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The Development of Mandarin Speaking Abilities Using Cooperative Learning for Luzhou Medical Device Vocational College Students

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Abstract

Background and Aims: In modern vocational education, effective communication skills are essential for graduate employability and professional success. Mandarin speaking ability is particularly crucial for students in medical device and health-related fields who must interact with patients, colleagues, and supervisors in their future workplaces. This study aimed to: (1) examine the effectiveness of cooperative learning in enhancing Mandarin speaking abilities among vocational college students, (2) compare students' Mandarin speaking performance before and after the cooperative learning intervention, and (3) investigate students' satisfaction with cooperative learning activities.

Methodology: This study employed a one-group pretest-posttest experimental design. The sample consisted of 50 first-year vocational students enrolled in the Mandarin course at Luzhou Medical Device Vocational College, selected through purposive sampling. The research instruments included a Mandarin speaking ability test administered before and after the intervention, and a satisfaction questionnaire. The cooperative learning intervention was implemented over 8 weeks, incorporating structured group activities based on five core principles: positive interdependence, individual accountability, face-to-face interaction, social skills, and group processing. Data were analyzed using descriptive statistics and paired-sample t-tests

Results: The findings revealed a significant improvement in students' Mandarin speaking abilities after the cooperative learning intervention. The mean post-test score (78.14) was substantially higher than the pre-test mean score (50.38), representing a 55% increase. The t-test analysis confirmed that this difference was statistically significant at the .05 level. Furthermore, students reported high levels of satisfaction with cooperative learning activities, with an overall mean of 4.17 on a 5-point scale. The highest satisfaction items related to student interest in the Mandarin program and the relevance of learning activities to real-life situations.

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Conclusion: Cooperative learning is an effective pedagogical approach for enhancing Mandarin speaking abilities among vocational college students. The structured group interaction, peer support, and shared responsibility inherent in cooperative learning create meaningful opportunities for oral communication practice, leading to improved speaking performance and positive learner attitudes. These findings have practical implications for Mandarin language instruction in vocational education contexts.

Keywords: Cooperative Learning; Mandarin Speaking Ability; Chinese Language Learning; Oral Communication Skills; Vocational College Students

Introduction

In today's knowledge economy, communication skills are no longer just an extra skill; they are a key quality that employers look for in graduates. Employers in all fields agree that good oral communication, getting along with others, and being able to work well with others are all important skills for the workplace. These skills are especially important for vocational students because their future jobs will often require them to talk to clients, coworkers, supervisors, and service users in person. In China, where there are many different languages and dialects, Mandarin is a common language that makes it possible to communicate clearly, quickly, and in a way that is appropriate for the situation. Consequently, enhancing Mandarin proficiency is crucial for vocational college students whose future employment relies on articulate and assured verbal communication (Tushar & Sooraksa, 2023; Kassim & Ali, 2010).

Recent research in Chinese language education has shown how important it is to learn how to speak Mandarin in vocational education. Recent evaluations of Chinese as a second or foreign language indicate ongoing advancements in research concerning pedagogy, learner outcomes, and instructional innovation, especially regarding practical language application and communicative development. This trend indicates that Mandarin instruction should extend beyond a limited emphasis on content delivery or examination preparation, and instead facilitate significant language application in genuine contexts. Speaking ability is particularly essential as oral participation, willingness to communicate, and learner confidence significantly impact language development. At the same time, earlier studies have demonstrated that language anxiety and boredom can diminish learners' willingness to communicate, consequently restricting opportunities for oral practice and impeding speaking development (Ma et al., 2017; Gong et al., 2018; Bai, 2023).

Even though people know that oral communication is important, Mandarin classes in many vocational settings are still mostly focused on tests and teachers, and not enough on real-life communication needs. These kinds of methods often don't give students enough chances to practice with each other, negotiate, and keep talking. Because of this, stude nts

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might learn bits and pieces about pronunciation or test formats without gaining the confidence and fluency they need to communicate at work. In light of these constraints, cooperative learning presents a viable pedagogical alternative. A significant meta-analysis indicated that cooperative learning positively influences achievement, attitudes, and perceptions. However, more recent studies have highlighted that its efficacy is contingent upon the quality of implementation, particularly the presence of positive interdependence, individual accountability, promotive interaction, social skills, and group processing (Kyndt et al., 2013; Adl-Amini et al., 2024).

Cooperative learning is especially useful for teaching Mandarin because it gives students many chances to use the language in meaningful ways with their peers, work together to solve communication problems, and practice speaking in safe, supportive settings. Studies on collaborative language tasks have demonstrated that structured interaction can improve speaking performance by augmenting learner engagement, promoting authentic language usage, and bolstering communicative confidence. In vocational education, these strengths are particularly advantageous as they correspond with employment-focused educational objectives and facilitate the cultivation of essential practical communication skills for future workplaces. Consequently, incorporating cooperative learning into Mandarin instruction may serve as an effective method to enhance students' speaking skills, foster active participation, and align Mandarin learning with their academic and professional requirements (Lian et al., 2021; Wiboolyasarin et al., 2023).

