

Exploration on the Design and Application of a Traditional Chinese Medicine Chinese Language Assistance Practice and Testing Tool Based on WeChat Mini-Programs

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Abstract: *As we all know, Chinese medicine is a discipline, so the language of Chinese medicine is a scientific language. However, TCM is bred in traditional Chinese culture and deeply influenced by Chinese culture. TCM language has a distinct humanistic color. Compared with daily language, it is more difficult for foreign students to learn TCM language. If we can integrate most Chinese courses of TCM in the market, classify new words, texts and professional terms, and design and develop a small program that can consolidate and test Chinese knowledge of TCM for foreigners, it will help foreign students to better learn Chinese knowledge and master Chinese terminology.*

Keywords: Traditional Chinese Medicine (TCM) Chinese, WeChat Mini Program, Auxiliary Exercise, TCM Terminology.

1. Introduction

Currently, with the continuous strengthening of the international influence of traditional Chinese medicine (TCM), more and more foreign students choose to study TCM in China. According to statistics from the Ministry of Education, in 2016, there were over 13,000 international students studying TCM in China, accounting for 3% of all international students, and this number has shown an increasing trend after the “Belt and Road” cooperation initiative. Foreigners have various motivations for studying TCM, including their love for TCM culture, recognition of the efficacy of TCM treatment, and the desire to bring TCM back to their home countries for development. For example, some foreign students become interested after seeing the effectiveness of TCM in treating difficult and complex diseases, or they hope to provide better medical services to their people by studying TCM. Foreign students can learn TCM in various ways, including receiving academic education at TCM universities in China, participating in short-term training courses, and learning through online courses [1]. These learning methods provide convenience for students with different needs and backgrounds. Therefore, the purpose of this paper is to study how a TCM-Chinese language practice mini-program can be designed under the current situation of foreign students’ influence on TCM-Chinese language teaching, to assist foreign students in learning TCM-Chinese and better grasp TCM-Chinese knowledge.

2. Analysis of the Current Situation of Chinese Medicine Teaching in Chinese

2.1 The Current Situation of Chinese Medicine Teaching in China

In 1956, the State Council of China approved the establishment of four major colleges of traditional Chinese

medicine in Beijing, Shanghai, Guangzhou, and Chengdu, marking the integration of traditional Chinese medicine education into China’s higher education system. With the continuous development of China’s comprehensive national strength, traditional Chinese medicine, as an important component of Chinese traditional culture, has gained increasing attention and recognition internationally in recent years [2]. Many foreign students choose to study traditional Chinese medicine in China, not only because of their curiosity and interest in this ancient medicine, but also due to their recognition of its therapeutic effects and philosophical ideas.

Taking Beijing University of Chinese Medicine (BUCM) as an example, the International College of BUCM is the earliest higher education institution of traditional Chinese medicine in China to accept international students. In recent years, the scale of its international student population has been growing. It is understood that the first problem encountered by students studying in China is the language barrier. The school divides students into two levels. One is those with a high level of Chinese proficiency, reaching HSK Level 6. Those who fail to meet this standard will receive Chinese language remedial courses. Interestingly, although these foreign students have a low level of Chinese proficiency, language does not hinder their love for traditional Chinese medicine. At the same time, in order to welcome more international students to study traditional Chinese medicine in China, our country also provides scholarship subsidies, including Chinese government scholarships, Beijing scholarships, and internal scholarships of the school. Furthermore, arrangements are made for international students studying at the school to intern at local hospitals.

For foreign students, learning traditional Chinese medicine (TCM) also poses many challenges. TCM classics are mostly written in classical Chinese, which is extremely difficult for foreign students to read and understand. Even students in Chinese language classes may find ancient Chinese language confusing, especially those from European and American

countries. TCM is deeply rooted in traditional Chinese culture, and its theoretical system and way of thinking differ significantly from Western medicine. Foreign students need to adapt to the Chinese cultural environment and understand the philosophical ideas and lifestyle behind TCM. Another issue is the faculty at Chinese medical colleges and universities, where teaching facilities are still inadequate.

