Exploring Strategies to Enhance the Teaching Ability of Chinese Educators in Chinese+Medical Education: A Case Study of Dali University

Huan Zhifeng, Wu Ping

International College, krirk University, Thailand
Email: 379402443@qq.com

Abstract

Study explores the core areas that enhance the teaching ability of Chinese teachers in the Chinese+Medical learning program. The participants in the study were 150 students of Dali University and questionnaires were used to collect data from the participants. Structural Equation Modelling (SEM), Pearson correlation analysis, and ANOVA test were conducted to determine the relationship of these factors. The results of the Pearson correlation are the following findings: teaching experience (TE) has a small positive correlation with teaching ability ($r = 0.40, p = 0.05$) while professional development training (PDT) has a strong positive correlation with the teaching ability, ($r = 0.52, p = 0.01$) and the pedagogical strategies (PS) ($r = 0.47$, $p = 0.03$) have the strongest positive connections with teaching ability, teacher collaboration (TC) ($r = 0.30, p = 0.10$) and educational resources (ER) ($r = 0.35, p = 0.07$) exhibit weaker non-significant associations. The SEM analysis findings indicate that the highest path coefficients about teaching ability areTE ($C = 0.30, p = 0.02$), TC ($C = 0.40, p = 0.01$), PDT ($C = 0.45, p = 0.01$),PS ($C = 0.35, p = 0.01$), and ER($C = 0.25, p = 0.03$). The findings of the ANOVA also indicate high variation in teaching competency regarding different PDT ($p = 0.03$), TE ($p = 0.02$), ER ($p = 0.01$), PS ($p = 0.04$), and TC ($p = 0.02$). The results altogether suggest that the most significantkey elements that can be employed to improve the teaching ability within Chinese+Medical Education are PDT and TC.

Keywords: Teaching Ability, Chinese Teachers, Chinese+Medical Education, Dali University.

1. Introduction

The teacher problem is the issue ofteachers affecting the development and effectiveness of the discipline of international Chinese education. This difficulty becomes quite pronounced in the concept of Chinese +Vocational Skills, where Chinese language learning is integrated with vocational /Technical education (Chen et al., 2020). The educational approach is to equip the students with the necessary specialized skills with an option in several careers such as medicine in addition to mastering the Chinese language. The reasons for this intensified interest in this

transdisciplinary approach are its effectiveness in enhancing language abilities as well as the occupationally relevant competencies that will lead to a wider spectrum of employment of learners (Macaro and Han 2020).

Chinese education is heavily influenced by the historical and cultural heritage of the country. To cultivate in students a far-reaching awareness of their cultural and historical contexts, Chinese education has long emphasized the education of ancient texts, especially literature, philosophy, and art (Liu et al., 2021). But as the world evolves and as the demand for more specific knowledge arises, Chinese educators have no other option than to integrate these relatively new scientific disciplines especially medicine into their system. To eliminate this type of knowledge gap, the Chinese+Medical approach in education is the combination of medical information in the Chinese education system, thus availing a broad range of knowledge and inputs to the teachers (Tsegay et al., 2022).

To increase the capacity of teaching for Chinese instructors, several key strategies are needed with the help of this integrated framework (Liang et al., 2020). First and foremost, it is imperative to design professional development programs to enhance educators' knowledge concerning medical concepts and how such knowledge can be oriented toward multicultural contexts. Their purpose should be to come up with ways on how the teachers can effectively integrate medical information into the traditional Chinese modes of teaching to enrich the learning of the students (Qian et al., 2020). Besides, to equip educators with up-to-date information and tools, the collaboration between educational institutions and related medical societies is imperative.