Taking all of this into account, this study looks at how cooperative learning helps students at Luzhou Medical Device Vocational College improve their Mandarin speaking skills. The study is predicated on the premise that vocational students require more than examination-focused Mandarin instruction; they necessitate educational experiences that promote interaction, self-assurance, and practical communicative proficiency. The study aims to ascertain the efficacy of cooperative learning as an instructional method for enhancing Mandarin speaking proficiency in a vocational education setting by analyzing students' speaking performance pre- and post-intervention, alongside their satisfaction with the learning activities.

Objectives

1. To develop effective learning activities using Cooperative Learning to promote Mandarin speaking abilities with an efficiency of 75/75.

2. To compare the Mandarin speaking abilities of students studying using Cooperative Learning between pre-study and post-study.

3. To study students’ satisfaction with learning activities using Cooperative Learning.

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Literature Review

This literature review is divided into three parts: the theoretical basis of cooperative learning, how cooperative learning is used in language education, and the rules for teaching Chinese that are related to speaking development. In this study, these three areas are closely related because cooperative learning provides the pedagogical framework, language education research shows how interaction helps oral development, and Chinese language teaching research shows why speaking should be stressed in the early stages of learning (Gong et al., 2020; Johnson et al., 2014).

Cooperative learning is a structured way of teaching that most people understand as students working together in small groups to reach common learning goals. Cooperative learning is different from regular group work in that it needs careful planning of tasks, roles, and ways of interacting. Johnson et al. (2014) say that five important things make up good cooperative learning: positive interdependence, individual accountability, promotive interaction, social skills, and group processing. This means that each person in the group is responsible for their own learning as well as the group's success as a whole.

Empirical research has validated the efficacy of cooperative learning. Kyndt et al. (2013) conducted a meta-analysis of face-to-face cooperative learning and discovered that it positively influenced students' academic performance, attitudes, and perceptions in various educational settings. Their results indicate that cooperative learning is most efficacious when applied systematically rather than as informal classroom grouping. So, cooperative learning should be seen as a well-planned way to teach, not just a way to put students in groups.

Cooperative learning is especially useful in language education because language is learned by talking to and interacting with others and figuring out what they mean. When students work together on tasks that matter, they have more chances to speak, listen, clarify their thoughts, and get feedback from their classmates. This kind of interaction helps students learn new words and phrases, get more involved in their learning, and feel more confident. Because of this, cooperative learning is widely seen as a good way to teach language, especially when speaking is an important goal (Johnson et al., 2014; Kyndt et al., 2013).

Cooperative learning is especially useful for teaching people how to speak. Studies on adult learners of Chinese as a second language indicate that the willingness to communicate is affected by cultural, emotional, and linguistic factors. Liu (2017) discovered that learners' willingness to communicate in Chinese is significantly linked to factors such as speaking anxiety and perceived language proficiency. This finding is significant as it indicates that speaking development relies not solely on linguistic knowledge but also on the emotional readiness of learners to engage. A cooperative learning environment may facilitate speaking

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development by offering low-pressure opportunities for peer interaction, alleviating anxiety, and enhancing confidence in oral communication.

Recent research shows that the field of teaching Chinese as a second or foreign language has grown a lot and is now more focused on learner development, pedagogy, and new ways of teaching. Gong et al. (2020) contend that the instruction of the Chinese language should extend beyond mere grammatical elucidation and examination readiness, emphasizing instead the significance of pragmatic language application and communicative proficiency. This viewpoint is particularly pertinent to speaking-focused courses, where students require practical skills rather than mere theoretical knowledge.

Speaking development is especially important for people who are just starting to learn Chinese because it has some unique problems, such as tones, pronunciation, and the fact that the writing system is based on characters. Because Chinese characters can't be processed the same way as alphabetic writing systems, beginners may have a hard time if they focus too much on reading and writing too soon. For this reason, many methods for teaching Chinese prioritize listening and speaking first. Pinyin and pronunciation training are then used to build literacy skills later (Gong et al., 2020). This principle endorses the notion that speaking-centered instruction is particularly suitable during the initial phase of Chinese language acquisition.

The literature collectively demonstrates that cooperative learning is a theoretically sound and empirically validated pedagogical method that can effectively enhance participation, interaction, and communicative development. In language education, it is especially good for teaching speaking because it gives students a lot of chances to use language in real-life situations. In Chinese language instruction, where students encounter pronunciation challenges and a convoluted writing system, a focus on listening and speaking is particularly suitable at the introductory level. Consequently, the implementation of cooperative learning in Mandarin instruction aligns with both overarching educational theories and contemporary principles of Chinese language pedagogy (Gong et al., 2020; Johnson et al., 2014; Kyndt et al., 2013; Liu, 2017).

