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Chinese character learning: Using embodied animations in initial stages (漢字學習：在初級階段使用體現動畫)

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Abstract: The purpose of the study is to investigate a new approach, Embodied Animations, to Chinese character learning (CCL) for beginning learners of Chinese as a Foreign Language (CFL). The study adopted a between-subjects experimental design to examine the effectiveness of three groups: Traditional Learning (TL), Animation Learning (AL), and Embodied Animation Learning (EAL). Thirty-six adults were randomly assigned to one of the groups. The CALL programs were created using Flash. The results indicated that the EAL group outperformed the other two groups in the total recall number of learned characters and the post-test scores. In addition, the AL group outperformed the TL. There were statistical significances and large effect sizes found between the AL and EAL groups. The study also found practice effect to be a significant predictor of CCL outcomes. Given the positive results, this empirical study recommends the use of EA to CCL for beginning learners of CFL.

摘要：本研究目的是探討一種新方法，即用體現動畫來幫助漢語作為外語學習者的漢字學習。研究採用實驗設計，檢查三個學習組的有效性：傳統學習，動畫學習，和體現動畫學習。36 名參與者被隨機分配並被要求盡力學習計算機輔助方案中所呈現的漢字。結果表明，體現動畫組漢字的總回憶數量和後測成績優於其他兩組。研究還發現，練習效用是一個學習成果顯著的預測. 這一實證研究給予了積極的結果, 建議初級漢語學習者在漢字學習上使用體現動畫。

Keywords: Chinese character learning, CALL, embodied animation, CFL beginning learners

關鍵詞：漢字學習，計算機輔助語言學習，體現動畫，漢語作為外語初級學習者

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1. Introduction

Chinese is a popular but difficult language for beginning learners of Chinese as a Foreign Language (CFL) to learn. Due to the complex nature of Chinese characters, learners of CFL show motivational decline when learning Chinese characters (Li, 1996; Lu, 2011). Therefore, researchers have designed and developed Chinese character learning programs (e.g., Nakajima, 1988, Li, 1996; Lu, Hallman, & Black, 2010). In this study, we propose a Chinese character learning program using what we call embodied animations (EA) and hypothesized that the EA design would yield better learning. To examine if the design of embodied animation learning (EAL) was effective, we conducted an experiment to compare this design to two other designs, which were traditional learning (TL) and animation learning (AL). After briefly stating the rationale, purpose, and justification of the study, we describe the research method, report the results, and discuss the implications of EAL design in this paper.

2. Background of the study

2.1 Purpose of the study

The purpose of the study is to examine the effectiveness of using embodied animations in learning Chinese characters for beginning adult learners of Chinese as a Foreign Language (CFL).

2.2 Background, problem, and rationale

One of the most challenging human languages in the world is Chinese. As estimated by Lewis (2009), Chinese is the most widely spoken language in the world, with more than 1.2 billion native and second language speakers. For most English speakers, however, Chinese is the toughest language to learn (Moser, 1991), probably due to its irregular morphology and unsystematic morphophonemics (Everson, 1998). Although Chinese, as a macrolanguage coded *zho* under the international language code ISO 639-3 (SIL International), has 15 significantly different individual languages or dialects (Tang & Heuven, 2007), the writing system of Chinese uses the same characters across these languages. These characters, or *Hanji* (in Taiwan; *Hanzi* in China, *Hanja* in Korea, and *Kanji* in Japan), are nonalphabetic orthography words that are formed and written in a specific logographic format.

Chinese has become a popular second language for college students in the United States to learn. This can be easily seen from fast-rising Chinese enrollments. The Modern Language Association (MLA) found Chinese enrollments rose by 51% from 2002 to 2006. In 2002, 34,153 students were enrolled in Chinese courses. That number rose to 51, 582 in 2006 at 2,795 colleges and universities surveyed by MLA (about two-thirds of all institutions of higher learning in the United States) (Furman, Goldberg & Lusin, 2007). More and more researchers have focused their attention on how learners,

from either theoretical or practical perspectives, may better learn Chinese.

However, although there is this trend of Chinese learning in U.S. colleges (Furman, Goldberg & Lusin, 2007) and in U.S. foreign language learning policy (e.g., The White House, 2009), due to the difficulty of Chinese characters, learners of Chinese still show a motivational decline in their learning after their first semester's Chinese class or when Chinese characters are introduced (Branner, 2009; Li, 1996), which indicates the need of studying and developing effective Chinese character learning (CCL) programs.

2.3 Scientific justification

Traditionally, in regard to CFL learning, rote memorization or constant repetition is emphasized if one is to master the target language. Therefore, CFL learners have to do a lot of repetitive writing and dictation, which make Chinese learning "very mechanical, uninteresting, and stressful" (Ki et al., 2003, p. 54). Nevertheless, we find strong technological and neuro-cognitive evidence to support the use of animation technologies along with embodiment designs for CCL.

Researchers found the positive effects of using various types of animations on Chinese character learning. For example, KanjiCard (Nakajima, 1988), HyperCharacters (Li, 1996), multimedia design (Wang, 2005), Character Origin, and Chinese character knowledge base (Lam et al., 2001) all show positive learning effects. A more thorough and detailed review of the effectiveness and advantages or disadvantages of several CCL CALLs can be found in Lu's (2011) work.

In addition, neuroimaging researchers (Tan et al., 2000; Tan et al., 2001) use fMRI to examine the brain's cortical activities when one is processing Chinese characters. They found Brodmann's areas 9, 46, 47, 44, 37, and 17-19 are uniquely activated for Chinese characters. What is interesting and new to the field are findings that Brodmann's areas 1, 3, 4, 6, and 7 are strongly activated. The activation of these areas implies that Chinese character processing is strongly associated with human body movements, which leads to this proposed empirical embodiment study.

With the effectiveness of instructional embodiment designs for math learning (Fadjo, Lu & Black, 2009; Fadjo et al., 2008; Fadjo et al., 2009), we therefore propose the use of embodied animation for Chinese character learning and its designs that show one's physical enactment of the attributes of a character.

2.4 Research question

In this pilot study, we aimed to investigate if the use of animation learning designs overall yields better learning results than traditional learning design for CFL learners in learning Chinese characters' morphology (written form), phonology (pronunciation), and semantics (meaning). In addition to examining in qualitative data what the learners' attitude, confidence, and embodiment experience were in learning Chinese characters, we

asked the following research question: Does the use of embodied animations in Chinese character learning generate better learning outcomes for CFL learners?

3. Method

3.1 Study design

The present pilot study adopted an experimental between-subject design with three treatment groups to investigate the effectiveness of different Chinese character learning programs for beginning learners of CFL. The learning outcomes across groups were examined through the use of a One-Way Analysis of Variance (ANOVA). Post-hoc Dunnett t tests were conducted to further examine possible differences in post-instruction tests' results between any two of the three groups. To detect the possible effect of Embodied Animation in this pilot study, we set the significance level to be 0.10, accompanied by effect size calculation.

Adult participants were randomly assigned to one of the three treatment groups: (a) Traditional Learning group (TL) participants received the Chinese Character Learning Program, which contains three features of each of the eighteen Chinese characters but does not include a video in a static interface; (b) Animation Learning group (AL) participants received the Chinese Character Learning Program, which contains three features (i.e., pronunciation, semantic meaning, and written form) of each of the same eighteen Chinese characters plus a video that shows an animation of the character's etymological form changes; and (c) Embodied Animation Learning group (EAL) participants received the Chinese Character Learning Program, which contains three features of each of the same eighteen Chinese characters plus a video that not only shows an animation of the character's etymological form changes but also human bodily movements, actions, or gestures that depict both the semantic meaning and written form of the character. Figure 1, Figure 2, and Figure 3 show the screenshots of the program interfaces for TL, AL, and EAL.

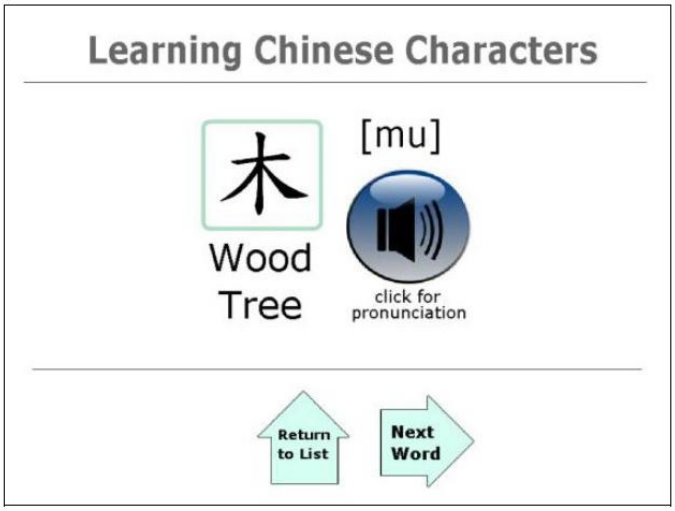

Figure 1 The Chinese character individual learning page of "Tree" for TL group

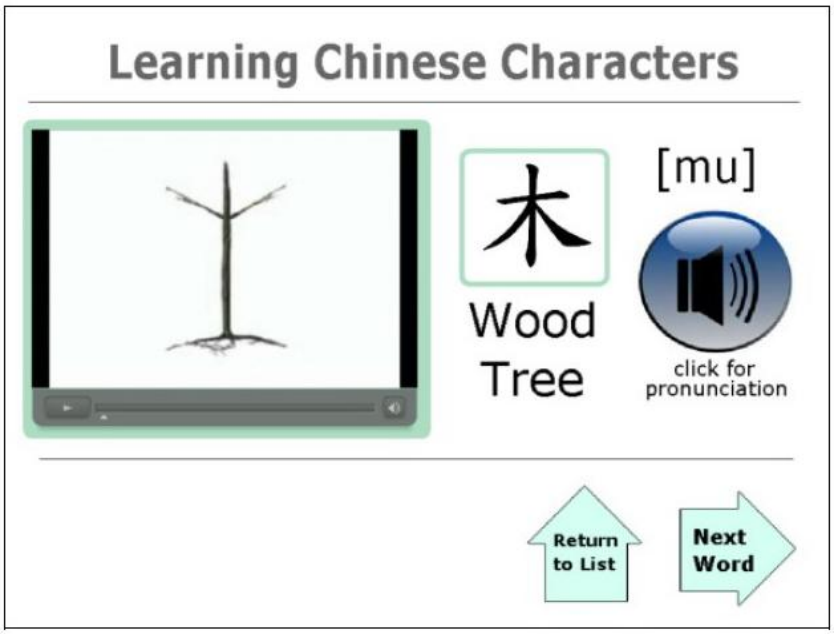

Figure 2 The Chinese character individual learning page of "Tree" for AL group

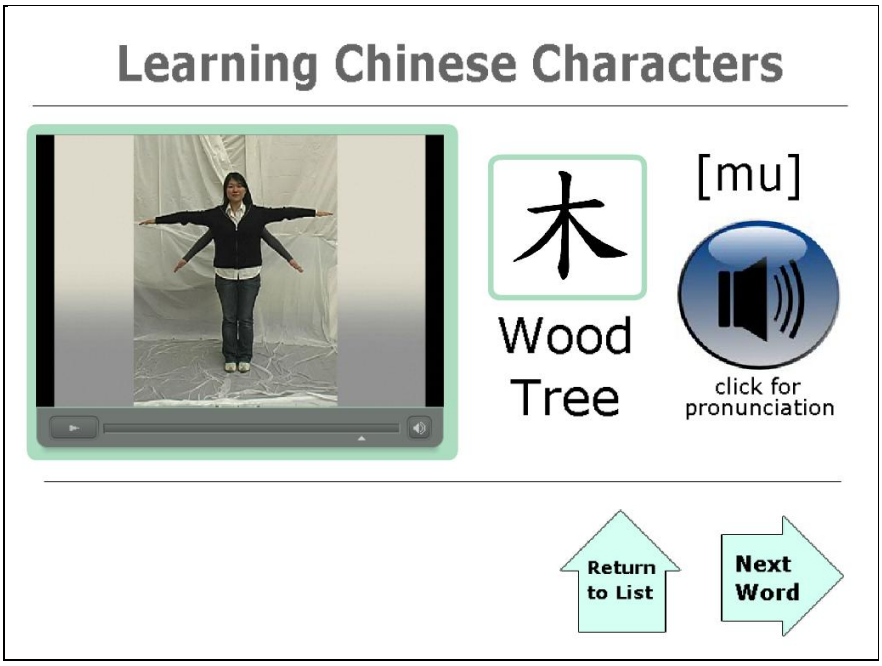

Figure 3 The Chinese character individual learning page of "Tree" for EAL group

3.2 Participants

Thirty-six undergraduate and graduate students from Columbia University, Teachers College, and other colleges voluntarily participated in the study. No participants knew any Chinese characters at the time of the experiment and were pre-tested to show no prior knowledge of Chinese language before any instruction. In addition, from the

pre-instruction questionnaire, none of the participants indicated that they knew any Chinese characters or spoke any Chinese at the time of the experiment. The participants were quite homogeneous such that there were no group differences concerning prior knowledge of Chinese, age ($F(2, 33) = .200$, $p = .82$[1]), level of confidence in Chinese character learning ($F(2,33) = .061$, $p = .941$), and attitude toward learning new things ($F(2, 33) = .569$, $p = .572$).

Table 1 shows the demographic information by groups, including the number of cases, gender, means of chronological ages, pre-instruction level of confidence in Chinese character learning (scale from 0-5; 0: not at all confident, and 5: very confident), and pre-instruction attitude toward learning new things (scale from 1-5; 1: do not like to learn new things at all, and 5: like to learn new things very much). Among all the participants, 19 were female and 17 were male. The mean chronological age across groups is 31.31, with a standard deviation of 8.13. When asked "Do you think that you can learn Chinese characters well?" before instruction, the participants yielded an overall confidence level of 3.14, with a standard deviation of .83. When asked "Do you like to learn new things" before instruction, the participants yielded an overall attitude toward learning new things of 4.67, with a standard deviation of .59.

The TL group had 13 participants, the AL group had 10 participants and the EAL group had 13 participants. In terms of their native (first) language, 35 indicated English.

Table 1 Demographic Data of Groups

	TL Group	AL Group	EAL Group	Total
Number of cases	13	10	13	36
Mean age (SD)	32.15 (9.36)	29.89 (7.29)	31.46 (7.88)	31.31 (8.13)
Gender- Female	10	2	7	19
Gender-Male	3	8	6	17
Confidence level mean (SD)	3.15 (.80)	3.20 (.79)	3.08 (.95)	3.14 (.83)
Learn new things mean (SD)	4.69 (.48)	4.80 (.63)	4.54 (.66)	4.67 (.59)

3.3 Apparatus and materials

The apparatus we used were IBM compatible Dell laptops with 15-inch monitors. All laptops were all installed with Adobe Flash CS4 Professional and Scratch programs. Earphones and speakers were tested to ascertain their proper functioning before use. Participants learned characters with the Chinese Character Learning Program and with the Scratch game run on Flash and Scratch using these apparatuses. In addition, two pieces of blank paper and two pens were provided during the learning activity time.

The materials included the Informed Consent/ Participant's Rights form, the Pre-instruction Questionnaire, the General Instruction Sheet, the specific Instruction Sheet for each group, the video instructions' video clip for the AL and EAL groups, the

[1] p value is significant at the .05 level.

CCL Programs for each group, the identical immediate and delay tests, the Scratch game, the Scratch game interview sheet, and the Post-instruction Questionnaire which contains a demographic survey.

When participants started the computer-based CCL Program, they first saw the Table of 18 Characters page where all the to-be-learned targeted characters were listed (see Figure 4). These characters include 7 pictographs (木，火，山，心，人，魚，犬), 5 indicatives (上，下，中，大，小), and 6 ideographs (看，比，告，舟，長，去).

Figure 4 The screenshot of the Table of 18 Characters page

Table 2 The Three Features of the 18 Characters

Character Type	Written Form	Semantic Meaning	Pronunciation
Pictographs	木	Tree; Wood	[mu4]
	火	Fire	[huo3]
	山	Mountain	[shan1]
	心	Heart; Mind	[xin1]
	人	Human	[ren2]
	魚	Fish	[yu2]
	犬	Dog	[quan3]
Indicatives	上	Up; Above	[shang4]
	下	Below; Under	[xia4]
	中	Middle	[zhong1]
	大	Big; Huge	[da4]
	小	Small; Little	[xiao3]
Ideographs	看	See; Look; Watch	[kan4]
	比	Compare	[bi3]
	告	Tell; Speak	[gao4]
	舟	Boat; Ship	[zhou1]
	長	Long; Length	[chang2]
	去	Go out; Leave	[qu4]

Table 2 shows each of the 18 character's character type and the three features of the 18 characters: written form, semantic meaning, and pronunciation. The written forms

presented here are in Standard Kai Scripts and the pronunciations are in Pinyin Phonetic Symbols.

When participants clicked on the character they wished to learn, that character's individual learning page would come out. Take the top left character as an example. When a TL participant clicked the character 木 (tree) [mu], this character's individual learning page would come out as shown in Figure 1. For the same character, an AL participant would see the page shown in Figure 2. And for the same character, an EAL group participant would see the page shown in Figure 3.

3.4 Procedures

3.4.1 Prescreening

The study was introduced to participants as research about Chinese character learning. Each participant was told that he or she would be completing a Pre-Instruction questionnaire, an immediate test, a language learning game, a delay test, and a Post-Instruction questionnaire in addition to a learning activity where he or she learn 18 Chinese characters using a computer-based Chinese Character Learning program. They were told to try their best to learn. From the Pre-instruction Questionnaire, we made sure that all the participants did not know anything about Chinese language and had not learned Chinese at all through pre-screening. Also, we ascertained that all participants could use a computer mouse or touchpad, which is necessary for the study.

Table 3 Experimental Procedures by Groups

Time	TL group	AL group	EAL group
~1 min	Consent	Consent	Consent
~1 min	Pre-Instruction Questionnaire	Pre-Instruction Questionnaire	Pre-Instruction Questionnaire
~1 min	General Instruction	General Instruction	General Instruction
~1 min	Instruction-TL	Instruction-AL	Instruction-EAL
Up to 40 min	CCL program-TL.swf	CCL program-AL.swf	CCL program-EAL.swf
10 min	Immediate Test	Immediate Test	Immediate Test
10 min	Scratch game + interview	Scratch game + interview	Scratch game + interview
10 min	Delay Test	Delay Test	Delay Test
~5 min	Recall Test	Recall Test	Recall Test
~5 min	Post-Instruction Questionnaire	Post-Instruction Questionnaire	Post-Instruction Questionnaire
Total: ~85 min			

3.4.2 Procedure

Table 3 shows the experimental procedures for all three groups. Participants were first randomly assigned to one of the three groups: TL group, AL group, or EAL group. They started by reading the Informed Consent and then signed the Participant's

Rights form. Afterwards, the participants were first given the Pre-instruction Questionnaire to fill out. Those who could speak any Chinese or had learned any Chinese were excluded from our study. Secondly, all three groups of participants could take their time and read over the General Instruction Sheet, which contained a brief introduction to Chinese characters. On the sheet, participants were told that they were going to learn some Chinese characters. After reading the sheet, participants were asked to proceed by reading the next Instruction Page. Thirdly, TL and AL group participants were then asked to take their time and carefully read the specific Instruction Sheet for their group. They were asked to make sure that they fully understood by placing a check every time after they had read each of the points on the sheet. In addition, participants were asked to try their best to learn all the 18 characters. Fourthly, participants could spend up to 40 minutes to learn those 18 Chinese characters using their assigned group-specific CCL Program. Two pieces of blank paper were provided during this learning phase in case that any participants wished to practice writing or to facilitate their memorization. Fifthly, participants took the Immediate Test for no more than 10 minutes. All 18 characters' pronunciations, semantic meanings, and written forms were included in the test. Sixthly, they were told to take a short break to play the Scratch game for 3 minutes where they were asked to use the 4 arrow keys and the space key to observe and explore both the program and the three Chinese characters. Seventhly, a 7-minute interview was conducted with the interview questionnaire. Eighthly, they then took the identical Delay Test for no more than 10 minutes. Ninthly, in the Recall Test, participants were asked to write down all the characters they could still remember on a blank sheet. Tenthly, participants filled out the Post-instruction Questionnaire where they entered their opinions, thoughts, and demographic information. Finally, participants received $15 remuneration and were told to feel free to ask any questions regarding this study.