However, it is also found that focusing on distinctive curricula is viable to ensure this teaching methodology, which is effective and successful. Teachers can give students a better understanding of Chinese culture as well as nowadays' science by creating courses based on traditional Chinese texts and the experience of the medical specialists (Jin et al., 2021). Itmakes the course content more engaging, but it also prepares students for any employment opportunity that can be out there. In the last place, it is critical to improve this Chinese+Medical education model after a series of assessments to succeed. Regular checks of the instructional approaches and students' outcomes will help identify directions for improvements and make sure that the utilization of medical information raises the quality of learning (Xie, 2021).

This research examines the strategies that are significant in developing the teaching ability of Chinese teachers in Chinese+Medical learning.

In section 2, a list of literature reviews is provided. In section 3, the approach is explained. The findings are mentioned in section 4. The discussions are covered in section 5. In section 6, the conclusion is provided.

2. Related works

Both the advantages and disadvantages of medical education in China were highlighted by (Yang et al., 2020) during the COVID-19 pandemic. Those who want to change medical education in the rest of China and around the globe might find these lessons useful.

Through examining regional online medical instruction in China, Su et al., (2021) offered practical resources and approaches that had been effectively employed in teaching throughout the challenging COVID-19 period, despite ongoing difficulties. Traditional classroom teaching would probably continue to be significantly impacted by the investigation of the shift to online teaching or learning.

The current state of medical education in China has been discussed (Wang, 2021), with an emphasis on recent advancements. According to the new regulations, medical education in China would create more trained health professionals to satisfy the needs of the Chinese population.

Medical schools worldwide were faced with the problem of conducting all of their instruction online due to insufficient planning and ongoing efforts to combat COVID-19 were examined by (Jiang et al., 2021). To guarantee a smooth transition to e-learning, pilot medical schools could share their personalized instructional learning experiences.

The relationship between medical students' impressions of their current formal online education and their earlier online learning experiences was investigated by (Wang et al., 2020). Furthermore, there was less correlation between perceived usefulness (PU) and students' satisfaction and assessment of their continued online education as higher their learning phases.

Li et al., (2021) investigated the factors that influenced the online education satisfaction of foreign medical and nursing students from low- and middle-income countries (LMICs) during the COVID-19 pandemic, as well as the quality of online education provided in China. A well-completed course assignment was the most important facilitator for students, and the efficient management of the online courses was the most important facilitator for teachers.

To find out whether undergraduate dental students and standardized resident physician training students in China during the COVID-19 epidemic were satisfied with online dentistry teaching methods were evaluated by (Jiang et al., 2021). Students who took COVID-19 courses were better able to comprehend how to stop the virus from spreading in dental clinics.

2.1 Hypothesis development

H1: PDT in Chinese+Medical education has a significant and positive correlation with the improvingteaching ability of teachers in China.

Specialized training equips teachers with targeted skills and knowledge, enhancing their ability to integrate medical content with Chinese instruction, which should improve their overall teaching effectiveness in this specialized field.

H2: TE in Chinese+Medical education has a significant and positive correlation with the improving teaching ability of teachers in China.

It is perceived that the current teachers are likely to employ enhanced instructional practices and comprehension of both the courses – Chinese and Medical education, which will improve the learning process and deliver positive impacts in the achievement of intended Chinese+Medical education teaching goals.

H3:ER in Chinese+Medical education has a significant and positive correlation with the improving teaching ability of teachers in China.

The availability of resources enables teachers to have the necessary tools and teaching aids to implement proper approaches to teaching integrated topics for Chinese+medical education.

H4:PS in Chinese+Medical education has a significant and positive correlation with the improving teaching ability of teachers in China.

Interdisciplinary teaching integrated into PS focused on language and medical sciences better overcome the challenges of managing two learning processes simultaneously, which in turn helps teachers give better performances and improve the results of students.

H5:TC in Chinese+Medical education has a significant and positive correlation with the improving teaching ability of teachers in China.

Collaboration between language and medical professionals fosters shared expertise and insights, which enhances teaching practices and effectiveness in integrating medical content with Chinese language instruction.

