

Deep Chinese Teaching and Learning Model Based on Deep Learning

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Abstract—Deep learning is a more situational and reflective way of learning that integrates complex knowledge and skills into intuitive thinking. As a language that closely combines sound, form and meaning, Chinese teaching and learning from the perspective of deep learning can help break through the limitations of the current teaching model that only focuses on certain language knowledge or cultural behaviors. This paper combines deep learning with international Chinese education, creates deep Chinese teaching and learning model including “four stages and ten steps”, and carries out practical application and teaching effect test. The results show that the deep Chinese teaching and learning model is conducive to improving students’ discourse presentation ability and comprehensive skills, cultivating the learners’ autonomous learning ability and intercultural communication competence, and strengthening the integration of language teaching and cultural teaching. At the same time, this model also has some limitations, need to be further adjusted and optimized.

Keywords—deep learning, international Chinese education, teaching and learning model

I. INTRODUCTION

As an important part of China’s international communication system, the fundamental mission of international Chinese education is to remove language barriers and cultural barriers for learners, make people from different countries and regions cooperate and communicate more smoothly, reduce prejudice and misunderstanding, and increase consensus and understanding [1]. However, the current Chinese teaching and learning model hasn’t fully adapted to the new needs of the communication of Chinese culture, as the integration of language teaching and cultural teaching is not close enough, and the exploration and explanation of Chinese deep culture is lacking [2, 3].

International Chinese education has three main goals: firstly to cultivate the learners’ ability to use Chinese for communication, secondly to cultivate the learners’ ability of self-learning Chinese, and thirdly to improve the learners’ Chinese cultural literacy [4]. One way to achieve the desired integration may be through the concept of deep learning [5].

II. DEEP CHINESE TEACHING AND LEARNING MODEL

Deep learning is the opposite of surface learning. Surface learning involves more explicit (mostly conscious) forms of knowledge, while deep learning involves the integration of complex or abstract (mostly unconscious) patterns of knowledge into intuitive thinking. Surface learning generally corresponds to specific cultural facts and behaviors, whilst deep learning focuses on such things as values, thinking patterns, and aesthetic tastes. Deep learning usually has the

following characteristics; it creates situational problems and focuses on process exploration, it pays attention to experience and chooses content integration, and it emphasizes the critical understanding and cultivates critical thinking.

The teaching model is a medium through which the teachers and students obtain a variety of successful teaching methods. Teaching models not only have a strong logic in theory, but also have a great role in practice, it is the basis of professional teaching. Whether the teachers are new or experienced, understanding and applying the teaching models is an important way to professionalize their teaching.

Combined with the connotation and characteristics of deep learning, this paper forms a deep Chinese teaching and learning model of “four stages and ten steps” (see Fig. 1). The model refers to the inquiring teaching and learning model in Teaching Chinese to Speakers as a Second language [6], “flipped classroom” Chinese teaching model [7], the Production-oriented teaching model of “motivate, facilitate and evaluate” [8] and drama teaching model of “Interpretation, adaptation and creation” [9].

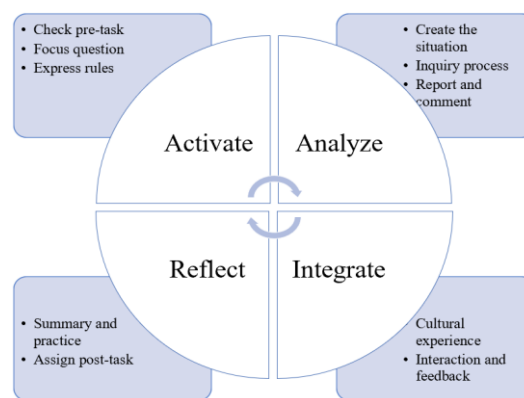


Fig. 1. Deep Chinese teaching and learning model.

Deep learning therefore provides a new thinking dimension for Chinese language and culture learning and teaching. The construction of the deep teaching and learning model in Teaching Chinese to Speakers of Other Languages (TCSOL), based on the concept of deep learning is conducive to breaking through the thinking limitations of traditional Chinese teaching, whilst promoting the learners’ deep reflection and self-development, and thus promoting the international Chinese education and the spread of Chinese culture. TCSOL core teaching objectives are: to cultivate the learners’ ability to independently explore Chinese knowledge and language skills by creating situations; to cultivate the learners’ ability to describe culture, explain culture, compare

culture and evaluate culture through cultural experience [10]; to cultivate the learners' competence to use Chinese for intercultural communication through teacher-student interaction, and to improve their comprehensive literacy.

