DEVELOPMENT OF AN INSTRUCTIONAL DESIGN MODEL USING BLENDED LEARNING AND COLLABORATIVE LEARNING TO IMPROVE MANDARIN PROFICIENCY IN PRC STUDENTS

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Abstract

The purposes of this research were: 1) to create an instructional design model using blended learning and collaborative learning strategies to improve the Mandarin Chinese proficiency of undergraduate students majoring in Primary Education, and 2) to assess the appropriateness of the developed instructional model. This research used a Research and Development (R&D) approach and was conducted in two phases. In Phase 1, data were collected through semi-structured interviews with five Mandarin Chinese experts and five Mandarin Chinese teachers, selected via purposive sampling. Additionally, a questionnaire was distributed to 248 undergraduate students majoring in Primary Education, who had previously studied Mandarin Chinese, to explore their learning problems and needs. Furthermore, 20 students were interviewed using open-ended questions and categorized into three groups based on academic performance: high, medium, and low. The data obtained from both experts and students were analyzed and used to design the preliminary instructional model. In Phase 2, experts who had earned their doctoral degrees and had three years of teaching experience evaluated the model's content validity using a five-point rating scale to assess appropriateness. All of the instruments used were checked for their relevance according to the IOC.

The results were as follows: 1) In the first phase, the biggest obstacles during the instructional process were the differences of language proficiency among students and the lack of instructional tools like speech laboratories. However, students showed a strong interest in education that includes technology. The model included ten components, and three instructional stages: pre-class, in-class, and after-class. 2) In the second phase, the analysis showed that all IOC values were higher than 1.0, and the overall appropriateness score was high, with an average of 4.05. This means that the instructional model development has a strong potential to effectively enhance the Mandarin Chinese proficiency of undergraduate students.

Keywords: Blended learning, Collaborative learning, Mandarin Chinese proficiency, Instructional model, PRC students

Introduction

Mandarin Chinese (Putonghua), the official language of the People's Republic of China (PRC), is extremely important for promoting language unity and fair access to education. Among the many policies released by the Chinese government to systematically promote the use of Putonghua, the National Common Language and Writing System of 2005, and the 14th five-year plan, which emphasizes the need to promote Chinese language in borders and ethnic minority regions to reduce linguistic inequality and improve the quality of education (Xu & Liu, 2023).

Though over 280 million people lack language proficiencies in mandarins, particularly in rural and isolated places, 2022 statistics reveal that more than 80% of the population attains basic production in mandarins (Xu & Liu, 2023). For the future, not having enough proficiency in Mandarin can make it harder to do well in academic performance and move up in society during early childhood education. Dovi (2019) said that better Mandarin language proficiency greatly help reduce the chance of being unemployed. The research used data from the China Labor-Force Dynamics Survey and found that when someone's Mandarin skills improved by one standard deviation, their risk of unemployment dropped by 5%. This benefit was especially noticeable among younger people and those living in urban areas. These results show that being good at a language, working efficiently, and being able to compete in the job market are all connected.

Traditional teacher-centered methods often fail to address the diverse needs and learning styles of today's students, highlighting the urgent need for adaptive, interactive strategies. Blended learning combining online flexibility with in-person support empowers students to learn at their own pace while receiving timely guidance. In parallel, collaborative learning fosters a supportive environment where students engage in teamwork, mutual encouragement, and effective communication (Slavin, 1995). Research by Lai et al. (2023) further confirms that blended collaborative approaches enhance learner motivation and emotional engagement, which are critical to language acquisition.

Therefore, the researcher is interested in designing an instructional model to enhance the Mandarin Chinese proficiency of undergraduate students majoring in Primary Education by applying blended learning and collaborative learning approaches. The study also aims to evaluate the appropriateness of the developed instructional

model to ensure its effective implementation in future Mandarin instruction at the university level.

Research objectives

1. To develop an instructional model using blended learning and collaborative learning to enhance the Mandarin Chinese proficiency of PRC students

2. To evaluate the appropriateness of the developed instructional model.

Literature review

Blended Learning

Language learning has been a successful, flexible, learning-centric strategy that combines online digital tools with private classes. Moore (2013) emphasizes that different learning routes may meet different requirements for students. Kintu et al. (2017) also highlight several factors, including student characteristics, educational design, and successful blended learning. Blended learning approaches have been shown to enhance student engagement, promote learner autonomy, and improve overall learning outcomes when effectively integrated with digital platforms (Sahni, 2019). Therefore, successful implementation depends on an organized curriculum that efficiently combines online and class learning.