3.5 Data analysis

Quantitatively, a one-way analysis of variance was conducted to investigate the effectiveness of different CCL programs for beginning learners of CFL. Post-hoc Dunnett t tests were conducted to further examine possible differences in post-instruction tests' results between any two of the three groups. Qualitatively, character's written forms from participants were rated based on our grading guideline rubrics in the codebook.

Table 4 shows the grading guidelines for any characters' written forms participants wrote either in the Recall Test or in the free writing test (*TestW*).

Table 4 Grading Guideline Rubrics for Written Forms

Score assigned	Description of the character written by participant
0	No writing; Completely wrong; Entirely unrecognizable
1	Hardly recognized; Keep some shape; Guessable; Seems like it
2	Recognizable; With several misses; Still keep the shape
3	Easily recognized; With only 1-2 misses; Near perfect
4	Perfect; Completely correct

4. Results

This study aimed to investigate the effectiveness of different CCL programs for beginning learners. Specifically, we examined if Embodied Animation Learning was better than Traditional Learning or Animation Learning.

4.1 Pre-instruction questionnaire

All 36 participants indicated that they did not know and speak any Chinese at the time of the experiment (with both 0s for No. 1.1 and No. 1.2 in the Pre-instruction Questionnaire). Therefore, there was no group difference in prior knowledge of Chinese. Pre-instruction level of confidence in Chinese character learning and pre-instruction attitude toward learning new things are listed in Table 1. The omnibus one-way ANOVA for pre-instruction level of confidence in Chinese character learning and pre-instruction attitude toward learning new things shows that there were no group differences concerning level of confidence in CCL ($F(2,33) = .061$, $p = .941$) and attitude toward learning new things ($F(2, 33) = .569$, $p = .572$).

4.2 Test means and standard deviations

Table 5 shows tests' mean scores and their standard deviations for Immediate Test (Post), Delay Test, Recall Test, and the free writing test where the characters were perfectly written (*RecallPerfect*) from Traditional Learning (TL, n = 13), Animation Learning (AL, n = 10), and Embodied Animation Learning (EAL, n = 13) groups. These variables' possible score ranges are also listed. To examine the effect of embodied animations from that of common etymological animations in Chinese character learning, effect sizes (ES) r and Cohen's *d* between AL group and EAL group were also calculated and reported in Table 5.

Table 5 Test Means and Standard Deviations

Variable (possible range)	TL's Mean (SD)	AL's Mean (SD)	EAL's Mean (SD)	ES r (Cohen's d, b/t AL & EAL)
Pre	0	0	0	
Post (0-34)	24.08 (5.299)	27.1 (4.408)	30.54 (2.961)	0.416 (0.934)
Delay (0-34)	24.62 (5.895)	27.4 (4.648)	30.77 (2.743)	0.404 (0.883)
Recall (0-72)	40.08 (9.987)	48.00 (12.824)	57.54 (12.218)	0.356 (0.762)
RecallPerfect (0-18)	7.77 (2.242)	9.40 (3.688)	11.54 (4.719)	0.245 (0.505)
N	13	10	13	

None of the three groups' participants had any prior knowledge of Chinese language and therefore they yielded an equal 0 for Pre. For Immediate Test (Post), the TL group's M = 24.08 (SD = 5.299), the AL group's M = 27.1 (SD = 4.408), and the EAL

group's M = 30.54 (SD = 2.961). The Cohen's *d* = 0.934 (r = 0.416) indicated a large effect size between the AL and EAL groups. For Delay Test, the TL group's M = 24.62 (SD = 5.895), the AL group's M = 27.4 (SD = 4.648), and the EAL group's M = 30.77 (SD = 2.743). The Cohen's *d* = 0.883 (r = 0.404) indicated a large effect size between the AL and EAL groups. For Recall Test, the TL group's M = 40.08 (SD = 9.987), the AL group's M = 48.00 (SD = 12.824), and the EAL group's M = 57.54 (SD = 12.218). The Cohen's *d* = 0.762 (r = 0.356) indicated a medium to large effect size. For *RecallPerfect*, the TL group's M = 7.77 (SD = 2.242), the AL group's M = 9.40 (SD = 3.688), and the EAL group's M = 11.54 (SD = 4.719). The Cohen's *d* = 0.505 indicated a medium effect size.

4.3 Group comparisons

To examine if these group means were indeed different statistically in these tests, we employed a series of one-way ANOVAs. Measures of *TestTotal*, *DeTotal*, *Recall*, and *RecallPerfect* were the DVs and the treatment groups of TL, AL and EAL were the grouping factor for ANOVA. A significant result indicates a possible difference between any of the two groups among all the groups. The omnibus one-way ANOVAs for the Immediate Test (*TestTotal*) and the Delay Test (*DeTotal*) show that, for *TestTotal*, there were significant differences between groups ($F(2,33) = 7.265$, $p < .01$), and for *DeTotal*, there were also significant differences between groups ($F(2, 33) = 5.802$, $p < .01$).

The omnibus one-way ANOVAs for the Recall Test (*Recall*) and the total number of perfectly recalled characters (*RecallPerfect*) show that, for *Recall*, there were significant differences between groups ($F(2,33) = 7.336$, $p < .01$), and for *RecallPerfect*, there were also significant differences between groups ($F(2, 33) = 3.404$, $p < .05$).

Therefore, there were significant group differences for all four DVs. To further examine the pair-wise group differences, we performed post-hoc tests. Since the study aim was to investigate if EAL was indeed better than AL or TL, we employed one-tailed post-hoc Dunnett t tests to compare EAL to other groups for all DVs.

Table 6 Post-hoc Dunnett t Test for TestTotal

(I) vs. (J)	Mean Diff	S.E.	p-value	90% CI-Upper Bound
TL vs. EAL	-6.462	1.696	.001***	-3.71
AL vs. EAL	-3.438	1.819	.061*	-0.49

*** p < .01; * p < .10

Table 6 shows the post-hoc Dunnett t test for the Immediate Test (*TestTotal*). In *TestTotal*, EAL significantly outperformed both AL by 3.438 points (SE = 1.819) at .10 level of significance, and TL by 6.462 points (SE = 1.696) at .01 level of significance.

Table 7 Post-hoc Dunnett t Test for DeTotal

(I) vs. (J)	Mean Diff	S.E.	p-value	90% CI-Upper Bound
TL vs. EAL	-6.154	1.809	.002***	-3.22
AL vs. EAL	-3.369	1.940	.081*	-0.22

*** p < .01; * p < .10

Table 7 shows the post-hoc Dunnett t test for the Delay Test (*DeTotal*). In *DeTotal*, EAL significantly outperformed both AL by 3.369 points (SE = 1.940) at .10 level of significance, and TL by 6.154 points (SE = 1.809) at .01 level of significance.

Table 8 Post-hoc Dunnett t Test for Recall

(I) vs. (J)	Mean Diff	S.E.	p-value	90% CI-Upper Bound
TL vs. EAL	-17.462	4.564	.001***	-10.06
AL vs. EAL	-9.538	4.894	.054*	-1.60

*** p < .01; * p < .10

Table 8 shows the post-hoc Dunnett t test for the Recall Test (*Recall*). In *Recall*, EAL significantly outperformed both AL by 9.538 points (SE = 4.894) at .10 level of significance, and TL by 17.462 points (SE = 4.564) at .01 level of significance.

4.3.1 Practice effect

We checked how many characters each participant wrote down on the paper (the practice effect) and found that initially there was no group difference among the three treatment groups (F (2, 29) = .022, p = .978). Table 9 shows the descriptives of the mean of total number of practices (*PracT*) participants in different groups generated on the blank practice sheets during the learning phase. Table 16 shows the omnibus one-way ANOVA table for total number of practice across groups.

Table 9 Descriptives for Number of Practices by Groups

	TL M (SD)	AL M (SD)	EAL M (SD)
Practice	65.58 (25.20)	67.43 (46.38)	68.85 (44.68)
Range	27-108	14-139	0-165
N	12	7	13

However, the overall practice effect stands as a significant predictor of *TestTotal*. Table 10 shows the ANOVA table of the simple linear regression model with *PracT* as an independent variable (IV) and *TestTotal* as a DV. The model is significant with R^2 = .196, MS = 143.64, F (1, 30) = 7.30, p < .05. This simple regression model can explain 19.6% of the variance in *TestTotal*. *PracT* is a significant predictor of *TestTotal* with standardized ß = .442, t = 2.70, p < .05.

Table 10 ANOVA Table for the Simple Regression Model with PracT as an IV for TestTotal

		SS	df	MS	F	*p*-value
PracT	Regression	143.64	1	143.64	7.30	.011**
	Residual	590.327	30	19.68		
	Total	733.969	31			

** p < .05

4.4 Post-instruction questionnaire

The Post-instruction Questionnaire included the same opinion questions and the same confidence questions as in the pre-instruction questionnaire, a demographic survey, and 12 other opinion and comment questions. All the opinion questions were on a 4-point Likert scale from 2 (very much), 1 (a little), to -1 (not a lot), and -2 (not at all).

4.4.1 Do you like the Chinese character instruction program?

When asked "Do you like the Chinese character instruction program?" after the learning phase, participants yielded a 1.58 score on average (SD = .50), indicating high positive feedback on using the program. Though the mean differences were not statistically significant among groups (F (2, 33) = 1.46, $p > .05$), Table 11 shows that on average all three groups expressed positive feedback.

Table 11 Descriptives for Liking the Chinese Character Instruction Program

	TL M (SD)	AL M (SD)	EAL M (SD)	Total Mean (SD)
Like	1.46 (.519)	1.50 (.527)	1.77 (.439)	1.58 (.500)
N	13	10	13	36

4.4.2 Do you think the Chinese character instruction program is effective?

When asked "Do you think the Chinese character instruction program is effective?" after the learning phase, participants yielded a 1.58 score on average (SD = .77), indicating high positive feedback on the effectiveness of the program. Though the only difference lies between the TL group and the EAL group (mean difference = -.846, SE = .268, $p < .05$) in that the overall mean differences were statistically significant among the three groups (F (2, 33) = 5.67, $p < .01$), Table 12 shows that on average all three groups expressed positive feedback.

Table 12 Descriptives for Effectiveness of the Chinese Character Instruction Program

	TL M (SD)	AL M (SD)	EAL M (SD)	Total Mean (SD)
Effect	1.08 (1.038)	1.80 (.422)	1.92 (.277)	1.58 (.770)
N	13	10	13	36

The responses to other questions in the Post-instruction Questionnaire also yielded similar results. For example, questions such as: "Does the video (or *the program*, for the TL group) make Chinese characters easier to learn?" "Does the video (or *the*

program, for the TL group) help you in understanding and remembering the Chinese characters?" "Does the video (or *the program*, for the TL group) help arouse your interest in learning Chinese?" and "Does the video (or *the program*, for the TL group) help maintain your motivation in character learning?" all yielded similar results in that there were no mean differences among groups but with overall positive responses. Table 13 shows that on average all three groups expressed positive opinions toward these variables.

Table 13 Descriptives for Learners' Opinions about the Chinese Character Instruction Program

	TL M (SD)	AL M (SD)	EAL M (SD)	Total Mean (SD)
Easier to learn	1.31 (0.86)	1.60 (0.52)	1.08 (1.26)	1.31 (0.95)
Help memory	0.85 (1.14)	1.70 (.048)	1.08 (1.26)	1.17 (1.08)
Arouse interest	0.92 (1.19)	1.30 (0.95)	0.85 (1.52)	1.00 (1.24)
Keep motive	0.85 (1.14)	1.50 (0.97)	1.08 (1.26)	1.11 (1.14)
N	13	10	13	36

4.4.3 What do you think about Chinese characters?

We asked this same question before and after the learning phase in the Pre-instruction Questionnaire and the Post-instruction Questionnaire. Participants could circle all of the ten provided answers that apply. We intended to examine if participants in the pilot study held certain attitude or specific perceptions about Chinese characters. In addition, we intended to explore if there were possible changes in their responses before and after their learning phase using the Chinese character instruction program. Table 14 shows the frequencies of the answers to this question from participants' responses of general idea and attitude about Chinese characters.

Table 14 Frequencies for Participants' Idea and Attitude about Chinese characters

Chinese characters:	Pre	Post	Change
are something I have no idea about	18	2	-16
are a meaningful and interesting writing script	29	28	-1
are just like some other foreign writing systems	6	7	+1
are not interesting	0	0	0
are meaningless lines and dots	0	0	0
are impossible to learn	3	0	-3
are difficult to learn	20	16	-4
can be mastered with effort	26	29	+3
are easy to learn	0	1	+1
are useful and powerful	19	17	-2

From answer "a" in Table 14, it seemed that learners felt they had learned some Chinese characters after using the Chinese character instruction program. From answers "d" and "e," none of the participants thought Chinese characters are 'not interesting' or are 'meaningless lines and dots.' From answers "f" and "h," learners tended to think Chinese characters are possible to learn and can be mastered with efforts. From answer "g," it seemed the number of those who thought Chinese characters are difficult to learn decreased. The only participant that indicated that Chinese characters are easy to learn

was from the EAL group in the Post-instruction Questionnaire. From one-way ANOVAs, there were no statistically significant group differences in their responses of these answers from both the Pre-instruction Questionnaire and the Post-instruction Questionnaire.

4.4.4 Bivariate correlation data analysis

It is worth mentioning that there were no statistically significant correlations between participants' learning outcomes (*TestTotal*) and many other variables collected in the Post-instruction Questionnaire such as gender, age, number of languages spoken, post-instruction level of confidence, if learners liked the program, if learners thought the program was effective, if learners thought the program made Chinese character learning easier, if learners thought that the program helped learners better remember characters, if learners thought that the program aroused learners' interest, and if learners thought that the program maintained their motivation to learn. There were a couple exceptions: 1. Those who thought the test was easy tended to perform better in *TestTotal* (Pearson's r = -.449, p = .006); and 2. Those in the AL and EAL groups who liked the video feature of the program tended to perform better in *TestTotal* (Pearson's r = .353, p = .038).

In addition, learners who indicated they exercise, watch sports, liked the Chinese character learning program, or liked the videos in the program tended to think the program was effective (r = .638, p < .001; r = .427, p < .01; r = .501, p < .01; and r = .421, p < .05, respectively). Learners who exercise also tended to think that the program helped them better remember Chinese characters (r = .349, p < .05). Those who liked the program as a whole tended to like the videos in the program (r = .364, p < .05) and those who liked the program also tended to think the program is effective (r = .501, p < .01). For those who liked the videos provided in the program, they also tended to think the program was effective, made learning Chinese characters easier, helped them learn better, and maintained their motivation to learn (r = .421, p < .05; r = .339, p < .05; r = .410, p < .05; and r = .444, p < .01, respectively). Table 15 shows the bivariate correlations of variables investigated in the Post-instruction Questionnaire.

Table 15 Bivariate Correlations of Variables in the Post-Instruction Questionnaire

		Test Total	exercise	watch sports	like video games	like program	like video	program effect	make easier	help remember	interest	motive	test hard?
Test Total	r	1	.233	.201	.003	.077	.353*	.153	-.273	-.013	-.073	.050	-.449**
	P		.172	.239	.987	.657	.038	.374	.107	.940	.672	.773	.006
	N	36	36	36	36	36	35	36	36	36	36	36	36
Exercise	r		1	.378*	.323	.227	.343*	.638**	.225	.349*	.183	.243	-.241
	P			.023	.054	.183	.043	.000	.187	.037	.287	.153	.156
	N		36	36	36	36	35	36	36	36	36	36	36
watch sports	r			1	.103	.314	.248	.427**	.095	.079	.046	.134	.066
	p				.548	.062	.150	.009	.581	.646	.790	.437	.701
	N			36	36	36	35	36	36	36	36	36	36

like video games	r	1	-.122	.194	.214	.249	.148	.000	.143	-.158
	P		.477	.264	.211	.143	.390	1.000	.406	.357
	N	36	36	35	36	36	36	36	36	36
like program	r		1	.364*	.501**	.215	.185	.322	.134	.215
	P			.031	.002	.207	.281	.055	.437	.207
	N		36	35	36	36	36	36	36	36
like video	r			1	.421*	.339*	.410*	.258	.444**	.060
	P				.012	.047	.014	.134	.008	.731
	N			35	35	35	35	35	35	35
program effect	r				1	.335*	.531**	.448**	.412*	-.022
	P					.046	.001	.006	.013	.901
	N				36	36	36	36	36	36
make easier	r					1	.727**	.532**	.521**	.015
	P						.000	.001	.001	.933
	N					36	36	36	36	36
help remember	r						1	.701**	.818**	-.191
	P							.000	.000	.263
	N						36	36	36	36
interest	r							1	.665**	-.040
	P								.000	.817
	N							36	36	36
motive	r								1	-.063
	P									.715
	N								36	36
test hard?	r									1
	P									
	N									36

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

4.4.5 Open-ended questions

We asked two open-ended questions in the Questionnaire: “How would you have improved the program were you an instructional designer?” and “Please share any thoughts on Chinese language learning or extra comments.” The purpose of these questions was mainly to seek learner’s opinions on how the program may be improved and to further probe possible learner’s thoughts on better Chinese character learning. Note that as answering these open-ended questions was not required, not every participant offered their thoughts, suggestions, or criticisms. We will discuss several program improvement suggestions in the next section.

From those participants who commented, however, most of the comments were very positive in general. Specifically, learners expressed their positive learning

experience in Chinese logographs and positive post-instruction learning attitude.

4.4.5.1 Positive learning experience in Chinese logographs

For example, many wrote their positive learning experience such as "very enjoyable experience," "Encouraging," "I had fun learning this little bit of Chinese," "The instructional program is great ☺," "Very effective. Could be used to teach Chinese," and "I think it is a good start for understating the written language. I think it will be much more difficult to learn to speak Chinese."

4.4.5.2 Positive learning attitude

The learning experience with the program generated positive learning attitude. For example, learners wrote: "I am interested in learning more," "Wish I could learn more," and "It was very interesting maybe down the road I will start to learn it."

5. Discussions

5.1 General discussion and implications

5.1.1 Levels of embodiment and practical implications

Are there different types, or levels, of embodiment? And if there are, how should teachers apply different designs of embodiment for Chinese character learning?

Researchers and educators have created different types of embodiment used for science and language learning and teaching in classrooms. All five types of embodiment are tightly linked to computer technologies: Direct (or Full) Embodiment (DE), Surrogate Embodiment (SE), Imagined Embodiment (IE), Reflected Embodiment (RE), and Haptic Embodiment (HE).

