

# Research on the Advantages, Shortcomings, and Countermeasures of Current Higher TCM Education

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**Abstract:** Traditional Chinese Medicine (TCM) is a treasure of China's traditional medical heritage, embodying the wisdom and cultural depth of the Chinese nation. Higher TCM education shoulders the important responsibility of preserving and advancing TCM, and in today's context, it offers significant advantages while also facing numerous challenges. Among its strengths are a profound cultural foundation in TCM, utilizing classic texts and unique theories to cultivate students' TCM thinking and competence; diversified teaching methods that integrate knowledge from multiple disciplines, innovate instructional models, and combine traditional with modern educational approaches; a complete teaching system characterized by professional faculty and advanced facilities; and interdisciplinary integration fostering innovation. However, problems persist, including some students lacking confidence in TCM culture due to the influence of Western medicine concepts and the westernization of the educational model; weak practical teaching where theory dominates, practice time is limited, and there are insufficient bases and instructors; and a shortage of faculty resulting in an imbalanced student-to-teacher ratio and an unreasonable structure. To address these issues, it is recommended to enhance cultural confidence, strengthen faculty development, and optimize practical teaching, thereby promoting the sustainable development of higher TCM education and achieving the shared prosperity of TCM education and the TCM profession.

**Keywords:** Higher TCM education; Advantages; Shortcomings; Strategies; Research

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## 1. Introduction

Traditional Chinese Medicine (TCM), known as the “art of Qi and Huang,” is a treasured part of China's traditional medical heritage, embodying the wisdom and cultural depth of the Chinese nation. It has been a crucial factor in sustaining Chinese civilization for thousands of years. At its core, TCM seeks harmony

between nature and humanity, representing the process by which human intellect confronts illness and strives to find optimal solutions for health <sup>[1]</sup>. Over time, TCM has developed a theoretical system grounded in concepts like yin-yang and the five elements, characterized by holistic views and differentiated treatment approaches. As an original medical science of the Chinese nation, it has significantly contributed to the prosperity of the Chinese people. Higher education in TCM shoulders the responsibility of preserving and advancing this tradition. With societal progress and improvements in educational systems, TCM teaching has grown stronger, with increasingly refined faculty teams. In recent years, higher TCM education has achieved notable successes. Simultaneously, it faces new opportunities and challenges. Under current circumstances, thoroughly examining the strengths and weaknesses of higher TCM education and proposing corresponding strategies is of great practical significance for enhancing educational quality, cultivating outstanding TCM practitioners, and preserving and developing TCM culture.

## **2. Current status of higher TCM education**

With the continuous refinement of educational philosophies, higher TCM education has significantly improved upon traditional models. The number of students has increased, but employment rates remain much lower than those of Western medical school graduates, largely due to practical conditions. In many TCM institutions, Western medicine courses occupy a substantial portion of the curriculum. The increasing influence of Western medicine can lead to gaps in TCM knowledge, leaving students with an insufficient understanding of both systems. This results in graduates entering clinical settings with weaker clinical and emergency response capabilities, making it harder for them to contribute effectively to hospitals. Compared to their peers from Western medical schools, the gap is significant, leading TCM graduates to spend considerable time catching up on Western medical courses while their Western-trained counterparts focus on specialized development. Hospitals, aiming for maximum benefit, often favor graduates from Western medical programs. The primary reason for this disparity lies in the lack of targeted education during schooling, which fails to adapt to modern needs while focusing too narrowly on TCM development. Faculty teams are limited to guiding specific courses, hindering not only TCM students but also wasting valuable resources within the TCM field <sup>[2]</sup>.

## **3. Current advantages of higher TCM education**

### **3.1. Rich TCM cultural heritage**

TCM boasts a long history, having accumulated a rich theoretical system and clinical experience over millennia. Higher TCM education leverages this profound heritage, providing systematic learning of TCM knowledge. Students study ancient classics such as the *Huangdi Neijing*, *Shanghan Zabing Lun*, and *Shennong Bencaojing*, gaining insight into the depth of TCM theory. These works contain core ideas like holism, differentiated treatment, and yin-yang and five-element theories, offering important foundations for understanding TCM principles and clinical practice. With its unique theoretical framework, TCM stands distinctively in global medicine. Holism emphasizes the body as an organic whole interconnected with natural and social environments. Differentiated treatment involves analyzing symptoms, signs, tongue appearance, and pulse characteristics to determine diagnostic patterns and develop personalized treatments. In higher TCM education, students systematically learn TCM theory to grasp its thinking and diagnostic methods, laying a solid foundation for future clinical work. For instance, in TCM diagnostics, students learn to collect patient information through observation, auscultation, inquiry, and palpation, then analyze and diagnose using differentiated treatment.

