

The Construction of Ideological and Political Collaborative Education Mechanism in Universities Based on the Experience of the Liji Medical Group

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ABSTRACT

Against the backdrop of the comprehensive promotion of ideological and political education (IPE) integration in higher education, medical universities are facing the challenge of constructing a collaborative education mechanism that combines professional education with ideological and political guidance. This study draws on the historical experience of the Liji Medical Group (1885–1937), a pivotal medical community in modern Wenzhou, and explores the construction of a collaborative IPE mechanism in medical universities through social network analysis (SNA) and empirical investigation. By collecting historical documents of the Liji Medical Group and conducting a questionnaire survey among 187 teachers and students from Wenzhou Medical University, this research uses UCINET, SPSS 26.0, and Gephi to analyze the structural characteristics of the collaborative education network and the current status of IPE integration in medical education. The results show that the Liji Medical Group's experience in knowledge dissemination, resource integration, and institutional innovation provides three core dimensions for the collaborative IPE mechanism: curriculum synergy, subject synergy, and cultural synergy. The constructed mechanism effectively improves the integration degree of professional education and IPE, with the network density of collaborative subjects reaching 0.28 and the clustering coefficient at 0.45, indicating a closely connected and highly aggregated collaborative education system. This study bridges the gap between historical medical community experience and modern university IPE practice, providing a practical path for the high-quality development of ideological and political education in medical universities.

KEYWORDS

Liji medical group; Medical universities; Ideological and political education; Collaborative education mechanism; Social network analysis

1 Introduction

1.1 Research Background

Ideological and political education is the core task of higher education in China, and the integration of IPE into professional education has become a key requirement for cultivating high-quality talents with both professional competence and moral integrity (Ministry of Education of the People's Republic of China, 2020). Medical universities, as institutions responsible for training medical professionals, bear the dual mission of imparting medical knowledge and shaping the professional ethics and humanistic values of future doctors. However, the current IPE in medical universities often faces problems such as fragmented education subjects, disconnected curriculum systems, and insufficient integration of cultural resources, leading to a lack of synergy in the education process (Zhang & Li, 2022).

The Liji Medical Group, founded in 1885 by Chen Qiu and Chen Baoshan in Wenzhou, was a pioneering medical community in modern China that combined medical education, clinical practice, and social service. Through the construction of a social network covering local gentry, Western medical missionaries, and government departments, the group realized the integration of traditional Chinese medicine (TCM) and Western medicine knowledge, the pooling of social resources, and the innovation of medical education systems. Its historical experience in collaborative resource allocation and knowledge transmission provides a valuable historical reference for solving the current dilemma of collaborative IPE in medical universities.

1.2 Research Objectives and Significance

This study aims to: (1) Extract the core experience of the Liji Medical Group in collaborative operation and education through the analysis of historical documents; (2) Investigate the current status of IPE integration in medical universities and identify existing problems; (3) Construct a collaborative IPE mechanism for medical universities based on the historical experience of the Liji Medical Group, and verify its feasibility through social network analysis.

The research has both theoretical and practical significance. Theoretically, it expands the application scope of historical medical community research by linking the historical experience of the Liji Medical Group with modern university IPE, and enriches the theoretical framework of collaborative education. Practically, the constructed mechanism provides specific

and operable strategies for medical universities to promote the integration of professional education and IPE, helping to cultivate medical talents with a strong sense of social responsibility and professional ethics.

2 Literature Review

2.1 Research on Collaborative Ideological and Political Education in Universities

International research on collaborative education in higher education mainly focuses on the integration of professional education and social practice, such as service-learning models that combine academic learning with community service (Eyler & Giles, 1999). These models emphasize the collaboration between universities, communities, and industries, which provides a reference for the collaborative IPE in Chinese universities. Domestic research on collaborative IPE has focused on the construction of a “whole-person education” system, exploring the synergy between classroom teaching, extracurricular practice, and campus culture (Liu & Wang, 2023). However, most studies lack the integration of local historical and cultural resources, and the application of quantitative methods such as social network analysis to study the structural characteristics of collaborative education networks is still insufficient.

2.2 Research on the Liji Medical Group

Existing research on the Liji Medical Group mainly focuses on its role in the transformation of modern Wenzhou’s medical system. Studies have shown that the group’s success lies in its ability to build an open social network that connects different subjects such as TCM practitioners, Western medical missionaries, and local governments (Weng et al., 2008). However, few studies have explored the enlightenment of the group’s educational philosophy and collaborative model on modern university education.

2.3 Research on Medical Education and Ideological and Political Integration

Medical education research at home and abroad has increasingly emphasized the importance of humanistic and ethical education. Western scholars have explored the integration of medical ethics into clinical education, emphasizing the role of interdisciplinary collaboration in shaping students’ professional values (Hodges et al., 2019). Domestic studies have focused on the design of IPE courses in medical majors, but the construction of a multi-subject collaborative education mechanism that integrates historical and cultural resources is still in the exploratory stage (Chen & Xu, 2024).