The design of DE (see Fadjo, Lu, & Black, 2009; Fadjo, et al., 2008) entails that learners obtain proprioceptive experience by meaningfully moving their torsi and thus full-bodily enacting what they are learning, such as embodying Chinese characters that contain 'water' or 'fire' radicals. The DE is effective as evidenced by the iWorld Team related studies. The design of SE (see Glenberg, 2004; Fadjo, Hallman, Harris, & Black, 2009) uses a surrogate's actions to replace torso movements; yet, it is effective in language teaching and learning (Glenberg, 2004; Glenberg, 2008). In practice, teachers may create different radicals' manipulatives as surrogates for learning activities. The design of HE (see Lu, 2013) is effective when learners obtain both 1st and 2nd -hand experiences in the learning activity phase. In addition to learners' clicking the mouse and hearing the target words' pronunciations, active rule-generating actions provide deeper processing in vocabulary recognition and memorization (Lu, 2013). When teaching CFL using HE, teachers can provide selected Chinese characters on a Smart Board, computers,

or on cards as stimulation, and then ask learners to self-generate and group common morphemes (ex. radicals) or common phonemes. The design of RE (see Hong, 2009) has a unique feature that learners see themselves through a webcam and hence also see themselves move (mostly their hands) on the computer screen when they interact (mostly using their hands) with the computer in a game. Hong (2009) had developed interactive flash player media in hope that learners would enhance their motivation and learning effects. He has found positive results in that the design indeed intrigues learners more with game components that require identification and active recall skills, with interactive components that show rich-information, and with competitive racing function. Teachers of CFL may design animation-based or interactive games to allow learners use RE for learning different Chinese characters. For example, RE can be used in a word discerning game for word recognition or character differentiation. The design of IE (see Fadjo, Lu, & Black, 2009; Black, 2007) emphasizes learner's imaginary ability and thus can be used when learners are inferring new rules, morphology, or phonetics in Chinese characters. Teachers of CFL should implement IE in the learning activity phase in their instructional designs for deeper learning. For example, during the beginning learning phase of a class, teachers of CFL can ask learners to encode (after seeing certain words) then decode (by thinking and imagining quietly without seeing these words) these Chinese characters.

Though research regarding some of the designs of embodiment is not specifically related to CFL or Chinese character learning, we believe future research will provide more affirmative details in their uses and applications in Chinese language classrooms. With the use of embodiment for language learning and teaching, future Chinese language classes will no longer be tedious repetition and relatively meaningless memorization of words. For character learning, we then should ask: Is imagination of viewing videos sufficient? Or should learners be told to embody themselves physically?

5.1.2 Embodied animations

The study suggests that the approach of using embodied animations to Chinese character learning for beginning learners of Chinese as a foreign language works. Why do embodied animations work?

We find possible evidence from neurological research. When examining the unique Brodmann's areas that were significantly activated in the Chinese character experiments Tan et al. (2001) and Tan et al. (2000) did, we find many of these areas are movement-based or action-related. Specifically, areas such as BA 4 (Primary Motor Cortex), BA 6 (Premotor Cortex and Supplementaty Motor cortex), BA 3 (Primary Somatosensory Cortex), and BA 7 (Somatosensory Association Cortex) were all strongly activated during both Chinese semantic and Chinese homophonic tasks. Moreover, BA 1 (Primary Somatosensory Cortex) was also strongly activated during the covert Chinese word generation tasks in addition to other motor-related areas aforementioned. These are not conventional areas that would be activated when an alphabetic language is being processed. Tan et al. (2000) even stated that, "… the reason why the right parietal regions (BAs 3 and 1) were strongly activated is not clear" (p. 23).

Why would these movement-based or motor-related areas be activated when processing Chinese characters? There are 3 possible explanations. Firstly, the processing and representation of Chinese characters require some of these unique areas to be activated. Some characters may be embodied and processing these characters is thus embodied. Unlike viewing an alphabetic word such as English in which words are formed in linear and orderly configuration, when we see certain Chinese characters, we see, or feel, more than a plain word but maybe a picture, a scenario, or even a motion picture in a square-shape space that can be packed with up to seven dozen various types of strokes. Secondly, when encoding and decoding Chinese characters, there is significant assistance to activate these brain areas. In other words, we humans tend to activate more of these areas that are supposed to be helpful to assist with our encoding Chinese logographs. Thirdly, the traditional classification of the brain areas is not entirely thorough or completely accurate. That is to say, these Brodmann areas still denote language processing areas, or language-related visual-spatial areas. This third point, however, may be highly unlikely since a lot of research has revealed the functional specifications of human brain's areas, especially the Brodmann's areas through many different types of brain and imaging studies.

Therefore, embodied animations work. By triggering motor- and body movement-related cortices, learners may better encode or process Chinese logographs. In fact, the design of embodied animations echoes our human's capability of imagination and the positive impact of technologies. Black (2007) and Schwartz and Black (1999) revealed the importance of imagination and imagined actions as Black (2010) spoke at the 2010 Teachers College Academic Festival about the magic of experience plus simulation, "having experiences that relate to what you are learning can make a big difference. Technology exists that provides these kinds of experiences." With the computer-based Chinese character learning program, it is easier to imagine and experience the relationship between characters and movements. It further helps learners generate forms when presented with meanings, or derive meanings when characters are presented. In sum, the program helps learners imagine and experience the relationship between characters and movements and that leads to deeper and better Chinese character learning.

5.2 Limitations and future directions

5.2.1 Limitations

Due to the limitation of time, the study was not able to be carried out over a longer period of time for more participants (for better power and for more variables' investigation) and for better instrument and measurement development (e.g., the inclusion of all the target characters in the measurement and maybe of all the tests in the program). Ideally, we ought to recruit more participants for each group for some other interesting variables' investigation and to carefully collect participants' retention and transfer data after at least one day or maybe 1 to 2 weeks of the treatment. It is a pity that we failed to do so in this pilot study. However, the statistically significant results and

medium to large effect sizes undoubtedly encouraged us in believing in the use of embodied animations in Chinese character learning.

5.2.2 Future improvements and directions

5.2.2.1 Questionnaire

We should adopt a 9-point or 10-point Likert scale for most of our variables in the questionnaire. Currently, our 4-point scale made many of the variables not discernible. For example, for questions such as "Does the program make Chinese characters easier to learn?" or "Does the program help you in understanding and remembering the Chinese characters?" on the 4-point Likert scale from +2, +1, -1, to -2, many participants chose "A Little" (+1) and thus they yielded mean scores that were all very close to +1. If we used a 9-point Likert scale, we would be able to uncover if indeed there were group differences in these variables from learners' thoughts and experience. In addition, some questions should be worth adding to the current questionnaire. Specifically, questions such as the strategies learners use and how learners spend their time on learning each characters during the given time period are of importance should we intend to probe into the learning mechanisms of adult learners' Chinese character learning. Metacognitive judgment questions, therefore, may serve as good open-ended questions. For example, we may ask learners after their learning, "How did you learn?" "Why do you think that you have gotten the characters right/ wrong?" "What strategies did you use in learning Chinese characters?" or "Under what condition did you think that best help you learn?"

5.2.2.2 Chinese character learning program

An important question to ask when a video is used for leaning is: How much information is in the video? We examined all the videos used in the Chinese character learning program and believe that we should cut the unrelated forms of characters in form-changing etymology animations as these forms may distract learning and prevent from correct characters' recognition. By doing so, the shortened videos will not contain many character forms that are not related to what learners are eventually learning. For example, many character forms in Clerical Type (Li-shu), Fine Ming typeface, and Song typeface have quite a few variations from, and therefore are not very similar to, their Standard Type or Regular Type (Kai-shu) character forms and should be excluded in the Chinese character learning videos.

For character's etymology animations in the videos, we should use more changes of morphs instead of changes of fades because morphs make better connections between different forms of the same Chinese character. For some characters, learners may have to guess those connections when we use fades-in and fades-out.

We should also consider emphasizing the imagination reinforcement by reminding the EAL group learners each time before they view the EAL videos so that learners would remember to perform the imagined embodiment when viewing the videos.

As to the learning of Chinese characters' pronunciations, we may consider using the present click-for-pronunciation buttons or having the pronunciation play automatically by embedding the audio sounds as background at the same time when the videos are playing. That way, learners do not have to click the button each time they want to hear the sound of the character's pronunciation and may focus more on other features of the character. However, we should also be cautious as this kind of design may interfere with learner's attention to learning other features of the character.

5.2.3 Future directions

We may add two more groups in the study design: one control group that is with mere paper-and-pencil instruction and has no computer-based instruction programs, and the other succinct-Embodied Animation Learning (EAL) group that views shortened videos instead of the current longer version of videos. The control group serves to compare computer-based programs to traditional paper-and-pencil only instruction. The succinct-EAL group serves to compare videos that are with more thorough character's etymological information to videos that include only essential information. By comparing these five groups, we will get a clearer idea of why and how the EAL groups may be better than the other groups.

We may also include Chinese children as participants in the future study. The reason why we may want to study Chinese children in the future is because we would like to examine how they learn Chinese characters and see if they view Chinese differently. In addition to studying them, we may investigate the question: Will an embodied animation learning program help native Chinese speaking children learn Chinese characters? The results from this pilot study show that the approach of using embodied animations to Chinese character learning for beginning learners of Chinese *as a foreign language* works, and therefore it should be interesting to see if the approach also works for native Chinese speaking beginning learners. Moreover, it should also be interesting to investigate the use of the program for non-native Chinese speaking children to compare with beginning adult learners in order to uncover if children learners of CFL also benefit from the program.

References

Black, J.B. (2007). Imaginary Worlds. In M.A. Gluck, J.R. Anderson and S.M. Kosslyn (Eds.) *Memory and mind*. Mahwah, NJ: Lawrence Erlbaum Associates.

Black, J.B. (2010). Speech at TC Academic Festival 2010. Teachers College Columbia University, NY, New York on April 24th, 2010.

Branner, D. P. (2009). Personal communication with Dr. Branner on Oct. 29th, 2009.

Everson, M. (1998). Word recognition among learners of Chinese as a foreign language: investigating the relationship between naming and knowing. *The Modern Language Journal, 82,* 194-204.

Fadjo, C., Lu, M. & Black, J. (2009). Instructional Embodiment and Video Game Programming in an After School Program. In *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2009* (pp. 4041-4046). Chesapeake, VA: AACE.

Fadjo, C., Shin, J., Lu, M., Chan, M. & Black, J. (2008). Embodied Cognition and Video Game Programming. In *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2008* (pp. 5749-5756). Chesapeake, VA: AACE.

Fadjo, C., Hallman Jr., G., Harris, R. & Black, J. (2009). Surrogate Embodiment, Mathematics Instruction and Video Game Programming. In *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2009* (pp. 2787-2792). Chesapeake, VA: AACE.

Furman, N., Goldberg, D. & Lusin, N. (2007). *Enrollments in Languages Other Than English in United States Institutions of Higher Education*, Fall 2006. Web publication. Modern Language Association.

Gibbs, R. (2006). *Embodiment and Cognitive Science.* New York: Cambridge University Press.

Glenberg, A.M., Gutierrez, T., Levin, J.R., Japuntich, S., Kaschak, M.P. (2004). Activity and Imagined Activity Can Enhance Young Children's Reading Comprehension. *Journal of Educational Psychology, 96,* 424-436.

Glenberg, A.M. (2008). Toward Integration of Bodily States, Language, and Action. In. Semin, G.R. & Smith, E.R. (Eds.) *Embodied Grounding: Social, Cognitive, Affective, and Neuroscientific Approaches*. New York: Cambridge Univ. Press.

Hong, J. (2009). Designing Animation and Interactivity to Attract Young Players. In *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2009* (pp. 3619-3640). Chesapeake, VA: AACE.

Kennedy, G. (1964). A Minimum Vocabulary in Modern Chinese, in *Selected Works of George Kennedy,* Tien-yi Li (ed.), New Haven: Far Eastern Publications.

Ki, W., Lam, H., Chiung, A. L. Tse, S., Ko, P., Lau, C., Chou, P.W., Lai, A.C., & Lai, S.M (2003). Structural awareness, variation theory and ICT support. *Educational Studies in Language and Literature,* 3, 53-78.

Lam, H.C., Ki. W.W., Law, N., Chung, A.L.S., Ko, P.Y., Ho, A.H.S., & Pun, S.W. (2001). Designing CALL for learning Chinese characters. *Journal of Computer Assisted Learning, 17,* 115-128.

Lewis, M. P. (ed.). (2009). *Ethnologue: Languages of the World, Sixteenth edition.* Dallas, TX.: SIL International.

Li, X. (1996). HyperCharacters: A pilot study in computerized learning of Chinese characters. *CALICO Journal, 14*(1), 77-94.

Lu, M. (2013). The DKE Model Revisited: Learning L2 Vocabulary Pronunciation Through 1st- And 2nd-Hand Experiences. *The International Journal of Language Learning and Applied Linguistics World, 3*(1), 63-82.

Lu, M. (2011). *The Effect of Instructional Embodiment Designs on Chinese Language Learning: The Use of Embodied Animation for Beginning Learners of Chinese Characters.* Doctoral Dissertation, Columbia University. Retrieved from http://academiccommons.columbia.edu/catalog/ac:132065.

Lu, M.T., Hallman, G. & Black, J. (2010). The Development of Embodied Animations for Chinese Characters. In *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2010* (pp. 3763-3768). Chesapeake, VA: AACE. Retrieved from http://www.editlib.org/p/35185.

Moser, D. (1991). Why Chinese is so Damn Hard. In Mair, V.H. (eds.) Schriftfestschrift: Essays on Writing and Language in Honor of John DeFrancis on His Eightieth Birthday. *Sino-Platonic Papers*, 27, 59-70.

Nakajima, K. (1988). On developing HyperCard stacks for the study of Chinese characters: KanjiCard. *CALICO Journal, 6*(2), 75-87.

Schwartz, D. L., & Black, T. (1999). Inferences through imagined actions: knowing by simulated doing. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 25,* 116-136.

SIL International. (2009). Scope of denotation. Retrieved from http://www.sil.org/iso639-3/scope.asp#M.

Tan, L.H., Liu, H., Perfetti, C., Spinks, J.A., Fox, P.T. & Gao, J. (2001). The neural system underlying Chinese logograph reading. *NeuroImage,* 13, 836-846.

Tan, L.H., Spinks, J.A., Gao, J., Liu, H., Perfetti, C., Xiong, J., Stofer, K., Pu, Y., Liu, Y., Fox, P. (2000). Brain activation in the processing of Chinese characters and words: A functional MRI study. *Human Brain Mapping,* 10, 16-27.

Tang, C. & Heuven, V.J. (2007). Predicting mutual intelligibility in chinese dialects from subjective and objective linguistic similarity. *Interlinguistica,* 17, 1019-1028.

The White House (2009). Remarks by President Barack Obama at Town Hall Meeting with Future Chinese Leaders. Retrieved from http://www.whitehouse.gov/the-press-office/remarks-president-barack-obama-town-hall-meeting-with-future-chinese-leaders.

Wang, L. (2005). *The impact of multimedia on Chinese learners' recognition of*

characters: A quantitative and qualitative study. ProQuest Dissertations and Theses database.

网络教学平台 Moodle 在中级汉语听说课程中的应用及效果 (The application and effectiveness of Moodle – An e-learning platform for intermediate Chinese speaking and listening course)

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摘要：二十一世纪电脑科技发展一日千里，对外汉语教学可以通过网络、应用数据库、智能搜索、编写专用语料库、在线采集、编辑、发布和管理教学内容，自动生成网络教材，从而将电脑科技、教学法及课程结合起来。本研究集中讨论网络教学平台 Moodle 在本所中级汉语听说课程中的应用，尤其是它如何管理及监督学生的学习进度，如何与教师的课堂教学配合，以验证其教学效果，并讨论学生对综合电脑科技在对外汉语教学中的反馈，和教师对 Moodle 教学的反思。

Abstract: In the 21st century computer technologies develop at a tremendous pace. Teachers teaching Chinese as a second language through smart searching engines and databases on Internet may collect, edit and upload contents to automatically generate teaching materials, thus combining methodology and curriculum with computer technologies to manage teaching on line. This study focuses on how an e-learning platform Moodle is being applied in our Intermediate Chinese Speaking and Listening Course, particularly on how it manages and supervises pace of study of students, and how it coordinates with teachers' classroom teaching, in order to examine its effectiveness. This paper also addresses the feedback from students on their perspectives of comprehensive computer technologies being employed in teaching Chinese as a second language, and the reflections of teachers towards teaching with Moodle.

关键词：网络教学平台，Moodle，听说课程

Keywords: e-learning platform, Moodle, speaking and listening course

1. 引言

网络教学平台 Moodle 是模块化面向对象的动态学习环境，即为 Modular Object-Oriented Dynamic Learning Environment，是由澳大利亚教师 Martin

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Dougiamas 博士基于“建构主义教学理论”而开发的课程管理系统，旨为老师和学生建立一个沟通平台，师生可以通过网络进行充分交流，达到互相探讨、协作、共同完成学习任务的目的。Moodle 拥有多样化的学习模块，包括师生名录模块、课程选择模块、管理模块、资源添加模块和活动添加模块等。目前 Moodle 在香港中文大学雅礼中国语文研习所的课程发展中得到广泛应用，它既能帮助教师管理面授课程的辅助教学部分，同时也能为学生提供多元化的汉语学习环境。

网络教学打破了传统课堂教学的局限，促进了新型教学理念和教学模式的实施。雅礼中国语文研习所发展网络教学平台 Moodle 主要有三个原因：一、以学生为中心，尽量满足不同程度学生的学习需要，如某些学生听力弱，可以通过此平台在课下加强听力练习， 学生还可根据需要选择练习次数；二、为课堂上的师生互动打好基础，其目的在于学生在课下多练并积累一定程度的语言输入后，再回到课堂，教师就可以在此基础上与学生进行讨论、互动，而不需过多占用课堂时间带领学生进行熟悉课文等较机械式的操练；三、利用电脑辅助教师管理教学，监察每个学生的学习进度，从而达至因材施教的目的。

2. 文献综述

随着网络的普及、教育信息化的发展，建构主义学习理论作为认知学习理论的重要分支显示出强大的生命力。学习是学生以已有的经验为基础，通过与外部情境的相互作用，主动探索、发现和建构知识的过程，教学活动以学生为中心，尽可能创设真实情境，引导学生自主学习，独立思考。

Moodle 作为网络教学平台，它的设计不仅注重教学内容的管理与呈现，而且着重对教学过程中各种活动的支持。根据胡畅霞（2010）的归纳，Moodle 的功能主要有：1) 课程介绍，包括内容体系、学习要求、评分准则等；2）提供师生互动交流平台，如发通告、讨论、在线聊天、答疑等；3）提供课程所需的各类资源，如课程内容、软件资源、课件资源、素材资源；4）每周展示各个单元主题、学习目标及学习内容等；5）管理学习过程，如详细记录学习者的档案信息、学习情况、方便学习者做自我评估，方便老师检查；6）提供作业上载入口，如学习者可将作业上载，方便老师批阅；7）提供多样化的学习活动，如问卷调查、投票、讨论等；8）提供在线测试，每一单元完成后，学习者可自行测试自己的掌握情况。

除上述功能外，王艳、童丽（2010）归纳出 Moodle 的现实功能：一、实现资源高度共享；二、实现在线实时同步、异步教学；三、促进小组协作与实现教师对学习者学习状况的考核。

由此可见，网络教学平台 Moodle 的功能强大。根据建构主义理论，它可以满足以学生为中心的个体教学策略，又可以激发学生的学习动机，加强学生自主学习的能力，同时注重教学情境的设计，让学生在生动、逼真的情境中进行讨论、协作和交流。

郑通涛（2010）、王迪华（2010）、王艳、童丽（2010）等学者探讨了对学生 Moodle 自主学习能力的影响，他们认为网络教学以学生自主学习为主，教学内容实现多层次、个性化、多媒体化，实现教学环境时空的开放化。他们认为数字化学习与传统学习不同之处在于学习者可以根据自身需要灵活选择学习内容，并能拥有自己独立思考的空间。

网络教学平台 Moodle 改变了以往教师以“板书”、讲解方式而教，学生通过纸质教材和各类参考书籍及笔记而接收的课堂学习方式。未来的网络教学发展虽然日趋成熟，但是教育工作者特别是语言老师也面临着挑战。网络教学依托数字化教学平台，教师信息技术能力显得尤为重要。王祖嫘（2010）提出了把传统课堂教学与网络辅助教学结合起来的“混合式学习”的好处，并提出数字化对外汉语教学存在的技术与人才层面的两大类问题。数字化教学的市场运行需要更为强大的团队，目前许多产品和网站的支持和服务团队还不够成熟，需要借鉴其他行业网络运营的经验。