3. Methodology

In this research, SEM analysis is used to examine the impact of various factors on improving the teaching ability of Chinese teachers in Chinese+Medical education. The dependent variable in this study is teaching ability, which is influenced by several independent variables: PDT, TE, availability of ER, implementation of PS, and TC. These variables are investigated to understand how they contribute to enhanced teaching effectiveness. The conceptual framework in Figure 1 illustrates the role of these factors in improving teaching abilities.

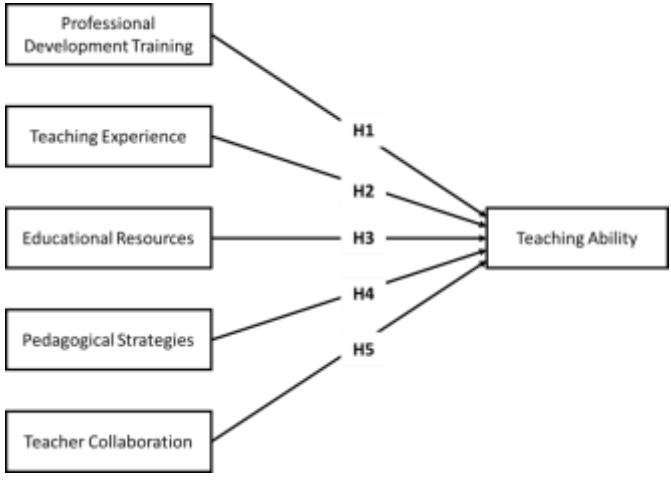

Figure 1: Conceptual framework

3.2 Data collection

A mixed-methods strategy will be used in this study to collect data, with a particular emphasis on quantitative surveys of student outcomes. A systematic survey will be given to about 150 students who are enrolled in Dali University's Chinese+Medical education program. Important factors including language ability, acquiring practical skills, and general program satisfaction will all be gauged by this survey. To give a complete depiction of student outcomes, additional information on academic performance,such as grades and skill assessments, will be gathered. Assessing how better teacher preparation affects student learning and performance in the setting of Chinese+medical education,these data will be considered in Table 1.

Table 1: Demographic table

Variable	Category	Count	Percentage
Gender	Male	75	50%
	Female	75	50%
Age	18-22	90	60%
	23-30	45	30%
	31-40	10	6.7%
	41+	5	3.3%
Year of Study	1st Year	60	40%
	2nd Year	50	33.3%
	3rd Year	25	16.7%
	4th Year or Above	15	10%
Program	Chinese+Medical	150	100%
Enrolment Status	Full-time	135	90%
	Part-time	15	10%

3.3 Structure questionnaire

The questionnaire is designed to help Chinese teachers become more proficient teachers of Chinese+Medical education. The three-question H1 evaluates the frequency of PDT, its efficacy, and its influence on instructional results for instructors. Two questions in the H2 section assess how prior TE in the Chinese+Medical education sector affects the efficacy of instruction. Two questions in the ER section examine how often new resources are accessed and how they support improved teaching techniques. Two questions in the PS section look at the use of creative teaching strategies and how they affect learning outcomes and student engagement. The final portion, TC, consists of three questions that investigate the frequency and advantages of teacher collaboration as well as how it affects student achievement and teaching improvements.Table 2 shows the questionnaire.

Table 2: Structural questionnaire

Variables	Questions
PDT	To what extent does your university offer Chinese+Medical Education teacher's opportunities for professional development?
	How successful do you think the professional development programs are at enhancing your ability to teach?
	How much have the student outcomes and your teaching methods improved as a result of these professional development programs?