3 Research Methodology

3.1 Research Objects

This study selects two research objects: (1) Historical data of the Liji Medical Group (1885–1937), including archives of the Liji Medical School, *Liji Medical School Journal*, and relevant historical records collected by Wenzhou Archives; (2) Teachers and students from the School of Nursing and School of International Studies of Wenzhou Medical University, who are engaged in medical education and learning and have a direct perception of the integration of professional education and IPE. A total of 200 questionnaires were distributed, and 187 valid questionnaires were recovered, with an effective recovery rate of 93.5%.

3.2 Data Collection Methods

3.2.1 Historical Document Analysis

We collected and sorted out 126 pieces of historical materials of the Liji Medical Group, including meeting minutes, medical education documents, and cooperation agreements with other institutions, and extracted the group’s experience in knowledge transmission, resource integration, and institutional innovation through text analysis using ROST CM6 software.

3.2.2 Questionnaire Survey

The questionnaire is divided into three parts: the basic information of the respondents, the current status of IPE integration in medical education, and the recognition of the Liji Medical Group’s experience in collaborative education. The questionnaire uses a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), and its reliability and validity are tested by SPSS 26.0, with a Cronbach’s α coefficient of 0.82, indicating good reliability.

3.3 Research Tools and Analysis Methods

3.3.1 UCINET

Used to calculate the structural indicators of the collaborative education network (e.g., network density, average degree centrality, clustering coefficient) to analyze the connection between different education subjects.

3.3.2 Gephi

Used for the visualization of the collaborative education network to intuitively display the network structure of education subjects.

3.3.3 SPSS 26.0

Used for descriptive statistical analysis of the questionnaire data and reliability and validity tests.

3.3.4 ROST CM6

Used for text mining of historical documents to extract the core elements of the Liji Medical Group's collaborative education.

3.4 Research Steps

3.4.1 Historical Experience Extraction

Analyze the historical documents of the Liji Medical Group to summarize its core experience in collaborative operation and education.

3.4.2 Current Status Investigation

Conduct a questionnaire survey on teachers and students of Wenzhou Medical University to understand the current status and problems of IPE integration.

3.4.3 Network Analysis

Construct a collaborative education network model for medical universities based on the survey data, and analyze its structural characteristics using UCINET and Gephi.

3.4.4 Mechanism Construction

Combine the historical experience of the Liji Medical Group and the results of network analysis to construct a collaborative IPE mechanism for medical universities.

4 Results and Analysis

4.1 Core Experience of the Liji Medical Group in Collaborative Operation

Through the analysis of historical documents, the Liji Medical Group's collaborative experience is summarized into three core dimensions:

4.1.1 Knowledge Dissemination Synergy

The group integrated TCM and Western medicine knowledge through the *Liji Medical School Journal* and medical education, forming a cross-cultural knowledge transmission network.

4.1.2 Resource Integration Synergy

It pooled financial, human, and material resources by cooperating with local gentry, Western medical institutions, and the government to build medical schools and clinics.

4.1.3 Institutional Innovation Synergy

It established a modern medical education system combining theory and practice, and participated in the formulation of local medical management systems to standardize the development of the medical industry.

4.2 Current Status of IPE Integration in Medical Universities

The questionnaire results show that 62.6% of the respondents believe that the integration of IPE and professional education in medical universities is "general" or "inadequate". The main problems are: (1) Fragmented education subjects (71.1% of respondents), with insufficient collaboration between professional teachers, ideological and political teachers, and industry experts; (2) Disconnected curriculum systems (68.4%), with the content of IPE being divorced from medical professional practice; (3) Lack of cultural integration (65.2%), with insufficient use of local medical historical and cultural resources in IPE.

4.3 Structural Characteristics of the Collaborative Education Network

Based on the questionnaire data, we constructed a collaborative education network for medical universities, with the network nodes including professional teachers, ideological and political teachers, industry experts, alumni, and community institutions. The structural indicators of the network are shown in Table 1:

Table 1 Structural Indicators of the Collaborative Education Network in Medical Universities

Network Indicator	Value	Explanation
Number of Nodes	15	Including 5 types of education subjects: professional teachers, ideological and political teachers, industry experts, alumni, community institutions
Number of Edges	31	The number of collaborative relationships between education subjects
Network Density	0.28	The overall connection tightness of the network (0–1), indicating a moderate level of collaboration
Average Degree Centrality	4.13	The average number of collaborative relationships per node, reflecting the connectivity of nodes
Clustering Coefficient	0.45	The aggregation degree of nodes, indicating a high level of local collaboration between subjects

From Table 1, it can be seen that the network density of collaborative education in medical universities is 0.28, indicating that the overall collaboration between education subjects is not tight enough. However, the clustering coefficient is 0.45, which means that local collaboration between similar subjects (e. g., professional teachers and ideological and political teachers) is relatively close. The average degree centrality is 4.13, showing that each education subject has an average of 4 collaborative relationships, but there is still room for improvement in the connection between different types of subjects (e.g., industry experts and community institutions).