近年来，很多学者都对网络教学平台 Moodle 做了深入研究，Moodle 在本所的中级汉语听说课程中的应用是一种新尝试。本研究着重探讨 Moodle 在课程中的应用情况，并提出未来 Moodle 应如何与课堂教学配合从而提高学生的听说能力。

3. 中级汉语听说课程的设置理念及目标

中级汉语听说课程主要为香港中文大学外国留学生开设。当学生具备相当于在本所完成 270 至 325 小时中文课程的水平或者通过分班试达标即可选修。教材设置分汉字课文、生词介绍、演讲题目、拼音课文及阅读练习五部分。课程的内容共分五个单元，以旅行、面试找工作、讨论跳槽的利弊、介绍异乡生活和公司里的情况、介绍城市为主，同时辅以写信介绍旅游经验、比较两种旅游方式的利弊、准备面试、投诉房地产公司及介绍澳门情况等各类题材的阅读练习供学生学习各种文体，目的在于复习巩固以往所学的语法及生词，提高学生在日常生活及工作中的汉语表达技巧。

本课程的设置理念包括四方面：首先、改善学生的发音，学生在学习发音时有个体差异，可以通过这门课改正一些尚未化石化的发音缺陷；其次、通过课文复习巩固并强化学过的语法点，若老师发现学生口语表达中的语法错误，会立即对他们进行语法微调及纠正；再者、加强练习中国人常用的表达方式，并利用课文中出现的俗语和成语，加强学生在日常生活中的口语表达能力；最后、提高学生对复杂内容的逻辑表达能力，尤其是连接词的使用，主要训练他们因应不同场合的表达技巧。课程结束时，希望留学生具备较强的沟通表达能力。

此课程在考察学生听说能力方面采取循序渐进的方式，如：每单元结束以后，学生都须做演讲，话题可从课后演讲题目中选择，期中考试也采用演讲形式，并加入讲者提问及听者提问、讨论等，加强学生与学生之间的互动；期末口试分为两个部分：一是三、四人组成小组表演小话剧等；二是老师与学生进行一对一的期末口

试，务求通过各种不同的口语练习形式帮助他们提高汉语听说能力。中级汉语听说课程的教学在开放 Moodle 上的练习的帮助下，课程的设置理念和目标得以加强。

4. 网络教学平台 Moodle 如何配合中级汉语听说课程之教学

中级汉语听说课程的目的是为了提高留学生对日常生活内容的听力技巧和口语表达能力，而网络教学平台 Moodle 则起了辅助此听说课程教学的作用。经过筛选，目前放在网络教学平台 Moodle 上的配合此课程的练习共有四类：词语练习、课文听力练习、阅读部分的听力练习及课后听力测试。词语练习分为三种：如词语与拼音的多项配对题、给拼音找出与之对应的词语、专有名词的图片配对练习；课文听力练习的设计是老师先将每个单元课文分成三个部分，再将每个部分的录音上载，然后老师根据内容录三至四个句子，请学生听后判断对错；阅读部分听力练习的形式也与课文听力练习的形式类似；课后听力测试的设计则是老师根据学生当课所学内容，重新编写两至三个与当课内容类似的对话，上载录音让学生判断句子对错。Moodle 的听力练习和测试并不给学生提供文字内容参考，学生只能做听辨判断，他们可边听边做笔记。

课文的学习体现出 Moodle 与此课程之间的课堂教学配合。首先，授课老师将网上课文听力练习开放给学生，并根据 Moodle 的管理系统，设定学生须在正式学课文之前完成练习，也就是在两周内完成任务。随后老师通过 Moodle 了解学生的学习进度，检查学生的完成情况。若学生通过 Moodle 跟老师配合，到真正学习课文时，老师不必拼命领读、纠错，因为 Moodle 上的课文听力练习已经帮老师扫除了这些障碍。老师可以直接与学生进行讨论，互动，同时由于学生已做过课文听力练习，对课文内容已经有了一定程度的了解，因此他们能提出较为深入的问题，课堂气氛更趋活跃，学生主动学习能力得到提高，从这个方面也验证了 Moodle 能更好地促进课堂教学。

关于课后演讲题目的使用，老师可将话题留给学生回去思考并让他们准备一段演讲，学生可根据个人喜好选出自己感兴趣的演讲题进行准备。他们可从老师在 Moodle 上开放的第四部分的课后听力测试中得到灵感及启发。老师根据自己所教班级学生的汉语水平，选择是否开放第三部分的阅读练习，这样学生可以从多种渠道输入汉语语料，强化训练，提高他们对复杂话题的表达能力。

根据以往的经验，未使用 Moodle 时，教师通过传统手段花费大量时间精力，留学生的学习效果并不理想。本学期学生使用 Moodle 预习、复习、重复练习、强化练习、体会语言使用的差异、模仿、并将所学内容根植于自身的语言体系等。电脑科技的发展在这些环节中发挥的作用较大，可取代一些在语言课堂教学中较为机械、甚至枯燥的练习。

综上所述，网络教学平台 Moodle 在语言教学中所扮演的角色重要。它不但是网络教学平台，同时也是帮助师生共同实现教学目标的一座桥梁。由于语言课程设

置的局限，本课程的老师一个星期只教授学生三个小时，但是通过网络教学平台 Moodle，老师可以随时监察、管理学生的学习进度，甚至可以通过控制练习的开放结束时间务求使学生跟随课程的进度学习，这样学生水平容易紧跟课程进度而提高。

Moodle 在管理学生的学习进度方面为老师提供了每个学生的具体使用情况，如：何时登入、何时做完、完成练习所用时间、每道题所得分数、每次练习总成绩、最好的一次成绩等资料。如果老师发现个别学生还未登入做练习时，可在练习结束以前发电邮提醒学生，督促他们尽快完成。由此可见，Moodle 为师生提供的教学桥梁既可帮助老师更有效率地完成课堂教学目标，又可让老师利用此平台督促学生，提高教学效果。

如果学生缺席，老师可将所留功课在 Moodle 上再公布一下，列明功课内容、种类、递交日期等，同时便于听力不好的学生查阅。如果有学生提出问题，老师认为可以进一步解释并给予学生更多帮助时，也可把答案通过 Moodle 上载，给学生一些提示，加强课下师生互动。

5. 网络教学平台 Moodle 在中级汉语听说课程中之教学效果

教学效果一般体现在落实教学目标，完成教学任务；学生学习积极性高，课堂气氛活跃；学生能运用所学知识解决一定的实际问题；学生能理解及掌握所学内容及技能。对于衡量中级汉语听说课程的教学效果， 我们认为可从以下几个方面来看，学生的平均成绩提高；对老师及课程的满意度提高；对汉语学习的兴趣提高；自学能力加强；课堂气氛轻松，学生愿意在同学及老师面前用中文表达，而且能通过一个学期的练习，中文演讲能力有所提高等。

使用 Moodle 为学生提供更多听力输入。对不同学生的不同练习需要，针对性有所加强。个别学生可根据自己学语言的难点或弱点，专门练习如词汇、听力、理解等各项不同内容。为课上师生互动、学生与学生互动做好准备。老师开放 Moodle 上的练习后，学生即可同步练习。同时授课老师可检查学生是否按时完成 Moodle 上的各项针对听说的练习。每单元结束之后，老师根据当课内容，重新设计与课文内容类似的听力测试，要求学生填空以检测学生的学习效果。这个听力测试可安排在 Moodle 上做，但由于听力测试成绩会计算在学生的总成绩里，因此目前这个测试安排在课堂上进行。

表 1 比较不同时期的三组学生听力测试的平均成绩

	授课时间	阶段听力测试平均分（100 为满分）	全级人数	教学形式
1	2011 年春	81.3	19（只一班）	未使用 Moodle
2	2011 年秋	83.0	27（共两班）	未使用 Moodle
3	2012 年春	89.4	24（共两班）	已使用 Moodle

此三组学生所修读的课程、教材、授课老师、课程要求、学生练习均相同，听力测试内容相同、评分标准相同。由表一得出 2012 年春季学期学生听力测试成绩高于前两组学生的平均成绩。

如果我们只比较阶段听力测试的平均分还不够全面，可从表二的结果进一步比较三组学生的口语表达能力是否有所提高。

表 2 比较不同时期的三组学生口试的平均成绩

	授课时间	口试平均分（100 为满分）		全组人数	教学形式
		期中	期末		
1	2011 年春	80	76.3	19（只一班）	未使用 Moodle
2	2011 年秋	81.5	86.9	27（共两班）	未使用 Moodle
3	2012 年春	89.2	89.3	24（共两班）	已使用 Moodle

上述成绩是根据当时授课的原始记录而计算出平均成绩，前两次学生的期中口试平均分接近，而 2012 年春季修读这门课学生的总平均分高于前两次。前两次老师通过电邮把课后听力练习发给同学，现在老师只需要在 Moodle 上开放课后听力练习，而且 2012 年春季修读的学生有机会试用 Moodle 上每个单元的词语练习、课文听力练习和阅读部分的听力练习。虽然以往学生也收到老师电邮给他们的听力练习，但是缺少 Moodle 这样的载体，趣味性及便利程度稍逊，而且老师亦不能按时检查学生的练习进度。

表 3 比较不同时期的三组学生在此课程所得的期末总平均成绩

	授课时间	本课程期末总成绩（100 为满分）	全组人数	教学形式
1	2011 年春	81.7	19（只一班）	未使用 Moodle
2	2011 年秋	83.4	27（共两班）	未使用 Moodle
3	2012 年春	88.3	24（共两班）	已使用 Moodle

表 4 比较不同时期的三组学生对老师及课程的满意度

	授课时间	全级人数	填写问卷人数	对老师及课程的满意度（6 分满分）	教学形式
1	2011 年春	19（只一班）	14	5.45	未使用 Moodle
2	2011 年秋	27（共两班）	23	5.74	未使用 Moodle
3	2012 年春	24（共两班）	21	5.89	已使用 Moodle

根据表四数据，2012 年春季学生对老师及课程的满意度分数也较前两组有所上升，反映 2012 年春季学生对此课程满意度提高，学生对中级汉语听说课程的教

学效果表示满意。此问卷由校方统一安排派发，不记名填写，专人负责收集填好的问卷， 务求给学生创造一个畅所欲言的机会，最后校方根据学生问卷结果得出上述数据。

总括而言，2012 年春季学期使用网络教学平台 Moodle 后，已使用 Moodle 的学生在听和说两方面成绩均高于 2011 年学生的平均成绩。同时本课程 2012 年春季学生的期末总平均成绩也高于前两组学生。

6. 学生对电脑科技在对外汉语教学中的反馈

为了了解学生对网络教学平台 Moodle 的实际使用情况，我们于学期中段发放网络多媒体应用技术与语言教学问卷，询问学生有关 Moodle 的优缺点及其他相关问题。此次调查共发出 24 份问卷，收回有效问卷 17 份。

学生反映使用 Moodle 辅助学习汉语听说课程的好处是：一、网络可以帮助学生随时随地学习--- 学生喜欢用手机登入，而且他们觉得二十四小时都可以练习很方便；二、Moodle 的管理好，听力练习限时完成有效，允许重复练习对学生帮助大；三、Moodle 上的练习多元化，可聆听课文，练习拼音，听力练习的形式好，可复习课上所学，检查尚未掌握的内容，可自学汉语；四、Moodle 用选择题测试学生的形式便利，较用纸完成的作业更方便。

另一方面，学生在使用 Moodle 辅助学习时也遇到很多困难：一、技术上的问题，如档案打不开，档案有错，浏览器有问题，不能通过自己的电脑使用 Moodle；二、不熟悉 Moodle 的管理，如错过限定时间，未能完成功课；三、学生自身的问题，如没有时间做，逃避功课等等。

虽然学生都成长于电脑科技高度发展的年代，问卷调查显示有七位以前没有使用过任何网络教学软件，其余七位的使用情况如下：WebCT(2)；Moodle (2); Blackboard(1); Cyber Campus(1); 不知名软件（1）。以学生的观点来看，他们倾向于所有科目甚至所有大学都使用同一种网络教学软件以方便他们适应。调查结果显示有 79%的学生赞成网络教学模式，他们认为需要加强的方面包括：重复听、听汉语歌儿、补课、随意聊天、学习更多生词、用 iPad 学习、加强课外补充练习等。问卷当中有两位不赞成网络教学，认为用课本学习效果好，还有写作业比通过网络交作业更好。

7. 教师对使用网络教学平台 Moodle 的反思

教师在电脑科技的高速发展之下需要与时俱进，尽快掌握各种网络教学软件的使用技巧。借助本所正在使用 Moodle 的老师的帮助，本研究搜集到大量意见及反馈，可从不同的角度分析观察。

大部分老师认为使用网络平台 Moodle 的优点很多：一、便于沟通，老师可以与学生做即时沟通和互动，老师可及时反馈，解答学生的问题；二、利于补足，由于授课时间有限，老师不能照顾个别学生，Moodle 可以补救课堂教学的不足，因材施教；三、加强课后学习，Moodle 可以传达多样化信息，包括留作业等，老师可以提前设计练习题，不必把教学局限在课堂内；四、Moodle 各种练习能提供答案可节省老师批改作业的时间。

老师认为网络教学平台 Moodle 的局限和不足有：一、若网络教学软件不普及，随时会被淘汰和取代；二、对老师自身电脑水平的要求有所提高，若老师没有技术支持团队，很难靠个人力量把 Moodle 的练习设计得更完美；三、Moodle 上的练习不但对学生学习的自主性要求提高， 同时也对学生的电脑使用水平和技巧有一定要求。无论老师和学生，双方都需要提高电脑的应用水平才可以在使用 Moodle 时更顺畅，更有效。

授课老师在使用 Moodle 时所扮演的角色是课程的监督者、监控者、评阅者和管理者；Moodle 扮演着辅助教学的角色，经验丰富的老师可根据多年教学经验总结出教学重点，将教学难点和重点变成练习放在 Moodle 上，学生可依照他们的个别需要进行练习。

在教学实践中，学校的电脑技术人员应为教学人员提供多方面的支持，如采集、统计；白天在线答疑；较为重复的动作可让技术人员为老师提供协助；技术人员可定期举办工作坊为老师提供培训，若老师和技术人员能把各种听说练习都制作成打游戏机的形式，学生会更接受这类练习，学习效果也会更显著。

8. 结语

网络教学平台 Moodle 在本所中级汉语听说课程中的应用属于起步阶段。Moodle 在管理和监控学生学习进度方面比传统做法更科学、更有效，而且它能从预习、复习、强化练习和测试四个方面来有效配合老师的课堂教学，并能提高课堂教学的效度、广度和深度。本学期使用过 Moodle 的学生的听力测试、口试平均成绩及期末总平均成绩都高于前两次未使用 Moodle 班级学生的平均成绩。

学生对电脑科技在对外汉语教学中的使用给予正面乐观的评价，Moodle 与目前学生的学习习惯和方法相互配合适应，这是他们乐于使用的学习工具和学习方式。学生普遍倾向于选择更生活化的素材来学习汉语。虽然在使用 Moodle 过程中，学生也遇到技术上的困难，但学生电脑应用技术强，技术问题都可迎刃而解。

大部分老师都同意借助 Moodle 可以提高教学质量并辅助教学。如果 Moodle 设计恰当，可达到事半功倍的效果；但同时老师也担心如果使用双方都缺乏较高的电脑技能，技术上得不到支援，反而事倍功半。

在目前的电脑时代，培养对外汉语教学人才的学校应广开结合电脑网络应用与汉语教学实践的跨学科专业。如果未来对外汉语教学人才既具备专业的汉语教学知识，同时又具备最先进的网络设计能力，学生将会在轻松、有效的网络、课堂混合式教学中学习汉语。快乐轻松学会汉语将不是一个梦想。未来的汉语软件开发商应本着易学、易用的原则设计一种比 Moodle 更容易用的软件系统。即使是在电脑使用方面稍弱的用户也能应付自如，老师可在易于使用的电脑软件支持下，创作出更多的更有效的网上练习来提高学生的汉语水平。

参考文献

安福杰. (2011). 基于 Moodle 互动式多媒体学习环境设计. *中国现代教育装备*, 8, 23-24.

胡畅霞, 韩立华, 李静, 刘晓星. (2010). 多媒体课件设计与制作课程中基于 Moodle 的双主教学设计. *中国教育技术设备*, 36, 65-66.

黄金金. 邹少辉. (2011). 基于 Moodle 的网络课程设计. *信息技术教学与研究*, 18, 162-163.

刘细英. (2010). 如何搭建 Moodle 教学平台. *中国信息技术教育*, 24, 100.

卢伟.（2010）. 汉语教材开发的技术支撑. *国际汉语学报*, *1*(1).92-96.

司雨昌. (2011). 基于 Moodle 平台的移动学习扩展技术研究. *计算机时代*, 2, 38-40.

王迪华. (2010). Moodle 对学生自主学习能力的影响. *山西广播电视大学学报*, 11, 20-21.

王迪华. (2010). 基于 Moodle 的多媒体应用技术课程设计. *南昌教育学院学报. 高等教育*, 6, 80.

王艳, 童丽. (2010). 关于 Moodle 平台的应用与自主学习的思考. *时代教育*, 1, 32-35.

王祖嫘. (2010). 数字化对外汉语教学的研究与发展趋势. *国际汉语学报*, *1*(1).109-113.

肖磊, 叶永, 王海鹰, 武雷, 焦炳连. (2011). 基于 Moodle 的“计算机网络”课程互动式教学平台的开发. *科技广场*, 1, 158-161.

张燕燕. (2010). 基于 Moodle 平台的网页设计课程量规评价分析. *职教通讯*, 6, 86-89.

郑通涛. (2010). EDU2.0 时代华文教学平台构建探讨. *国际汉语学报*, *1*(1). 84-91.

周波. (2010). 构建基于 Moodle 平台的网络课程体系. *中国信息教育技术*, 24, 92-93.

周小娟. (2011). 基于 Moodle 的多元化评价活动设计. *中国教育信息化*, 4, 33-35.

朱跃, 朱朝霞. (2011). Moodle 平台下网络课程设计的研究. *信息技术与课程整合*, 1, 9567-9568.

以 Moolde 為輔助華語學習的課外活動設計
(Moodle as a learning aid: An example of Chinese extra-curriculum activity design)

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摘要：本文為筆者在華語課程中利用 Moodle，以課外筆談活動方式，創造一個有效線上學習環境的經驗分享。此活動是針對上課時數有限且日常生活中缺乏華語環境的課程而設計。筆者運用 Moodle 的群組討論功能將課堂教學與課外活動結合，提供學生運用課堂所學的機會並延長學生使用華語的時間，以增進學習效果及興趣。由此，學生得以在課外彼此以華語交流，教師得以評鑒學生的學習成果及給予反饋，華語的學習得以成功的延伸到課外。

Abstract: This article discusses an example of utilizing Moodle as a learning aid for Chinese language courses offered in a non-Chinese speaking community with limited instructional hours. This Moodle-based extra-curriculum activity incorporates second/foreign language learning theories together with technology in facilitating language acquisition by engaging U.S. college students at various levels of Chinese proficiency in text-based computer-mediated communication. It extends language learning from a classroom setting to the students' daily life, provides an opportunity for the students to make good use of what they learned in class, and elevates the students' abilities to use Chinese in authentic interactive communication. The nature of the forum also enables the instructor to provide feedback regarding the students' linguistic outputs. Students' outputs are provided and analyzed to provide evidence of language acquisition.