III. APPLIED RESEARCH

In order to test the effect of the deep Chinese teaching and learning model in actual teaching practice, I selected students studying on a comprehensive course of intermediate Chinese for practical application and in-depth discussion at Beijing Normal University for 6 months. There are 15 students (1 male and 14 female), aged between 25–40, with HSK-4 level from Russia, Belarus and other “Belt and Road” countries. They are all Chinese language teachers by profession, with more than 5 years' experience teaching Chinese. The textbook selected for the students is “Practice Chinese: Intermediate Reading and Writing” (edited by Zhu Zhiping and Liu Lanmin). This research chooses two classes of reading and writing from the unit 5 of Love and marriage of the textbook, which mainly uses the text content of Lesson 17 “A psychological Test about Love” and Lesson 20 “The Story of Liang Shanbo and Zhu Yingtai (The Butterfly Lovers)”, including 30 new words and 6 grammar points. The duration of one class is 50 min, and the total length of two Chinese classes is 100 min.

This application research tries to solve the following questions:

- 1) What is the teaching effect of the deep Chinese teaching and learning model?
- 2) What are the implications of the deep Chinese teaching and learning model?

IV. DATA COLLECTION, ANALYSIS AND RESULTS

Following Chinese lessons of 100 minutes, the data was collected through questionnaires, classroom videos, interviews between teachers and students, to test the teaching effect of the practical application of the deep Chinese teaching and learning model, including three parts: the student satisfaction, time allocation in classroom teaching and students' composition quality. Results are summarized briefly.

A. Students' Satisfaction

After implementing the deep Chinese teaching and learning model, we conducted an anonymous questionnaire survey of 22 questions among the 15 students, to understand their evaluation of teaching and learning effects (see Table 1).

The survey shows that the students are satisfied with the teaching effect and learning effect of the deep Chinese teaching and learning model (average score is above 4.5, full score is 5). Some students believe that the teaching objectives of Chinese courses are appropriate, the teaching methods are conducive to the achievement of teaching objectives, the students have strong enthusiasm to participate in class activities, the class atmosphere is active and the teacher-student interaction is good (average score is above 4.5). At the same time, some students think that the teaching content does not fully meet the needs of students, the instructions and expressions of goals and tasks are not very clear, and the quality of students' answers to questions and tasks needs to be improved (the average value is about 4.0).

Table 1. A survey of students' satisfaction with deep Chinese teaching and learning model

Questions	Average score
1. The teaching objectives of the course are appropriate	4.5
2. The teaching content meets the needs of students	4.0
3. Both pre-task and post-task are appropriate	4.3
4. The instructions and statements of the objectives and tasks are clear	4.1
5. The arrangement of teaching steps is reasonable	4.2
6. The teaching methods are helpful in achieving goals	4.5
7. Students are active in participating in class activities	4.5
8. The quality of the students' answers was excellent	4.0
9. Student task completion quality is particularly good	4.1
10. The interaction between teachers and students is good	4.6
11. You are satisfied with the teacher's teaching effect	4.6
12. You are satisfied with your learning results	4.5

In terms of the interviews and questionnaires, the students argued that compared with the traditional Chinese teaching model, this teaching and learning model pays more attention to exploring the basic national conditions of China and modern and contemporary culture, and the continuous writing task and abbreviation task has improved their Chinese character writing ability. However, some students argued that they had little contact with Chinese culture before and had a weak Chinese foundation, so they felt difficult in the learning process, including the need to study Chinese daily because of life commitments.

B. Proportion of Time Spent in Class

Through classroom video and specific observation, we recorded the time occupied by this teaching model in each of the ten steps within the 100-minute Chinese classroom teaching, trying to test whether the deep Chinese teaching and learning model really realized the goal of “taking the students as the main body of classroom teaching” and “cultivating the learners' intercultural communicative competence”.