TE	How long have you been a Chinese+Medical Education teacher?
	What effect, in your opinion, did your teaching experience have on your capacity to teach Chinese+Medical Education?
ER	To what extent does your institution support Chinese+Medical Education through the provision of new educational resources?
	How have these educational resources improved your capacity to impart Chinese+Medical Education instruction?
PS	In your Chinese+Medical Education classes, how often do you implement new pedagogical techniques?
	Regarding learning outcomes and student engagement, how would you assess the effects of these pedagogical strategies?
TC	In the curriculum of Chinese+Medical Education, how frequently do you work with other teachers?
	How much can teamwork among coworkers enhance your instructional strategies and efficacy?
	What impact has greater teacher collaboration had on the academic performance of Chinese+Medical Education students?

3.4 Statistical analysis

The strength of the relationships between Chinese teachers' developing teaching abilities in Chinese+Medical education and SEM was assessed. Path analysis was used to evaluate the strength and direction of the relationships between teaching abilities and different educational techniques. To find out if there were any notable variations in the effectiveness of instruction based on different educational approaches, Analysis of Variance (ANOVA) was employed. Pearson correlation analysis was used to examine the links between teaching skills, pedagogical techniques, and teacher training in Chinese+Medical education to make sure the measuring model was appropriate for the data.

4 Result

Using the components in this section, the Pearson Correlation, SEM Analysis, and ANOVA were assessed.It defines the orientation and intensity of linear relationship between two variables that are invariant in nature. It may indicate how aspects put into consideration influence the teaching ability with relation to increasing the capability of Chinese teachers to teach medical education in Chinese. A positive correlation confirms that as one variable increases, the other is likely to do the same, whereas a negative association points at an unfavourable position. This process assists in establishing which elements have high positive correlation with higher teaching performance. Pearson correlation coefficient is used to establish the degree of relationship between two variables, which are both continuous in nature; the greater the value of r, the stronger the two variables are related in the manner of positive linear association. A statistically significant correlation is usually a P-value less than 0.05, as shown in Table 3.

Table 3:Pearson Correlation result

Hypothesis	Pearson Correlation Coefficient with Teaching Ability (r)	p-value
H1	0.52	0.01
H2	0.40	0.05
H3	0.35	0.07

H4	0.47	0.03
H5	0.30	0.10

H1 shows a significant positive association between teaching abilities and PDT (r = 0.52, p = 0.01). This suggests that among Chinese teachers enrolled in the Chinese+Medical education program, greater PDT is substantially linked to enhanced teaching ability. There is substantial evidence to support this hypothesis, which emphasizes the value of specialized training initiatives.

H2 demonstrates that teaching ability and correlation are moderately positive (r = 0.40, p = 0.05). Though there is a positive association, the impact is not as strong as it is for H1. This implies a weaker and less statistically significant association between TE and improved teaching abilities.

H3 is statistically not significant at the 0.05 level, yet it is positive (r = 0.35, p = 0.07). This suggests that while enhanced teaching abilities may be linked to greater ER, there is insufficient data to draw firm conclusions about a meaningful influence.

H4shows a strong positive link with the ability to educate (r = 0.47, p = 0.03). It is implied by this that improved teaching efficacy is positively correlated with efficient teaching techniques. Effective PSis demonstrated to enhance teaching performance, hence supporting this hypothesis.

H5 demonstrates a positive but non-significant association between teaching ability and r = 0.30, p = 0.10. This suggests that although TC may be advantageous, there is not enough evidence to conclude that it will have a major impact based on the facts available.

The large positive associations that H1 and H4 exhibit with teaching abilities suggest that these elements play a major role in enhancing the effectiveness of teaching. A favourable association is also shown in H2, however, it is not as strong. The lack of statistical significance for H3 and H5 indicates weaker or less obvious connections with teaching ability.