TCM offers diverse therapeutic methods, including herbal medicine, acupuncture, massage, cupping, and qigong, each tailored to individual diseases and conditions. Students not only learn about herbs' properties, functions, and applications but also master skills like acupuncture and massage. Acupuncture regulates energy flow by stimulating specific points, while massage adjusts physiological and pathological states through manual techniques <sup>[3]</sup>. Higher TCM education focuses on cultivating comprehensive student qualities, emphasizing professional knowledge alongside humanities, ethics, and innovation. TCM culture stresses "medicine as a benevolent art," requiring doctors to possess compassion, high ethical standards, and excellent skills. Courses in medical ethics and doctor-patient communication nurture professional ethics and empathy. Encouraging research participation enhances innovation and practical abilities. Additionally, visits to TCM museums and renowned practitioners' homes strengthen students' cultural confidence.

### **3.2. Diversified teaching methods**

Higher TCM education innovatively employs various teaching methods. Curriculum integration breaks traditional disciplinary boundaries, combining foundational TCM theory, diagnostics, pharmacology, and formulas into comprehensive modules for systematic learning. Teaching content incorporates modern medical knowledge and research to enrich TCM instruction. For example, modern imaging technology can be introduced to enhance the understanding of tongue diagnosis. Multimedia lectures, online course browsing, and self-study methods extend knowledge retention and improve information literacy.

Diversified teaching models are applied. Case-based teaching develops clinical thinking and problem-solving skills through real-world examples. Teachers guide students in analyzing cases, formulating diagnoses, and designing treatment plans. Group discussions and role-playing enhance communication and teamwork. Problem-based learning (PBL) encourages independent learning and exploration through posed questions, improving research and analytical abilities. Flipped classrooms reverse traditional models, allowing students to study materials before class and engage in discussions, answer questions and solve problems, and conduct case analysis during sessions, fostering active learning and collaboration <sup>[4]</sup>.

The combination of traditional apprenticeship with modern education integrates hands-on clinical training with formal academic learning. The "dual mentorship" system pairs school instructors for theoretical guidance with clinical mentors for practical instruction <sup>[5]</sup>. TCM culture is integrated into education through dedicated courses and activities, strengthening cultural identity and cultivating professional ethics <sup>[6]</sup>.

### **3.3. Comprehensive teaching system**

Firstly, highly qualified faculty. Most higher TCM institutions boast experienced teachers with strong clinical backgrounds who impart professional knowledge and guide clinical practice, nurturing clinical thinking and practical skills. Institutions actively recruit domestic and international talent to enhance faculty quality and teaching standards. A multi-level, multidisciplinary educational framework spans associate, bachelor's, master's, and doctoral degrees, promoting coordinated development across related fields. Secondly, advanced teaching facilities. With growing national support, higher TCM institutions have upgraded infrastructure, featuring modern classrooms, laboratories, and libraries that provide excellent learning environments. Advanced technologies like multimedia and virtual simulation systems further enhance teaching effectiveness.

### **3.4. Interdisciplinary integration**

TCM integrates with modern medicine, biology, chemistry, physics, artificial intelligence, and other disciplines, broadening students' horizons and fostering innovative approaches. Combining with modern medicine promotes

effective integrated treatments; intersections with biology and chemistry deepen understanding of herbal mechanisms; information science supports TCM informatization through databases and intelligent diagnostic systems; psychology and sociology enhance awareness of psychological and social health factors. Such interdisciplinary fusion creates new opportunities for TCM development, addressing key issues and promoting global recognition of traditional Chinese medicine to better serve human health.