Collaborative Learning

Increasing communication knowledge and funding is emphasized by collaborative learning as peer commitment and shared responsibility. This is especially helpful when kids develope trust and language abilities in group problem-solving and discourse. Its efficacy, thus, depends on group dynamics and teacher training. In big or in many different classrooms, teachers can push themselves (Laal & Ghodsi, 2012).

Integration of Blended Learning and Collaborative Learning in the Mandarin Chinese Proficiency

The integration of blended and collaborative learning will help to gain more Mandarin Chinese students, language competencies and intercultural awareness. The blended learning environment provides digital support and flexibility for individual learning, but collaborative group projects allow students to use the target language in a real social environment (Lai et al., 2023). According to Mungizzah and Sriyanto (2023), imitation of real conversation is quite important for enhancing hearing and speaking abilities. Such an approach's efficacy relies on the design of interactive group tasks linked to deliberate digital material absorption.

Conceptual framework

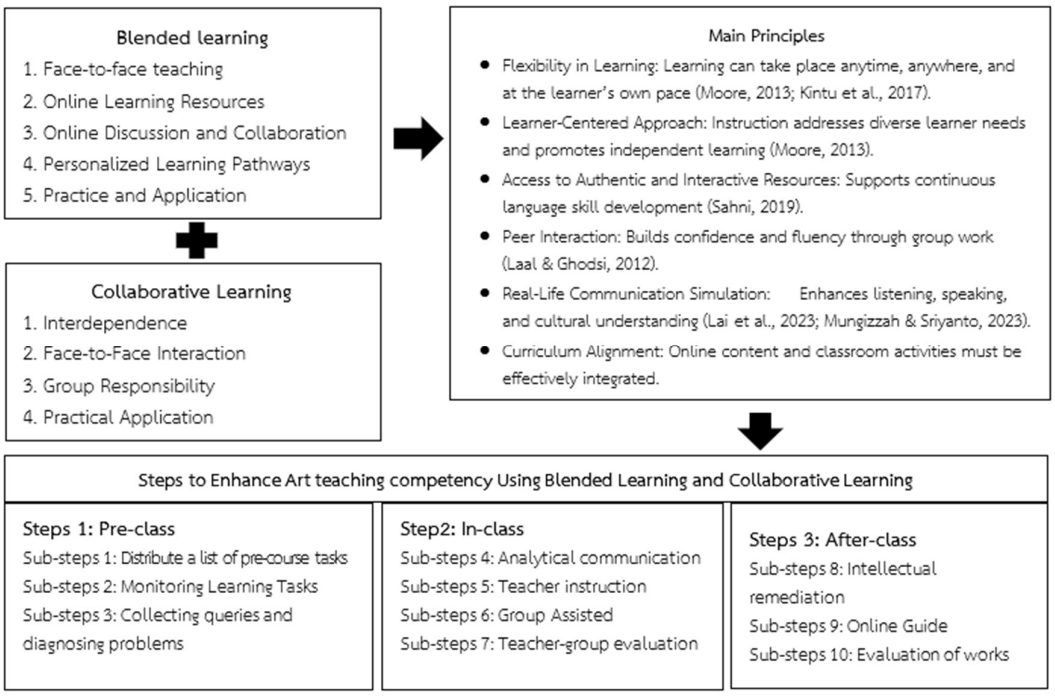

Figure 1 Conceptual framework

Research methodology

Phase 1: Needs Analysis and Preliminary Model Design

Informants: The informants in this phase were divided into four groups: (1) five Mandarin Chinese experts, each with at least 10 years of educational experience; (2) five Mandarin Chinese instructors, each with a minimum of 4 years of teaching experience; (3) 248 undergraduate students majoring in Primary Education at KMCC College who had previously taken a Mandarin Chinese course; and (4) 20 students from the same group, categorized into three subgroups based on academic performance: five high-achieving students, ten average-achieving students, and five low-achieving students.

Instruments: The research instruments consisted of 4 parts:

1. A semi-structured interview form was create for five Mandarin Chinese experts. It includes five open-ended questions focused on the topic "Exploring the Current Situation and Needs for Mandarin Chinese Teaching Model Using the Blended Learning and Collaborative Learning Approaches." The purpose of this tool is to collect detailed information about the experts' views on the current state and needs in Mandarin Chinese education.

