

Learner Attitude and Satisfaction in Chinese Vocabulary Learning under CALL

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Abstract: In this information age, we try to understand the attitude of native English learners when they adopt technology in Chinese language learning. This paper uses qualitative analysis to investigate the attitude of Chinese language learners before and after the use of computer-assisted language learning (CALL) software in Chinese vocabulary learning. Participants were divided into three groups: one control group (1B, $N_1=6$) and two experimental groups (1A, $N_2=5$ and 2A, $N_3=13$). Questionnaires were handed out to participants before and after the experiment CALL course. This paper discusses the relationship of learning motivation and learning efficiency, vocabulary growth of learners using CALL, and participant satisfaction of using CALL as a supplement to traditional classroom teaching. The main findings are: the average satisfaction for Experimental Group 1A was 4.58 whereas the average satisfaction for Experimental Group 2A was 3.22 (full score 5); The average satisfaction for the experimental groups together (1A + 2A) was 3.60 (full score 5); the top three satisfaction categories are: The 1,033 Chinese vocabularies are appropriate for my present Chinese learning (4.06) > I can recognize and understand more Chinese characters and words (3.89) > I am getting familiar with the four tones of Hanyu (3.89); the bottom three satisfaction categories are: I am satisfied with the effectiveness of the CALL software (3.28) < I am satisfied with the art design of the interface (3.33) < I can understand and memorize more Chinese vocabularies from the simple English/Chinese translations; I think this method is fast and effective (3.39).

Keywords: CALL, Attitude, Satisfaction, Chinese words

3. Introduction

When learning a new language, the amount of vocabulary learners master influences their language level in listening, speaking, reading, and writing considerably. Each Chinese character has its own traits and is not easily learned by native English speakers. The great difficulty in learning Chinese characters and phrases makes it harder for learners to achieve a higher level in Chinese proficiency.

Computer-assisted language learning (CALL) has become a popular method for learning foreign languages. Goodfellow and Laurillard (1994) proposed four reasons to use CALL in language learning: 1) computers could record the learning process accurately, 2) the information typed could describe the strategies of the user, 3) the environment of CALL could be used as a “cognitive platform” for research, and 4) CALL was a “detailed evaluation tool” for inspecting language learning theories. Apart from the above reasons, the authors would like to add another eight points for using CALL in language learning, which are: 1) it is an efficient standardization tool in learning and testing contents, 2) the rapid switch between screenshots of CALL is more efficient than in classroom teaching, 3) a common interface for learning and testing reduces teaching management load, 4) adaptive scientific tests produce a more accurate test score, 5) a non-threatening learning environment makes making mistakes less intimidating, 6) learning is unrestricted by place, 7) learning is unrestricted by time, and 8) CALL may be integrated into classroom education to produce a more satisfactory teaching result.

Ho and Huong (2011) adopted the concept of Key Performance Indicator (KPI) of management science in EFL vocabulary learning, named Vocabulary Quotient (VQ). Three models of VQ were designed to test English spelling, word recognition, and listening proficiency. Chinese vocabulary recognition, listening, and word choice models were designed according to the concept of VQ in our experiment.

Methods including Dynamic Timing of Reviews (DTR), multi-sensory learning, simple English/Chinese translations, and native language learning were adopted by CALL in this experiment.

The theory of DTR was based on the Ebbinghaus Forgetting Curve (Ebbinghaus, 1913) and used the concept of arithmetic progression to explain human memory. According to the learning theory, the more sensors used in learning, the better the memory results. Reading, listening, touching (typing), speaking, and memorizing were practiced in CALL application. Chen (1999) claimed that “although direct Chinese/native language translations are often criticized, this method of learning Chinese is simpler, and its drawback may be offset by practical application in a Chinese language environment”. Chomsky (1959) advocated that language was learned by understanding the syntax of the target language and by imitation.