## **4. Shortcomings of current higher TCM education**

### **4.1. Lack of cultural confidence**

Influenced by modern science and Western medical concepts, some learners of TCM lack a deep understanding and recognition of TCM theories and practices, often doubting its scientific validity and effectiveness. They may prefer Western diagnostic and treatment methods over the unique theoretical framework of TCM, such as Yin-Yang and Five Elements, meridians, and Qi-blood, which they find difficult to explain through modern science. The educational system for TCM does not delve deeply enough into traditional culture, leading students to inadequately grasp the profound cultural heritage behind TCM, making it hard for them to firmly believe in TCM culture. Public opinion sometimes misinterprets or harbors prejudice against TCM, which can negatively affect learners' confidence in it. The current TCM education model is based on a Western medicine-dominated medical education system from the former Soviet Union. TCM differs greatly from Western medicine, not only in diagnostic and therapeutic methods but also in thinking patterns. Rooted in traditional culture, TCM's theories mainly stem from long-term clinical practice and rely on dialectical thinking for diagnosis and treatment, requiring doctors to use their judgment for the four diagnostic methods: observation, auscultation and olfaction, inquiry, and palpation. In contrast, Western medicine is based on modern science, where disease judgments are largely dependent on modern instruments and devices, primarily derived from experiments. These differences mean that TCM's knowledge structure, research methods, and treatment models cannot be equated with those of Western medicine. Therefore, higher TCM education modeled after Western teaching approaches has led to the loss of certain TCM characteristics.

### **4.2. Weak practical teaching components**

TCM is a highly practical discipline, and practical teaching components are crucial for cultivating students' clinical skills and practical abilities. However, the practical teaching component in current higher TCM education remains relatively weak, mainly due to insufficient practical teaching time, incomplete construction of practical teaching bases, and a lack of practical teaching instructors<sup>[7]</sup>. Currently, the cultivation of TCM talents primarily follows a higher TCM education model centered on academic education. In the current TCM education system, theoretical education often dominates. Students receive extensive instruction in TCM classical theories, formula studies, and pharmacology, but struggle to highlight TCM's clinical advantages. When students face clinical situations, they find it difficult to flexibly apply the theoretical knowledge they have learned, leading to "armchair strategizing." Additionally, some young teachers, despite holding doctoral degrees or postdoctoral positions, lack rich clinical experience and struggle to effectively integrate theory with practice, providing less vivid and practical guidance to students. Uneven distribution of teaching resources and insufficient clinical internship bases fail to meet the numerous students' practical needs<sup>[8]</sup>. Throughout higher TCM education, there is an emphasis on theory over clinical practice, lacking academic debate, which contradicts the rules of TCM education. As calls for social development and educational reform grow, TCM education has gradually moved towards modernization, adopting similar enrollment, unified training,



and employment policies as other institutions, neglecting the uniqueness of TCM, which somewhat limits innovation. To ensure graduates possess strong clinical patient handling capabilities and adapt to societal demands, TCM colleges have added courses related to Western medicine, computers, and foreign languages. This has resulted in reducing the hours dedicated to ancient Chinese culture courses and TCM subjects, decreasing the time and energy spent on teaching and studying fundamental TCM theories based on classic texts, significantly affecting learning outcomes and resulting in unreasonable course settings. Following such a curriculum system, students neglect learning about Chinese traditional culture and related characteristic disciplines, poorly grasp basic TCM knowledge, and struggle to truly understand the essence of classics like the *Nei Jing* and *Shang Han Lun*. The “essence” of TCM gradually fades, and the trained medical students drift further away from pure TCM practitioners.

### **4.3. Insufficient faculty strength**

Although higher TCM colleges possess a professional faculty team, with the continuous development of TCM education, faculty strength still falls short. On one hand, some teachers lack clinical practice experience, making it difficult to combine theoretical knowledge with clinical practice; on the other hand, there is a shortage of outstanding TCM talent to meet teaching demands. With the rapid expansion of higher TCM education scale and the sharp increase in student numbers, the growth rate of the faculty team cannot keep up. Many universities experience imbalanced teacher-student ratios, leading to large class sizes where teachers cannot adequately focus on each student during practical teaching segments. For instance, during clinical teaching, one instructor must simultaneously guide many students, drastically reducing students’ opportunities for actual operation. Taking some newly established local TCM colleges as examples, the number of admissions continues to rise, but talent recruitment faces challenges, and faculty reserves are insufficient, causing heavy burdens on foundational course teaching tasks and jeopardizing teaching quality. Faculty structure imbalance exists. In terms of age structure, a generational gap appears. On one hand, older generations of TCM experts gradually retire, possessing profound clinical experience and excellent medical skills but limited energy to sustain high-intensity teaching participation; on the other hand, there are insufficient mid-level and young backbone teachers who need time to grow and are yet unable to fully shoulder responsibilities. Professional structure is unreasonable; some schools concentrate TCM teachers in a few popular fields, such as internal medicine, while areas like orthopedics and acupuncture-massage have relatively weaker faculty, leading to insufficient professional guidance for students in these directions. Knowledge structure-wise, some teachers focus solely on theoretical teaching, lacking clinical experience. During clinical courses, they can only read from textbooks without closely integrating theory with actual cases, making it difficult for students to understand and master practical clinical skills. In TCM diagnosis courses, teachers without rich clinical experience find it challenging to vividly explain various diagnostic methods using real cases. Many university teachers directly enter teaching after graduation without sufficient clinical experience, leading to weak practical operational skills. In a highly practical discipline like TCM, teachers unable to proficiently demonstrate techniques like acupuncture and massage cannot provide precise practical guidance, hindering the development of students’ hands-on abilities. Surveys show that some university TCM faculty members have less than six months of average clinical practice within the past five years, making it difficult for them to convey the latest clinical experiences and skills to handle complex conditions, resulting in slow adaptation and long adjustment periods for students entering clinical work after graduation.

