Design of Chinese Classroom Modules and Statistical Processing of Teaching Data Based on the BOPPPS Teaching Model

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Keywords: BOPPPS, Chinese Classroom, Instructional Design.

Abstract: This study is based on the BOPPPS teaching model to design a case study of Chinese classroom for Colombian students, combining computer processing technology and education, using constructivism and communicative approach as the theoretical basis, to design a Chinese classroom teaching module, to analyze the learning data of the experimental subjects, and to determine the implementability of the teaching model through comparative analysis of the experimental subjects' data. In the process of teaching, we emphasize the closed-loop teaching of student participation and feedback, follow the principles of student initiative and goal orientation, apply computer science and technology to BOPPPS Chinese classroom teaching, and finally quantify and analyze the teaching data of teachers and students through questionnaires and data processing techniques, aiming to summarize the best results of students' learning performance in the BOPPPS-based Chinese classroom teaching model. The aim is to summarize the best results of students' learning in the BOPPPS-based Chinese classroom, and to use it as a standard to optimize the construction of Chinese classes for Colombian students, this will help to provide effective teaching reference for future Chinese teaching.

1 INTRODUCTION

The Chinese classroom, as a professional channel for Chinese language learning, requires teachers to adopt effective teaching methods in the teaching process to help students improve their Chinese language learning ability. On this basis, according to Douglas Kerr of the University of British Columbia, the BOPPPS teaching model is proposed, based on constructivism and communicative approach as the theoretical basis, with a closed-loop teaching process emphasizing student participation and feedback as the mode (Pattison, Russell, 2006), and a total of six teaching elements are divided, and then computer statistical techniques are combined with education for the final summary and analysis, thus determining the BOPPPS teaching model implementability for enhancing teaching effectiveness.

At present, the application of the BOPPPS teaching model in international Chinese teaching has achieved the following classical results. In 2019, Ting Liu applied the BOPPPS teaching model to the teaching practice of the Elementary Chinese General Course at the Confucius Institute of Hasanuddin University in Indonesia, and concluded that the BOPPPS teaching model has a significant effect on improving students' interest in learning Chinese listening, reading, and speaking.In 2020, Chaoqun Zhong and Xinzhen Zhang applied the BOPPPS model to the teaching of Chinese newspaper reading classes at the Confucius Institute of the University of the Philippines in Red River Rizal. Later in 2021, Ye Xiaotong published a paper entitled 《Teaching Design of Online Chinese as a Foreign Language for Elementary Comprehensive Classes Based on the BOPPPS Teaching Model》, which elaborated on her exploration of the advantages of applying the BOPPPS teaching model to online Chinese as a foreign language for elementary comprehensive classes. So far in 2022, only two articles, Wang Xiaowei's 《Research on the Application of BOPPPS Model Based on Online Intermediate Chinese Integrated Class》 and Sun Yating's 《Design and Application of BOPPPS Teaching Model in Online Teaching of Advanced Chinese Reading》, have shared their research reports on the adoption of BOPPPS teaching model in Chinese classrooms.

It can be seen that there are still few Chinese classrooms using the BOPPPS teaching model, and there is even less research on teaching Chinese to Colombian students. Therefore, this paper designs

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and analyzes this teaching case using the BOPPPS teaching model with Colombian students as the research object, help learners to learn Chinese better.

2 RESEARCH METHODOLOGY AND PROCESS

The following section will use BOPPPS to record and analyze feedback from Colombian Chinese classrooms.

2.1 Division of Teaching Elements

The BOPPPS teaching model consists of six main elements, namely Bridge-in, Objective, Pre-assessment, Participatory Learning, Post-assessment, and Summary (Cao, Yin, 2016), as shown in Table 1.

The introductory element, often referred to as the "hook," helps students become interested in new learning and accelerate their motivation by stimulating their curiosity. The pre-assessment stage is used to assess the learners' current learning level and to remind the learners of what they have mastered; the classroom participation stage is to use active learning strategies to make the learners deeply involved in the classroom to achieve the teaching objectives; the post-assessment stage is to determine the learners' mastery of the knowledge associated with the teaching objectives after the classroom learning; the summary stage is to provide an opportunity for the teacher and the learners to reflect together and to help teachers and students to prepare for the next teaching (Zhang, Zhu, 2016).