關鍵詞： Moodle，語言互動，華語文教學，電腦輔助溝通

Keywords: Moodle, interactive communication, teaching Chinese as a foreign language, computer-mediated communication

1. 前言

筆者目前任教於美國的一所學季制大學。這所大學位於一個以白人為主的小城市，華人在此並不多見。相較於其它的外語，華語在此大學是較新的課程，中文科

系也尚未成立。因此，選修華語的學生來自此校的各科系，每星期的華語上課時數僅有四個小時，且在去除期中及期末考週後，每個學季真正的授課週數只有 8 週。對於成長在西方社會，沒有華語背景的西方學生或華人的第二代第三代子弟而言，要藉由這僅有的一週四小時來學好華語實在是一大挑戰。除此之外，只在課堂學習而無法將所學藉由與他人互動而運用在日常生活中 （meaningful output），對於語言習得來說更是一大問題。德國心理學家艾賓浩斯 Ebbinghaus (1999)的研究指出，若沒有善用課堂所學 （或良好的復習），幾天後，一般學生對上一次課程的記憶只剩約 20%。由此可見只在課堂上學習而無法以運用所學的方式來復習是一個不可忽視的問題。雖然學生可以在作業簿中練習寫字造句，但此種練習畢竟是單向的，而且無法與學生的現實生活做連結。況且，以學習動機及學習興趣而言，這種紙本練習並無太大的促進功能。

爲了打破時間地點的限制，並將課堂教學與課外活動做結合，更提供學生在課外彼此以華語互動進而運用並學習華語的機會，筆者於是有了利用 Moddle 群組討論功能的想法，期望藉由科技與傳統語言教學理論的結合來加強學生的學習成效。

Moodle 是一種架設在網際網路上的數位課程平台。它與 Blackboard 類似，是可以在網路上使用的課程管理系統。俄國心理學家 Vygotsky(1978, 1986)認為學習，包含語言學習在內，是先從社會過程而後個人過程。亦即，知識是建構於群眾參與的實際活動中。因此 Moodle 的主要目標為幫助教師建立有效的線上社群，透過學生的群眾參與過程創造一個有效的學習環境（林金錫等，2008）。

2.文獻探討

本活動是以 Long 的互動假說 （Interaction Hypothesis）, 布魯姆的認知分類學（Bloom’s Taxonomy）,與維高斯基的社會文化論（Vygotsky's Sociocultural Theory）中之鷹架學習為語言習得的理論基礎，並參考電腦輔助溝通（CMC）的相關理論，以 Moodle 課程平台中的群組討論功能為工具而設計。其語言習得理論的相關文獻如下：

2.1 Michael Long 的互動假說理論

此理論主張，第二語言學習者，透過使用欲習得的標的語言（target language）與他人溝通互動 (interaction)，是習得此標的語言的最好方法之一。除了藉由閱讀，語法，及字彙課程，和聽力練習，獲得大量的可理解性输入（comprehensible input）之外，Long 強調，使用欲習得的標的語言與他人交際互動，不僅可以提供學習者練習使用此語言的機會，更是進一步促進語言習得的關鍵。此“促進語言習得的關鍵”指的是學習者在溝通互動過程中產生的意義的協商（negotiation of meaning）（Gass，2007）, 而此意義的協商在第二語言的習得中有決定性的作用。亦即，真實語言情境的互動 (authentic interaction)過程讓第二語言學習者意識到自己在使用標的語言中所犯的錯誤或對標的語言知識的缺乏，而尋求正確或更多的語言資訊，進而進行修正，而終能成功的使用正確的標的語言達到溝通的目標, 亦即習得此語

言(Long, 1996)。在過去的 20 年間， Long 的互動理論在第二語言習得界得到了廣泛的關注及運用。

筆者的學生除了在課堂中，少有以華語與他人互動的機會，藉由 Moddle 的群組討論功能，筆者希望能為學生創造在課外以筆談方式交流的機會，給學生能實際運用課堂所學的場合，讓他們以自己真實面臨的經驗來思考筆談的主題，進而以文字表達，也增加他們在真實語言情境中使用華語互動的機會。

由於是讓學生以非同步筆談 (參與對談者不用同時在綫上), 而不是以面對面同步的口語方式，來進行互動，對談雙方都有充分的時間來準備欲談論或回應的內容 ，這可能會降低他們在語意上不清楚的機會，而減少雙方進行意義協商的頻率 。然而，筆者希望此筆談互動仍能在"提供學習者練習使用標的語言的機會"和促進學生 "意識到自己對標的語言知識的缺乏，而尋求正確或更多的語言資訊以達到溝通的目的"上起到一定的作用。當然，也增加學生在課外獲得可理解性输入（comprehensible input）的機會。

2.2 布鲁姆分類學與其認知歷程向度中之技能

布鲁姆分類學（Bloom's taxonomy ）是美國教育心學家本杰明·布鲁姆於 1956 年所提出，把教育者的教學目標分類，以便更有效的達成各個目標。Anderson, Krathwohl, Airasian, Cruikshank, Mayer, Pintrich, Raths 及 Wittrock 等人 (2001) 修訂了布鲁姆分類學，將認知分類區分為知識向度（Knowledge Domain ）和認知歷程向度（ Cognitive Process Domain ）。 其中，認知歷程向度(Cognitive Process Domain)是在促進學習者保留(retention)和轉移(transfer)所習得的知識， 也是筆者設計本活動的主要目的之一。

根據此分類學, 認知歷程向度（cognitive process domain）分成六個範疇，由低層級到高層級依序為記憶 (Remember)，理解 (Understand)，應用 (Apply)，分析 (Analyze)，評估 (Evaluate)，和創造 (Create)。每一範疇對應於學習的不同層次，較高層次對應較複雜的內容，也較接近對該學科的精熟(Mastery) 度 (Huitt, 2011)。

記憶 Remember

指的是學習者對於信息的回憶。亦即，當面對某提示或綫索時學習者能從記憶中提取相關知識。 從華語學習的角度來詮釋，也就是，學習者是否能認得或記得所學過的漢字及華語知識。

理解 Comprehension

亦即表現出理解的事實和思想，組織，比較，翻譯，解釋。也就是，學習者是否能理解不同華語字彙或句型的意思及其之間的差異性。

應用 Application

指的是使用新學的知識。亦即，在新形勢下，以不同的方式運用所學到的知識、事實、技術和規則解決問題。也就是，學習者是否能將所授予的華語字彙句型或片語應用在一個新的溝通情境。.

分析 Analysis

指的是檢查並分析而後分解信息並進行推論。也就是，學習者是否能從華語情境中認出華語的語言元素以及這些元素如何統整在一起建立出系統性的關聯。 例如， 分析一個句子或片語進而推論出其在此情境的意思或用法。

評估 Evaluation

指的是根據規則及標準來做判斷。也就是，學習者是否能以所學的華語知識，判斷自己或他人所使用的華語是否符合華語的語言規則或對當時的溝通情境是否恰當以及是否達成溝通的目標 。

創造 Create

指的是將各個元素組裝在一起，形成一個完整且具功能的新整體。也就是，學習者是否能在新的溝通情境中成功地結合新舊華語字彙或句子片語而達成溝通目標。

在以認知歷程向度的六大範疇為目標下，筆者欲利用 Moddle 群組討論功能，讓學生們借由參與筆談這項課外活動，盡可能的運用這六大範疇的技能，增加他們保留(retention)和轉移(transfer) 所習得的華語知識的機會，以促進華語習得。

2.3. 維高斯基的社會文化論（Vygotsky's Sociocultural Theory）與鷹架學習（scaffolding）

俄國心理學家維高斯基（Vygotsky，1978）認為，知識是建構於群眾參與的實際活動中，包含語言學習在內，是先從社會過程而後個人過程。他從觀察小孩解決問題 （problem solving tasks）的過程中發現，人們在能力較強的同伴協助下，能超越自己目前能力所及而完成更難達到的工作，因此提出了“可能發展區”（Zone of Proximal Development，ZPD）的理念。“可能發展區”是指學習者“實際發展層次”（個體所展現的獨立解決問題能力）與“潛在發展層次”（在成人引導或與較能幹同儕合作所展現的解決問題能力）二者的差距（關之英， 2012）。學者們認為，提供鷹架學習，有利於開發學習者的潛能，讓他們超越自我獨立作業時可達到的表現，進入“可能發展區”，而達到更高的學習成效（黃德祥及謝龍卿，2005）。

鷹架學習的概念是 Wood, Bruner, & Ross (1976) 從“可能發展區”的理念中衍生出來的， 他們把這鷹架概念應用於教學與學習上，視其為一種輔助學習的策略。事實上，Vygotsky 本人並未直接使用‘鷹架’這個名詞，而後來的學者也對‘鷹架’的內涵各有不同的理解與認知（陳育琳，徐照麗 2007）。但一般來說，鷹架廣爲接受的內涵為：教師或同儕透過文字書寫或口語形式的語言互動，提供學習者關鍵性

的引導或指點以協助學習者完成一項學習活動或將之前習得的知識與新學的知識做連結，以達到成功學習的目的（徐椿樑, 2001；Warschauder, 1997）。甚至，利用電腦軟件，以提點或提醒 （prompt）的方式幫助學生進一步的省思及釐清觀念，以促進知識的整合，亦也可視爲是一種鷹架的內涵（Davis & Linn, 2000).

鷹架學習可由不同的方式達成，筆者欲借此課外筆談活動達成的主要為同儕鷹架學習。在 Moddle 群組論壇（forum）的互動中，學生們可經由較高程度同儕的貼文，或這些同儕對自己貼文的回應，而直接或間接的得到字彙，用語，或語法上的引導及協助，幫助他們省思自己對華語的認知及用法是否正確，進而起到提點或啓發的作用，促使他們在有錯誤產生時能進行修正，抑或補強他們華語知識的不足，進而起到關鍵性引導的作用，協助完成以華語，針對某些主題貼文表達自我（也就是筆談）的任務。 身為老師的筆者亦可不定期的加入論壇給予反饋或參與貼文，亦即以提供學生關鍵性的引導或指點的方式提供教師鷹架。基於此，筆者希望此學生群眾參與的筆談活動能有助於學生華語知識的建構，幫助他們超越獨立學習時可達到的表現，提升學習成效。

2.4 以電腦輔助的筆談交流活動

電腦輔助溝通（簡稱 CMC）是指透過電腦為媒介所進行之溝通模式。其形式甚爲多元，例如：電子郵件、即時通，甚至是電子討論版、論壇等各種社會性軟體。使用者之間則以非同步（asynchronous，像是電子信箱、討論區、論壇等）或是同步（synchronous，像是聊天室、MSN Messenger、Skype 等）的形式來交換與傳遞訊息，以達成溝通的目的。

‘電腦為輔助的筆談交流活動’在以下的文獻探討中所指的是在電腦輔助溝通的架構之下，讓語言學習者以非同步或同步的方式，在網路上進行筆談，或借由電子郵件往返，做為學習及運用標的語言的工具。其對語言學習的促進功能在西方語言習得的文獻上早有所載：它有效的提供了學生一個進行許多，如互動假說（Interaction Hypothesis）所主張，促進語言習得活動的場合（Blake，2000） ；相較於面對面的同步口語對話，電腦輔助的線上討論是一種較為平和的活動方式（Warschauer & Healey，1998）， 學習者不會因為要與他人面對面地溝通而感到害羞（Ko & Rossen, 2001），也更能成功的掌握或完成在網路上進行的筆談交流，進而達到以標的語言進行溝通的任務（Chun，1994)， 還能在較不感受到緊張和壓力的狀態下，在全語境中 （in context）成功地習得課堂內沒有教授的字彙和語詞(Ramzn & Saito, 1998)。 此外，研究顯示，外語學習者在電腦輔助的筆談交流中，更能使用比較複雜的詞彙及語句結構（Warschauder , 1996）， 並能，如 Vygotsky (1978) 的“可能發展區”理論所言，從與較強能力者的文字互動中，習得較艱深的字彙及語法結構，而大大的提升自己的標的語言能力 (St. John & Cashi, 1995)。Warschauer & Healey （1998）也指出，在語言的使用方面，電腦輔助的線上溝通中，在句子結構方面是較為複雜的，原因在於，與口語溝通相比較，學習者較有時間準備談話的內容。

近年來，由於網路科技的發達及華語文教學的蓬勃發展，探討以電腦網路科技爲輔的華語文教學研究也與日俱增。劉繼仁 (2007) 提及，網路化的情境，讓語言學習者在學習標的語的過程中，能夠擁有多種管道及互動機會和其他學習者進行溝通, 藉以發展他們的語言能力。陳懷萱，林錫金 (2010) 在其探討華語文寫作學習的論文中亦指出，運用網路討論區的筆談及寫作活動能讓語言的學習變成一種主動的選擇而不是被動的接受教師的安排，因爲每個同儕所寫出的文句和現實網路上的資源都能成爲所有參與學生學習的教材，而決定取捨的權利在於學生自己的需求。同時，這種活動還能對語言學習起鼓勵和刺激的作用，因爲在討論區上，所有參與者的進步都是一目瞭然。看到他人的成就會讓學生鞭策自己要多努力，而看到自己的進步也會讓學生得到鼓勵。

筆者欲運用的課外活動是以電腦輔助而進行的群組筆談，即以 Moodle 平台為輔助工具，讓學生們, 不用同時在綫上（非同步，在較不感受到緊張和壓力的狀態下），也可以用中文打字的方式交談或傳遞訊息，以達成互動及溝通的目的。如 Warschauder (1997) 所言，有別於面對面同步的口語交談，這種以電腦輔助而進行的非同步筆談，既不受時間及地點的限制，還可以一對一或群組的方式來進行，這不但與維高斯基社會文化論中的‘語言知識是建構於群眾參與的實際活動中’之學習理論相符合，也增加了學生獲得語料的輸入(input)及輸出(output)的機會，還能讓學生在使用標的語言溝通的過程中，若產生障礙時，得以停下腳步來省思問題的癥結所在，進行修正或尋求解答，進而促進溝通的完成及語言的習得。

3. 活動內容及實施步驟

3.1 活動設計之目的

此課外筆談活動是針對缺乏華語文環境且每星期上課時數非常有限的學生而設計。其主要的目的是提供學生使用華語交流的文字平台，讓學生將課堂所學運用在一個真實語的語言情境，與同儕互動，一起學習，並藉此打破時間地點的限制，將課堂教學與課外活動做結合，把學習華語的活動延伸至課堂外，以延長學習時數，且提高學習動機及增加學習成效。

借由參與筆者設計的 Moolde 平台群組論壇，學生能與同儕用筆談的方式互動。在一個真實的語境中，針對某個主題，以華語進行訊息及意見的交流。從互動假說 (Interaction Hypothesis)的觀點而言，這種互動不僅可以讓語言學習者練習使用標的語言，還可在對方貼文語意不明的情況產生時，促進參與者進行意義的協商 (negotiation of meaning)，這些都是促進語言習得的關鍵。

再者，筆者也希望此活動能促使學生運用認知歷程向度(Cognitive Process Domain) 中的技能，促進學生保留和轉移所習得的華語文知識，提高對華語文的精熟(Mastery) 度。希望借此活動， 學生能：

- 練習在同儕所貼的文句中認字。這可增加學生在全語境中 (in context) 認字的能力，並增加其華語字彙量。(需運用的認知技能包括（但不限於）：記憶 Remember，理解 Comprehension) ;
- 練習運用課堂所學。將所授予的華語字彙用語和語法結構運用在論壇的貼文句子中，以達成傳達訊息的目的。 (需運用的認知技能包括但不限於：記憶(Remember)，理解(Comprehension) ， 應用(Application))；
- 在其已有的華語基礎上，透過自我學習（例如，查閱教科書，查字典，或運用其他網路資源）來幫助其使用華語在論壇中貼文，傳達訊息。(需運用的認知技能包括但不限於：記憶(Remember)， 理解(Comprehension)，應用(Application)，分析 (Analysis))；
- 以回應同儕貼文的方式，練習將所學的華語運用在真實語言情境的互動交流上。 亦即，運用已有的華語文知識，來理解分析他人貼文的語句及語意，並且嘗試針對當時的溝通情境，創造自己的句子來回應他人貼文，以達成溝通的目的。 (需運用的認知技能包括但不限於：應用(Application)，分析 (Analysis)，評估 (Evaluation)，創造 (Create))；
- 評估同儕貼文文句的正確性，並借由同儕對自己貼文的回應來評估自己文句的正確性 。 亦即，判斷自己或他人所使用的華語是否符合華語的語言規則，或對當時的溝通情境是否恰當，以及是否達成溝通的目標。(需運用的認知技能包括但不限於：分析(Analysis)，評估 (Evaluation)) 。

此外，由於是以電腦網路為工具的非同步筆談活動，學生有寬裕的時間準備貼文的內容，筆者亦希望這個活動能如電腦輔助溝通（CMC）的文獻上所載，提供學生們互動的機會，讓學生在一個較不感受到緊張和壓力的狀態下，透過同儕及自我學習，使用相較於他們在同步口語對話中所用較複雜的詞彙及語句結構，或成功地習得課堂內沒有教授的字彙和語詞。

在把學習華語的活動延伸至課堂外方面， 由於在初級和中級班，學生們的華語字彙仍很有限，有些學生爲了要使其貼文的內容更豐富，或爲了更能貼切地表達自己的實際經驗，勢必要訴諸於查字典或其它網路資源及工具，透過自我學習，來完成此課外作業。 也就是說，借由參與此活動，學生們有時會透過自我學習來獲得課堂所教之外的字詞或用語。這樣的自我學習對一星期只有四小時上課時數的學生來說是一個很好的延長學習時數的方式。此外，學生們即使只是閱讀或回應與自己程度相當同儕的貼文，也能經由同儕額外獲得華語字彙及語法輸入的機會，進一步學習到其他同學自我學習的成果。

3.2 參與之學生

參與此活動的爲筆者初級（CHIN 101 到 103）到中級班 (CHIN 201 及 202) 的學生。這些選修華語課程的大學生來自學校裏的各科系。101 的學生學完拼音後即開始參與此課外活動。102 的課程進度是完成新版“中文天地”第一冊的上冊。 103 的學生開始學習“中文天地” 第一冊下冊的內容，而此下冊在 201 課程結束時完成。

從 202 開始，學生使用“中文天地”第二冊的上冊。由於此課外活動是學生課後作業的一部分，所有的學生都必需參與。

3.3 輔助工具

用以實施此活動的平台為筆者任教的大學所提供的免費 Moodle 課程管理平台。由於學校的系統自動將所有的學生都納入其選修課程的 Moodle 網站，學生只需登入其選修的中文課程的 Moodle 網站， 點選筆者所建立的論壇（forum）， 即可以貼文（posting）的方式進行筆談。

在每一個新的學季開始前，筆者即在 Moodle 上預先建立好可供整個學季使用的論壇。由於學生們每週都得參與此筆談活動, 以貼文進行交流，故此作業取名為“weekly posting”。又由於一個學季的第十週已是期末考試的前一週，所謂的復習週，已不教授新課程，所以筆者一個學季只建立可供 9 週（包含期中考週）使用的 9 個論壇， 並將此筆談活動的規則 （weekly posting guidelines），除了一開學就發給每個位學生一份之外，還以電子檔挂在 Moodle 上讓學生們可以隨時查閱。開學後，學生只需在 Moodle 主畫面的 weekly posting 主題上直接點選週別，即可進入該週的論壇，參與貼文筆談。筆者亦在課程大綱(course syllabus)中提供幾個網路字典的網站供學生參考，並在一開學時即在課堂上示範如何使用這些網站幫助他們查詢華語字彙。

3.4 活動設計與規則

爲了確保每個學生都能看懂並遵循此項作業規則，筆者用英文將實際的活動規則詳列發給學生。簡要的來説，此活動規則告訴學生們：

- 每週至少在當週的論壇中貼三則貼文。兩則為自己對某兩個主題的闡述，一則為對某同儕貼文的回應。
- 當主題為問句時，除了給自己的答案，並請盡量闡述給予此答案的理由。
- 可超越課堂所學，運用自學所得的新字彙或用語，但請在其貼文中提供新字彙的拼音及英文翻譯。
- 在將文句貼出前，請學生們再次查閱字典（或課本）確認自己沒有用錯字。
- 當無法了解同儕的貼文時，可以要求其同儕進一步澄清語意。
- 可以用網路字典或 Google Translate 來查單字，但不可用 Google Translate 來將英文句子直接翻譯成中文來完成此作業。
- 除了運用課堂所學，可以盡量的運用新字詞及用語，或創造新句子。不要畏懼測試自己使用華語文的能力。