## **5. Suggestions and strategies**

### **5.1. Enhancing TCM cultural confidence**

Deepening the course teaching and strengthening the study of TCM classics. Increasing the weight of courses such as the *Huangdi Neijing*, *Shanghan Zabing Lun*, and *Shennong Bencao Jing*, employing diverse teaching methods like intensive reading, serial lectures, and discussions, guiding students to deeply comprehend the essence of the classics. For example, organizing case discussions on prescriptions from the *Shanghan Zabing Lun* and analyzing their applications in modern clinical conditions allows students to tangibly feel the vitality and practicality of the classics, thereby establishing firm confidence in the TCM theoretical system. Inviting renowned scholars and veteran TCM practitioners to deliver classic lectures, sharing their insights and clinical application experiences, inspiring students to explore the classics with exemplary influence, and helping them recognize the timeless value of the classics. Expanding TCM cultural courses. Offering courses on various TCM doctrines, TCM philosophy, and TCM folklore helps students understand the development history, cultural background, and social foundations of TCM. From its origins to historical inheritance and innovation, from the infiltration of traditional philosophical thoughts to the health wisdom contained in folk customs, comprehensively showcasing the profundity of TCM culture. For instance, in TCM history courses, narrating legendary stories of ancient famous doctors like Bian Que and Hua Tuo, as well as TCM's remarkable achievements in combating epidemics in different historical periods, instills pride in students regarding TCM's brilliant history. Utilizing local TCM cultural resources to develop distinctive school-based courses. If the school's location has unique TCM schools or medicinal herb resources, they can be integrated into the curriculum, bringing students closer to local TCM culture and enhancing their sense of identity and belonging.

### **5.2. Strengthening faculty team building**

Firstly, enhancing talent recruitment and cultivation. Universities should broaden talent recruitment channels, not only recruiting excellent TCM talents domestically but also introducing overseas TCM experts with international perspectives. Meanwhile, formulating comprehensive plans for nurturing middle-aged and young teachers, dispatching them to renowned domestic and international medical institutions for further study, attending academic conferences, and participating in clinical practice to enhance their professional competence and practical skills. Secondly, optimizing faculty structure. Adjusting faculty age, specialty, and knowledge structures according to the school's professional development needs. Encouraging mentorship among senior, middle-aged, and young teachers, establishing team cooperation mechanisms, and promoting exchanges and collaboration among teachers from different professional fields. For instance, forming multi-disciplinary joint teaching research rooms in TCM to jointly conduct teaching research and practical guidance. Additionally, establishing incentive mechanisms. Setting up special reward funds to materially and spiritually reward teachers who excel in teaching, clinical practice, and research, tilting title evaluations and position promotions towards teachers with strong practical abilities and good teaching effects, motivating teachers to improve their own qualities.

### **5.3. Reinforcing practical teaching components**

Increasing practical teaching time to ensure students have ample time for clinical practice. This can be achieved by adjusting teaching plans and increasing the number of practical teaching weeks to raise the proportion of practical teaching. Improving practical teaching base construction, strengthening cooperation with hospitals, clinics, and other medical institutions to establish stable practical teaching bases. This can be done through signing cooperation agreements and providing technical support to enhance the construction level of practical

teaching bases. Strengthening the construction of practical teaching guidance teacher teams, improving the professional levels and teaching abilities of practical teaching guidance teachers. This can be achieved by sending teachers to participate in practical teaching training and hiring clinical doctors as practical teaching guidance teachers to enrich the practical teaching guidance teacher teams. Adjusting course structures to avoid content repetition. Courses can be reasonably set based on the characteristics and needs of TCM majors, optimizing the course system. Updating course content to reflect the latest research results and developments in the field of TCM. This can be done by introducing cutting-edge TCM theories and technologies and inviting experts and scholars for lectures to enrich course content. Increasing the proportion of practical courses and strengthening the integration of theory and practice. This can be done by setting up clinical internships, experimental courses, and social practices to enhance students' practical abilities.