Table 1. Analysis of BOPPPS teaching elements

Elements	Purpose
1.Bridge-in	Stimulate students' curiosity and help them become interested in new content
2.Objective	The level that students should achieve through their studies
3.Pre-assessment	Assessing the learners' current learning level to facilitate the teaching follow-up arrangement
4.Participatory Learning	The process of using active learning strategies to deeply engage learners in the classroom and ultimately achieve instructional goals
5.Post-assessment	Determine the extent to which learners have mastered the knowledge associated with the instructional objectives after this classroom learning
6.Summary	Provide an opportunity for teachers and learners to reflect together and help teachers and students prepare for the next instruction

2.2 Teaching Module Design

The BOPPPS teaching model is composed of the above six modules, and teachers should not be able to design their lessons in a formal way, nor should all lessons be designed strictly according to these six modules. The purpose of the model is to improve the effectiveness of teaching and learning and to provide a reference for teachers who use the BOPPPS teaching model for classroom teaching (Zhou, Zhong, 2018). Therefore, according to the six teaching elements, the teaching tasks are arranged in three teaching phases: before, during and after class, and specific teaching modules are designed as shown in Table 2.

Table 2. Teaching module design

Teaching process	Serial number	Elements	Task	Teaching
Before Class	1	Bridge-in	Stimulate learning interest 、 classroom introduction	Why
	2	Objective	Clarify learning objectives	What/How well
	3	Pre-assessment	Understanding students' Chinese level to prepare for teaching	Know what
During the lesson	4	Participatory Learning	Set teaching measurements to guide students' active learning	How to learn
	5	Post-assessment	Test the learning effect of students and the teaching result of teachers	How well
After Class	6	Summary	Self-reflection and lessons learned	Know Yourself

2.3 Comparative Data Analysis

In this case, the feasibility of the teaching model was evaluated by comparing and analyzing the students' learning assessment scores. The students were divided into two groups of five students each, with the first group being the better learners and the second group being the lower learners. Under the same classroom conditions, the weights of the pre-test, stage assessment and summative assessment of the two groups were recorded to observe whether the students had mastered the learning contents. Finally, the comparative analysis was conducted, and the teaching mode was considered effective when the difference between the weights of summative assessment scores and pre-class assessment scores of each group of students was P≥10 and the difference between the weights of the two groups of students was S≤5, as shown in Table 3.

Table 3. Analysis and comparison of student Achievement

Group	Measurement phase	pre-class assessment	stage assessment	summative assessment	P	S
	Serial number	1	2	3		
Group 1	1	2	3	5	12≥10	2≤5
	2	3	4	5		
	3	3	3	4		
	4	4	6	7		
	5	2	4	5		
Total		14	20	26		
Group 2	1	1	3	4	15≥10	
	2	2	3	5		
	3	2	4	6		
	4	1	2	4		
	5	3	4	5		
Total		9	16	24		

2.4 Teaching Feedback Analysis

From the above data, it is clear that the BOPPPS teaching model has a positive effect on the improvement of students' performance. Based on this, a questionnaire survey on student satisfaction was conducted after the class, and the results of student feedback were consistent with the results of objective achievement improvement, as shown in Figure 1.

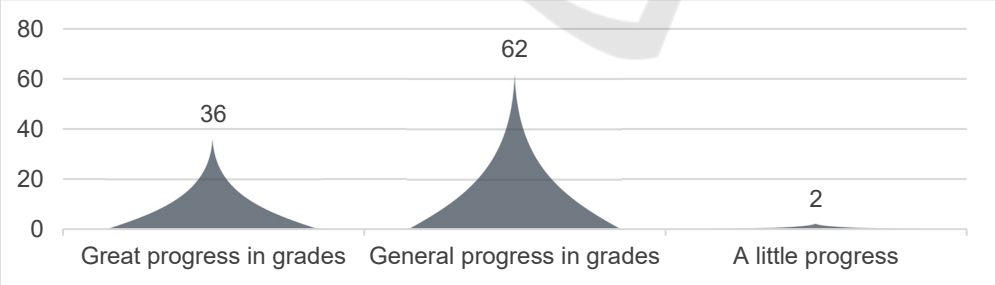

Figure 1. Student satisfaction survey statistics

The results proved that the BOPPPS teaching model is applicable to Chinese classroom teaching and beneficial to students' learning.

3 CONCLUSIONS

This teaching case is based on the BOPPPS teaching model, which combines computer technology and modern education. The experimental results show that the teaching effect is significantly improved,

which has certain guiding significance for Chinese teaching. In addition, in the actual teaching, teachers should adjust flexibly according to the specific situation of classroom teaching and pay attention to the timeliness of "interaction-feedback" inside and outside the classroom (Wang, Duan, 2022). However, the limitation is that the sample size and representativeness are not enough. The sample size can be further expanded in the future to extend the findings and provide a basis for subsequent analysis of similar Chinese classrooms.

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