2.2 The Current Situation of Chinese Medicine Teaching in Foreign Countries

Internationally, the dissemination of traditional Chinese medicine (TCM) culture has also enhanced China's cultural soft power. Through international exchanges and cooperation in TCM culture, a small herb, a silver needle, and a wisp of medicinal fragrance have allowed the world to better understand and recognize traditional Chinese culture, providing Chinese wisdom and solutions for global health. TCM culture is currently experiencing a global boom, with the United States being one of the important frontiers for the overseas development of TCM. In addition to the United States, TCM has also made significant progress in other countries and regions. In Asian countries such as Japan, South Korea, and Singapore, TCM has become an important medical treatment method, widely used in the treatment of various diseases, including chronic diseases, pain, and digestive system diseases. On October 1, 2018, the World Health Organization (WHO) included TCM in its globally influential medical compendium for the first time. Since then, the TCM industry and those who love TCM have gained immense confidence in the internationalization of TCM.

Meanwhile, the Ministry of Education has focused on the international exchange and cooperation of traditional Chinese medicine (TCM) in the Belt and Road Initiative, launched the Belt and Road TCM Development Forum, and strengthened the cultivation of international talents in TCM. For example, in 2024, Shanghai University of Traditional Chinese Medicine (SHUTCM) launched the "Belt and Road Co-construction Countries Medical High-end Personnel TCM Training Program". As a key project of Shanghai's education opening-up, this program has built a platform for high-quality exchange and cooperation among medical professionals from Belt and Road co-construction countries, promoting mutual learning and mutual appreciation between traditional medicine and modern medicine.

2.3 Characteristics and Future Development of Chinese Medicine Teaching in Chinese as a Foreign Language

Teaching Chinese medicine involves a vast array of specialized vocabulary in traditional Chinese medicine (TCM). These terms are not only numerous but often carry unique cultural connotations and historical backgrounds. For instance, terms such as "yin and yang," "five elements," and "qi and blood" hold significant importance in TCM theory, yet they rarely appear in everyday Chinese communication. Therefore, during the teaching process, special emphasis should be placed on explaining and utilizing these specialized vocabulary, assisting students in building a bridge between TCM terminology and Chinese expression.

With the global boom of traditional Chinese medicine (TCM),

China is actively encouraging TCM to go overseas. Most TCM colleges and universities in China are actively engaging in international exchanges and cooperation, strengthening ties and collaboration with foreign institutions of higher learning, research institutes, and relevant TCM enterprises and institutions that are "going global" [3]. They are continuously deepening the characteristic model of "Chinese + vocational skills" and persistently promoting overseas education in TCM and the dissemination of TCM culture.

3. Overall Design Idea and Goal of the Mini Program

3.1 Overall Design Idea of Mini-program

The primary purpose of the Chinese language practice and testing tool for traditional Chinese medicine (TCM) based on WeChat Mini Program is to assist foreign students in mastering TCM-related Chinese vocabulary and enhancing their understanding of TCM. Through a survey of existing TCM-related Chinese language textbooks on the market, this program design will primarily focus on "Practical Chinese Language Course for Traditional Chinese Medicine" and "Comprehensive Chinese Language Course for Traditional Chinese Medicine". These two textbooks not only emphasize the rigor of TCM literature in terms of material selection but also take into account the specificity of teaching Chinese as a second language. In terms of textbook compilation, special attention is paid to summarizing and organizing common TCM vocabulary, sentence patterns, and knowledge, which compensates for the blind spots in general Chinese language teaching materials regarding professional knowledge of traditional Chinese medicine. Even international students without a background in TCM can learn and use it step by step from the basic to the advanced.

