



Construction of Interdisciplinary System Based on the Quality Education of Students Majoring in Chinese Medicine

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Abstract. Background: Focusing on improving applied undergraduate education, the major of Chinese Medicine actively carries out teaching reform, breaks the barriers of disciplines and majors, adjusts and upgrades existing disciplines and majors, and accelerates the cultivation of talents in short supply. Objective: To carry out the interdisciplinary integration of Chinese Medicine and to improve the comprehensive quality of undergraduate students of Chinese Medicine. Methods: In the first academic year of undergraduates, unified and comprehensive basic teaching was carried out, and in the second academic year, majors were subdivided, and students independently chose majors for the second time after enrollment as the concept, and the teaching methods were diversified. Results: The teaching resources were systematized, the students' autonomous learning ability was enhanced, and the comprehensive quality ability was improved.

Keywords: Traditional Chinese medicine, quality teaching, interdisciplinary.

1 Introduction

Traditional Chinese Medicine (TCM) originated from the branch of TCM and was established in the 1950s [1]. Based on TCM diagnosis and treatment, TCM is a comprehensive discipline that studies the effective ingredients and mechanisms of action of single and compound Chinese medicines, medicinal resources of TCM, quality control and safety through summarizing clinical experience and guided by TCM theory [2]. The major of TCM includes "Fundamentals of TCM", "TCM", "pharmacology of TCM", "botany", "chemistry of TCM", "analysis of Chinese patent medicine", "new drug development" and other related courses. In April 2021, Jinping Xi president emphasized in Tsinghua University that we would make good use of the "catalyst" for interdisciplinary integration, strengthened the ability to cultivate basic disciplines, broke down disciplinary barriers, adjusted and upgraded the existing disciplinary and professional system, promoted the construction of new engineering, new medical, new agricultural, and new humanities, and accelerated the cultivation of scarce talents [3]. Under the traditional teaching system, the College of TCM carries out cross disciplinary integration of TCM majors, improving students' humanistic connotation, professional

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literacy, skill system, and comprehensive quality, improving applied undergraduate Chinese medicine education, enhancing students' practical and practical abilities, and achieving the goal of cultivating talents with strong competitiveness for enterprises.

2 The Connotation of Cultivating the Quality of TCM

2.1 The three elements horizontal

The three elements horizontal basic teaching of "learning, practice, and operation" has been in place since 2019. TCM related majors are built around knowledge systems such as humanities, inheritance, and professionalism. Carry out reinforcement of learning units that are based on learning, useful for learning, and successful in learning. Improve students' learning ability and knowledge accumulation, and enhance their overall cultural connotation. At the same time as cultural accumulation, actively adjusting teaching plans and class schedules, strengthening the improvement of students' practical skills, mainly including professional practical foundation content, skill proficiency enhancement, and scientific research exploration improvement, runs through the entire four-year undergraduate university, completing the accumulation and improvement of professional skills. To carry out character and literacy improvement in "practice and learning", focusing on the inheritance of excellent ancient Chinese culture, professional ethics of TCM, and the shaping of an outgoing personality, we aim to cultivate high-quality and outstanding talents in TCM, committed to the development of TCM, and cultivate outstanding TCM practitioners who can adapt to the rapid development of the new era (Fig. 1).

2.2 “Four sections” training system

Pay attention to student quality education and carry out four time axis teaching. Covering the basic cultural literacy stage, professional knowledge reserve enhancement stage, professional skill mastery stage, and research ability enhancement stage (Fig. 1).

Around the four-year teaching timeline for students, courses are integrated and quantified, while introducing enterprise training models and talent demand goals to fill the teaching gaps of the college and form a long-term talent training mechanism. Throughout the four-year undergraduate teaching process, we will strengthen professional skills training and practical operations, and cultivate a new generation of Chinese medicine graduates who are capable of working, have an enterprising spirit, and quickly integrate into corporate culture. The cultivation of talents in TCM not only enhances the professional skills and level of students, but also strengthens the education of humanistic literacy. In the four years of teaching practice, we have carried out activities related to the inheritance of TCM culture, TCM and Hanfu etiquette, interesting stories from hundreds of TCM schools, TCM science popularization lectures, and TCM online platforms to enhance our professional level. We have enriched campus life and used TCM as an opportunity to guide TCM students to focus on the development of the TCM industry.