2. A semi-structured interview form was create for five Mandarin Chinese teachers. It includes ten open-ended questions focused on the topic “Exploring the Current Situation and Needs for Mandarin Chinese Teaching Model Using the Blended Learning and Collaborative Learning Approaches.” The purpose of this tool is to gather detailed insights from the teachers about their views on the current state and needs in Mandarin Chinese education.

3. The questionnaire given to 248 students had 21 questions split into five main categories: 4 questions of basic information, 4 questions of use of blended learning, 3 questions of use of collaborative learning, and 6 questions of learning resources. The goal of this tool was to gather students’ view on how Mandarin Chinese is currently being taught and what their needs are for creating a new instructional model.

4. The researcher conducted semi-structured interviews with 20 students. The interviews consisted of two open-ended questions: (1) What difficulties did you face while learning Mandarin Chinese in this course? and (2) In your opinion, what type of instructional methods or activities would help you improve your Chinese proficiency more effectively? These questions aimed to explore students’ learning difficulties and their preferred instructional approaches for improving Mandarin Chinese proficiency. The qualitative data obtained were analyzed to support the development of an instructional model that truly responds to the actual needs of the learners.

Four instruments were checked by experts to make sure that their content was accurate. For each item, the IOC score for all the instruments together was exactly 1.00, which shows that the content is very valid.

Data Collection: The data collection process in this phase included interviews with five experts and five Mandarin Chinese teachers conducted from September 20th to October 10th, 2024; a survey administered to 248 students from September 20th to October 27th, 2024; and interviews with 20 students, categorized based on academic performance, carried out between September 28th and October 15th, 2024. The data obtained from these sources were analyzed to identify the problems and needs related to Mandarin Chinese learning, which served as the foundation for designing the initial instructional model.

Data Analysis: The study used content analysis on the qualitative data gathered from interviews with five experts, five Mandarin Chinese teachers, and 20 students to identify main problems and learning needs in Mandarin language learning. For the quantitative data from questionnaires filled out by 248 students, descriptive like statistics like mean, standard deviations, and percentages were used. The research tools were checked for appropriateness by calculating the IOC. The tools’ suitability was also determined by looking at the average scores and standard deviations.

Phase 2: Model Validation and Appropriateness Evaluation

Informants: In this phase, the informants were five Mandarin Chinese language experts who were chosen using purposive sampling.

Instruments: In this phase, the research tool used an evaluation form for the instructional model, which created based on the model developed in the first phase. The form used a five-point Likert scale to rate how suitable each part of the instructional model was. The tool was checked for content accuracy, and the IOC scores for each item ranged from 0.80 to 1.00.

Data Collection: Five experts used the evaluation form to review the instructional model and also gave extra comments and suggestions to help improve and refine the model.

Data Analysis: The data from the expert reviews were analyzed using mean and standard deviations to assess how suitable the instructional model was overall. Also, the IOC values were computed to check if the evaluation items were valid in terms of content.

Results

1. Results of Developing an Instructional Model Using Blended Learning and Collaborative Learning to Enhance the Mandarin Chinese Proficiency of PRC Students

The analysis showed that using traditional lectures did not work well in keeping students interested and did not take into account the different needs of each student. Both the experts and teachers suggested using more adaptable teaching methods that focus on interaction and include digital tools in the learning process. The main problems found were trouble with staying certain consonant sounds that have tones, not enough access to technology, and not enough learning materials. Most students, 70% preferred a mix of online and in-person learning, and 85% thought it made them better at using and communicating in the language. Other ideas mentioned were using different types of activities, applying what is learned in real-life situations, working together with classmates, and making learning materials and tools more easily available.

Based on these findings, the researchers created a preliminary instructional model that combines blended learning and collaborative learning approaches to enhance the Mandarin Chinese proficiency. The model is made up of ten components: first, the theoretical foundations, which includes blended learning and collaborative learning; second, the objectives of the model; third, structure of the model; fourth, instructional process; fifth, learning activities; sixth, instructional media and technology;

seventh, the role of the teacher; eighth, the role of the learner; ninth, the assessment guidelines; and tenth, the expected outcomes.

The instructional process was divided into three stages with ten specific bub-steps. In the first stage, pre-class, learners are involved in three activities: (1) giving out a list of tasks to do before the course starts, (2) keeping track of the learners' progress on those tasks, and (3) gathering any questions they have figuring out what problems they might be facing. During the in-class, there four main activities: communicating through analysis, the teacher giving lessons, working in groups with help from the teacher, and the teacher checking how the groups are doing. After-class, there are three more steps: helping students understanding better, offering online support, and checking their work. This system makes use of online tools, and matches the teaching to each student's level to make sure the learning is both flexible and effective.

