

Construction and Practice of the "TCM +X" Dual-track Linkage TCM Inheritance and Innovation Talent Training Base

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Abstract: As a traditional Chinese medicine system, with the progress of society and the rapid growth of the Chinese medicine market scale, there is an urgent need for interdisciplinary traditional Chinese medicine inheritance and innovation talents. This study selected the Guangdong Medical University laboratory animal public service platform to build an innovation base, focusing on the sustainable development of the base from the aspects of constructing a traditional Chinese medicine characteristic teaching scene, constructing "multidisciplinary" core curriculum group, constructing a three-dimensional cultivation system and constructing multi-level progressive practice system structure, etc. Traditional Chinese medicine can not only maintain its traditional essence, but also maintain its traditional essence. It can also radiate new vitality in modern society and make a greater contribution to human health.

Keywords: TCM +X; Base; Practice.

1. Introduction

As a splendid treasure of China's traditional medicine system, traditional Chinese medicine carries thousands of years of historical precipitation and profound cultural heritage. As an important part of traditional medicine, traditional Chinese medicine has a unique theoretical system and rich clinical experience, and has contributed a unique perspective and method to world medicine, which is praised[1] by the world. According to the research report "2024-2029 China Traditional Chinese Medicine Industry Competition Pattern and Investment Analysis Report", the size of China's traditional Chinese medicine market in 2022 is about 4500.7 billion yuan, an increase of 4.77%. It is predicted that the market size is expected to reach 510.2 billion yuan[2] in 2024. The modern TCM industry is developing rapidly, and TCM inheritance and innovation talents are particularly in short[3,4] supply. It is of great significance for TCM related colleges and universities to train TCM inheritance and innovation talents with the ability of interdisciplinary and cross-cultural communication in the context of new medicine. Based on the construction [5]of "group", the construction of "Traditional Chinese medicine + X" innovative subject group is an important measure [6]to meet the requirements and deployment of the national "14th Five-Year Plan" and the construction needs of "double first-class" disciplines.

2. Platform Selection of "TCM +X" Innovation Talent Base

Dongguan Key Laboratory of Laboratory Animal Resources Development and Application Research of Biomedical Industry is established by integrating 5 biomedical innovation teams of Guangdong Medical University on the basis of the existing Laboratory Animal Center on Dongguan Campus. At present, it is the

characteristic laboratory of experimental animals with the most complete animal varieties, the largest feeding scale, complete equipment and facilities, and excellent professional technology in Dongguan. At present, it serves the fields of Chinese and Western new drug creation, cardiovascular interventional medical equipment, in vitro diagnostic reagents, new biological materials, tumor neutron therapy, stem cell and regenerative medicine. At the same time, the laboratory adheres to the operating mechanism of opening to the outside world and cooperation and exchange. It not only serves as the supporting conditions for the research of various topics of the university, but also adheres to the functional positioning of actively serving the society. It has close connections with key biomedical enterprises in Songshan Lake Science City and medical research and development institutions at all levels in Dongguan. It provides standardized experimental animal model resources, standardized animal experiment facilities, advanced animal experiment technical support and efficient animal experiment results transformation and other supporting conditions for scientific and technological innovation for all kinds of enterprises and institutions in Dongguan and even the surrounding biomedical enterprises, and helps Dongguan and even the surrounding biomedical innovation and results transformation. It is a natural biomedical "industry-university-research" integration platform, suitable for the construction of "Traditional Chinese medicine +X" innovation talent base.

3. Construction Path of "TCM +X" Innovation Talent Base

3.1. Construction of TCM characteristic teaching scenarios

The college has worked with hospitals and enterprises to formulate training programs and improve the curriculum teaching system. Attaching great importance to the

construction of gold courses, comprehensively sorting out the teaching content of each course, taking the construction of high-quality resources as the guarantee, and strengthening the construction of sharing resources of high-quality courses. At the same time, we will strengthen the construction of traditional Chinese medicine teaching scenarios.

In terms of hardware, the construction of traditional Chinese medicine science popularization corridor, herbs garden and traditional Chinese medicine culture exhibition hall is mainly. The interior decoration and signage system of the base highlights the elements of traditional Chinese medicine culture, creating a strong atmosphere of traditional Chinese medicine culture.

Fully excavate the ideological and political content of TCM elements, and strengthen theoretical teaching of ideological and political support. For example, Tu Youyou consulted the TCM classic "Tuo Reserve and Shou Fang" and discovered the example of artemisinin with 100% antimalarial effect, forming a teaching scene with TCM characteristics, realizing the guidance of inheriting and carrying forward the TCM cultural values, and then implementing the characteristics of the curriculum combining virtues and talents. On the basis of realizing the original knowledge goal, condensing the ideological and political education goal of Lide and cultivating people, the two infiltrate and complement each other.

3.2. Building "multi-disciplinary" core curriculum group

The School has optimized curriculum groups and formed a "multidisciplinary" curriculum group with humanities and social sciences as the guarantee, biology/chemistry as the basis, medicine as the support and traditional Chinese medicine as the core, building a platform for the integration of science and education. In accordance with the drug research and development process and social needs, the talent base has built a "dual-teacher" innovative teaching team. Relying on the key laboratory of biomedical industry of our university, the undergraduate tutorial system and the "Science and Education Integration Education Plan" have been implemented in the major of Chinese medicine, further promoting the dual track drive of "Chinese Medicine +X".