Although CALL has several advantages, what are the attitude of native English speaking learners in using CALL to learn difficult Chinese characters and phrases? What are their impressions of CALL? Future research and development may be benefited by understanding the attitude and satisfaction of participants after using CALL.

3.1 Research questions

According to the motivation of this study, research questions are listed below.

Q₁: What are the attitudes of native English speaking learners in learning Chinese characters with CALL?

Q₂: How learners are satisfied with learning Chinese with CALL?

4. Methods

For exploring the research questions, following subsections describe our experiment. A CALL Chinese vocabulary learning and reviewing system was developed by authors and used for this study.

4.1 Questionnaires

There are two questionnaires used in this study.

- 1) Questionnaire 1 (Pre-test Questionnaire): Investigates the Chinese learning motivation, Chinese vocabulary learning style, and Chinese learning cognitive mode of the participants.
- 2) Questionnaire 2 (Post-test Questionnaire): Investigates CALL software satisfaction, merit and fault evaluation, and improvement suggestion of the participants.

4.2 Participants

The participants of this experiment were all US language students studying Chinese in China. They had intermediate level in Chinese. These college students, range from 19 to 22 years old, came from two different education institutions and were divided into three groups. Experimental Group (1A, $N_2=5$) and Control Group (1B, $N_1=6$) come from a class (low-intermediate level) in CIEE (Council of International Education Exchange) Shanghai Center. The class was divided into two groups (1A and 1B), both groups received classroom education, but only 1A received an extra CALL course after class. Experimental Group 2 (2A, $N_3=13$) was a class (Class 1) from Carleton College, US. The students had an intermediate Chinese level. Class 1 all participated in the CALL experiment.

The ideal number of participants for this experiment was 30 people, but because of limited English native speakers, we could only find the class with the highest number of English native speakers to participate in the experiment.

4.2.1 Materials

This experiment adopted a Lexical CALL-DTR software system named “Chinese Words Booster-Grasp 1,000 Chinese Words in 20 hours.” This Chinese vocabulary CALL software included 1033 high frequently used vocabularies and used various learning methods such as DTR (Dynamic

Timing of Review) review method, e-flashcards, collaborative learning method, and simple translations to boost the vocabulary of Chinese language learners.

4.2.2 Apparatus

Two software systems were used in this experiment: the Chinese vocabulary testing system and the Lexical CALL-DTR Chinese vocabulary learning and reviewing system. Figure 1 shows the main screen of the system. Figure 2 shows the screen of practice function.

This CALL system had six question types (see Figure 3) specifically designed for word recognition and listening. Test 1 and Test 2 were Chinese reading tests: in Test 1 (see Figure 4), the learner read a Chinese word and chose its English meaning; in Test 2 (see Figure 5), the learner read an English narrative and chose its Chinese meaning. Screens of Test 3-6 are shown in Figure 6-9. Note that Test 3 and Test 4 provide Chinese speech sound to test ability of listening.



Figure 1. Main Screen of CALL-DTR system.

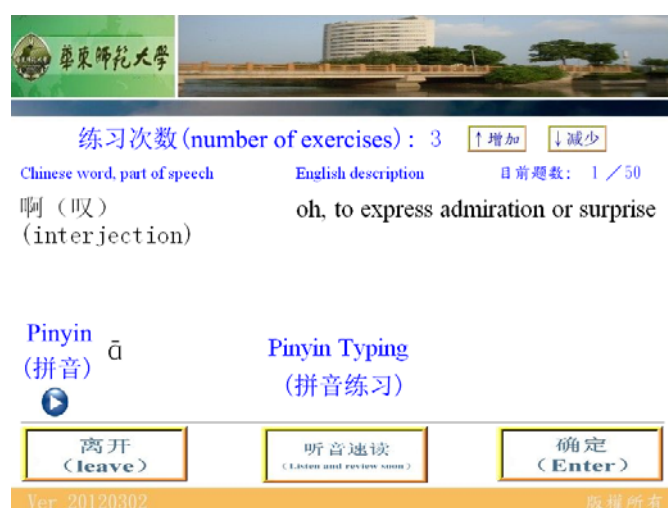


Figure 2. Screen of Practice Function.