Teacher-led activation stage takes up 10% of the time, the student-centered analysis stage takes up 37%, the teacher-student interaction stage takes up 35%, and the reflect stage involving teachers and students takes up 20%. In the whole teaching process, “interaction and feedback” occupies the highest proportion of time (25%), which indicates that teacher-student interaction is the most frequent at this stage, and the students use the Chinese language points and cultural content they have learned to conduct intercultural communication with teachers. According to this, the teacher takes the lead time of 20 to 30 percent of the whole course, and the student takes the lead time of 70 to 80 percent of the time. The content arrangement and time allocation of the whole course are reasonable, basically achieving the teaching objectives.

C. Production Quality

In order to further understand the quality of students' output products and their learning effects, we collected 47 compositions from students, and assessed whether students

used core new words and important grammatical points in their compositions, and whether they had the ability to objectively describe, explain, compare and evaluate culture of different countries. There were five different types of written assignments with key or core vocabulary that needed to be used (see Table 2).

Table 2. Composition topic and writing requirements

Topic	Writing Requirements
1. Courtesy demands reciprocity	Please use the language point “never (千万), catch (接), each other (互相), throw (扔), gift (礼品), actually (其实), exchange (换), give gift (送礼), is (是……的) write about the custom of giving gifts in your country.
2. Different customs	Please introduce the table manners in your country using the language points “characteristic (特点), knife and fork (刀叉), manner (方式), party (聚会), more A more B (越A越B), just (刚好), however (然而), still (还)”.
3. Love and marriage	Do you believe in love at first sight or love over time? Please use the language point “although... (尽管……但是) It’s easy to... (好不容易) willing (愿意), constant (不断), quite (十分), love at first sight (一见钟情)” to write.
4. This era	According to the article “Love in this Era”, guess after secretary Xiao Gao and “I” married what will happen? Please use “since (既然) finally (最终), fulfilled (实现), full (充满), beautiful (美好), dream (梦想), romantic (浪漫) “Continue the following story.
5. Dink and ding chong	Watch the video About Dink’s Choices and Struggles and write down your attitudes and opinions about Dink using “While (趁着), without (用不着), fertility (生育), energy (精力), retirement (养老), recent years (近年来), freedom (自由自在)”.

These five kinds of essay questions are all post-assignment tasks for students. The students are required to complete the composition within 50 minutes according to the writing requirements, and the number of characters is about 300. The evaluation criteria of writing tasks are based on content synergy and language synergy, and the correlation between the students’ continuous composition and the vocabulary, grammar and content of the original text is analyzed. The analysis index refers to the analysis methods of Liu and Peng [11], and Qi Haifeng and Liao [12]. Content collaboration examines the correlation between the students’ compositions and the given examples from two aspects of composition structure and information point.

By analyzing the synergy between students’ compositions and post-assignment tasks (see Table 3), we find that: (1) the average synergy between vocabulary, grammar, content and follow-up tasks of students’ compositions ranges from 66% to 89%, indicating that the deep Chinese teaching and learning model enables the learners to master more than two-thirds of the core new words, important grammatical points and content themes. (2) In the longitudinal comparison, the content coordination average of students’ compositions is the highest, followed by lexical coordination, and grammatical coordination is the lowest, which indicates that the students’ understanding and use of the content of the post-task is relatively good, but the use of important grammar points needs to be improved. Through communication with students, it is found that the reason is that the creation of context and cultural experience of the deep Chinese teaching and learning

model deepens students’ understanding and application of learning content, and the coordination degree of the posterior task content is high. But some students think that the traditional “lead-in, explain and practice” approach may be more effective when it comes to grammar learning. (3) In terms of horizontal comparison, the mean value of students in lexical coordination, grammatical coordination and content coordination gradually increases, while the standard deviation gradually decreases. This indicates that with the change of time, the students become more familiar with the deep Chinese teaching and learning model, the learning effect is gradually improved, and the internal differences among students are gradually reduced.

