DOI: 10.53469/ijomsr.2024.07(06).03

Research Progress on the Development of Loose-leaf Teaching Materials of Chinese Medicine Specialty in Higher Vocational Colleges

Hua Zhang*, Zhiteng Zheng

College of Chinese Medicine, Guangzhou Huali Science and Technology Vocational College, Guangzhou, Guangdong
Correspondence Author, 83686113@ qq.com

Abstract: ***Starting from the background of loose-leaf teaching materials, this paper describes the background and current situation of the development of loose-leaf teaching materials in higher vocational colleges in China, particularly, summarizes the development status of loose-leaf teaching materials for Chinese Medicine specialty. This paper points out the problem of lagging development of loose-leaf teaching materials for Chinese Medicine specialty and analyzes the causes, it proposes some strategys for the development of loose-leaf teaching materials for Chinese Medicine specialty.***

Keywords: Higher vocational education; Chinese Medicine; Loose-leaf teaching materials.

1. INTRODUCTION

Loose-leaf teaching materials have gained widespread application in vocational education, particularly under the backdrop of "industry-education integration" and the "three reforms in education." The development of loose-leaf teaching materials in vocational education has been rapid. This paper provides an overview of the research progress in the development of loose-leaf teaching materials for Chinese Medicine specializations in higher vocational education, aiming to understand the current status, identify issues, analyze causes, seek solutions, and offer references for educational reforms in Chinese Medicine specializations.

2. BACKGROUND OF THE DEVELOPMENT OF LOOSE-LEAF TEACHING MATERIALS

In February 2019, the "National Implementation Plan for Vocational Education Reform" proposed: "Develop a large number of national planned teaching materials through school-enterprise 'dual' cooperation, advocate the use of new loose-leaf and workbook-style teaching materials, and support the development of informational resources. Revise the teaching materials every three years, with professional materials updated in a timely and dynamic manner in line with the development of information technology and industrial upgrades. Adapt to the development needs of 'Internet + vocational education', employ modern information technology to improve teaching methods, and promote the construction and widespread application of network learning spaces such as virtual factories." This marked the first proposal for the reform of vocational education teaching materials – the introduction of loose-leaf teaching materials.

In April 2021, the National Vocational Education Conference explicitly stated: "We must integrate the training systems of secondary, higher vocational, and undergraduate vocational education, deepen the 'three reforms in education', implement a comprehensive 'post-course-competition-certificate' education approach, and enhance educational quality." The conference once again emphasized the need to integrate professional job requirements into teaching material reforms to better refine content, promote industry-education integration, and enhance the overall quality of students.

3. OVERVIEW OF LOOSE-LEAF TEACHING MATERIAL DEVELOPMENT IN VARIOUS SPECIALIZATIONS OF HIGHER VOCATIONAL EDUCATION AND THE CURRENT STATUS IN PHARMACEUTICAL AND CHINESE MEDICINE CATEGORIES

3.1 Specializations Leading in Loose-leaf Teaching Material Development

In recent years, various specializations within vocational education have made bold attempts in teaching material reforms. Examples include Tea Art Service [1], Textile [2], and Automotive Manufacturing [3]. Loose-leaf teaching materials are not confined to practical training courses; many theoretical courses in vocational education have also adopted this format, such as “Advanced Mathematics” [4], “Engineering Mechanics” [5], and “Introduction to Transportation” [6]. The development of loose-leaf teaching materials in these specializations is student-centered and emphasizes personalization. The main characteristics are as follows:

(1) Aligning with job requirements, using real work tasks as the basis to achieve seamless integration between job roles and curriculum, thereby reinforcing industry-education integration.

(2) Benchmarking against professional skill competition regulations and national professional skill standards, enhancing the integration of competition and curriculum, as well as certificate and curriculum, making the teaching materials an essential tool and means for students to achieve effective learning and meet professional skill requirements.

(3) Incorporating information technology in teaching content, free from the constraints of location and time, allowing students to access industry trends and job requirements via PC or mobile devices at any time.

(4) Integrating ideological and political education into the curriculum. The core objective is to guide students in successfully fulfilling job requirements, aiming to cultivate high-quality skilled talents who are proficient in theory, operation, and management, and are welcomed by enterprises.

These loose-leaf teaching materials typically feature modular content, a combination of case studies and practice, an emphasis on formative assessment, enhanced interactivity, and ease of updating and upgrading.