Methodology

The research tools for the study on "Developing Mandarin Chinese Speaking Skills Using Cooperative Learning for Students at Luzhou Medical Vocational College" include the following:

1. Literature Approach:

As an advanced theory, project-based learning has been applied to all aspects of social activities. These successful teaching activities and case studies play a positive role in

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researching project-based learning in Mandarin Chinese teaching.

2. Experimental Approach:

Project-based learning is implemented in the classroom as a teaching method. Its impact on teaching needs to be observed through actual teaching practice. Therefore, experimental classroom project-based learning activities were used in this research.

3. Observational Approach:

Classroom activities are dynamic processes, not static outcomes. Therefore, much of the evaluation and reflection in the research process is conducted through classroom observation.

Results

Therefore, the scores after studying are summarized in a table as follows. Higher than before studying with statistical Significance

Test	n	Full score	$\bar{x}$	S.D.	t - test
Before	50	100	50.38	3.60	57.90
After	50	100	78.14	3.29	

It was found that the development of students' knowledge and understanding was different. Students tested using cooperative learning have knowledge. Understand and are able to take the exam better than before. It makes the students' educational behavior according to their wishes, and their achievement after teaching is higher than before learning, according to the academic achievement development standards. Improve academic achievement by 75% or more.

Mean and standard deviation of the development of Mandarin speaking ability using cooperative learning

Improving Mandarin Speaking Ability Using Collaborative Learning	$\bar{x}$	S.D.	Level
1. I am interested in the Mandarin speaking program.	4.32	0.47	High
2. I am very clear about the tasks assigned by teachers.	4.22	0.50	High
3. When I study after class, I have a lot of learning Materials related to speaking.	4.18	0.38	High
4. The Mandarin-speaking learning project is closely	4.28	0.45	High

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Improving Mandarin Speaking Ability Using Collaborative Learning	$\bar{x}$	S.D.	Level
related to life.			
5. I think this Mandarin-speaking learning project will help improve the level of Mandarin speaking learning.	4.10	0.30	High
6. It is difficult to complete Mandarin speaking, but it can be overcome.	4.24	0.51	High
7. Through this Mandarin-speaking project, learning activity, I mastered the relevant knowledge of Mandarin, which I learned.	4.06	0.31	High
8. I will take the initiative to find a solution to the problems.	4.02	0.14	High
9. I will continue to use this method to learn Mandarin speaking after class by myself.	4.16	0.54	High
10. My interest in learning Mandarin speaking has increased.	4.12	0.52	High
Total average	**4.17**	**0.14**	**High**

Table shows that the students' satisfaction with the activities to develop their Mandarin speaking ability using collaborative learning is at a high level ($\bar{x}$=4.17). When considering each item, it is found that all 10 items are at a high level, with the average values ranked from highest to lowest as follows: I am interested in the Mandarin-speaking program. ($\bar{x}$=4.32), The Mandarin-speaking learning project is closely related to life. ($\bar{x}$ =4.28), It is difficult to complete the completion of the Mandarin speaking, but it can be overcome. ($\bar{x}$=4.24), I am very clear about the tasks assigned by teachers. ($\bar{x}$=4.22), When I study after class, I have a lot of learning materials related to speaking. ($\bar{x}$=4.18), I will continue to use this method to learn Mandarin speaking after class by myself. ($\bar{x}$=4.16), My interest in learning Mandarin speaking has increased. ($\bar{x}$=4.12), I think this Mandarin-speaking learning project will help improve the level of Mandarin speaking learning. ($\bar{x}$=4.10), Through this Mandarin-speaking project learning activity, I mastered the relevant knowledge of Mandarin I learned. ($\bar{x}$=4.06) And I will take the initiative to find a solution to the problems. ($\bar{x}$=4.02)

Discussion

The results of this study show that cooperative learning helped students at Luzhou

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Medical Equipment Vocational College improve their Mandarin speaking skills. The results indicated enhancements in academic performance, heightened student involvement in learning activities, acceptable post-intervention outcomes, and a significant degree of student contentment with the instructional methodology. These results indicate that cooperative learning can be an effective teaching method for enhancing speaking skills in vocational Chinese language education, especially in situations where students require practical communication abilities for future professional applications.