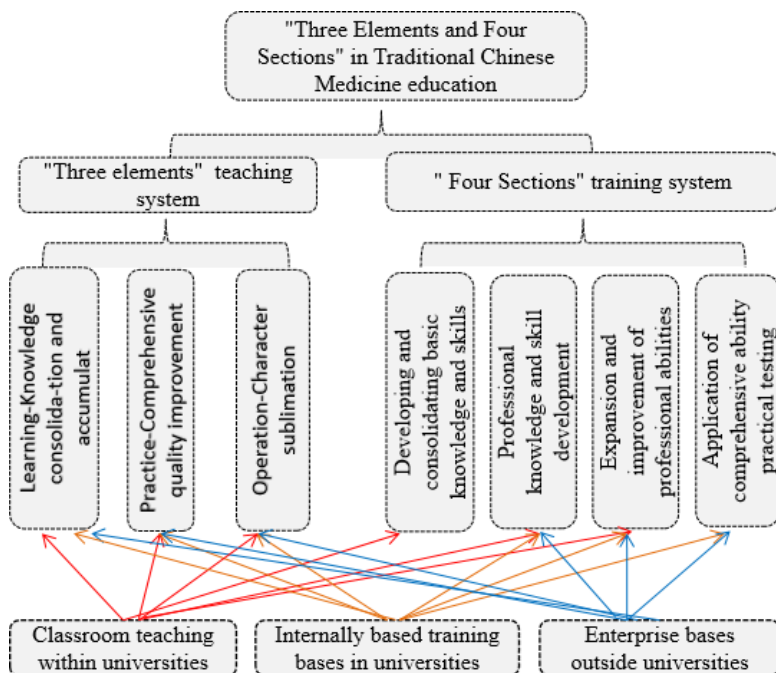


Fig. 1. Skill module structure diagram.

3 Concept of Interdisciplinary Education in TCM

TCM covers three majors: TCM, TCM Resources and Development, and TCM Cultivation and Identification, with overlapping courses between each major.

Therefore, it is necessary to adjust the disciplines, fully utilize effective resources, improve teaching level, and create advantageous disciplines. At the same time, adjust the teaching structure based on the characteristics of having more and less obvious differences in ideological and political theory and basic courses in the first year of undergraduate studies.

Considering the lack of planning for future majors among students, their worldview, outlook on life, and values have not been fully formed.

Therefore, when setting up a comprehensive TCM major, students first engage in basic professional learning. After completing the first year of study, they gain an understanding of their major and have a clearer understanding of future research directions and work plans before making a second major choice.

The major of TCM has been expanded into three branches: TCM, TCM Resources and Development, and TCM Cultivation and Identification, providing high-quality professional teaching.

4 Construction of Interdisciplinary Curriculum System for TCM

4.1 Construction and Integration of Teaching Modules

According to the requirements of the Chinese Ministry of Education for the teaching level of undergraduate universities, combined with teaching plans, the four-year university curriculum is divided into five modules: general education curriculum module, basic curriculum module, professional core curriculum module, elective curriculum module, and cross professional elective curriculum module. The teaching content and curriculum are presented more intuitively in front of students and teachers. Students have a thorough understanding of the curriculum structure, can complete course selection with clear goals, and plan to complete four years of learning. The general education module mainly includes courses on shaping philosophy of life and physical education courses to enhance physical fitness. Essential English and related chemistry courses for professional foundations. The basic course module categorizes and integrates public basic courses and professional characteristic courses based on the characteristics of each major category in TCM. Complementary interdisciplinary approach, showcasing the characteristics of macro unity and micro fine-tuning around the major of TCM, satisfies students' thirst for knowledge, provides students with learning needs, and enhances the level of TCM related disciplines. The core course modules and elective course modules of the major are adjusted and reformed according to the characteristics of each major. On the basis of generally increasing practical and hands-on ability training, the aim is to strengthen course construction, enhance students' social competitiveness and subject creativity, and enhance their research and innovation abilities (Fig 2).

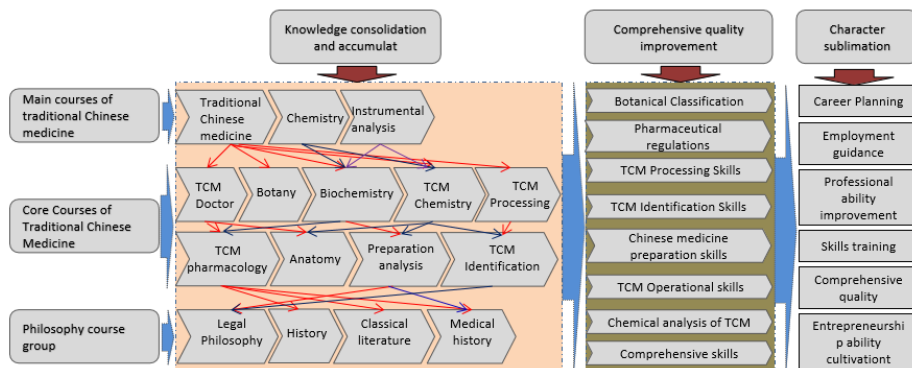


Fig. 2. Framework diagram of teaching and practical courses.