3.2 Current Status of Loose-leaf Teaching Material Development in Pharmaceutical Specializations

Research on loose-leaf teaching materials within pharmaceutical specializations has primarily focused on nursing and pharmacy. Zheng Xiangyun et al. [7] have applied the “Job-Course-Competition-Certificate” integrated talent cultivation model to higher vocational nursing education. Based on an analysis of “Course-Job Integration,” “Course-Certificate Integration,” “Course-Competition Integration,” “Job-Certificate Integration,” and “Job-Competition Integration,” the loose-leaf teaching materials reflect school-enterprise integration, closely align with professional certification examination requirements, and construct a comprehensive practical teaching system, effectively improving students’ practical application abilities and thereby contributing to the stable development of China’s higher vocational education.

Sun Liyan et al. [8] addressed the main issues in the current teaching materials for Traditional Chinese Medicine Processing Technology in higher vocational education. They developed a loose-leaf teaching material for “Traditional Chinese Medicine Processing Technology” based on the integration of job roles and courses, competition and courses, certificates and courses, and ideological and political education and courses. Collaborating with multiple pharmaceutical companies, they engaged in dual development by the school and enterprise. By analyzing the national competition questions from the past 10 years, they designed the loose-leaf teaching material to achieve an organic integration of national competition standards with practical training teaching. The material was developed to meet the requirements of the national professional skill standard certification examination for “Traditional Chinese Medicine Processors,” adding a training and guidance function to the teaching material. Additionally, ideological and political elements were integrated into the material, using the “Intangible Cultural Heritage” of traditional Chinese medicine processing as a starting point to establish cultural confidence and strengthen the educational function of ideological and political education.

In the context of industry-education integration, the alignment of professional and course offerings in higher

vocational colleges with the talent demands of enterprises has become increasingly common. The content of loose-leaf teaching materials is becoming more attuned to clinical and enterprise development needs. Sun Jiajia et al. [9] proposed the establishment of a school-enterprise dual development team for the development of practical training materials in nursing, reflecting industry-education integration. The collaboration between enterprises and educational institutions resulted in the development of high-end simulation practical training loose-leaf teaching materials, which have enhanced the professional and comprehensive vocational abilities of nursing students in practical applications.

Wang Jinxia et al. [10] developed the loose-leaf teaching material "Pharmaceutical Quality Management Statistical Techniques" under the background of school-enterprise cooperation. They utilized modular teaching content design and a "Project + Task" format for the material content, designing the teaching process around projects and tasks, and supplementing it with digital teaching resources, thereby improving the overall quality level of students.

Yang Xiangguo et al. [11] conducted in-depth research on the characteristics of enterprise positions, closely linked the work process, and combined the characteristics of the course to reconstruct the framework for the teaching material "Traditional Chinese Medicine Identification Technology." They focused on professionalization scenarios, enriched the course resources with images and videos, and developed an integrated loose-leaf teaching material that combines theory and practice, reflecting the practical nature of the teaching material.

3.3 Current Status of Loose-leaf Teaching Material Development in Chinese Medicine Specializations

Research on loose-leaf teaching materials within Chinese Medicine specializations is limited, with the existing studies primarily focusing on courses centered on practical operations, such as "Techniques of Traditional Chinese Health Care" and "Massage Therapy." The development strategies for these teaching materials are largely similar to those in other specializations, adhering to key concepts such as "work process orientation," "integration of job roles and courses," "digital resources," and "integration of ideological and political elements."

For instance, Huang Bingjie et al. [12] developed a task-based loose-leaf teaching material, "Techniques of Traditional Chinese Health Care," which is grounded in job analysis. The material is designed with teaching modules that reflect job characteristics, while also integrating informational resources and ideological and political elements. This approach ensures that theory effectively guides practice, and that theoretical knowledge is applied and integrated in practical settings.

Li Hong et al. [13], against the backdrop of industry-education integration, reconstructed the course content modules for "Massage Therapy." The development of the teaching material was based on job capability analysis, guided by the work process, and involved the creation of a teaching resource library to produce a multi-dimensional loose-leaf teaching material. This aligns with the learning strategies of higher vocational students and facilitates a seamless transition between skills acquisition and job roles.

