

# Exploration of Teaching Reform of TCM Dispensing Technology in Higher Vocational Colleges Based on Traditional Chinese Medicine Skills Competition

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**Abstract:** This paper aims to thoroughly explore the teaching reform of Traditional Chinese Medicine (TCM) dispensing technology in higher vocational colleges, with a focus on the Traditional Chinese Medicine Skills Competition. By analyzing the current teaching status and main challenges of TCM dispensing technology, and aligning with the requirements of the skills competition, a series of detailed and practical teaching reform measures are proposed. These measures are designed to comprehensively improve the teaching quality of TCM dispensing technology in higher vocational colleges, enhance students' practical skills and professional qualities, and ultimately meet the demand for high-quality, skilled talents in the field of TCM.

**Keywords:** Traditional Chinese medicine skills; Traditional Chinese medicine dispensing technology; Educational reform

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## 1. Introduction

Traditional Chinese Medicine (TCM) dispensing technology is a crucial component of TCM education, essential for training professionals with strong theoretical knowledge and excellent practical skills. However, the traditional teaching model exhibits significant shortcomings in integrating theory with practice, offering diverse teaching resources, and employing a varied evaluation system. This paper aims to explore optimization strategies for teaching TCM dispensing technology by introducing the modular training approach of the Traditional Chinese Medicine Skills Competition.

## 2. Current teaching situation of TCM dispensing technology

As a core course in TCM programs, TCM dispensing technology is responsible for equipping students with

fundamental theories, methods, and skills. However, the current teaching model reveals several issues in practice, such as the disconnect between theory and practice, limited teaching content and methods, inadequate teaching resources, and an incomplete evaluation system. These problems significantly hinder the improvement of teaching quality in TCM dispensing technology.

### **3. Main problems in the teaching of TCM dispensing technology**

#### **3.1. Disconnect between theory and practice**

In the traditional teaching model, theoretical instruction in TCM dispensing technology is often detached from practical application. Students are exposed to extensive theoretical knowledge in the classroom but lack opportunities to apply this knowledge in practical settings, making it challenging to translate learned concepts into practical skills<sup>[1]</sup>. This gap limits their effectiveness in real-world situations.

#### **3.2. Limited teaching content and method**

Currently, the teaching content for TCM dispensing technology primarily relies on textbooks. While basic theories and methods are systematically introduced, they are not closely aligned with the actual needs of the industry. The predominant teaching method is lecture-based, with minimal interaction and hands-on practice, which hampers the development of students' innovative and practical abilities.

#### **3.3. Inadequate teaching resources**

Some higher vocational colleges lack essential equipment and training resources for TCM dispensing technology education, such as TCM decoction pieces and precision scales, which restrict the quality of instruction. The scarcity of resources makes it difficult to keep pace with the evolving TCM industry, limiting students' access to engaging, practical learning experiences.

#### **3.4. Incomplete evaluation system**

The traditional evaluation system overly emphasizes examination scores as the primary assessment standard, neglecting a comprehensive evaluation of students' practical abilities and professional qualities. This approach fails to accurately reflect students' true capabilities and development potential<sup>[2]</sup>, and it does not provide effective guidance for their career growth. Therefore, the development of a diversified evaluation system has become a critical focus in the reform of TCM dispensing technology education.

### **4. Reform measures for TCM dispensing technology teaching in higher vocational colleges based on the TCM skills competition**

#### **4.1. Implementation of modular teaching**

##### **4.1.1. Module division**

In line with the requirements of the Traditional Chinese Medicine Skills Competition, the teaching content of TCM dispensing technology is divided into several sub-modules<sup>[3]</sup>. See **Table 1**.

**Table 1.** Division of teaching content into sub-modules for TCM dispensing technology

Modules	Knowledge objectives	Skill goals
Adjudicator	Understand prescription review principles. Learn to identify common irregularities.	Accurately review TCM prescriptions. Identify and address irregularities and contraindications.
Pricing	Master the pricing methods for TCM. Know the price range of herbal medicines.	Accurately calculate TCM prices.
Dispensing	Understand the properties of TCM decoction pieces. Master the dispensing process and precautions.	Weigh mixed decoction pieces accurately. Package them correctly, ensuring safety and cleanliness.
Review and dispense medicine	Understand the importance of reviewing prescriptions and the relevant procedures.	Accurately review the quality of Chinese medicines. Dispense medicines according to standards. Provide proper medication instructions.