Figure 3. There are six question types.



Figure 4. Screen of Test 1.



Figure 5. Screen of Test 2.



Figure 6. Screen of Test 3.



Figure 7. Screen of Test 4.



Figure 8. Screen of Test 5.

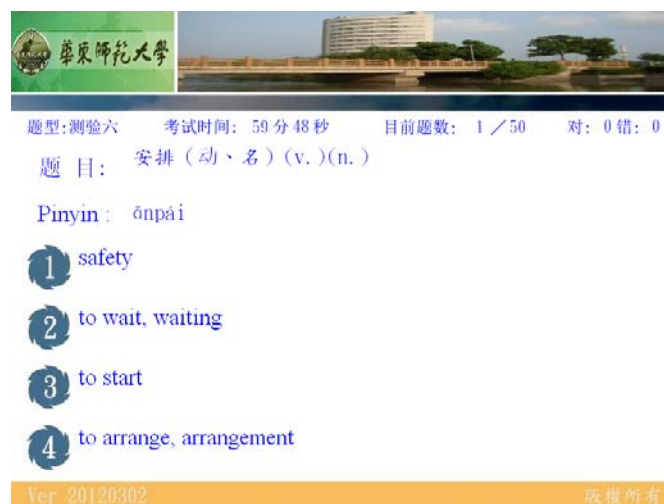


Figure 9. Screen of Test 6.

4.2.3 Procedure

The experimental groups adopted the Lexical CALL-DTR model. Their CALL learning records were collected and saved automatically. The control group did not have any after class courses. The operating hours of the experimental groups were 11 hours. Experimental Group 1 (1A) divided the course into 12 lessons, and Experimental Group 2 (2A) divided the course into 8 lessons.

The experiment procedure was as follows:

- a) Pilot study
- b) Pre-test questionnaire (Questionnaire 1)
- c) Pre-test of Chinese vocabulary proficiency
- d) CALL experiment
- e) Post-test of Chinese vocabulary proficiency
- f) Post-test questionnaire (Questionnaire 2)

5. Results and Discussion

5.1 The effect of learning elements on learning efficiency under CALL mode

In this section, we discuss the learning effect of CALL mode under three variables: the Hanyu learning motive variable, learning style of Chinese character and phrase variable, and the cognitive mode of Chinese character and phrase variable.

In Questionnaire 1 (Table 1), participants were offered six multiple-choice Hanyu learning motivation options in which all six options could be selected. The experimental group 1A and 2A (18 participants) together chose 50 options, and had an average of 2.8 choices each. The questionnaire result was analyzed according to 1) the percentage of each chosen option, 2) the order of the percentage of each chosen option, and 3) the order and analysis of progress in each option.

Table 1: Motives for learning Chinese.

No.	Learning motive option(s)	Option for motive in learning Chinese (with no.)	No. of times selected	Percentage of times selected	Mean percentage of progress
1A-1	1,2,3,4	1. Present or future business purposes.	3	6.0%	37.2%
1A-2	3				
1A-3	1,4				
1A-4	3,4,6	2. To make it easier for job hunting.	6	12.0%	16.5%
1A-5	3,4				
2A-1	3,4				
2A-2	3,4,6	3. Academic purposes	14	28.0%	20.8%
2A-4	3,4,6				
2A-5	4				
2A-6	2,3,4	4. Culture and trip purposes	16	32.0%	22.2%
2A-7	3,4				
2A-8	1,2,3,4,6				
2A-9	4,5,6	5. My ancestor(s) is Chinese; I think it's good for me to study Chinese.	3	6.0%	18.4%
2A-10	2,3,4				
2A-11	2,3,4				
2A-12	3,6	6. Interested in China or Chinese, but uncertain whether I will use Chinese in the future.	8	16.0%	19.5%
2A-13	2,4,5,6				
2A-14	3,4,5,6				

Table 2 shows the top three motives for learning Chinese are 1) culture and trip purposes, 2) academic purposes, and 3) interested in China or Chinese, but uncertain whether I will use Chinese in the future.