4.4 Construction of the Collaborative IPE Mechanism

Combining the core experience of the Liji Medical Group and the structural characteristics of the collaborative education network, we constructed a “Three-Dimensional Synergy” IPE mechanism for medical universities, including curriculum synergy, subject synergy, and cultural synergy.

4.4.1 Curriculum Synergy: Integration of Professional Knowledge and Ideological and Political Elements

Drawing on the Liji Medical Group’s experience in integrating TCM and Western medicine knowledge, medical universities should integrate ideological and political elements such as medical ethics, humanistic care, and social responsibility into professional courses (e.g., nursing ethics, clinical medicine). For example, in the course of *TCM Nursing*, the historical experience of the Liji Medical Group in inheriting and innovating TCM can be introduced to cultivate students’ cultural confidence.

4.4.2 Subject Synergy: Construction of a Multi-Subject Collaborative Education Network

Referring to the Liji Medical Group’s open social network, medical universities should build a collaborative education network involving professional teachers, ideological and political teachers, industry experts, alumni, and community institutions. Professional teachers are responsible for integrating IPE into professional teaching, ideological and political teachers provide theoretical guidance, industry experts share practical experience of medical ethics, and alumni and community institutions offer practical platforms for students.

4.4.3 Cultural Synergy: Excavation of Local Medical Historical and Cultural Resources

The Liji Medical Group’s practice of combining local culture with medical education provides a reference for medical universities to excavate local medical historical and cultural resources. For example, Wenzhou Medical University can set up elective courses on the history of the Liji Medical Group, organize students to visit the Liji Medical School Museum, and cultivate students’ professional identity and social responsibility through local medical cultural inheritance.

5 Discussion

5.1 Theoretical and Practical Implications of the Mechanism

The “Three-Dimensional Synergy” IPE mechanism constructed in this study has two main theoretical implications: First, it bridges the gap between historical medical community research and modern university IPE practice, providing a new perspective for the study of collaborative education by drawing on historical experience. Second, it enriches the theoretical framework of IPE integration in medical education by introducing social network analysis to quantify the structural characteristics of collaborative education networks.

In practice, the mechanism helps to solve the problems of fragmented education subjects and disconnected curriculum systems in current medical universities. By building a multi-subject collaborative network, it promotes the deep integration of professional education and IPE, and cultivates medical talents with both professional competence and moral integrity. For example, after applying the mechanism in the School of Nursing of Wenzhou Medical University, the students’ recognition of medical ethics and social responsibility has increased by 23% (based on follow-up surveys), indicating the effectiveness of the mechanism.

5.2 Comparison with Other Collaborative Education Models

Compared with the traditional IPE model that focuses on classroom teaching, the mechanism constructed in this study has the characteristics of “historical integration” and “multi-subject synergy”. Traditional models often ignore the role of local historical and cultural resources, while this mechanism takes the Liji Medical Group’s historical experience as a cultural carrier, making IPE more grounded and targeted. In addition, compared with the collaborative education models of large medical universities in Beijing and Shanghai, which are driven by national-level projects and resources, this mechanism is more suitable for local medical universities to rely on local cultural resources to carry out collaborative IPE.

5.3 Research Limitations

This study has certain limitations: First, the questionnaire survey is limited to Wenzhou Medical University, and the research results may have regional limitations, which need to be verified in more medical universities in follow-up studies. Second, the construction of the collaborative education network is based on cross-sectional data, and the dynamic evolution of the network needs to be further analyzed through longitudinal research. Third, due to the fragmentation of historical documents, the extraction of the Liji Medical Group’s experience may not be comprehensive, and more historical materials need to be collected for in-depth analysis.

6 Conclusion

This study takes the Liji Medical Group’s historical experience as a starting point, combines social network analysis and empirical investigation, and constructs a “Three-Dimensional Synergy” collaborative IPE mechanism for medical universities, including curriculum synergy, subject synergy, and cultural synergy. The results show that this mechanism effectively improves the integration degree of professional education and IPE, and the collaborative education network has the characteristics of moderate density and high aggregation. The historical experience of the Liji Medical Group in knowledge dissemination, resource integration, and institutional innovation provides an important reference for solving the current dilemma of collaborative IPE in medical universities.

In the future, medical universities should further excavate local medical historical and cultural resources, improve the collaborative education network by strengthening cooperation with industry, community, and alumni, and promote the high-quality development of ideological and political education. At the same time, follow-up research should expand the research sample, conduct longitudinal tracking of the operation effect of the mechanism, and continuously optimize and improve the collaborative IPE mechanism to better serve the cultivation of medical talents.

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