3.3. To build a three-dimensional promotion and cultivation system

Construct a "three-dimensional promotion" cultivation system. From three dimensions: blended teaching, university-enterprise research, competition + scientific research training, comprehensively improve students' knowledge, ability and quality. The use of online and offline mixed teaching modes, mobilize students' enthusiasm for knowledge learning, improve class participation; Use school-enterprise cooperation and industry-university-research to improve students' practical ability, deepen students' understanding of professional quality, and internalize students' labor spirit and craftsman spirit; Develop personalized and expanded improvement programs such as medicinal plant specimen making skills competition and scientific research training, so

as to improve students' self-cognition, independent thinking and independent inquiry ability. Implant artificial intelligence special learning, relying on AI's excellent ability in data mining and collection, data processing and analysis, deep learning, etc., to improve students' ability to achieve structured and scientific expression of massive ancient books and literature and clinical diagnosis and treatment experience.

3.4. Building a multi-level and progressive practice system structure

Form a new path of application innovation talent cultivation with four layers of progressive "interest - foundation - application - innovation". The first is to set up courses to stimulate students' interest in innovation and entrepreneurship at the beginning of enrollment; The second is to design course projects in the professional curriculum to consolidate the professional foundation; The third is to restructure the professional personnel training system, cooperate with enterprises, jointly develop training programs, increase practical course modules, and strive to improve students' application ability; Fourth, improve students' innovation ability through college students' innovation and entrepreneurship project, Challenge Cup, Medical innovation and entrepreneurship Competition, etc.

4. Achieve Sustainable Development of "TCM +X" Innovative Talent Base

The construction work of the base is led by the Laboratory Animal Center, and the management office of the Undergraduate Chinese Medicine Inheritance and Education Base is set up, which is mainly responsible for the formulation of relevant management documents and work plans, and the review, inspection, supervision, summary and archiving of the base projects. It is responsible for setting up an expert committee, which is responsible for reviewing the construction standards and project guidelines of the base, reviewing the feasibility of the declared projects, inspecting and evaluating the implementation of the projects, and putting forward opinions and suggestions on the relevant policies of the base. The key laboratory is responsible for the specific construction and daily management, as well as the specific implementation of undergraduate TCM inheritance and innovation education and practice activities, evaluation and return visits. In order to encourage the practice teaching guide teachers, build and manage the practice teaching base well, and train more qualified senior applied talents for the society, the quantitative assessment of the base construction work is adopted, the base construction and management evaluation and base evaluation activities are carried out, and the excellent base construction and management and practice teaching guide teachers are rewarded. Encourage teachers to actively participate in and explore the reform of practical teaching curriculum system, content and means and methods according to the development of education situation and the transformation of talent training mode, so as to promote the in-depth and sustainable development of the construction of the base(Fig 1)

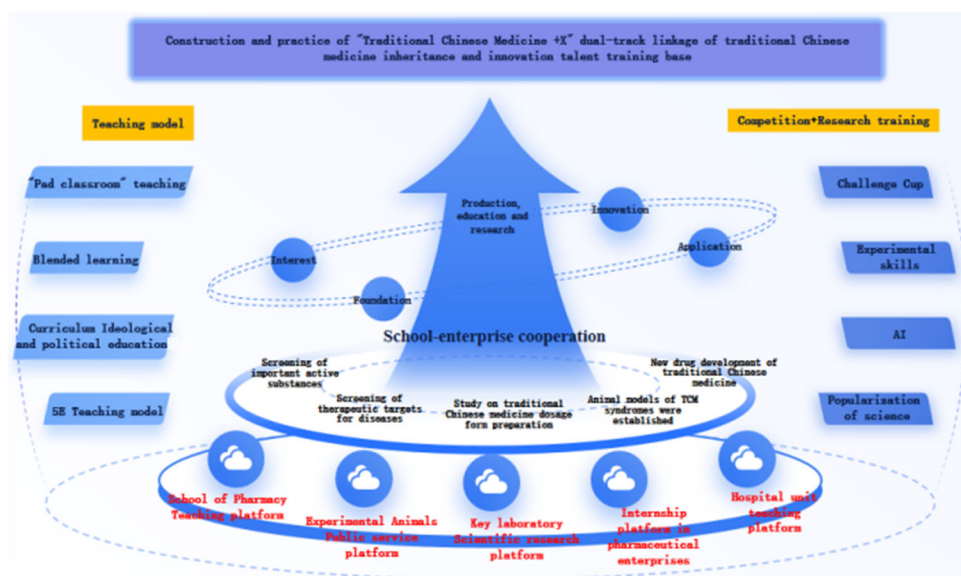


Figure 1. Construction Plan for Double Innovation Base

To sum up, the "TCM +X" inheritance and innovation talent base was built under the "1234" mode of "golden course guidance, dual-track linkage, three-dimensional improvement and four-level progressive progress" under the compound drug R&D talents and existing site advantages of the Key Laboratory of Dongguan Bio-Pharmaceutical Industry Experimental Animal Resources Development and Application Research. The base adheres to the principle of basing itself on practice, bringing forth the new from the old, innovating the old and facing the world. In the aspect of traditional Chinese medicine inheritance, it mainly guides students to collect and sort out ancient books and medical prescriptions related to traditional Chinese medicine culture, so as to strengthen research on the mining and protection of traditional Chinese medicine cultural resources, and then establish a digital database of traditional Chinese medicine culture and form research results; In terms of the innovation and development of traditional Chinese medicine, it mainly promotes the cultivation of talents' innovation ability in the base, and then promotes the innovation and development of traditional Chinese medicine through the integration of multidisciplinary courses[7], the integration [10]of theoretical courses and drug research [8]and development practice, the integration of science and education with school-enterprise cooperation[9], and the integration of production practice and innovation. Under the condition of Shuanggui linkage, traditional Chinese medicine can not only maintain its traditional essence, but also radiate new vitality in modern society and make greater contributions to human health.

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