In addition to practical training courses, the Chinese Medicine specialization encompasses a significant number of theoretical courses, such as "Fundamentals of Traditional Chinese Medicine," "Diagnosis in Traditional Chinese Medicine," "Pharmacology of Chinese Herbs," and "Prescription Studies." These courses hold a vital position within the Chinese Medicine teaching system. However, as of now, loose-leaf teaching materials for these primarily theory-based fundamental courses have not yet emerged.

4. STATUS ANALYSIS

Since the "National Vocational Education Reform Implementation Plan" proposed the promotion of "new types of loose-leaf and workbook-style teaching materials" in 2019, there has been an upsurge in the reform of teaching materials across various specializations in vocational education. Particularly, science and engineering specializations have taken the lead, adopting loose-leaf teaching materials not only for practical training courses but also for some fundamental theoretical courses.

The reform of medical teaching materials currently focuses mainly on practical training, with the nursing and pharmacy specializations, which emphasize skills, experiencing the fastest development. In contrast, the development of Chinese Medicine specializations is relatively lagging. This may be attributed to the absence of standardized skill criteria for Chinese Medicine and the lack of related vocational skill competitions. However,

loose-leaf teaching materials are not solely applicable to practical training courses; they are equally suitable for theoretical courses. The compilation of practical, flexible, and engaging loose-leaf teaching materials serves as an effective means to enhance student interest in learning and improve academic performance.

5. DEVELOPMENT STRATEGIES FOR LOOSE-LEAF TEACHING MATERIALS IN CHINESE MEDICINE SPECIALIZATIONS

Given the current state of development for loose-leaf teaching materials in Chinese Medicine specializations, there is significant room for growth in the reform of teaching materials for higher vocational Chinese Medicine programs. In the development of loose-leaf teaching materials, it is advisable to draw on the experiences of other specializations while also considering the unique characteristics of Chinese Medicine. The following strategies can be employed:

(1) Student-centered Approach. Students in higher vocational colleges are pragmatic, favoring practice over theory, and are more motivated by knowledge that can be immediately applied in real-world scenarios. They tend to be passive in their learning, benefiting from clear task-oriented learning processes. Additionally, they may exhibit a tendency towards laziness, thus incorporating elements of fun and skill into the learning material can enhance their engagement. Traditional theory-focused teaching materials may fail to captivate their interest, so the development of teaching materials should prioritize practicality and engagement.

(2) Align with Competitions and Certification Exams. Although there is no unified vocational skill competition for Chinese Medicine specializations at the higher vocational level, some regional competitions can serve as a reference. In terms of certification exams, the syllabus for the Assistant Physician Qualification Exam corresponds to the higher vocational level. Therefore, when developing teaching materials, the content can be aligned with the syllabus of the Assistant Physician Qualification Exam, and course modules can be designed in accordance with competition regulations, creating a versatile and practical teaching tool that serves multiple purposes.

(3) Closely Integrate with Clinical Positions, Guided by the Work Process. Clinical courses in Chinese Medicine, such as “Internal Medicine of Chinese Medicine,” “Surgical Medicine of Chinese Medicine,” “Gynecology of Chinese Medicine,” “Pediatrics of Chinese Medicine,” “Acupuncture and Moxibustion,” and “Tuina,” are inherently closely related to clinical practice and can fully adopt a work process-oriented approach in their development. Basic courses like “Diagnostics of Chinese Medicine,” “Pharmacology of Chinese Medicine,” and “Prescription Studies” are also closely integrated with clinical diagnosis and medication. Therefore, the development of teaching materials for Chinese Medicine specializations should emphasize the integration of theory and practice, with joint efforts from both academic faculty and clinical practitioners.

(4) Utilize Digital Resources. Certain concepts in Chinese Medicine are abstract and difficult to comprehend. The use of digital resources such as images and videos can enhance understanding. Moreover, establishing a digital resource library allows students to review the material through videos outside of class if they have not fully grasped the knowledge during the lesson.

(5) Incorporate Ideological and Political Elements. Chinese Medicine is a treasure of the Chinese nation, carrying thousands of years of wisdom and experience. While studying Chinese Medicine, it is important to guide students to truly understand, believe in, and apply Chinese Medicine, thereby fostering cultural confidence in the nation’s heritage. This is also a primary teaching objective.