至於筆談的主題，基本上筆者將此交由學生們自由選擇，但提醒初級班的學生盡量將範圍設在當週或前一週所學相關的主題，以達到練習運用課堂所學的目的。例如，如果上週課堂中所學的主題為語言及國籍，那麼學生們可以選擇談論自己會說的語言有哪些， 或問其同儕他們會說什麼語言。此外，筆者也把前一學年度學生曾經討論過的主題條列出給學生當參考，還會不定期的在論壇中貼一個跟課程所

學相關主題的貼文讓學生來回應。中級班的學生因爲可利用的字彙及句型較多，且更有能力運用課外資源自我學習來增加自己的華語表達能力，筆談主題則是在新一週的筆談開始前，在課堂上由全班同學一起決定，選出兩到三個他們最有興趣的主題，讓他們以自己真實面臨的經驗來思考，進而以文字表達。例如，有一次在 201 的課程，除了該課的主題"未來計劃"，筆者也運用在網路上截取的六格漫畫介紹了有關描述男女朋友各種個性及外表上優缺點的用語，當補充教材。在決定下週的筆談主題時，學生們就提出了好幾個相關的主題，而最後票選出"我的寒假計劃"，"你畢業後想做什麼？"，"你有男/女朋友嗎? 請描述你的男/女朋友 （或你想要什麼樣的男/女朋友？）"，當作下個筆談的主題。每個學生可以在這三個主題中任選兩個主題，在 Moodle 的該週論壇中，分別由兩則貼文來闡述，還得至少回應一則其同儕的貼文。 相同的，筆者也把前一學年學生曾經討論過的主題條列出給學生當參考。

由學生們選擇筆談的主題來發揮即如蔡雅雯 （2013）所言，把學習的主導權交給學生，不僅可以更貼切學生的需求，更同時可以提高學生主動參與的興趣，藉以提高學習動機及增加學習成效。亦如陳懷萱，林錫金 (2010) 所言，運用網路討論區的筆談及寫作活動，讓語言的學習變成一種主動的選擇而不是被動的接受教師的安排。

以下（表一）為 CHIN 101 ， CHIN 103， 及 CHIN 201 課程在 2012 ~2013 學年度曾使用過的論壇主題之簡表。

表 1 論壇主題實例 Topics

班別	主題
CHIN101（第一學季）	你好！ 你會說什麼語言？ 你是哪國人？你的爸爸和媽媽會說什麼語言？ 請問您貴姓？ 你的英文名字是什麼？ 我的老師。 我的爸爸和媽媽。 我的家人。 你喜歡星期幾？爲什麼？ 你有寵物嗎？你喜歡貓還是狗？ 你今天吃了什麼？你喜歡吃什麼？ 你的生日是什麼時候？ 你有室友嗎？你有幾個室友？他們是學什麼的？ 你主修什麼？你爸爸的專業是什麼？ 你很忙嗎？我很忙...
CHIN103（第三學季）	昨天… 從你家到學校怎麼走？ 你春假去了哪裡？做了什麼？

	你喜歡去哪裏逛街，爲什麼？ 春夏秋冬，其中你最喜歡哪個季節，爲什麼？ 你不喜歡借什麼給別人？ 爲什麼？ 你這個週末要做什麼？ 我的房間。 我喜歡的顏色。你喜歡什麼顏色？ 你喝咖啡嗎？你喜歡喝什麼咖啡？你常喝咖啡嗎？你喝咖啡的時候喜歡加什麼？ 你鍛鍊嗎？ 你常做什麼運動？你在哪裏做運動？ 你常跟你的爸爸媽媽/朋友/室友一起做什麼？ 你怎麼慶祝生日？ 你有車嗎？你的車是什麼車？如果你要買車，你最想要那一款車？
CHIN201（第四學季）	今年夏天，你去了哪裏？做了什麼？ 你通常怎麼來學校的? 你做什麼做得很好？ 我生病的時候… 一個我不想讓我爸爸或媽媽知道的秘密。 一個忠言逆耳的例子。 我的感恩節假期。 我的二十一歲生日。 你有搬過家嗎？你搬家的經驗好不好？ 我的寒假計劃。 你什麼時候畢業？畢業以後想做什麼？ 你有男/女朋友嗎? 請描述你的男/女朋友（或你想要什麼樣的男/女朋友？） 你覺得你的工作機會在哪裏？ 如果我很有錢，我會…

3.5 活動相關事項

爲了讓學生們更確切的瞭解這項課外活動的要求，筆者先在第一週的 Moodle 論壇（forum）上用華語貼了一則貼文，自己回應此則貼文，然後在課堂上邀請學生當場給予貼文回應當作示範及練習。筆者也趁機回答學生們由此練習中而產生的一些相關問題。

除此之外，在建立此 Moodle 活動論壇時，筆者勾選了一項設定，將所有學生納入論壇貼文通知（email alert）的對象。因此，一旦有學生在論壇中貼文，全班的學生，包括筆者（老師），都會同步收到含有貼文內容的電子郵件通知。加入此項功能的好處為，學生們可以有即時給予其同儕回應的機會，老師也可以在第一時間決定是否需要對其貼文的語法或內容提供反饋。還有，當筆者給予某些學生的貼文反饋時，所有學生也都能同時收到通知，接收到教師鷹架。 再者，這些貼文通

知可以起到提醒學生參與此活動的作用。 在尚未點選此功能之前，筆者有時得在課堂上提醒，否則有些學生會忘記要參與此活動。

除了自動貼文通知功能，筆者還設定了參與者可事後修改(edit)其貼文的功能。這項功能很重要，因爲它能允許貼文者在其貼文送出後再回頭修改其貼文，避免發生一旦送出貼文即無法挽回的狀況。這不僅能降低學生們擔心送出語意錯誤貼文的壓力，也能給予學生們在發現錯誤後進行自我修正的機會。

在學季中，筆者亦不定期的點入論壇參與筆談活動，有時回應某些學生的貼文內容，有時給予某些學生一些字彙及語法上的反饋。在回應學生的貼文內容時，筆者會選擇性的用一些超出課堂所學的字彙或用語，但會附上拼音及英文翻譯，以增加學生在真實語言情境中接受可理解的輸入（comprehensible input）的機會。相同的，由於筆者設定了貼文自動通知的功能，學生們可以在第一時間看到這些回應及反饋，更增加了語言情境的真實性。

4. 實際活動範例及分析

以下(表二至表五)為筆者華語課程 Moodle 網站上截取下來的貼文實例。借由這些實例，我們可以看到這個課外活動的實際進行過程：學生們參與論壇貼文筆談的時間點（非同步），如何的運用課堂所學，對主題做闡述及回應同儕貼文。此外，我們還可以看到，學生們的互動情形，不同程度班級學生所進行的互動方式是否有所不同，以及這些語言互動中是否存在有如本文文獻探討中提及的促進語言學習的元素（例如，‘意義協商’，‘意識到對標的語言知識的缺乏，而尋求正確或更多的語言資訊以達到溝通的目的’，‘鷹架’，等等），也就是，這個課外活動是否能到達筆者當初設計此活動的目的。 由於版面有限，在此只提供 101， 103， 及 201 學生所參與四個主題的相關貼文。

表 2 筆談實例 1. 學生級別: 101，學習完拼音，正式上課文內容後的第三個禮拜。

你會說什麼語言？ by GA - Tuesday, November 6, 2012, 8:21 PM
我是美國人。我會說英文。Juliet 是我的室友。 我和我的室友會說西班牙文。我們也會說一點兒中文。你呢？你會說什麼語言？

Re: 你會說什麼語言？ by MM - Tuesday, November 6, 2012, 8:45 PM
我也是美國人。我會說英文。我也會說法文和一點兒中文。我的男朋友會說一點兒意大利。

Re: 你會說什麼語言？ by BL - Friday, November 9, 2012, 2:45 PM
你们好！我是美國人所以我會說英語。我也會說一點兒西班牙語和一點兒中文。我喜歡學語言。MM, 意大利文？

Re: 你會說什麼語言？ by MM - Friday, November 9, 2012, 2:50 PM
對。意大利文。

Re: 你會說什麼語言？ by TY- Friday, November 9, 2012, 3:14 PM
你好! 我也是美國人. 我的室友是 Lisa. Lisa 和我會說英文. Lisa 不會說中文.他喜歡說一點中文.

Re: 你會說什麼語言？ by AT- Friday, November 9, 2012, 3:28 PM
您好！我的同學 Andy 會說中文和英文。對了，他是北京人。

以上是 101 的學生們第一次在 Moodle 的群組討論功能中運用課堂所學進行交流的實例。由於字彙有限，貼文都非常的簡短，並充分的利用了在該單元所學有關國籍及語言別的字彙和句型來完成此項作業，而且參與此主題的學生們並未開始利用自我學習（查網路字典或用 Google Translate）來使其貼文的內容更豐富。除此之外，學生們偶爾會在用字和語法上出現一些小錯誤，但不影響其在語意上的表達。有趣的是，在第二位學生（M M）的貼文中明顯的出現了一個小錯誤，錯將 "意大利" 當 "意大利文"來表達。雖然，在此情境中並不影響同學們瞭解其意，爲了確認 MM 的語意，其下一位貼文的同學（ BL） 仍給予語意確認的反饋 (MM, 意大利文？)，而 MM 也借此瞭解到並糾正自己的錯誤。這不僅是同儕鷹架的例子，也是在真實互動情境中進行意義的協商（negotiation of meaning）繼而幫助語言習得的例子。

此外，爲了完成貼文的任務，很明顯的，學生們至少都運用了布魯姆分類學認知歷程向度中之記憶 （認得字彙），理解 （瞭解字彙的意思，和句子結構的組成，進而理解同儕的貼文），和運用（將課堂所學的字彙及句型使用在新的語言情境中）的技能。

表 3 筆談實例 2. 學生級別: 101，學習完拼音，正式上課文內容後的第三個禮拜。註：粗斜體字加下划綫為筆者(HC) 給學生的反饋，刪除綫上的斜體字為學生原來的字詞。

你好! by TY- Wednesday, November 7, 2012, 1:56 PM
你好! 我喜歡美國. 我喜歡美國的 music. 我也喜歡美國的菜. 我喜歡美國 的 fried chicken 和汉堡 hang4bao3hamburger. 你呢? 你喜歡*身 什*麼美國的菜?
(Edited by HC-, Wednesday, November 7, 2013, 2:10 PM)

Re: 你好! by MM- Wednesday, November 7, 2012, 2:20 PM
我也喜歡美國的菜。我也喜歡美國的音樂(yin1 yue4: music). 我喜歡法國的菜和 scenery. 我也加拿大的 scenery.

Re: 你好! by BL- Friday, November 9, 2012, 4:21 PM
我也喜歡美國。我喜歡吃美國的 thanksgiving 菜。好吃！我也喜歡美國的 diversity。美國有各民族(ming1-zu2:ethnic group)的人。

Re: 你好! by SC- Saturday, November 10, 2012, 6:32 PM
你好! 我也喜歡美國. 我喜歡美國的書和音樂. 我也很喜歡美國的菜! 我喜歡美國的漢堡和 apple pie.

Re: 你好! by JF- Saturday, November 10, 2012, 6:51 PM
你好! 我喜歡美國! 我也喜歡美國的音樂. 我也喜歡美國的菜. 我喜歡吃漢堡, 可是我不喜歡吃炸雞 zhaji: fried chicken.

Re: 你好! by AN- Saturday, November 10, 2012, 7:12 PM
你好! 我也喜歡美國的菜. 我喜歡美國的漢堡和 薯條 shu3-tiao2: fries.

以上是與前一則實例同一週但不同主題的貼文。同樣的，學生們偶爾會在用字或語法上出現一些小錯誤，但不影響其在語意上的表達。 由於第一個貼文的學生開始跳脫華語字彙有限的困境，利用英文來表達其真實狀況，使得其他的學生也開始跟進，除了運用課堂所學，也開始利用自我學習所得來幫助完成此項作業。例如 " 音樂 " ， " 漢堡 " ， " 炸雞 " 和 " 薯條 " 等等，這些字彙都是學生們自我學習

所得，在當時的課堂上並未提及， 而較後來加入貼文的學生也能成功地從較前面的貼文中學習到這些新字彙而運用在他們自己的貼文中。

這是學習者在真實的語言互動情境中，借由運用課堂所學，自我學習，或來自同儕的語言輸入，而完成交流任務的一個例子。筆者也在第一位學生的貼文中給予反饋，修正了一個用字的小錯誤，借此做關鍵性的指導，亦即提供教師鷹架。從這個主題的貼文中，我們看到了，如 Long （1996）所言，真實語言情境的互動(authentic interaction)過程讓語言學習者意識到自己對標的語言知識的缺乏，而尋求更多的語言資訊，而終能成功的使用正確的標的語言達到溝通的目標。也看到了，如 Ramzn (1998) 的研究所指，電腦輔助的筆談交流活動（CMC）能協助學習者，在全語境中，成功的習得課堂內沒有教授的字彙。

表 4 筆談實例 3. 學生級別:103 （第三學季） 註：粗斜體字加下划綫為筆者（HC）給學生的反饋，刪除綫上的斜體字為學生原來的字詞。

昨天。。by GT- Monday, May 13, 2013, 12:30 PM
明年你爸爸媽媽生日的時候你***會***送他們什麼禮物？明年我會幫忙做家事。我媽媽喜歡我幫她做家事因爲她很忙，她沒有時間。(Edited by HC- Tuesday May 14, 2013, 3:10 PM)

Re: 昨天。。by JF- Monday, May 13, 2013, 12:45 PM
你好 GT! 明年我爸爸生日的時候, 我***會***送他 一本歷史書。我媽媽生日的時候, 我***會***送她一本食譜 shi2pu3:cookbook，因爲我媽媽喜歡做菜，我哥哥生日的時候, 我***會***送他一輛車! (Edited by HC- Tuesday May 14, 2013, 3:14 PM)

Re: 昨天。。by GT- Monday, May 13, 2013, 12:59 PM
你好! JF 食譜是一個好主意。我想送我的女朋友一本食譜。你有錢嗎？你***會***送你的哥哥一輛車？
(Edited by HC- Tuesday May 14, 2013, 3:16 PM)

Re: 昨天。。by JF- Monday, May 13, 2013, 1:21PM
我沒有很多錢。我爸爸***會***借我錢, 哈哈。我爸爸有很多錢。他很大方。
(Edited by HC- Tuesday May 14, 2013, 3:19 PM)

Re: 昨天。。by MS- Wednesday, May 15, 2013, 3:32 PM
你好 GT! 我的爸爸生日是七月十六號. 明年我爸爸生日的時候 我會送他階梯.我的媽媽生日是七月十四號. 明年我媽媽生日的時候 我會送她一~~個~~***台*** (Note from 老師: tai, second tone: measure word for TV set)電視.
階梯=jiē tī(ladder) (Edited by HC- Thursday, May 16, 2013, 5:22 PM)

Re: 昨天。。by JB- Wednesday, May 15, 2013, 4:33 PM
明年我爸爸生日的時候我會送他一件襯衫。 明年我媽媽生日的時候我會做晚飯。我會做意大利麵。 我媽媽喜歡吃，因爲很好吃，她喜歡我的意大利麵。

Re: 昨天。。by GT- Wednesday, May 15, 2013, 4:56 PM
你好 JB！你的媽媽很愛你。因爲你的意大利麵不好吃。我是你的室友，我吃了你的意大利麵。你的意大利麵不好吃。你應該做牛排 niu1pai1steak，我覺得牛排很好吃。

相較於在 101 時，這些 103 學生彼此之間的互動 （interaction）程度增加了，亦即有意義的輸出（meaningful output）及可理解的輸入 (comprehensible input)也豐富了許多了。此外，雖然筆者在課堂上已介紹如何使用 “會”來表示未來或假設語氣，這些學生們很明顯的還不能完全掌握“會”的用法。 第一位貼文的學生在前半

段的句子中就忽略掉了“會”，第二位學生則完全沒能使用“會”。筆者於是給予反饋（教師鷹架），借以幫助學生們注意到“會”在此語言情境的用法。接下來兩位貼文的學生於是能成功地運用了“會”。“階梯”，“食譜”，“牛排”，“他很大方”，和“我覺得”這些字彙及用語在課堂上並沒有教到，是學生們為完成此項作業自我學習而得。相同的，其他參與或觀看此主題貼文的學生也能借此習得這些字彙及用語 。

從‘認知歷程向度’的角度來解析，在此主題的貼文中，有的學生，除了 ‘記憶’，‘理解’，和‘應用’，更運用了‘分析’和‘創造’這些認知技能。例如，在最後一個貼文中，GT 必需先分析上一個同儕（JB）貼文中的句子及用語，推論出其語意，然後將‘牛排’運用在 “你的…不好。你應該…, 我覺得…” 的句型中。 亦即，GT 在現有的語言基礎上，分析出對方貼文的語意以及如何將自我學習所得的字彙 （牛排）和語句 （我覺得…）與已有的語言知識結合，而創造出符合邏輯且呈現完整語意的句子來回應其同儕的貼文內容。

表 5 筆談實例 4. 學生級別: 201（第四學季）註：粗斜體字加下划綫為筆者（HC）給學生的反饋，刪除綫上的斜體字為學生原來的字詞。

你有搬過家嗎？你搬家的經驗好不好？
by DL- Tuesday, October 23, 2012, 12:29 PM
你有搬過家嗎？你搬家的經驗好不好？
我高中二年級的時候從堪萨斯（Kānsàsī, Kansas）搬到加州。搬到加州~~*對我很難* ***對我來說很不容易(rónɡyì- easy)***~~，去新學校，~~*做*~~ ***結交 jie2jiao1: to make (friends)***新朋友。可是現在回顧（huígù, to look back, to review）的時候我覺得神~~*有原因*~~帶我來加州***是有原因的***。我在這裡也~~*做*~~ ***結交***了很多好朋友。
(Edited by HC- Tuesday, October 23, 2012, 3:22 PM)

Re: 你有搬過家嗎？你搬家的經驗好不好？
by GJG- Wednesday, October 24, 2012, 2:22 AM
同學你好：
堪薩斯啊？很遠呢。D:
我搬過家，兩次搬家了, 結交新朋友對我來說很不容易。我第一次搬出公寓因為我爸爸買家了。高中後我十八歲的時候我家人再搬家，但是我在大學不能幫助他們搬東西。這次我們搬到我們現在住的家， 又不吵又漂亮 ㄧ 我很喜歡。
拜拜～

Re: 你有搬過家嗎？你搬家的經驗好不好？
by ST- Wednesday, October 24, 2012, 8:49 PM
你好 DL,
從我出生到我三歲,我的家人在南加州搬到四次了.我的父母不喜歡洛杉磯的學校也不喜歡洛杉磯的煙霧(yānwù - smog).所以我們搬家到洛杉磯山的後面了,因為空氣在那裡真的很好比較洛杉磯的空氣.

Re: 你有搬過家嗎？你搬家的經驗好不好？
by NB- Thursday, October 25, 2012, 7:58 PM
ST,你家的空氣比洛杉磯好嗎？
洛杉磯有很多煙霧. 你的父母很聰明因為他們搬家. 你喜歡洛杉磯嗎? 你的父母是從中國來的嗎? 因為中國的空氣比較不好. 我們很幸運因為我們住在 SLO. SLO 的空氣比好。
-N

Re: 你有搬過家嗎？你搬家的經驗好不好？

by ST- Thursday, October 25, 2012, 10:30 PM
對，我家的空氣比洛杉磯好。我家的空氣比較好。 還有洛杉磯的學校不太好。可是我最喜歡去洛杉磯玩.我也有親屬(qīnshǔ – relatives)住在四週的洛杉磯.我有時候問自己, "你們怎麼能住在那裡呢?!" 我的家鄉(jiāxiāng–hometown)比洛杉磯高海拔(gāohǎibá – high elevation)也在洛杉磯山的後面, 所以空氣非常的不同.冬天的時候,我們有時候有大下雪. 在我的家, 我媽和我很敏感(mǐngǎn–ensitive)洛杉磯的空氣.我的父母也最喜歡 SLO 市的天氣.
我媽媽爸爸從越南來美國的,但是他們都是中國人也都是客家人(kèjiārén–Hakka).說來話長(shuōláihuàcháng–It's a long story! :D)有很多人認為(rènwéi–think/consider)我和我的家人都是廣東人(guǎngdōngrén – Cantonese),可是我們不是廣東人,哈哈.