## **6. Conclusion and outlook**

Higher TCM education bears the important task of inheriting and developing TCM, currently enjoying significant advantages while facing numerous challenges. TCM contains rich cultural connotations, building a solid foundation of TCM knowledge for students through classic texts, unique theories, and diverse therapies, cultivating TCM thinking and comprehensive qualities in students. Diversified teaching methods innovate continuously, integrating courses, utilizing modern technology, applying varied modes, and combining the strengths of traditional apprenticeship systems and modern education to stimulate students' enthusiasm for learning and practical abilities. A complete teaching system covering professional faculties and advanced facilities provides strong support for teaching, and interdisciplinary integration broadens horizons, injecting vitality into TCM innovation. However, problems cannot be ignored. Some students and practitioners lack TCM cultural confidence, impacted by modern science and Western medical concepts, compounded by the westernization of TCM education models, lack of traditional cultural education, misleading public opinions, leading to the dilution of TCM characteristics; weak practical teaching components, theory dominance, insufficient practice time, inadequate bases, and lack of faculty practical experience result in students' deficiencies in clinical skills; insufficient faculty strength, imbalanced teacher-student ratios, unreasonable structures, and weak faculty practical abilities fail to meet teaching demands. In response to these issues, deepening courses to strengthen TCM classic readings, expanding TCM cultural courses, and utilizing local ethnic TCM resources can enhance cultural confidence; broadening talent recruitment, nurturing middle-aged and young teachers, optimizing faculty structures, and establishing incentive mechanisms strengthen faculty team building; reinforcing practical teaching components from aspects of time, bases, faculty, and courses. Higher TCM education has the potential to reach new heights through continuous improvement. With the reconstruction of TCM cultural confidence, students will more deeply understand the essence of TCM, with a firm belief in inheriting TCM, allowing it to shine uniquely in the new era and become a bright card in the global health field. Through continuous optimization of faculty teams, gathering domestic and international elites, uniting old, middle-aged, and young individuals, balancing knowledge and practice, injecting inexhaustible wisdom power into TCM education, and steadily improving teaching quality. Strengthening practical teaching components will make students' clinical skills increasingly proficient, seamlessly connecting theory with practice, cultivating a large number of TCM talents capable of quickly adapting to clinical situations and solving practical problems, meeting society's growing health needs, and achieving coordinated prosperity in TCM education and TCM endeavors.

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## Disclosure statement

The authors declare no conflict of interest.

## References

- [1] Yang X, 2023, The Inheritance and Development of Chinese Narrative Medicine Practice to the Philosophical Wisdom of Traditional Chinese Medicine. *Chinese Medicine and Culture*, 6(2): 164–174.
- [2] Han S, 2019, The Contradiction between TCM Education and Real Needs and the Thinking of Reform. *Wisdom Health*, 5(29): 27–28.
- [3] Wang H, Hu Y, 2019, Traditional Chinese Medicine Cupping and Health, International Conference on Health and Well-Being in Modern Society (ICHW 2019), Atlantis Press, 249–253.
- [4] Ming H, 2023, Teaching Reform of “Nursing of Traditional Chinese Medicine” Course Based on OBE Concept. *Journal of Contemporary Educational Research*, 7(9): 5345.
- [5] Zhou X, Yang Q, Bi L, et al. 2023, Integrating Traditional Apprenticeship and Modern Educational Approaches in Traditional Chinese Medicine Education. *Medical Teacher*, 46(6): 11–16.
- [6] Chen J, Yang J, 2021, Development and Application of Workbook Teaching Materials—Taking the Curriculum Construction of Pharmacy and Traditional Chinese Medicine Pharmacy in Higher Vocational Colleges of Pharmaceutical Specialty Group as an Example. *Education Reform and Development*, 3(1): 5–9.
- [7] Zou X, 2012, Research on the Path to Success for Renowned TCM Practitioners under the Higher Education Model of TCM, dissertation, Nanchang University.
- [8] Han Y, Wei A, Xu G, 2020, Analysis of Problems and Countermeasures of Clinical Teaching Management in Higher Colleges of Traditional Chinese Medicine. *China Traditional Chinese Medicine Modern Distance Education*, 18(22): 147–149.

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