Table 3. Average and standard deviation of synergism between students’ compositions and tasks

	Analysis Index	Word	Gramma	Content
topic 1	AVG	69%	66%	75%
	STDEVP	0.168	0.159	0.152
topic 2	AVG	67%	68%	68%
	STDEVP	0.119	0.131	0.129
topic 3	AVG	80%	79%	81%
	STDEVP	0.05	0.06	0.067
topic 4	AVG	81%	80%	81%
	STDEVP	0.059	0.079	0.059
topic 5	AVG	86%	85%	89%
	STDEVP	0.058	0.07	0.037

The proportion of time spent in Chinese classroom, the quality of students’ output products and students’ satisfaction have always shown that the “four stages and ten steps” deep Chinese teaching and learning model has achieved good teaching effects. The teachers play a guiding and auxiliary role in classroom teaching, the students give full play to their subjective initiative, take the initiative to participate in the study of situational problems and in-depth cultural experience, and the teaching objectives are basically accomplished.

V. DISCUSSIONS AND IMPLICATIONS

From the perspective of deep learning, this paper constructs a deep Chinese teaching and learning model, and tests it through practical application within the classroom and teaching environment. In this study, the deep Chinese teaching and learning model is applied to the intermediate Chinese intensive reading course. Practice teaching shows that the deep Chinese teaching and learning model is student-centered, gives full play to the initiative of the students’ independent inquiry, and attaches importance to the integration of language teaching and cultural teaching. Students’ satisfaction on teaching and learning effects is relatively high, and the quality of students’ compositions is also rising steadily.

The study has shown that there are a number of advantages to the deep Chinese teaching and learning model. Firstly, it helps to enhance the students’ understanding and application of language points. This model prompts the students to deepen their understanding of the target language points through step-by-step prompt information. Through group discussion and questions, the memory of target language points is strengthened and the comprehensive application ability of target language points is improved.

Secondly, it is helpful to exercise the students’ discourse

expression ability. Through the complementary training in oral and writing, the students deepen their understanding of complex sentence patterns and complete discourse, and develop their ability to comprehensively analyze and creatively use Chinese discourse. Thirdly, it is helpful to construct the classroom relationship of multi-dimensional cooperation between teachers and students. Students continue to learn and export Chinese with the help of teachers and peers, being both language users, and also co-creators. The multi-dimensional cooperative classroom relationship between teachers and students promotes the students' bold exploration and expression, and improves the students' language communication competence.

The study has also identified a number of possible limitations of the deep Chinese teaching and learning model that would need addressing. First of all, teachers need to spend more time after class reorganizing the content and knowledge points of the text, and designing well-organized prompt information, which increases the workload of teachers virtually. The teachers need to strengthen their understanding of deep learning, and then combine deep learning with Chinese teaching. Secondly, this model focuses on promoting the learners' self-exploration of knowledge, so it does not pay enough attention to the practice and application of knowledge points. Although the homework can play a certain role in knowledge application, it still needs to be combined with other teaching models to improve this teaching link. This is also one of the important reasons why some students are not used to this new teaching mode. Finally, the small number of participants in the empirical study limits the scope of the results. Additional studies with greater numbers are needed to further corroborate the results.

The study also has a number of implications of the possible use of the deep Chinese teaching and learning model. The initial results show that the method of deep learning can be applied to international Chinese education, and the deep Chinese teaching and learning model based on deep learning has achieved good teaching effects. In the process of Chinese teaching, the teachers can explore the depth rather than the breadth of learning by creating situations and cultural experiences, and cultivate the learners' critical thinking. This study focused on students with HSK-4, and there is scope for further work at other HSK levels. In addition, the students were all Chinese language teachers and additional studies may need to be with a different student base.

The deep Chinese teaching and learning model based on deep learning is a new attempt, which builds a benign approach of language and culture exploration based on the individual development of learners. Educators can use it as an overall framework for planning activities and syllabuses. It can also be flexibly used in a single Chinese teaching course or multiple continuous Chinese classes. The in-depth teaching perspective encourages the students to think, search and explore, and the learners will find that Chinese is not just a set of skills or a language medium for finding jobs, but also transformative experiences and self-development. In this

sense, the model is designed for those who view Chinese language learning as a form of cultural exploration and personal growth, helping students to have a deeper understanding of Chinese culture and promoting its dissemination.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Wang, Yipu developed the Deep Chinese teaching and learning model and the research questions, as well as designing and administering the questionnaire and interview surveys. The data was jointly analyzed by both Wang, Yipu and Perrin, Stuart. The paper was jointly drafted between the co-authors. Both authors have read and agreed to the final version of the manuscript.

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