4.2 Integrated Teaching Based on the Principles of First Summarizing and then Dividing

Basic Teaching of TCM. During university enrollment, there is no division of majors. In the first year of university, general and professional basic courses are offered for

integrated teaching. Mainly aimed at cultivating professional interests in TCM, students can adapt to university life as soon as possible, and at the same time, understand the goals of university professional training, making it easier for them to make a second choice. Students can better choose professional courses, facilitate the establishment of life goals, and reduce the aversion to learning caused by mismatched majors.

Basic Professional Division. In the second academic year, students will choose three branches of their major based on their own learning situation: TCM, TCM Resources and Development, and TCM Cultivation and Identification. Adjust the curriculum and adapt to learning, including professional basic courses, professional boutique courses, and backbone courses. At the same time, accumulate professional courses and enhance professional literacy to strengthen the professional foundation (Fig. 3).

Professional Deepening and Practical Ability Improvement. According to the training objectives of students, different training directions are established, professional elective courses are offered, and hands-on skills training is strengthened. Build a comprehensive curriculum system that combines knowledge, abilities, and qualities for improvement. Selected teaching contents, combined with repeated chapters, highlight the practical and scientific progressiveness of the courses. Combining the development of TCM related majors, new technologies, achievements, and knowledge can be supplemented

Expansion of Scientific Research Capabilities. With the goal of cultivating and improving students' abilities, we focus on the integration of industry, academia, and research, and carry out the cultivation of student education and ability expansion. According to the college's ability development plan, credit expansion will be developed for student competitions, papers, and patents. Encourage students to establish research groups to undertake research and development work for enterprises, combine with innovation and entrepreneurship projects for college students, initiate projects that rely on knowledge to support rural construction, and create a new model for contemporary university training.

In order to further develop students' potential, education on practical and innovative abilities was given top priority. Based on the characteristics of regional economy and TCM industry economy, students can cultivate their self-learning ability, promote their individual development, and ensure the quality of talent cultivation in the field of TCM.

5 Reform of Teaching Mode

5.1 Online Platform Teaching

Traditional classrooms can no longer meet and adapt to the requirements of remote teaching, and universities have actively launched the development and exploration of online teaching models. Faced with such complex forms of teaching in the field of

TCM, these problems are also faced. The TCM major carried out online teaching supplements, increased teaching modes and software development, and analyzed teaching effectiveness through online platforms. In order to reduce the occurrence of student plagiarism and preserve video evidence, achieving a fair effect, the College of TCM has improved its course assessment mechanism and invigilation measures (Fig 3).

5.2 Micro Classroom Supplementary Teaching

The college has launched micro courses as an expansion and supplement to classroom teaching content. Based on the knowledge points and topics that students are interested in, related topics such as "identifying flowers by looking at leaves", "interesting plants", and "plant pearls" are set up to stimulate students' interest in learning. Using social media accounts, students can build their own "charming campus", "morning dew", "edible health" and other themes to promote TCM knowledge and broaden their knowledge fields. Reflecting characteristics such as flexibility, richness, and fun [4], it has significant differences from traditional resource-based teaching courseware and design, effectively compensating for the shortcomings of traditional teaching in terms of fixed, standardized, and long time, enhancing the attractiveness of teaching, and achieving excellent student feedback effects.

5.3 Diversified Teaching Supplement

With the development of science and the Internet, the traditional knowledge system can no longer meet the students' thirst for knowledge, so the diversity of teaching methods and the rapid updating of knowledge are the necessary stages for colleges and universities to run schools [5]. For example, flipped classroom, group interaction, classroom novelty search, and experimental design are integrated with each other. Therefore, our school actively promotes the diversity of teaching methods, making classroom teaching more flexible and diverse, and attracting students to learn.

