinical practice.

Disclosure statement

The author declares no conflict of interest.

References

[1] Wang Y, Shi F, Chi L, et al., 2025, Optimization and Reconstruction of Practical Teaching System for Animal Husbandry and Veterinary Specialty in Higher Vocational Colleges from the Perspective of Industry Demand. Shandong Animal Husbandry and Veterinary Medicine, 46(05): 92–94.

[2] Tang Z, Wang Y, Xie S, et al., 2024, Exploration on the Reform of Practical Teaching of Traditional Chinese Veterinary Medicine Course in Higher Vocational Colleges. Journal of Animal Husbandry and Veterinary Science & Technology Information, 2024(11): 16–18.

[3] Wang Y, Li H, Zhu G, et al., 2024, Investigation and Analysis on the Connection between Practical Teaching of Animal Husbandry and Veterinary Specialty in Higher Vocational Colleges and Industry Demand. Contemporary Animal Husbandry, 2024(11): 73–75.

[4] Li Z, Xu F, Long L, et al., 2024, Analysis on the Influence of Skill Competitions on Practical Teaching of Animal Husbandry and Veterinary Specialty. Heilongjiang Journal of Animal Reproduction, 32(05): 64–67 + 72.

[5] Wang Y, Wu Y, Du S, et al., 2024, Research on the Reform of Veterinary Clinical Practice Teaching Strategy for Animal Medicine Specialty. Veterinary Orientation, (03): 30–32.

[6] Zhou X, Wu D, Hu X, et al., 2024, Application of Problem-Based Learning Combined with Case Teaching Method in Clinical Practice Teaching of Veterinary Obstetrics. Journal of Central South Agricultural Science and Technology, 45(04): 190–193.

[7] Xie Y, Xie X, Wang X, et al., 2024, Research on the Construction of Practical Teaching System for Animal

Husbandry and Veterinary Specialty in Higher Vocational Colleges under the Background of Integration of Production and Education. Livestock and Poultry Industry, 35(04): 47–49.

[8] Lian S, He X, Geng Z, et al., 2024, Preliminary Study on the Application of Clinical Thinking Training in Veterinary Clinical Practice Teaching. Heilongjiang Journal of Animal Reproduction, 32(02): 54–58.

[9] Chang S, 2024, Teaching Reform of Basic Course of Traditional Chinese Veterinary Medicine Based on Information Technology. Guangxi Education, 2024(02): 113–116.

[10] Yang J, Guo C, 2024, Exploration and Practice Based on the Practical Teaching System Model of Animal Husbandry and Veterinary Specialty. Modern Journal of Animal Husbandry and Veterinary Medicine, 2024(01): 162–164.

[11] Duan K, Lu X, 2023, Exploration and Practice of the Ways to Integrate Ideological and Political Elements into the Course "Traditional Chinese Veterinary Medicine". Jiangxi Journal of Animal Husbandry and Veterinary Medicine, 2023(06): 1–5.

[12] Lü Y, 2023, Application and Effect Analysis of Flipped Classroom in the Basic Course of Traditional Chinese Veterinary Medicine. Shandong Animal Husbandry and Veterinary Medicine, 44(11): 86–89.

[13] Xia Q, Liu X, 2021, Analysis on the Teaching Reform of Traditional Chinese Veterinary Medicine in Higher Vocational Colleges. Chinese Journal of Traditional Veterinary Science, 2021(09): 91–92.

[14] Liu C, Han C, 2017, Several Experiences on Practical Teaching of Traditional Chinese Veterinary Medicine. Chinese Journal of Traditional Veterinary Science, 2017(06): 72–74.

[15] Yang D, Zhao X, Bi J, et al., 2017, Exploration on the Reform of Experimental Teaching of Traditional Chinese Veterinary Medicine. Laboratory Science, 20(01): 104–106 + 110.