In the process of studying traditional Chinese medicine (TCM) for international students, there are a large number of new words and TCM professional terms that need to be understood and memorized. Each TCM professional term is accompanied by a matching part of speech, definition, and example to aid understanding [4]. Mastering TCM professional terms is the foundation of learning TCM. If a self-test can be conducted after learning through methods such as designing multiple-choice questions for new words and corresponding English, filling in blanks in texts, explaining specialized terms, practicing Chinese characters, and selecting words to fill in blanks, it will greatly benefit the mastery of TCM Chinese. Therefore, a comprehensive and effective TCM Chinese auxiliary practice and testing tool needs to have a note module, a wrong question module, a practice module, a simulated exam module, a test question search module, etc. Some specific implementation plans are as follows:

(1) Since this testing tool primarily focuses on the "Practical Chinese Course for Traditional Chinese Medicine" and the "Comprehensive Chinese Course for Traditional Chinese Medicine", it is necessary to design a learning material section and incorporate these two textbooks. International students who take the Traditional Chinese Medicine Chinese test all need to have a certain basic knowledge of Chinese, and they also need to have learned some traditional Chinese medicine terminology in advance. Then, they can use this testing tool

for supplementary practice to consolidate their knowledge.

(2) This testing tool will primarily focus on practice tests, so it is planned to be divided into multiple practice sections, mainly including sequential practice, question type practice, and random practice. Different chapters will be designed based on the learning materials, making it convenient for students to practice in sections.

(3) Based on the feedback on the learning outcomes of international students studying traditional Chinese medicine, it has been observed that they are not proficient in mastering vocabulary during the learning process. They tend to repeatedly make mistakes with incorrect vocabulary or exercises, which, over time, leads to the formation of long-term memories of incorrect vocabulary, making it difficult to correct. Therefore, it is necessary to set up a module for incorrect questions to facilitate students in correcting their mistakes in a timely manner.

(4) Considering the integrity of the learning process, the mini-program will incorporate a simulated examination module. This module will randomly assemble a complete test paper from the questions that students have typically solved. Through practicing with simulated test papers, students can better grasp the knowledge of traditional Chinese medicine terminology. Simultaneously, a search function for test questions will be added to assist students in quickly locating the relevant test questions they seek.

3.2 The Design Goal of Mini-programs

Firstly, the design of this mini-program is primarily targeted at foreign students with a certain foundation in Chinese (HSK Level 3 or above), majors related to traditional Chinese medicine (TCM), and enthusiasts of TCM. The main goal of the basic WeChat mini-program's TCM Chinese auxiliary practice and testing tool is to design a tool that utilizes the popularity and convenience of WeChat mini-programs in China, targeting all foreign students who study TCM and have a certain foundation in Chinese. This tool aims to help foreign students better grasp basic vocabulary and expression methods related to TCM majors, understand knowledge and content related to TCM, construct a framework of TCM knowledge, form a TCM thinking mode, and lay a solid foundation for professional learning. Students can conduct self-tests on the mini-program for the TCM Chinese knowledge they have learned in class and from books, and a solution to add error books will help them identify and correct their mistakes in the later stage.

4. Interface Design and Implementation Effect of the Mini Program for Assisted Practice and Testing of Traditional Chinese Medicine in Chinese

4.1 Design Features of the Mini-Program for Auxiliary Practice and Testing of Traditional Chinese Medicine in Chinese

The interface design of software serves as a bridge between

the application and user interaction, representing the user's first impression of the software. An excellent interface design enables users to easily get started, quickly understand and grasp the functions of the application, thereby enhancing usage efficiency [5]. Interface design is not only about aesthetics, but also about practicality and user experience. Therefore, I believe that the practice test mini-program should possess the following characteristics:

(1) Consistency

The program interface needs to maintain consistency in interface elements, style, and operation methods, so that users can reduce the time required to adapt when using the program, focus more on application usage and learning, and reduce user learning costs.

(2) Simplicity

The pursuit of simplicity in program interfaces aims to effectively meet functional requirements with the fewest elements, which is crucial in both software development and user interface design. It not only affects the user experience but also impacts the performance and maintenance efficiency of the program. Designing a simple program interface can reduce the cognitive burden on users, making it easier for them to understand and use the traditional Chinese medicine testing mini-program. At the same time, a simple design means less server resource occupation and faster loading speed, which can greatly enhance the user experience and reduce operational costs. A simple interface design can also give users a professional and tidy impression, while a cluttered program interface can make users feel distracted and irritable while learning.