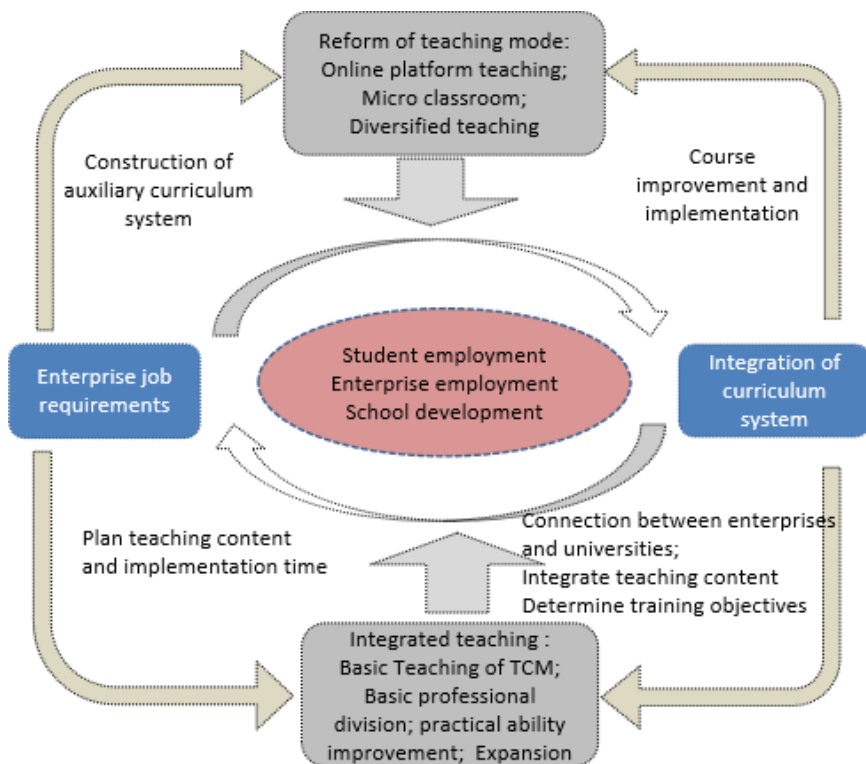


Fig. 3. Diversified teaching construction.

6 Teaching Effectiveness and Discussion

In the past few years, curriculum adjustments and teaching reforms have been carried out in the field of TCM. A questionnaire survey was conducted on approximately 1500 graduates in 2021, 2022, and 2023 (1332 questionnaires were distributed and 1186 were collected), focusing on four aspects: satisfaction with the course structure, satisfaction with core courses, mastery of professional courses, and satisfaction with the support of general courses for the course system. The results show that the overall satisfaction level of students has reached over 90%, while showing an increasing trend, especially for the 2023 graduates who have undergone a complete teaching system reform, and their satisfaction has increased to over 98%. The survey results confirm the role and effectiveness of teaching reform (Fig. 4).

The adjustment of the curriculum structure and the reform of the training mode in TCM have led to an increase in the overall cultural heritage of students, a more complete knowledge system, improved comprehensive organizational skills, and enhanced practical and hands-on abilities.

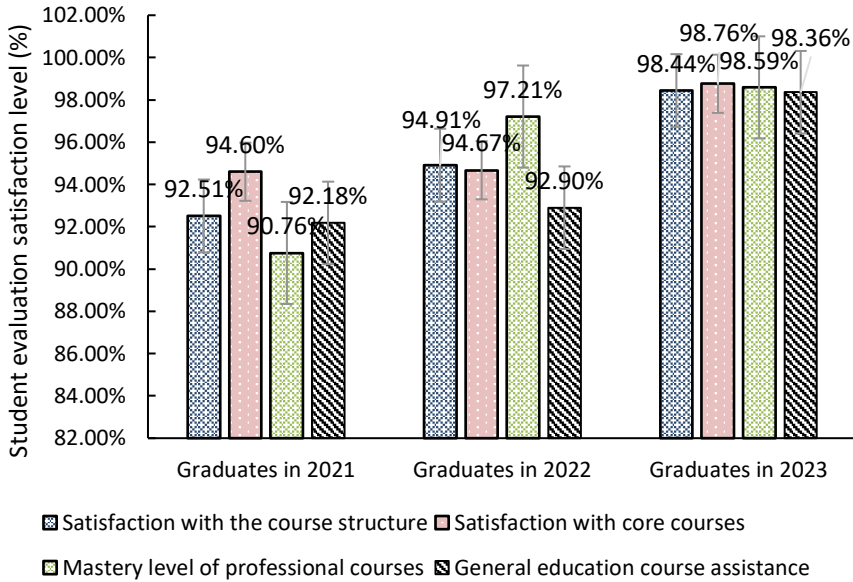


Fig. 4. Student satisfaction with teaching effectiveness.

7 Conclusion

The integration of disciplines will be chosen by many higher education institutions in the future process of higher education. The traditional concept of TCM has been broken by modern Chinese medicine through the accumulation and transmission of interdisciplinary knowledge.

The knowledge points related to TCM have cross coverage. Therefore, conducting cross disciplinary training within disciplines can maximize professional advantages, achieve unified and systematic educational resources, balance resource allocation, promote mutual development, and achieve mutual penetration of course content.

The integration of TCM disciplines is constantly being attempted and explored, with both advantages and disadvantages. It needs to be corrected and supplemented in future development, which is the goal of the future development of TCM. This attempt to integrate disciplines provides evidence and basis for the future integration of various disciplines in education.

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