#### **4.1.2. Simulate actual work situations**

Modular teaching should emphasize the simulation of real work situations to deliver targeted instruction, with the core goal of enhancing students' "post competency"<sup>[4]</sup>. Real prescription case analysis is integrated into assessments, and simulation tasks are designed to allow students to practice skills such as weighing, mixing, and packaging. This approach helps students translate theoretical knowledge into practical abilities.

#### **4.1.3. Interactive teaching**

Modular teaching should focus on interactive methods, stimulating students' interest and initiative through group discussions and case analysis. Role-playing exercises help students understand and master key concepts, while peer evaluations and teacher assessments enhance students' self-evaluation and reflection skills.

### **4.2. Strengthening school-enterprise cooperation**

#### **4.2.1. Establishing a close cooperative relationship**

Close collaboration with TCM enterprises and medical institutions is vital for improving the teaching quality of TCM dispensing technology. This cooperation provides students with more practical opportunities and job experience, while enterprises can leverage school resources for staff training and product development, resulting in mutual benefits.

#### **4.2.2. Building training bases through school-enterprise cooperation**

Collaborating with enterprises to establish TCM dispensing training bases, equipped with advanced tools and realistic environments, helps students understand actual operational processes and requirements, thereby enhancing their professional quality and employment competitiveness.

#### **4.2.3. Expert guidance**

Inviting industry experts to teach or guide students in practical training is crucial. The course development team should stay informed about industry advancements and periodically update teaching projects<sup>[5]</sup>. Experts with extensive practical experience and industry knowledge can offer valuable insights and suggestions, aiding students in better understanding and mastering TCM dispensing technology.

### 4.3. Constructing a diversified evaluation system

#### 4.3.1. Refining evaluation indicators

Specific evaluation indicators and weights are established for different modules of TCM dispensing technology to ensure comprehensive and objective evaluation<sup>[6]</sup>. See **Table 2**.

**Table 2.** Specific evaluation indicators and weights for different modules of TCM dispensing technology

Modules	Evaluation indicators	Weight	Instructions
Adjudicator	Accurate prescription review	0.4	Verify the correctness of the prescription information. Ensure medication safety for patients. Avoid drug interactions or adverse reactions.
	Prescription completeness	0.3	Ensure all prescription information is complete and the medication is legally prescribed.
	Prescription specifications	0.3	Check for clarity in prescription writing and compliance with format standards.
Pricing	Accurate valuation	0.7	Follow the prescription and dosage instructions. Calculate drug prices accurately.
	Pricing efficiency	0.3	Complete the pricing process on time.
Deployment	Accurate weighing	0.4	Use precision tools to weigh medications accurately and ensure medication safety.
	Dispensing speed	0.3	Ensure quality and rapid deployment.
	Packing specifications	0.3	Clearly label medicine packages and ensure hygienic sealing.
Double-checking	Comprehensive review	0.6	Thoroughly review all drug information.
	Timely review	0.4	Recheck immediately after deployment and correct any errors promptly.
Dispensing medication	Accurate medication instructions	0.6	Provide detailed and accurate descriptions of drug usage, precautions, and side effects. Ensure the patient takes the medication correctly.
	Service attitude	0.4	Display warmth and patience towards patients.

#### 4.3.2. Introducing third-party evaluations

Invite industry experts or third-party evaluation agencies to participate in the teaching evaluation process to enhance its authority and credibility. These third-party agencies can assess student outcomes based on industry standards and offer effective guidance for career development<sup>[7]</sup>.

#### 4.3.3. Comprehensive evaluation of students' professional quality

The evaluation system should also focus on a comprehensive assessment of students' professional quality. This includes evaluating their attitude and behavior during practical operations, assessing their level of professional accomplishment, and gathering feedback from enterprises during internships to understand their professional performance<sup>[8]</sup>. Self-evaluation and peer evaluation should also be used to enhance students' professional awareness.

### 4.4. Utilizing information-based teaching methods

#### 4.4.1. Enriching teaching resources

Fully utilize teaching videos, virtual simulation software, and other information-based teaching tools to enrich teaching resources. Develop an ideological and political resource base for TCM professional courses<sup>[9]</sup> and create a virtual simulation system for TCM dispensing technology<sup>[10]</sup>. Record high-quality teaching videos

for students to study and review independently <sup>[11]</sup>. Establish a TCM dispensing technology teaching resource library to facilitate the sharing and optimal allocation of teaching resources <sup>[12]</sup>.

#### **4.4.2. Online interaction and communication**

Use online platforms, social media, and other tools to strengthen interaction between teachers and students, thereby improving teaching efficiency and increasing students' interest in learning <sup>[13]</sup>. Establish an online learning community for Q&A sessions and discussions, and promote student communication and cooperation. Regularly publish learning resources and industry news to keep students updated on the latest developments.