Re: 你有搬過家嗎？你搬家的經驗好不好？
by LH- Friday, October 26, 2012, 5:16 PM
NB,
我同意! SLO 的空氣比較好. 洛杉磯有很多煙霧. 我家離洛杉磯不遠, 開車要一时. 我也很愛 SLO, 天氣很暖. 我喜歡海灘所以我也覺得我們很幸運因為我們住 SLO.

Re: 你有搬過家嗎？你搬家的經驗好不好？
by NB- Thursday, October 25, 2012, 7:24 PM
DL，
我搬家很多次了. 搬家是麻煩 ma1fan2 troublesom。 我住在 Santa Maria, 但是我的爸爸和我的媽媽離婚(líhūn, to divorce)了, 所以我的媽媽,我, 和我的兄弟姊妹搬到了 Morro Bay. 然後我們搬到 SLO, 再 Los Osos, 然後 SLO. 我最喜歡 SLO 和 Los Osos.
我很高興你搬家到加州!
-NB

Re: 你有搬過家嗎？你搬家的經驗好不好？
by DL- Thursday, October 25, 2012, 10:24 PM
呵呵。謝謝 Nicole！我也很高興我可以成為 chengwei become 你們的同學。這堂中文課是我最喜歡的課！我願望我們每天有中文課。

Re: 你有搬過家嗎？你搬家的經驗好不好？
by ST- Thursday, October 25, 2012, 10:27 PM
NB,
你的家人最喜歡住在中加州海灘! 我也最喜歡住在這裡因為 SLO 市的天氣好極了.

Re: 你有搬過家嗎？你搬家的經驗好不好？
by LH- Friday, October 26, 2012, 9:02 AM
你好 DL!
我有搬過家! 我是七歲的時候我從 Mission Viejo 搬到 Rancho Santa Margarita. Rancho Santa Margarita 離 Mission Viejo 不太遠. 開車只要十分鐘. 從 Mission Viejo 搬到 Rancho Santa Margarita 的時候我哭了因為我很年輕.可是我新的房子很大.
結交新朋友對我來說不難.我有很多朋友. 可是我不喜歡搬家因爲我同意 Nicole 搬家很麻煩. 我也希望我們每天有中文課.

Re: 你有搬過家嗎？你搬家的經驗好不好？
by NB- Friday, October 26, 2012, 1:24 PM
你好 Lauren! 我也不喜歡搬家。搬家很麻煩。可是我搬家的時候沒有哭。

Re: 你有搬過家嗎？你搬家的經驗好不好？
by DH- Friday, October 26, 2012, 2:36 PM
你好 DL!
你住過堪薩斯了嗎？呵呵！你喜歡不喜歡堪薩斯？堪薩斯是什麼樣的？你真的覺得神帶你來加州是有原因的？什麼原因， 你知道嗎？我覺得神可以用多的東西，可是我不覺得神要很多~~東西~~事發生的（Fāshēng de = to happen）。比如，我覺得神不要別人有癌症（áizhèng = cancer）， 可是我覺

得神可以用癌症凝聚家庭（Níngjù jiātíng = unite/strengthen a family）。你應該看 Romans 8:28.
http://bible.cc/romans/8-28.htm
http://cu.holybible.com.cn/romans/8.htm
我也希望我們每天有中文課. 再見!
DH

Re: 你有搬過家嗎？你搬家的經驗好不好？
by CH- Friday, October 26, 2012, 11:08 PM
我有搬过家。 我十岁的时候从***巴黎西北部的*** Asnières sur Seine ~~*在巴黎西北部*~~， 搬到***在巴黎东南部的*** Créteil ~~*在巴黎东南部*~~。
我记得我们有很多东西，有很重的箱***子***
我比较喜欢在 Créteil 主因为我家附近有一个很美的湖。
(Edited by H C- Saturday, October 27, 2012, 6:02 PM)

Re: 你有搬過家嗎？你搬家的經驗好不好？
by JL- Saturday, October 27, 2012, 5:12 PM
你好 Caroline!
我一直希望去巴黎！我聽說~~*汽車在巴黎比較少*~~ ***巴黎的汽車比較小***。是真的嗎？我畢業 bi4ye1:graduate 後，我想住在台灣，上海，或者香港。你想在哪住, Caroline？你想留在美國，回到 Créteil， 或者住在別的地方嗎？
(Edited by HC - Saturday, October 27, 2012, 6:08 PM)

Re: 你有搬過家嗎？你搬家的經驗好不好？
by CH- Saturday, October 27, 2012, 10:38 PM
你好 JL！
你应该过来巴黎，是一个很漂亮的城市！
你说得对，巴黎的汽車比較小， 我们没有很多 SUV's，Mini Cooper 尺寸 (chi3cun = size)的车比较多。
我毕业后也想住在台湾，上海，香港， 新加坡，或者留在美国。我不想马上回法国。

以上是 201（第四學季）學生在期中（第六週）的貼文實例。隨著課堂所學字彙用語及句型的增加，貼文的內容又更豐富了，學生之間的互動也又增加了許多，使用自我查得字彙用語的例子比比皆是，例如，“神”，“煙霧”，“敏感”，“巴黎”，“離婚”，“海拔”，“癌症”, “又不吵又漂亮”，“成爲”…等等，也更勇於嘗試創造。尤其值得一提的是，有些學生不但開始評估他人的用字句型是否正確，更勇於嘗試創造自己的句子。例如，第三位學生(ST)的貼文中寫了，“…因為空氣在那裡真的很好比較洛杉磯的空氣. ”。 接下來貼文的學生，NB，就以“你家的空氣比洛杉磯好嗎？” 來回應。從這裡可以看出， NB 能成功的利用所學得的語言知識來判斷出 ST 的句子在“比較”的用法上出了問題並給予回饋，使得 ST 在其後來的貼文中能自我糾正錯誤。這也是一個意義協商（negotiation of meaning），運用分析 analysis 和評估 evaluation 而創造 create，及同儕鷹架的例子。而這樣的例子在這個主題的貼文中時而可見。例如，NB 在其另一個貼文中提到 “搬家*是*麻煩”， 其中，“麻煩”是 NB 自己查得的字彙，筆者在課堂上並未教過。同樣的，這個句子很明顯的受到學生母語的影響而有語法上的錯誤。 然而，LH 在後來的貼文中就能成功地根據課堂所學而評估出此錯誤，進而寫出符合華語語法的句子：“搬家*很*麻煩”。雖然 LH 對 NB 做的是間接的回應，但是 NB 卻因爲得到此反饋（提點）而能在其後的貼文中自我糾正錯誤。還有， LH 能成功的評估出 DL 的 “我*願望*我們每天有中文課” 是錯

誤的，而寫出的“我也*希望*我們每天有中文課”。 LH 對‘希望’的正確用法似乎對 DH 和 JL 起了引導的作用，使他們也能在後來得貼文中成功地運用‘希望’這個語詞。

在嘗試創造自己的句子方面，成功的及有瑕疵的皆有。LH 的 “結交新朋友對我來說不難.” 就是一個創造 （create）成功的案例。她成功地將 “結交” 與 “對我來說…” 結合而成爲一個語法及語意皆正確的句子。雖然有時候學生們自創的句子在語法上不見得是完全正確的，但是能在自己所習得的語言知識基礎上，練習評估並創造新的句型與用法以達成在真實語言情境中交流的目的，正是語言習得的重要一環。例如，第一位學生 （DL）寫了 “可是現在回顧（hu ǵù，to look back, to review）的時候我覺得神有原因帶我來加州” 還有 “搬到加州對我很難，去新學校，做新朋友”。這個些句子很明顯的是受到了英語句型影響而導致了華語語法上的錯誤。筆者於是給予反饋（教師鷹架），修正了其大部分的錯誤，使得後來參與貼文的學生可以順利的使用符合正確語法的句型來進行交流。基於相同的原因， 筆者也修正了 CH 的 “Asnières sur Seine 在巴黎西北部” 和 “ Créteil 在巴黎东南部” 及 JL 的 “我聽說汽車在巴黎比較小”。

根據 Bandura （1997）在學習者的自我效力理論 (learner self-efficacy)中所言，過多的負向反饋(negative feedback)會導致學習者認爲自己沒有足夠的能力來學好所學而降低學習興趣及熱忱。爲了盡量維持學生們貼文的完整性，並不打擊他們使用華語的自信心，筆者並沒有糾正學生們所有語法上的瑕疵，且在盡可能的範圍內，將此活動的主要目標放在讓學生運用課堂所學及勇於嘗試用新字詞和用語進行交流，而不是寫出毫無錯誤的句子。

5. 結論

在現今的外語教學理論及教學法中，皆以發展學生們的溝通能力（communicative competence）為主要目標。然而，進行溝通（communication）不僅是外語學習的最終目標，更是外語習得的不二法門。但是 Schumann (1999) 曾指出，外語教學其實是讓學生們 “learning under conditions of environmental deprivation”， 因爲 “no language teaching method can provide an adequate alternative to the natural conversational interaction with others which the brain requires to learn a language …” (p. 40). 也就是說，課堂教學無法提供如我們學習母語時所得到的足量語言輸入（input）。因此，如何增加學生在課外接觸華語的時間，並為學生創造在真實語言情境中用華語進行交流的機會，是許多在缺乏華語環境中教華語的老師們共同關心的議題。

依欲達成學習目標的不同，增加學生在課外接觸華語的時間可以用不同的方法來進行，筆者在本文中分享的課外活動只是其中的一個方法。然而，這個方法提供了住在以白人爲主的城市的學生們, 運用課堂所學，跟同儕進行交流的機會。 此外，學生們有時得訴諸於自我學習去查得所需的字詞，並利用所學的語言知識來分析及評估，以運用在其創造的句子中，或瞭解其同儕的語言輸出 （output）。再者，筆者不定期的給予反饋，提供教師鷹架。這些不但增加了學生們自我學習的機會，也

打破時間地點的限制，將課堂教學與課外活動做結合，延長了學習時數，更增加了學生的可理解語言輸入（comprehensible input）的量。根據筆者在課堂上的調查，依貼文的長短及使用語言難度的不同，學生們平均要花 15 到 30 分鐘來完成一則貼文。由於每個學生每週最少得貼上三則貼文，一個學季九週下來也能累積不少額外接觸華語的時數。

相較於課堂上以教師為主導的學習，這項活動的另外一個好處就是把學習的主導權交給學生。 學生們得以以自己感興趣的主題，在對自己適當且充分的時間裏來進行與同儕的交流。 這不僅可以更貼切學生的需求， 也同時可以提高學生主動參與的興趣 。

另外一個筆者始料未及的好處是，此活動增加了學生之間的 “同袍” 情誼，而對學習氣氛起了正面的作用。許多學生表示，由於貼文的內容都是符合他們真實生活情境的分享 ，因此拉近了他們彼此之間情感上的距離，使這些來自不同科系平常並無交集的學生開始形成一個他們所謂的“中文圈”，在課後互相幫助，一塊兒玩樂，變成好朋友。讓他們覺得在這條學習的路上並不孤獨， 也更樂於來課堂上與他們的朋友們一起上課學習。

參考文獻

蔡雅雯. (2012). 以 Moodle 爲教學輔助的短期漢語情境會話教學設計. *Journal of Technology and Chinese Language Learning*, *3*(2), 30-46.

關之英. (2012). 中文作為第二語言：教學誤區與對應教學策略之探究. *中國語文通訊, 91* (2), 61-82.

陳育琳, 徐照麗. (2007). 同儕鷹架理論對國三學生數學態度影響之研究。*國名教育研究學報,* 19, 141-168.

黃德祥, 謝龍卿. (2005). 維果斯基社會認知論與英語教育. *教育研究月刊,* 138, 95-102.

陳懷萱, 林金錫. (2010). 運用網路互動進行華語文寫作學習之探討. 取自 http://edu.ocac.gov.tw/discuss/academy/netedu03/papers/C10.pdf.

林金錫, 舒兆民, 周中天, 陳浩然, 連育仁. (2008). Moodle 在華語文教學上之運用, 第五屆全球華文網路研討會論文，取自 http://media.huayuworld.org/discuss/academy/netedu05/html/paper/sw57.pdf.

劉繼仁. (2007). 數位語言學習之現況與類型. *教育研究月刊,* 163, 61-76.

徐椿樑. (2001). 鷹架學習理論在專業技術教學的成效分析之研究. (未出版之博士論文). 國立臺灣師範大學教育研究所, 臺北.

Anderson, L. W., & Krathwoho, D. R. (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives. New York: Addison Wesley Longman, Inc.

Blake, R. (2000). Computer mediated communication: a window on L2 Spanish interlanguage. *Language Leanring And Technology, 4*(1), 120-136.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Chun, D. (1994). Sing computer networking to facilitate the acquisition of interactive competence. *System*, 22, 17-31.

Davis, E. & Linn, M. C. (2000). Scaffolding students' knowledge integration: prompts for reflection in KIE. *International Journal of Science Education*, 22, 819-837.

Ebbinghaus, H. (1999). *Memory: A Contribution to Experimental Psychology*. Bristol: Thoemmes Press.

Huitt, W. (2011). Bloom et al.'s taxonomy of the cognitive domain. *Educational Psychology Interactive*. Valdosta, GA: Valdosta State University.

Gass, S. M. (2007). Input and Interaction. In C. J. Doughty & M. H. Long (Eds.), *The handbook of second language acquisition* (pp. 224-255). Malden, MA: Blackwell Publishing.

Ko, S., & Rossen, S. (2001). *Teaching online: A practical guide*. Boston, MA: Houghton Mifflin Co.

Long, M. (1996). The role of the linguistic environment in second language acquisition. In W.Ritchie & T. Bhatia (Eds.), *Handbook of Second Language Acquisition* (pp. 413-68). San Diego: Academic Press.

Ramzan, Y. & Ritsuko, S. (1998). Computer-mediated communication in foreign language learning: A case of the students of Japanese. In *Flexibility: The next wave? Proceedings ASCILITE Wollongong 1998* (pp. 585-592). University of Wollongong. Retrieved from http://www.ascilite.org.au/conferences/wollongong98/asc98-pdf/ramzansaito-0066.pdf

Schumann, J. H. (1999). A neurobiological perspective on affect. In J. Arnold (Ed.), *Affect in Language Learning* (pp. 28-42). Cambridge: Cambridge University Press.

St. John, E., & Cash, D. (1995). Language learning via e-mail: demonstrable success with German. In M. Warschauer (Ed.) *Virtual connections: Online activities and projects for networking language learners*. (pp. 191-197). Honolulu, HI: University of Hawaii, Second Language Teaching & Curriculum Center.

Vygotsky, Lev S. (1978). *Mind In Society : The Development of Higher Psychological Processes.* Cambridge : Harvard University Press.

Warschauder, M. (1996). Comparing face-to-face and electronic communication in the second language classroom. *CALICO Journal*, 13,7-26.

Warschauder, M. (1997). Computer-mediated collaborative learning: theory and practice. *The Modern Language Journal, 81*(4), 470-481.

Warschauer, M., & Healey, D. (1998). Computer and language learning: an overview [Electronic version]. *Language Teaching*, 31, 57-71.

Wood, D., J. S. Bruner, & G. Ross. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry,* 17, 89-100.

汉语二语教学网络平台的交互评价[1]
(Evaluation of interaction mechanism on e-learning platforms for teaching Chinese as a second language)

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摘要：作为网络教育的重要组成和基本手段，交互直接影响到学生的学习兴趣与质量。本文提出针对汉语作为第二语言教学的网络平台的交互评价系统。评价指标均通过层次分析法确定权重和一致性检测；评价系统在使用时要收集定性数据和定量数据，定性数据通过访谈、问卷等方式获得，定量数据则通过软件技术获取。为检测该评价系统的实际效果，我们让 30 位受试者对网络平台样本进行了主观评价与指标测评的相互印证。

Abstract： As a major component and a fundamental element in e-Learning, "Interaction" has direct impact on student learning, especially in arousing interest and upholding quality of learning. This paper analyzes one such evaluative framework used to assess the level of interaction on e-Learning platforms for teaching Chinese as a second language. The index weights and consistency of the evaluation indicators have been identified by the Analytic Hierarchy Process. The study made use of both qualitative and quantitative data. Qualitative data was obtained by interviews and questionnaires whereas quantitative data was acquired through sophisticated software. Empirical evidence from 30 respondents was collected. Corresponding analysis through evaluation indicators on the sample e-learning platforms were made, and the findings were echoed by the subjective comments from the respondents.

关键词：交互评价，网络教学平台，汉语二语教学

Keywords： Interaction evaluation, E-learning platform, teaching Chinese as a second language

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1. 引言

现代网络教育中的“交互”是指学习者通过网络与学习资料、学习伙伴和教师进行信息交流，以获取、问答、讨论、协商等方式达到知识共享、知识内化和推陈出新等目的的一种活动（陈丽，2004；Chai，2011；Roblyer，Wiencke，2003）。在传统教学中，交互一直被认为是教育成功的一个关键，那么，在网络教育时代，交互的作用和效果又如何呢？

张建伟等（2003）曾以问卷调查方式考核了清华大学网络学院的 112 名学生，结果显示：学生对于课程材料的评价最高, 而对于与教师交互的评价最低；网络学习者普遍感到难以与老师和其他学习伙伴联系沟通、无法获得指导性意见和学习相关信息。许多研究者因此质疑老师与学生分离的网络教育能否达到与传统教育一样的效果，然而，这恰好说明了交互对于网络教育具有重要意义。那么，什么才是好的交互？如何构建成功的网络学习的交互系统？使用者如何基于交互来选择不同的网络学习？这些问题的解决都取决于网络教学交互质量的评价体系。

从现有的网络教育评价体系来看，国外已形成了一些比较有价值的标准，如“E-learning Certification Standards” (Gillis, 2012)、“A Framework for Pedagogical Evaluation of Virtual Learning Environments” (Britain and Liber, 2012)、“E-Learning Courseware Certification Standards” (Sanders, 2001)等。这些评价标准的评价指标倾向于技术性，大多需要聘请专家进行评价、费用昂贵。国内关于评价的工作起步较晚，得到较多认可的有《网络课件质量认定标准》(董艳, 黄荣怀, 李晓明, 申瑞民，2003)、教育部教育信息化技术标准委员会制定的《网络课程评价规范》和《远程对外汉语教学评价研究》(徐娟, 2007)，但也存在不少问题：

1. 部分指标说明不够准确，注重指标的存在性而忽略合理性；
2. 一些评价内容反复出现，加重了所占权重，使得评价结果与事实偏离；
3. 评价表操作过程复杂，可用性低，普通人无法使用。

综上所述，建立一个与时俱进、专门针对汉语二语网络教学的交互质量评价体系迫在眉睫。

2. 研究方法

国内软件评价起步较晚，自 1986 年逐渐走上正轨以来，形成了分析式评论、指标体系评定、观察和实验等四种基本方法(刘志波，2003)。本文使用指标体系评价法，即根据学科特点设计特定的评价指标体系，对网络教学平台的各项特征进行打分；然后进行加权比较；最后，根据总分得出网络教学平台的等级或判定其是否达到合格标准。