SEM is a comprehensive statistical method for evaluating intricate correlations between variables. SEM can simulate how different independent variables affect a dependent variable, which is relevant to enhancing teaching ability in Chinese+Medical education. It assesses both direct and indirect impacts at the same time, enabling a comprehensive comprehension of the interactions between these variables. SEM offers a thorough analysis of the degree to which each link in the suggested model is robust and how well it matches the data. The link between two variables, both in strength and direction, is represented by the coefficient. The precision of the coefficient estimate is gauged by the standard error. If the coefficient differs from zero in a meaningful way, a statistic called the t-value is utilized. The correlation between the variables is unlikely to be the result of random variation when the p-value is smaller (usually less than 0.05), indicating that the coefficient is statistically significant, as shown in Table 4 and Figure 2.

Table 4:SEM result

Path	Coefficient	Standard Error	t − value	p − value
PDT → Teaching Ability	0.45	0.11	4.09	0.01
TE → Teaching Ability	0.30	0.12	2.50	0.02
ER → Teaching Ability	0.25	0.10	2.50	0.03
PS → Teaching Ability	0.35	0.13	2.69	0.01
TC → Teaching Ability	0.40	0.14	2.86	0.01

H1 is a high positive correlation between PDT and teaching ability, as indicated by the path coefficient of 0.45 (p-value = 0.01). This implies that teachers' ability to teach increases dramatically as they obtain more professional development.H2is a positive correlation between TE and teaching ability, as indicated by the path coefficient of 0.30 (p-value = 0.02). This suggests that, while the relationship is weaker than it is for H1, greater teaching experience is associated with improved teaching performance. H3 with a path coefficient of 0.25 (p-value = 0.03) indicates that ER has a moderately positive effect on the capacity to teach. This suggests that increased ability to teach is correlated with improved access to resources. H4 determines the beneficial relationship between teaching abilities and effective PS is indicated by the path coefficient of 0.35 (p-value = 0.01). It follows that using more effective teaching techniques improves instruction. H5 is a substantial positive correlation between teaching ability and TC, as indicated by the path coefficient of 0.40 (p-value = 0.01). The efficacy of instruction is significantly increased when teachers work together.

Based on significant results and the highest coefficients, H1 and H5 are the most robust predictors of teaching ability.

In addition, favourable correlations are shown by H2, H3, and H4, but to differing degrees of significance.

The results show that improving teaching competence requires a special focus on H1 and H5.

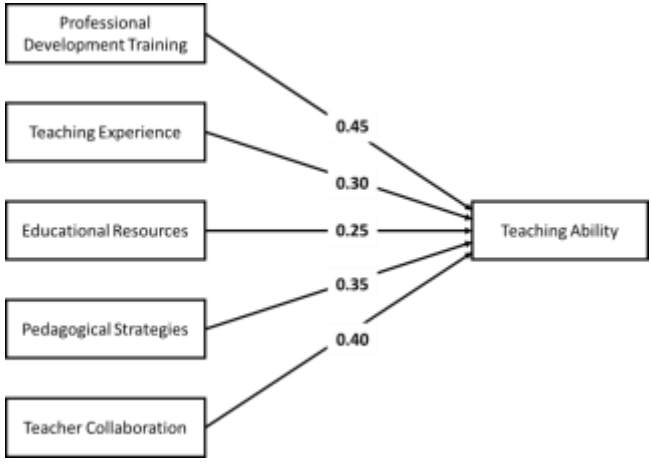

Figure 2: SEM coefficient result

ANOVA is used to find out if the means of different groups differ significantly from one another. ANOVA can compare teaching ability (e.g., language proficiency, vocational skills) across multiple levels of variables in the context of enhancing teaching ability in Chinese+Medical education. It evaluates whether changes in these variables account for variances in student outcomes, assisting in the identification of the variables that have a major influence on the efficacy of instruction. In an ANOVA, the statistical measure known as the F-value is employed

to ascertain whether there is a significant difference between the means of different groups, statistically significant differences are indicated by a p-value of less than 0.05 shown in Table 5.