#### **4.4.3. Personalized learning support**

Information-based teaching tools can provide personalized learning support, delivering tailored resources. Big data analysis can be used to offer targeted suggestions and feedback, evaluate results through intelligent assessment, and develop personalized learning plans <sup>[14]</sup>.

### **5. Conclusion and prospects**

Teaching reform based on the Traditional Chinese Medicine Skills Competition can significantly enhance the quality of TCM dispensing technology education in higher vocational colleges. Modular teaching helps students master essential skills, school-enterprise cooperation provides practical opportunities, the diversified evaluation system offers comprehensive assessments, and information-based teaching enriches resources. In the future, efforts should focus on advancing students' skills, deepening teaching reforms, exploring innovative paths, adapting to the evolving needs of the TCM industry, and continuously improving teaching quality <sup>[15]</sup>.

### **Disclosure statement**

The author declares no conflict of interest.

### **References**

- [1] Wang Y, Fu H, Dou G, et al., 2023, Study on Comprehensive Education Model of “Post Course Competition Certificate + Ideological and Political Integration” in Vocational Colleges – A Case Study of TCM Dispensing Technology Course. *Health Vocational Education*, 41(11): 48–51.
- [2] Huang Z, Zhong X, Chen J, et al., 2018, A Preliminary Study on the Reform of Practice Teaching System of Chinese Pharmacy Specialty Based on “Inheritance and Innovation and Social Demand”. *Chinese Higher Medical Education*, 2018(7): 61–62.
- [3] Program Regulations for 2022 National Vocational College Skills Competition, viewed December 26, 2022, <http://www.chinaskills-jsw.org>
- [4] Li S, Wang M, Yang X, et al., 2023, Research and Practice of “Dual Thinking” Basic Innovative Top-Notch Talent Training Model for Chinese Pharmacy. *Journal of Gansu University of Traditional Chinese Medicine*, 40(4): 96–99.
- [5] Zhang N, Di X, 2023, Research on OBE Curriculum Construction Path Based on Post Course Competition Certificate Accommodation. *Career*, 2023(12): 82–84.
- [6] Liu J, Zhao Q, Zhang N, et al., 2018, Modular Teaching and Formative Evaluation Design of Task-Based Curriculum

- Project – A Case Study of TCM Dispensing Technology. *Modern Chinese Materia Medica Research and Practice*, 32(5): 74–77.
- [7] Chen S, Wei Q, Liu F, 2019, Influence of TCM Prescription Analysis on Clinical Safety of Drug Use in TCM Dispensing. *China Prescription Drugs*, 19(5): 44–45.
- [8] Gao N, Tan Z, 2022, Inherit Excellent Traditional Chinese Medicine Culture and Construct New Connotation of Traditional Chinese Medicine Dispensing Technology. *Health Vocational Education*, 40(12): 45–48.
- [9] Zheng J, Dou G, Sun L, et al., 2023, Research on the Construction of Ideological and Political Resource Database of Chinese Medicine Professional Group Curriculum. *Tianjin Pharmacy*, 35(5): 70–74.
- [10] Zeng F, Wang M, Yu C, et al., 2019, Construction and Application Evaluation of Simulated TCM Pharmacy Based on Virtual Simulation Technology. *Chinese Pharmacy*, 35(3): 271–276.
- [11] Yu X, 2022, Effective Classroom Teaching Practice of “Integration of Post Class Competition and Certificate, Teaching and Doing” – A Case Study of “Linux System Foundation”. *Journal of Hubei Open University*, 42(4): 39–44.
- [12] Shi X, Yang Z, 2023, Research on the Path of Four-Dimensional Linkage of “Post Course Competition Certificate” to Improve the Training Efficiency of High-Skilled Talents. *Journal of Beijing Polytechnic Institute of Technology*, 22(2): 55–58.
- [13] Dou Y, Xue J, Zhang X, 2023, Research on the Path of Gold Course Construction in Higher Vocational Colleges Based on OBE Concept. *Education and Teaching Forum*, 2023(1): 157–160.
- [14] Wang Y, 2020, Application of Information-Based Instructional Design in TCM Dispensing Technology Course Teaching. *Modern Distance Education of Chinese Medicine*, 18(13): 27–28.
- [15] Zeng T, 2021, Practice Exploration of Training High-Skilled Talents by Integrating Post Courses and Certificates. *China Vocational and Technical Education*, 2021(8): 5–10.

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