Table 2: Ranking of learning motives.

Ranking of choice	Learning motivation options	No. of times selected	Percentage of times selected	Mean percentage of progress
1	4. Culture and trip purposes	16	32.0%	22.2%
2	3. Academic purposes	14	28.0%	20.8%
3	6. Interested in China or Chinese, but uncertain whether I will use Chinese in the future.	8	16.0%	19.5%
4	2. To make it easier for job hunting.	6	12.0%	16.5%
5	1. Present or future business purposes.	3	6%	37.2%
5	5. My ancestor(s) is Chinese; I think it's good for me to study Chinese.	3	6%	18.4%
Total		50	100.0%	

5.2 Self-evaluation of participants in Chinese vocabulary growth

In this section, we discuss the participant satisfaction of CALL system and teaching aspects under CALL mode by analyzing the post-test (Questionnaire2) results of 18 experimental group participants (1A + 2A) in 1) self-evaluation of Chinese vocabulary growth, 2) self-satisfaction, 3) relationship between self-satisfaction and progress, and 4) relationship between self-satisfaction and post-test score.

In Question 1 of Questionnaire 2, participants were asked whether their Chinese vocabulary grew after using the software. From the results in Table 3, a third (38.9%) of the participants achieved high learning efficiency, half (55.6%) of the participants achieved a medium level learning efficiency, and 5.5% of the participants did not consider the software helpful in learning Chinese vocabulary. The participants had lower vocabulary retention than we predicted, especially 2A in “self-evaluation of

Chinese vocabulary growth.” We suspect this to be the result of insufficient number of courses (8 80-minute courses), but the lack of detailed introduction to CALL might have some relation to this result as well.

Table 3: Percentage of Chinese vocabulary growth in the self-evaluation of the experimental groups.

Options	No. of times selected	Percentage of times selected
(1) Chinese vocabulary increase sharply every week.	7	38.9%
(2) Chinese vocabulary increase slowly every week.	10	55.6%
(3) Chinese vocabulary did not increase.	1	5.5%
Total	18	100.0%

5.3 Participant satisfaction in CALL

The 18 participants in experimental groups 1A + 2A were analyzed in CALL satisfaction. With the full score as 5, the average satisfaction for 1A was 4.58 whereas the average satisfaction for 2A was 3.22 (Table 4). The reasons for the difference are as follows:

1) Although both groups had 11 hours of CALL course, the lessons for each group were divided into 12 lessons for 1A and 8 lessons for 2A. In comparison with 2A, 1A practiced more frequently and had more time to absorb the teaching material. The total amount of vocabulary of 2A was 1.5 times the amount of 1A, yet the total reviewed vocabulary was only 60.2% of 1A. Under this condition, 2A had lower learning efficiency and satisfaction than 1A.

2) Experimental group 1A and Control group 1B came from the same institution (CIEE), therefore, unlike 2A, 1A voluntarily participated in the experiment actively. Furthermore, the Chinese vocabulary level of 1A was lower than 2A, so the sense of achievement and satisfaction 1A got from completing the course exceeded that of 2A.

Table 4: Participant satisfaction in CALL.