2. The Evaluation Results of the Appropriateness of the Developed Instructional Model

The initial instructional model was shown to experts to check if it was appropriate. The IOC for each of the ten components ranged from 0.80 to 1.00, showing that the content is very accurate.

The evaluation results, based on a five-point Likert scale, showed an overall average score of 4.05, which suggests a high degree of suitability. The experts also provided recommendations for future improvements. These involved carefully combining group learning to increase student involvement, improving ways to measure student growth through better assessments, and ensuring equal time was spent on using technology, working in groups, and practicing the Chinese language.

The researchers used these suggestions to update the instructional model by fostering on how to properly combine blended learning and collaborative learning approaches that are suitable to early childhood education students. The main changes involved submitting assignments through online platforms, using real-life learning data to help plan lessons, using mobile apps to work on pronunciation, giving instant feedback during grading, and using digital tools for peer and teacher assessments.

In the updated model, the instructional process was organized into three main stages: pre-class, in-class, and after-class. Each stage used digital tools to help make learning more effective, flexible, and tailored to individual needs, creating a more student-focused and adaptable learning environment.

Discussion

1. To develop an instructional model using blended learning and collaborative learning to enhance the Mandarin Chinese proficiency of PRC students

The results showed that using just lecture is not enough to meet the different needs and skill levels of PRC students, which matches up with Piaget (1954) constructivist idea that learning should be focused on the student and based on their experiences. More skilled students wanted tasks that were both interesting and difficulty, whereas students who were less skilled had trouble with the basics, especially with pronunciation and grammar. These insights point to the need for tailed methods and flexible learning routes, as Li (2024) noted, emphasizing how personalized learning can boost student motivation and overall academic performance. More than 85% of students pointed out pronunciation problems, particularly difficulties with tone and consonants, as their main challenges. These results indicate that using technology like pronunciation apps and voice recognition tools in teaching is important, as Sahni (2019) demonstrated that blended learning and digital platforms can significantly enhance student engagement and overall learning outcomes. Moreover, limited access to digital tools and not enough help for teachers were big problems that affect how well students were learning. Teachers and experts said it is important to better train teachers, update the material they use, and make sure students have better access to technology. These suggestions align with the recommendations from Lai et al. (2023), who emphasized the importance of teacher training and strong digital infrastructure for effective carrying out blended and collaborative learning.

The model's three stage teaching process – pre-class, in-class, and after-class – helps students build their understanding through structured and engaging activities. The setup encourages students to take an active role, helps teachers tailor their lessons to different learning needs, and builds communication skills and language ability by having students work together and learn through real-life situations. These principles clearly show the influence of Piaget's constructivist learning theory and are also backed by Jaekel et al. (2022), who started the importance of working together in learning, as well as Pozzi et al. (2023), pointed out how using digital tools can make language learning more effective.

2. To evaluate the appropriateness of the developed instructional model

Five experts evaluated the model and found it to have a strong content validity and overall fit. The IOC scores ranged between 0.80 and 1.00, and the average rating on the Likert scale was 4.05. This shows that the model's components are all in line with what education aims to achieve and what learners actually need. Experts suggested

focusing on improving collaborative learning to boost student involvement, updating ways to assess learning to more accurately measure growth, and maintaining a good mix of using technology, working in groups, and applying Mandarin in real-life situations. These suggestions helped update the model to better support the learning goals of early childhood education students. The main changes involved introducing online tools for assignments, providing instant learning insights, using mobile apps for practicing pronunciation, and implementing digital tools for giving feedback and assessing progress. These changes show how important it is to integrate technology smoothly, as Li (2024) pointed out, since mobile learning tools help improve speaking skills. Also, Lai et al. (2023) supported the idea of using blended learning environments to make language learning more effective.

The revised model keeps its three-stage structure but it is now better supported with customized and adaptable learning tools that are digital in nature. This setup helps make teaching more effective and puts the learner at the center, so students get the right support at every step of their learning cycle.