(3) Intuitiveness

The layout of the interface should be clear and orderly, avoiding clutter and congestion. Through reasonable spacing, positioning, and grouping, the relationships between various elements should be immediately apparent. The text, icons, and symbols on the interface should be concise and easy to understand. For example, use universal icons to represent specific functions or operations, such as a mail envelope for email, a magnifying glass for search, etc.

(4) Operability

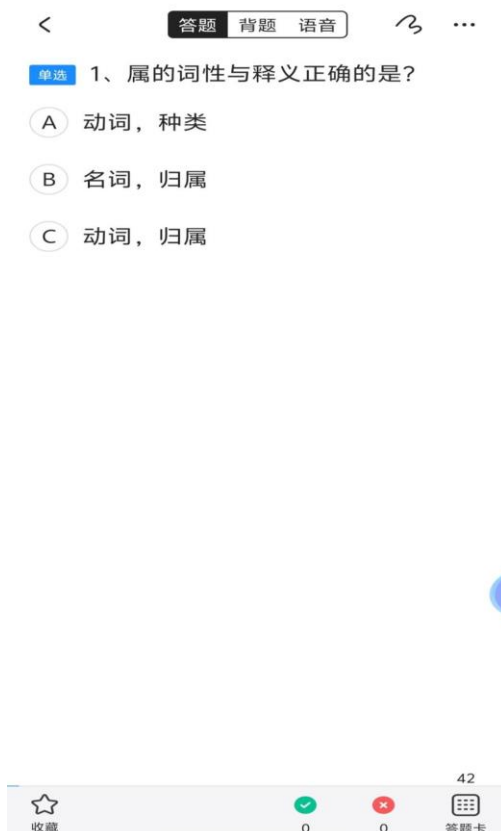
Interface elements should be easy to operate, such as buttons of moderate size and reasonable placement, to avoid user misoperations. At the same time, when users perform an operation, the interface should provide timely feedback to let them know that their operation has been received and is being processed by the system. This feedback can be visual, such as a color change after clicking a button, or auditory, such as a click sound effect.

4.2 Preliminary Effects of the Mini-program for Assisting Practice and Testing in Chinese Medicine

(1) User interface



(2) Answering interface



(3) Simulated Exam



5. Conclusion

This study revolves around the “Design and Application of a Traditional Chinese Medicine (TCM) Chinese Auxiliary Practice and Testing Tool Based on WeChat Mini-Programs”, aiming to address the difficulties foreign students face in understanding and memorizing professional terminology during their learning of TCM Chinese. By analyzing the current situation and characteristics of TCM Chinese teaching both domestically and internationally, and combining the convenience and popularity of WeChat Mini-Programs, a fully functional and easy-to-operate TCM Chinese auxiliary practice and testing tool has been designed. This tool integrates content from mainstream TCM Chinese textbooks, provides diversified practice modes (such as sequential practice, random practice, simulated exams, etc.), and adds practical functions such as a wrong answer book and question search, helping international students consolidate knowledge and identify and rectify weaknesses.

The innovation of this paper lies in combining traditional Chinese medicine (TCM) Chinese language teaching with modern information technology, fully utilizing the platform advantages of WeChat Mini Program to provide foreign students with an efficient and flexible learning method. The interface design focuses on consistency, simplicity, intuitiveness, and operability to ensure a smooth user experience. In addition, the design of the tool module not only meets the students' practice needs but also provides them with rich learning resources and convenient search functions, further enhancing learning efficiency.

In the future, with the acceleration of the internationalization of traditional Chinese medicine, the demand for Chinese language teaching in traditional Chinese medicine will

continue to grow. The mini-program designed in this study can be further optimized, such as introducing artificial intelligence technology to achieve personalized learning recommendations, or adding multi-language support to cover a wider range of user groups. At the same time, through cooperation with more colleges and universities of traditional Chinese medicine, the content of the question bank can be continuously updated to ensure the practicality and timeliness of the tool.

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