Table 5:ANOVA result

Hypothesis	Mean Language Proficiency	Mean Vocational abilities	F-value	p-value
H1	3.8	3.5	4.12	0.03
H2	3.9	3.6	5.25	0.02
H3	3.7	3.4	6.30	0.01
H4	3.8	3.5	3.90	0.04
H5	3.9	3.6	4.55	0.02

H1 F-value (4.12) and p-value (0.03) show that the various training levels differ significantly in terms of language Proficiency and vocational abilities. When a p-value is less than 0.05, it indicates that the observed differences are statistically significant.

Significant variations in student outcomes according to TE levels are indicated by the F-value (5.25) and p-value (0.02) in H2. The impact of TE on student results is significant when the p-value is less than 0.05.

H3 significant variations in student outcomes based on resource access are indicated by the F-value (6.30) and p-value (0.01). Higher student results are linked to improved resource access, as indicated by the low p-value.

H4depending on the PS used, there are significant changes in student outcomes (F-value = 3.90 and p-value = 0.04). A p-value of less than 0.05 indicates a substantial impact of instructional strategy selection on student results.

H5 significant variations in student results correlated with the degree of TC, as indicated by the F-value (4.55) and p-value (0.02). A p-value of less than 0.05 suggests that improved teamwork improves student performance.

Collaboration has a considerable impact on language proficiency and vocational skills, according to the ANOVA results. All of the hypotheses (H1 - H5) are accepted, and the notable variations that have been seen at different levels underscore their critical importance in enhancing the capacity to teach Chinese+Medical education.

4.2 Discussion

In addition to examining the impacts of career calling and teaching competencies on self-directed learning (SDL) ability, as well as potential processed by, (Zhao et al., 2024) was to evaluate SDL ability among Chinese medical students. A straightforward slope analysis revealed that career calling had a greater impact on SDL ability at higher teaching competency levels. Additionally,(Zhou et al., 2024) assessed the benefits and drawbacks of different methods and looked at how they might be combined for the best traditional Chinese medicine(TCM) instruction. While an integrated strategy tries to balance these advantages, it finds a gap in interactivity, indicating that adding education could be a useful, experiential way to raise student involvement. With traditional Chinese medical skills at its center, (Zhang and Li 2024) attempted to investigate an integrated teaching paradigm that integrates theoretical instruction with hands-

on practice. The findings underscore the significance and usefulness of teaching integrated skills that are based on traditional skills in TCM education.

5 Conclusion

This study examines the variables affecting Chinese teachers' capacity to teach in the setting of Chinese+Medical education. The strongest components for each test were highlighted in the insightful findings from the Pearson correlation, SEM, and ANOVA studies. With a Pearson correlation coefficient of $C = 0.52$ ($p = 0.01$), Pearson correlation H1 showed the most positive link with teaching ability. Teaching ability is most robustly influenced by professional growth, as evidenced by SEM Analysis H1, which once again had the highest path coefficient at 0.45 ($p = 0.01$). When it comes to enhancing language competence and vocational skills, both of which are crucial in the Chinese+Medical education setting, ANOVA H3 had the highest F-value of 6.30 ($p = 0.01$), indicating that access to ER is a key factor. The shortcomings encompass inadequate medical knowledge integration with instructional approaches, inadequate professional growth, and difficulties in modifying conventional approaches to meet contemporary educational requirements.There will be opportunities in the future for creating specialized training programs, incorporating cutting-edge educational technologies, improving multidisciplinary cooperation, and regularly revising curricula to conform to changing practices and norms in medical education.

WORKS CITED

Chen, J., Zhou, J., Wang, Y., Qi, G., Xia, C., Mo, G. and Zhang, Z., 2020. Blended learning in basic medical laboratory courses improves medical students' abilities in self-learning, understanding, and problem solving. Advances in physiology education, 44(1), pp.9-14.

Macaro, E. and Han, S., 2020. English medium instruction in China's higher education: Teachers' perspectives of competencies, certification and professional development. Journal of multilingual and multicultural development, 41(3), pp.219-231.