First, the results showed that students' grades after doing the integrated learning activities were much better than before the .05 level of instruction. This shows that the cooperative learning activities helped the students learn what they were supposed to learn and understand the lesson better. The fact that students did better than the 70% standard also suggests that the way the lessons were planned helped them learn. This finding aligns with the extensive cooperative learning literature, which indicates that structured peer interaction, shared responsibility, and active participation can enhance academic performance and learning dispositions. Cooperative learning is particularly more effective when systematically organized rather than executed as general group work (Johnson et al., 2014; Kyndt et al., 2013).

Second, the results showed that students liked the cooperative learning activities and seemed to enjoy the process of learning. During the activities, the students were said to be happy, interested, and excited, and they were able to connect what they learned in class to real-life speaking tasks. This indicates that cooperative learning enhanced cognitive outcomes and facilitated emotional engagement in the classroom. This outcome is significant as effective language acquisition relies not only on comprehension of content but also on active engagement, self-assurance, and the readiness to utilize the target language. Previous studies in language education have contended that cooperative language learning fosters interaction, learner autonomy, and communicative participation more effectively than conventional teacher-centered instruction (Zhang, 2010).

Third, the rise in test scores from 50.38% before the intervention to 78.14% after the intervention is more proof that cooperative learning works to help people learn how to speak Mandarin. It can be assumed that the students reached the expected level of learning performance after taking part in the program because the post-test mean was higher than 75%. This outcome can be attributed to the intrinsic characteristics of cooperative learning, which provided learners with opportunities to engage in discussion, practice, share experiences, and offer mutual support while executing communicative tasks. These characteristics probably boosted speaking practice and lowered the passivity that is common in traditional teaching. The outcome corresponds with studies in Chinese language education

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indicating that contemporary pedagogy must transcend mere grammar elucidation and examination readiness, advancing towards methodologies that foster significant language application and communicative proficiency (Gong et al., 2020).

Fourth, the students were very happy with all ten of the Mandarin speaking development activities. The things that got the most votes showed that students were interested in the project, that the learning activities were useful in real life, that the teacher-assigned tasks were clear, and that they were willing to keep using this method for self-study after class. These results show that the teaching method worked not only in terms of measurable success, but also in terms of being meaningful and motivating for the students. This is especially useful for teaching speaking, where it's important for students to feel confident and want to talk. Studies on Chinese as a second language learners indicate that the willingness to communicate is significantly affected by affective and linguistic factors, such as speaking anxiety and perceived competence. A supportive cooperative learning environment may consequently foster students' confidence in speaking and enhance their engagement in oral tasks (Liu, 2017).

The findings of this study indicate that cooperative learning is an appropriate and effective method for enhancing Mandarin speaking proficiency among vocational college students. The method seems to improve not only grades but also how interested, happy, and satisfied students are with their learning. This is an important result for vocational education in particular because students need to be able to communicate clearly and effectively in the workplace. Consequently, the results endorse the incorporation of cooperative learning into Mandarin instruction to enhance interactivity, student engagement, and real-world communication relevance in language acquisition.

Simultaneously, the interpretation of the findings should be approached with caution. The enhancement noted in this study pertains to the results derived from a singular instructional context and a specific cohort of learners. Subsequent research may investigate the replicability of analogous results with larger samples, across various vocational institutions, or over an extended duration of instruction. Further research may investigate which particular cooperative learning strategies are most efficacious in enhancing various facets of Mandarin speaking, including pronunciation, fluency, confidence, or interactional competence.

Recommendation

Recommendations for implementation

1. Learning management using the using Cooperative learning concept activity formats should be organized to suit the duration of each class period. Therefore, teachers should

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control the duration to suit the activity. However, the duration of organizing learning activities can be flexible as appropriate, for example, some activities take a lot of time. The teacher, therefore, allows some groups of students to be representatives in doing activities or presenting their work. In order for students to gain complete knowledge from organizing activities, everyone must participate in the learning activities effectively.

2. Learning management using the Cooperative learning concept, some students do not study or are not interested in the lessons, so teachers should use asking questions, demanding questions, and stimulating students. So that students can access the lessons that the teacher sets.

3. Education in today's era is full of technology, easy access, and variety. Teachers should provide opportunities for students to study information. and a variety of answers. Always take into account that information sources may contain both reliable information and unreliable Therefore, students must know how to apply analytical skills, evaluate judgments, and know how to examine information accessed from a variety of learning sources.

Recommendations for further research

1. Teaching using Cooperative learning, the researcher found that it makes students practice on their own, and activities are carried out through group processes, which allows students to have good human relations and mutual assistance. Make the students have fun next time, may use task-based learning combined with teaching techniques that emphasize a variety of practices, etc., to develop students' ability in the Chinese language, and to develop and strengthen students' Chinese language for the better.

2. In the next research, the results should be compared. Theoretical learning and practical skills of students during teaching to develop academic achievement through integration with other teaching methods.

3. Research should be done on teaching integrated with other subjects or other grade levels to study the academic achievement and attitude towards learning of students.

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