Body of knowledge

This study offers useful guidance on creating and putting into practice an instructional model that combines blended learning with collaborative learning to improve students' Mandarin Chinese proficiency. This model is structured into three stages based on the class and incorporates digital tools and interactive learning methods. This model focuses on building skills in listening, speaking, and a pronunciation through adaptable learning that works for many different types of learners. It supports group activities, offers tailored feedback, and allows for real-time monitoring of progress. Because of this, it can be used in both standard classroom settings and in online learning platforms, as illustrated in Figure 2.

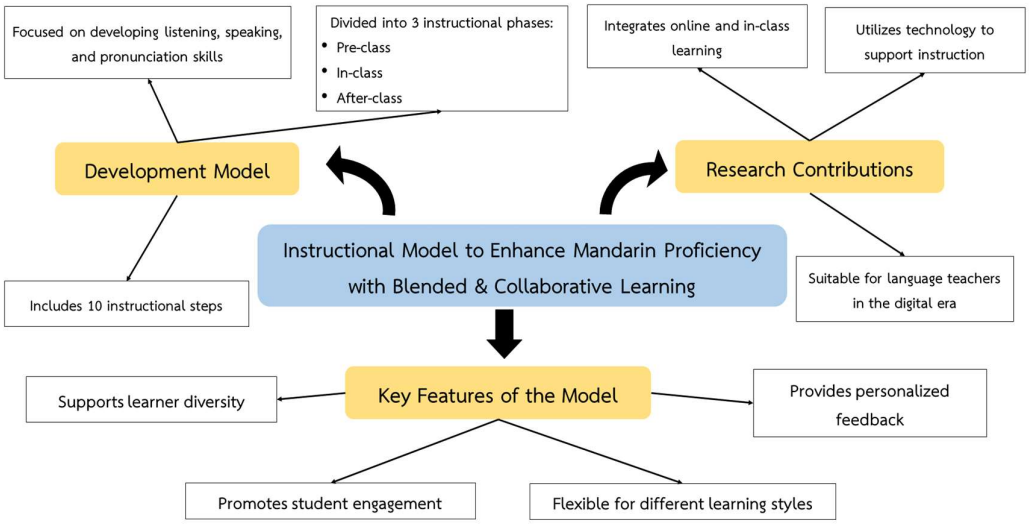

Figure 2 New body of knowledge from the research

Conclusions

1. To develop an instructional model using blended learning and collaborative learning to enhance the Mandarin Chinese proficiency of PRC students

This study found important problems that are impacting how well students from the People's Republic of China are learning Mandarin Chinese, especially when it comes to pronouncing tones correctly, understanding phonics, and staying engaged over time. Traditional lectures did not work well for all students, especially those who struggled more. Teachers, experts, and students all agreed that there is a need for teaching methods that are more adaptable, engaging, and tailored to individual needs. In response, the researchers created an instructional model that combines blended learning with collaborative learning. The model has important components and is split into three main stages: pre-class, in-class, and after-class. Each stage uses digital tools, works with classmates, and provides instant feedback to help teacher tailor their lessons and better develop language proficiency, especially listening and speaking skills.

2. To evaluate the appropriateness of the developed instructional model

The model was reviewed by experts and showed strong content validity (IOC = 0.80-1.00) and appropriate suitability (mean score = 4.05). Experts said that model worked well with what learners needed and the instructional goals. They suggested making the model better by including more group work, using better ways to check

understanding and finding a good mix between using digital tools and doing activities in class. The final model was revised based on the feedbacks to improve flexibility, offer more learning experiences, and better incorporate technological tools. This has led to an instructional framework that adapts to different situations, making it effective for teaching Mandarin Chinese in both online and traditional classroom settings.

Suggestion

From the research results the researcher has suggestions as follows:

1. Suggestion for application

Educational institutions should adopt teaching approach combining blended learning and collaborative learning if they are to improve Mandarin Chinese proficiency efficiently. A significant suggestion is to include digital tools like online quizzes, peer feedback systems, and pronunciation apps into real-time format evaluations. These tools let students track learning progress and change lessons depending on various needs and encourage individualized, group-based learning. Flexible and interesting language courses in pre-class, in-class, and after-class back up these tools.

2. Suggestion for future research

2.1 Future studies should apply and evaluate the instructional model that has been created in real classroom, particularly with elementary school students, to check how well they work in practice and identify where it can be improved.

2.2 To find out which approach or mix produces the most notable learning results in various learner environments, comparative research should be carried out to examine the particular effects of bended learning versus collaborative learning on several facets of Mandarin Chinese proficiency including pronunciation, fluency, and comprehension.

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