Liu, Y., Mishan, F. and Chambers, A., 2021. Investigating EFL teachers' perceptions of task-based language teaching in higher education in China. The Language Learning Journal, 49(2), pp.131-146.

Tsegay, S.M., Ashraf, M.A., Perveen, S. and Zegergish, M.Z., 2022. Online teaching during COVID-19 pandemic: Teachers' experiences from a Chinese university. Sustainability, 14(1), p.568.

Liang, Z.C., Ooi, S.B.S. and Wang, W., 2020. Pandemics and their impact on medical training: lessons from Singapore. Academic Medicine, 95(9), pp.1359-1361.

Qian, H., Youngs, P., Hu, S. and Prawat, X.J., 2020. Will China's Free Teacher Education Policy address teacher shortages in rural schools or reproduce existing inequality?. Compare: A Journal of Comparative and International Education.

Jin, Y.Q., Lin, C.L., Zhao, Q., Yu, S.W. and Su, Y.S., 2021. A study on traditional teaching method transferring to E-learning under the COVID-19 pandemic: From Chinese students' perspectives. Frontiers in Psychology, 12, p.632787.

Xie, F., 2021. A study on Chinese EFL teachers' work engagement: the predictability power of emotion regulation and teacher resilience. Frontiers in Psychology, 12, p.735969.

Yang, D.Y., Cheng, S.Y., Wang, S.Z., Wang, J.S., Kuang, M., Wang, T.H. and Xiao, H.P., 2020. Preparedness of medical education in China: lessons from the COVID-19 outbreak. Medical teacher, 42(7), pp.787-790.

Su, B., Zhang, T., Yan, L., Huang, C., Cheng, X., Cai, C. and Cui, D., 2021. Online medical teaching in China during the COVID-19 pandemic: tools, modalities, and challenges. Frontiers in Public Health, 9, p.797694.

Wang, W., 2021. Medical education in China: progress in the past 70 years and a vision for the future. BMC Medical Education, 21(1), p.453.

Jiang, Z., Wu, H., Cheng, H., Wang, W., Xie, A.N. and Fitzgerald, S.R., 2021. Twelve tips for teaching medical students online under COVID-19. Medical education online, 26(1), p.1854066.

Wang, C., Wang, W. and Wu, H., 2020. Association between medical students' prior experiences and perceptions of formal online education developed in response to COVID-19: a cross-sectional study in China. BMJ open, 10(10), p.e041886.

Li, W., Gillies, R., He, M., Wu, C., Liu, S., Gong, Z. and Sun, H., 2021. Barriers and facilitators to online medical and nursing education during the COVID-19 pandemic: perspectives from international students from low-and middle-income countries and their teaching staff. Human resources for health, 19(1), p.64.

Jiang, Z., Zhu, D., Li, J., Ren, L., Pu, R. and Yang, G., 2021. Online dental teaching practices during the COVID-19 pandemic: A cross-sectional online survey from China. BMC Oral Health, 21, pp.1-9.

Zhao, C.X., Wang, Z.J., Yang, X.J., Ma, X., Cui, Y., Zhang, Y.X., Cheng, X.H., Zhang, S.E., Guo, Q.F. and Cao, D.P., 2024. Promotion of self-directed learning abilities among Chinese medical students through preparing for career calling and enhancing teaching competencies in medical education: a cross-sectional study. BMC Medical Education, 24(1), p.386.

Zhou, X., Yang, Q., Bi, L. and Wang, S., 2024. Integrating traditional apprenticeship and modern educational approaches in traditional Chinese medicine education. Medical Teacher, 46(6), pp.792-807.

Zhang, X. and Li, L., 2024. Exploration and Practice of Teaching Methods of Comprehensive Knowledge and Skills of Traditional Chinese Medicine with Traditional Chinese Medicine Traditional Skills Inheritance as the Core. Contemporary Education and Teaching Research, 5(5), pp.193-198.