6. CONCLUSION

This paper provides an overview of the current state of loose-leaf teaching material development across various specializations in higher vocational education, with a particular focus on the status quo in pharmaceutical and Chinese Medicine specializations. It describes the primary forms of loose-leaf teaching material development in these disciplines and highlights the relative lag in the development of such materials within Chinese Medicine specializations. The development of loose-leaf teaching materials aligns with the contemporary context and national policy orientation. However, the development and usage of loose-leaf teaching materials in Chinese Medicine specializations within higher vocational colleges are still in their infancy, with only a few courses having such materials, while the development for most courses remains nascent. The author analyzes the reasons and proposes several strategies, hoping to further optimize and refine the development of loose-leaf teaching materials

in Chinese Medicine, thereby advancing vocational education reform and the high-quality development of Traditional Chinese Medicine.

REFERENCES

[1] Jiao Qiao. Development and design of loose-leaf teaching materials based on the integration of "Post-Course-Competition-Certificate" – A case study of the "Tea Art Service Training" teaching material development [J]. Journal of Wuhan Polytechnic, 2021,20(6):61-66.
[2] Wan Jiangli. Exploration of new loose-leaf teaching material development under the modern apprenticeship system – A case study of the "Textile Materials and Experiment" course[J]. Footwear Technology and Design, 2024,4(12):3-5.
[3] Li Huayu. Discussion on the planning and publication of national planned teaching materials for vocational education in transportation under the "Fourteenth Five-Year Plan" – A case study of "Automotive Painting Technology (Loose-leaf)" [J]. Communication and Copyright, 2024,12:16-18.
[4] Yang Xiaojuan, Li Huan, Wang Shijing. Research on the "Loose leaf" Textbook of Higher Mathematics in Vocational Colleges under the Background of the "Three Education" Reform: A Case Study of Shaanxi Mechanical and Electrical Vocational and Technical College[J]. Proceedings of the 2024 Higher Education Development Forum and Ideological and Political Seminar (Volume 1),2024,175-176.
[5] Long Lili. The development path of loose-leaf teaching materials under the background of "Double High" construction – A case study of the "Engineering Mechanics" loose-leaf teaching material development[J]. Modern Vocational Education, 2024,13(4):101-104.
[6] Guo Shizhong, Zhang Xinyu. Research on the loose-leaf teaching material of "Introduction to Transportation" based on PBL[J]. Journal of Hebei Energy Vocational and Technical College,2024,1:90-93.
[7] Zheng Xiangyun, Zhang Lili, Lu Ye. Exploration of the talent training model of integrating "Post-Course-Competition-Certificate" – A case study of the higher vocational nursing major[J]. Charm China, 2021, (38):393-394.
[8] Sun liyan, Dou Guoyi, Fu Hong. Development and research of loose-leaf teaching materials for "Traditional Chinese Medicine Processing Technology" in higher vocational education based on the integration of "Post-Course-Competition-Certificate" [J]. Tianjin Vocational Colleges United Journal, 2022,24(5):8-13, 63.
[9] Sun Jiajia, Pu liping, Yu Xiaoyi. Development and application practice of school-enterprise cooperative nursing comprehensive training loose-leaf teaching materials from the perspective of industry-education integration[J]. Win the Future, 2022(23):76-78.
[10] Wang Jingxia, Zhou Xiujuan. Research on the design of loose-leaf teaching materials for the course "Pharmaceutical Quality Management Statistical Techniques" in higher vocational education under the background of school-enterprise cooperation[J]. Industry and Science Forum, 2021,20(20):119-120.
[11] Yang Xianguo, Chu Sisi, Li Feiyan. Research on the development and construction of the integrated loose-leaf teaching material of "Traditional Chinese Medicine Identification Technology" for the traditional Chinese medicine major in higher vocational education[J]. Guangdong Chemical Industry, 2021,48(17):264-265.
[12] Huang Bingjie. Development and design of loose-leaf teaching materials based on work tasks – A case study of Traditional Chinese Medicine Health Care Technology[J]. Yanbian Education College Journal, 2023,37(1):41-47.
[13] Li Hong. Curriculum reform of "Tuina" based on the work process under the background of industry-education integration[J]. Science and Education Guide, 2024,15:96-98.

Author Profile

Hua Zhang, Postsecondary Teacher, attending doctor, obtained a master's degree from Beijing University of Chinese Medicine, College of Chinese Medicine, Guangzhou Huali Science and Technology Vocational College. Research direction: education and human development.

Zhiteng Zheng, student of Guangzhou Huali Science and Technology Vocational College.