Question Descriptions	1A	2A	Average of experimental groups
1. I am satisfied with the effectiveness of CALL.	4.20	2.92	3.28
2. CALL program helps increase my vocabulary.	4.80	3.23	3.67
3. I can recognize and understand more Chinese characters and words.	4.80	3.54	3.89
4. I am getting familiar with the four tones of Hanyu.	4.60	3.62	3.89
5. I can understand and memorize more Chinese vocabularies from the simple English/Chinese translation, which I think is fast and effective.	5.00	2.77	3.39
6. I am satisfied with the art design of the interface.	4.40	2.92	3.33
7. I am satisfied with the sound of the software.	3.80	3.46	3.56
8. The 1,033 Chinese vocabularies are appropriate for my present Chinese learning.	5.00	3.69	4.06
9. The ‘intensive review’ in the software really helps me in memorizing Chinese vocabulary.	4.80	3.00	3.50
10. The test function in the software really helps me memorize Chinese vocabulary.	4.40	3.08	3.44
Average	4.58	3.22	3.60

5.4 Participant satisfaction for the experimental groups as a whole

The average satisfaction for the experimental groups (1A + 2A) was 3.60 (Full score 5). This unsatisfactory result motivates us to improve the “Chinese vocabulary learning system CALL.”

The top three satisfaction categories are shown in Table 5, which means 1) the 1,033 word Chinese vocabulary are suitable for intermediate level students, 2) participants are generally satisfied with their vocabulary progresses, and 3) participants generally find their four tones of Hanyu has improved.

Table 5: Top three satisfaction categories in user experience of CALL.

Top three satisfaction categories	Question Descriptions	Average
1	H. The 1,033 Chinese vocabularies are appropriate for my present Chinese learning.	4.06
2	C. I can recognize and understand more Chinese characters and words.	3.89
3	D. I am getting familiar with the four tones of Hanyu.	3.89

Table 6 shows the bottom three satisfaction categories, which implies 1) a need to improve CALL system, 2) a need to design a better visual interface, and 3) the use of simple English/Chinese translations have opposite effects for 1A and 2A (1A gave full score and 2A gave 2.7). This may be due to the lack of sufficient introduction during the experiment; therefore, participants could not grasp the main idea of the exercise.

Table 6: Bottom three satisfaction categories in user experience of CALL.

Bottom three satisfaction categories	Question Descriptions	Average
1	A. I am satisfied with the effectiveness of the CALL software.	3.28
2	F. I am satisfied with the art design of the interface.	3.33
3	E. I can understand and memorize more Chinese vocabularies from the simple English translations. I think this method is fast and effective.	3.39

6. Conclusion

Based on the results of this study, some findings are concluded below. They might be useful for people who want to develop Chinese CALL systems for native English speakers.

6.1 The effect of learning motive on learning efficiency

The top three motives for learning Chinese were 1) culture and trip purposes, 2) academic purposes, and 3) interested in China or Chinese, but uncertain whether I will use Chinese in the future.

6.2 Self-evaluation of participants in Chinese vocabulary growth

A third (38.9%) of the participants achieved high learning efficiency, half (55.6%) of the participants achieved a medium level learning efficiency, and 5.5% of the participants did not consider the software helpful in learning Chinese vocabulary.

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6.4 Participant satisfaction for the experimental groups as a whole

The average satisfaction for the experimental groups (1A + 2A) was 3.60 (Full score 5). The top three satisfaction categories were: The 1,033 Chinese vocabularies are appropriate for my present Chinese learning (4.06) > I can recognize and understand more Chinese characters and words (3.89) > I am getting familiar with the four tones of Hanyu (3.89).

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6.5 Suggestion for vocabulary teaching

In the information age, self-access language learning is a suitable method for learners to study by themselves. Computer-assisted language learning software is a valuable tool for autonomous language learning. We suggest utilizing autonomous language learning, CALL theory, and empirical evidence to establish an effective Chinese vocabulary course and learning system. Furthermore, by integrating CALL in classroom teaching, teachers may efficiently control the education materials and design more comprehensive teaching plans.

6.6 Future development

Future development of the CALL software system may include integration with mobile interfaces, such as iOS and Android, as well as other online versions of CALL.

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