具体流程如下：

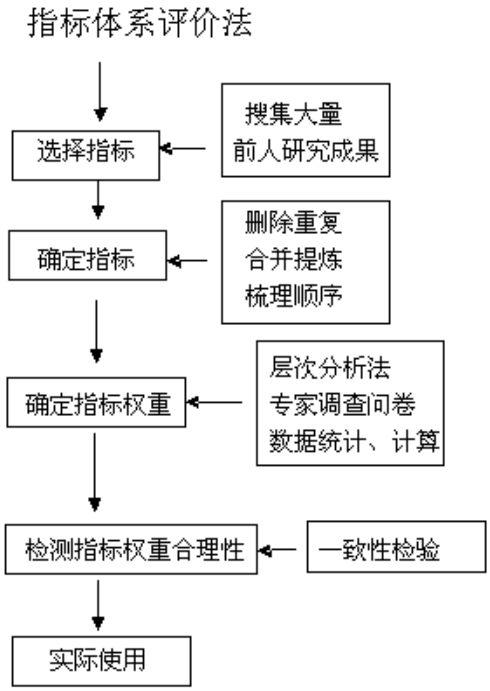


图 1 汉语二语教学网络平台交互评价体系的构建流程

在确定评价指标方面，我们采用文献分析法：搜集和总结前人成果（Gillis，2001；王萍，李立新，2003；刘志波，2003；Roblyer，Wiencke ，2003；Britain，Liber，2004；魏志慧等，2004；李红，2007；徐娟，2007；杨在宝，张杰，2010；Zhu，Wang，2011；Chai，2011；Feng，2011；Lai，2011），删减重复项、合并同类项、添加缺少项，并详细撰写各项指标说明。初步得到一个 4 维度、31 个指标的评价指标表。

为保证指标表的有效性，我们采用专家论证法进行初步检测：聘请专家和专业人员对各个指标的必要性、全明性、说明的清晰性等加以评价、并给出修改建议；接着，使用层次分析法确定各个维度的权重，检测其一致性；最后，把每项指标的得分分为五级（优秀、良好、及格、差、极差），制作成应用程序。

3. 评价指标表

根据网络教育中的交互活动种类，我们形成了交互评价指标的三个维度：学生与学习资源的交互、学生与教师的交互、学生与学生的交互；此外，由于所有交互都必须得到网络技术的支持，故评价指标中的第四个维度是技术支持。具体说明如下：

3.1 维度一：学生与学习资源的交互

指学生能够顺利通过网络平台获取学习资源，同时，能够通过学习资源的内容

与安排，顺利学到知识、获取语言能力。下设指标如下：

表 1 学生与学习资源的交互指标

指标	说明
网络平台能提供足够的学习资源	学习资源包括：文字教材、课件、音像资料、直播课堂、练习、问题、答案、相关链接等等，应涵盖目的语“听说读写”的各个方面。
所有学习资源具有明确说明及具体学习计划	说明学习资源的主要内容、适合人群、学习时长、学习要求等等。
可以顺利下载学习资源	
可以顺利上传学习资源	
学习内容要求学生进行有效交互	例如：要求学生与老师或其他同学利用交互工具进行协作学习，就“新年”话题发起讨论。
学习内容或讨论主题有吸引力	指学习内容或讨论主题生动有趣，符合不同年龄段学生认知水平，并与学生学习目的密切相关，让学生可以参与，愿意参与。
学习内容或讨论主题多样化	多样化指网络平台所提供的课件能够满足已有学习者和潜在学习者的需求。
学生能顺利从学习内容中获得所需知识	

3.2 维度二：学生与教师的交互

指学生在学习过程中，能够充分得到老师的指导、及时解决学习困难、少走弯路。下设指标如下：

表 2 学生与教师的交互指标

指标	说明
老师能及时批改学生的作业	
教师对学生作业的反馈	反馈内容包括：错误纠正、学习建议等。例如：学生发音准确与否、汉字字形的正误、字词使用恰当与否、句子语法使用正确与否等内容。
教师能按照课程需要设计合适的讨论主题	
老师能根据课程需要、教学内容和学生实际情况，分配学生组成网上学习协作小组	
老师对讨论、交流的方式有明确的规定	交流的方式有：围绕问题推断、解释或举例；对问题深入探讨和澄清；自我总结与反思；提出新观点或新方案。
老师参与学生讨论，并适时给出指导	老师的指导内容包括：在偏离讨论主题时能及时拉回学生；在讨论结论错误时能及时纠正；在讨论处于僵局时能及时加入；在讨论结束后能及时总结讨论结果等。

教师能给予学生鼓励	
教师能定时查看学生的实际学习情况	包括：学生登录次数、学生学习时长、学生是否参与讨论及讨论程度、学生作业及考试成绩等等。
教师能根据学生实际学习情况编写学习重难点指导	指导内容有：易错字词的读音、意义；重要语法点实际使用环境与实例；与文化相关内容的深度剖析等等。
学生在遇到问题时能及时与老师沟通	

3.3 维度三：学生与学生的交互

指网络学习者能顺利与其他学习者交流合作、分享学习心得，能建立学习的参与感和氛围感。下设指标如下：

表 3 学生与学生的交互指标

指标	说明
教学平台支持学习者线下交流	
学习者能积极参与协作学习	积极回应老师的问题、主动发起讨论并热心参与讨论。
讨论话题与课程内容直接相关	
学生回答内容详细、表达准确	学生在参与讨论时，应该尽量使用标准的目的语。
愿意与其他学生一起共享讨论成果	

3.4 维度四：技术支持

指为保证交互能够顺利实施，网络平台设计者和维护者必须提供一系列技术支持和数据统计分析。具体指标如下：

表 4 技术支持指标

指标	说明
对学生上传的资料进行严格审查，保证资料内容正确、思想正面	
提供多种有效的交互方式	包括：HTML 网页、BBS、聊天室、Email、博客、可视电话、双向视屏会议等。
网站用户界面美观	包括用户界面颜色协调，布局合理，文字、图片大小适中，画面清晰，文字醒目，声音清楚、音量适当，设计合理，页面不超过三屏。
网站使用方便	导航结构清晰明了，用户能够从导航栏看到整体网站架构，可通过导航栏访问任意模块，所有链接均可使用。
有意识营造出目的语文化氛围	例如：平台设计上使用具有中国特色的图片、视频，或建设仿真环境（四合院、天安门、故宫等

	等)。
自动记录学生一切学习活动数据	数据包括：学生登录、点击、发起讨论、参与讨论的次数；学生讨论的平均长度、使用词数、高频词汇；每个小组及小组成员讨论的详细内容等。
提供优秀学习案例	例如：一些优秀的教学视频、学生交流记录等。
建立优秀学生库	

4. 评价指标的权重

确定指标表后，我们使用层次分析法来计算指标各维度的权重。

4.1 选定两两对比的赋值表

根据指标表中的四个维度:“学生与学习资源的交互”、“学生与教师的交互”、“学生与学生的交互”、“技术支持”四项，赋值表如下：

表 5 指标的赋值表

	9		7		5		3		1		3		5		7		9	
学生与学习资源交互																		学生与教师的交互
学生与学习资源交互																		学生与学生的交互
学生与学习资源交互																		技术支持
学生与教师的交互																		学生与学生的交互
学生与教师的交互																		技术支持
学生与学生的交互																		技术支持

我们选取九级分制（1，3，5，7，9），等级越高表示该指标越重要，应赋予较高的权重：

表 6 1—9 标度法

标度	相对比较
1	两要素同样强
3	一要素比另一要素稍微强（或重要）
5	一要素比另一要素明显强（或重要）
7	一要素比另一要素重要强（或重要）
9	一要素比另一要素绝对强（或重要）
2、4、6、8	强度（重要程度）介于 1、3、5、7、9 之间
上列各数的倒数	另一要素与原要素的比较

接着，我们采用问卷调查形式，聘请专家和使用者对指标各维度的重要程度进行两两比较，然后给予一定分值，制定出具有普遍认可的结果。

4.2 建立判断矩阵、进行层次单排序

根据问卷调查结果，我们建立了判断矩阵 B：

表 7 四维度总判断矩阵

B	学生与学习资源交互 p1	学生与教师的交互 p2	学生与教师的交互 p3	技术支持 p4
学生与学习资源交互 p1	1	1	2	3
学生与教师的交互 p2	1	1	2	3
学生与教师的交互 p3	1/2	1/2	1	2
技术支持 p4	1/3	1/3	1/2	1

用判断矩阵（表 7）中各行相对重要性等级之和除以所有等级之和, 即可得出该指标维度在整个指标体系中所占的权重。

表 8 判断矩阵 B 的值和各纬度的权重

B	P1	P2	P3	P4	Vi	Wi
P1	1	1	2	3	7	35%
P2	1	1	2	3	7	35%
P3	1/2	1/2	1	2	4	19%
P4	1/3	1/3	1/2	1	2.166667	11%

4.3 层次单排序一致性检验

所谓判断思维的一致性是指专家在判断指标重要性时，当出现 3 个以上的指标互比时，各判断之间要协调一致，不要出现内部相互矛盾的结果。具体使用 AHP 中给出的随机一致性比率 CR：CR=CI/RI；其中，RI 为随机一致性指标，与矩阵的阶数有关。RI 可根据判断矩阵的阶数 n 从下表直接查到（赖文华，2004）：

表 9 各阶数判断矩阵 RI 值

判断矩阵阶数 n	1	2	3	4	5	6	7	8	9
RI 值	0	0	0.58	0.90	1.12	1.24	1.32	1.41	1.45

CI 为判断矩阵的一致性指标，与矩阵的最大特征根 λmax 有关。根据公式 CI=(λmax-n)/(n-1)，当 CR<0.1 时可认为判断矩阵满足一致性。如果有矩阵不具有一致性，则稍作调整、重新计算。

按照以上方法，我们对 B 的计算结果为 CR=0.007709<0.1，也就是说，此次单次排序有效，即由此矩阵获得的维度权重有效。

5. 应用程序

为简化评价过程、提高评价效率，我们将指标表转化成一个应用程序供受试者使用。点开应用程序，可看到每个页面出现的指标（如果该指标较复杂，则旁附说明），指标下有五个选项（优秀、良好、及格、差、极差）。受试者只需在选项中勾选出最符合实际情况的选项即可。

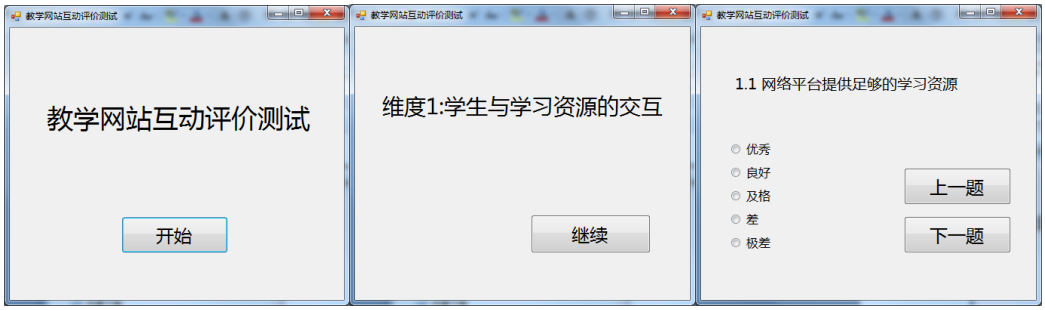


图 2 评价体系的程序界面

当答完最后一题的时候，程序会有提示是否提交测试结果，在确认后会显示本次评测的得分和等级。

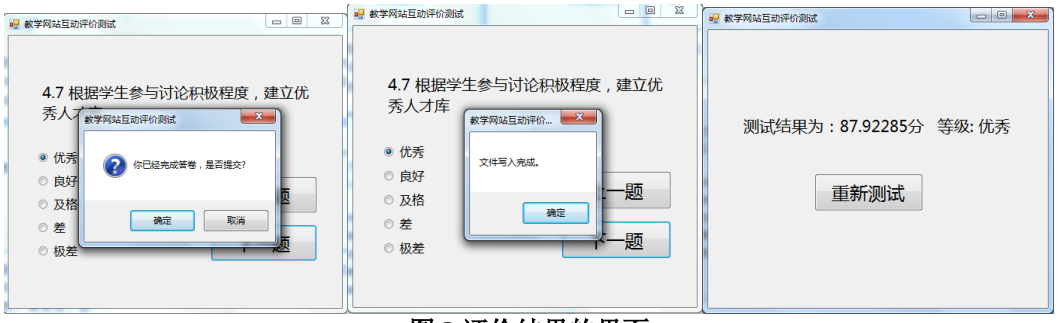
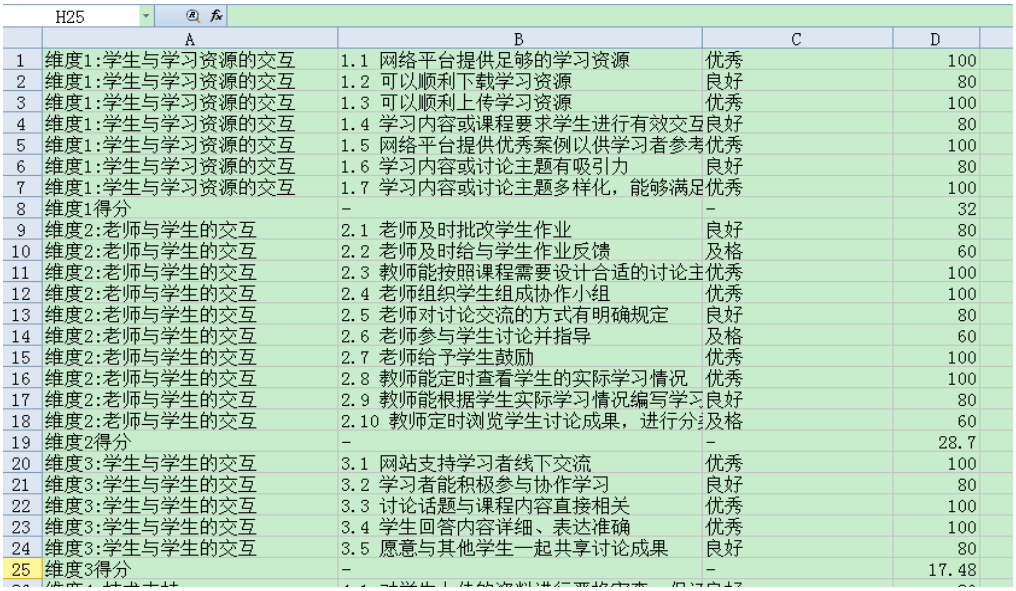


图 3 评价结果的界面

此后，程序的执行目录会生成一个 CSV 文件，该文件可用 Excel 打开，里面详细记录了答题情况和分数，显示每个指标的具体得分与综合得分。



	A	B	C	D
1	维度1:学生与学习资源的交互	1.1 网络平台提供足够的学习资源	优秀	100
2	维度1:学生与学习资源的交互	1.2 可以顺利下载学习资源	良好	80
3	维度1:学生与学习资源的交互	1.3 可以顺利上传学习资源	优秀	100
4	维度1:学生与学习资源的交互	1.4 学习内容或课程要求学生进行有效交互	良好	80
5	维度1:学生与学习资源的交互	1.5 网络平台提供优秀案例以供学习者参考	优秀	100
6	维度1:学生与学习资源的交互	1.6 学习内容或讨论主题有吸引力	良好	80
7	维度1:学生与学习资源的交互	1.7 学习内容或讨论主题多样化，能够满足	优秀	100
8	维度1得分	-	-	32
9	维度2:老师与学生的交互	2.1 老师及时批改学生作业	良好	80
10	维度2:老师与学生的交互	2.2 老师及时给与学生作业反馈	及格	60
11	维度2:老师与学生的交互	2.3 教师能按照课程需要设计合适的讨论主	优秀	100
12	维度2:老师与学生的交互	2.4 老师组织学生组成协作小组	优秀	100
13	维度2:老师与学生的交互	2.5 老师对讨论交流的方式有明确规定	良好	80
14	维度2:老师与学生的交互	2.6 老师参与学生讨论并指导	及格	60
15	维度2:老师与学生的交互	2.7 老师给予学生鼓励	优秀	100
16	维度2:老师与学生的交互	2.8 教师能定时查看学生的实际学习情况	优秀	100
17	维度2:老师与学生的交互	2.9 教师能根据学生实际学习情况编写学习	良好	80
18	维度2:老师与学生的交互	2.10 教师定时浏览学生讨论成果，进行分	及格	60
19	维度2得分	-	-	28.7
20	维度3:学生与学生的交互	3.1 网站支持学习者线下交流	优秀	100
21	维度3:学生与学生的交互	3.2 学习者能积极参与协作学习	良好	80
22	维度3:学生与学生的交互	3.3 讨论话题与课程内容直接相关	优秀	100
23	维度3:学生与学生的交互	3.4 学生回答内容详细、表达准确	优秀	100
24	维度3:学生与学生的交互	3.5 愿意与其他学生一起共享讨论成果	良好	80
25	维度3得分	-	-	17.48

图 4 评价指标的具体得分

6. 评价体系的使用效果

为检测该评价体系是否有效，我们邀请了 30 位具备网络学习经验或者教学背景的专业人员，对选定的六个汉语二语网络教学网站（代号为 A、B、C、D、E、F）进行测评。首先进行经验性评价，即让受试者根据交互的定义对教学网站做主观评价，给出明确得分；然后，让受试者使用我们设计的评价程序再次对网站进行评价，记录最后得分。

6.1 重测信度

我们让同一组评分者对网站 B 进行先后两次评价，接着对前后两次得分的相关，作为量表稳定性的证明。两次评价间隔时间为七个月。

通过 SPSS 软件，我们对两次得分进行了皮尔森相关分析（pearson）：

表 10 pearson 相关分析结果

Correlations			
		三月测试	十月测试
三月测试	Pearson Correlation	1	.482**
	Sig. (2-tailed)		.007
	N	30	30
十月测试	Pearson Correlation	.482**	1
	Sig. (2-tailed)	.007	
	N	30	30
**. Correlation is significant at the 0.01 level (2-tailed).			

皮尔森相关分析结果显示，有关变量“三月测试”与“十月测试”的相关系数为0.482，检验的 t 统计量的显著性概率为 0.007，小于 0.01，故拒绝零假设，即认为“三月测试”与“十月测试”的结果有显著的相关关系。

6.2 内部一致性检验

为了检测我们评价体系的一贯性、一致性、再现性与稳定性，我们对其进行了内部一致性检验（Alpha）。通过 SPSS 软件，我们对六个网站的回收数据进行了分析：

表 11：内部一致性检验结果

网站	Cronbach’s Alpha
A	0.850
B	0.860
C	0.822
D	0.898
E	0.910
F	0.908

内部一致性检验结果显示，六个网站的 Alpha 系数分别是：0.850、0.860、0.822、0.898、0.910、0.908。由此可见，六个信度系数均在 0.8－0.9 之间，说明信度可以接受，不需要进行修订。

6.3 效标关联效度

通过 SPSS 软件，我们对 6 个网站 30 位受试者主观评测结果和测试程序评测结果进行了皮尔森相关系数分析：

表 12 皮尔森相关系数分析结果

网站	受试（人）	Pearson correlation	Sig.(2-tailed)
A	30	0.910	0.000
B	30	0.845	0.000
C	30	0.552	0.002
D	30	0.627	0.000
E	30	0.910	0.000
F	30	0.737	0.000

皮尔森相关分析结果显示，六个网站的有关变量“主观测评结果”与“测试程序测评结果”的相关系数分别为 0.910、0.845、0.552、0.627、0.910、0.737，检验的 t 统计量的显著性概率分别为 0.000、0.000、0.002、0.000、0.000、0.000，均小于 0.01，故拒绝零假设，认为“主观测评结果”与“测试程序测评结果”的结果有显著的相关关系，也就是说，采用测试程序评价与主观评价的结果基本一致。

除了定量分析，我们还进行了定性访问。结果显示：在测评 A 网站时，由于受试者作为访客无法全面深入了解 A 网站各项功能的具体使用情况，因而对 A 网站的交互性的评价较低。具体表现在“第二维度：学生与教师的交互”上得分很低；在“第三维度：学生与学生的交互”中的“学生积极参与”一项上的得分也很低。相比而言，B 网站的开放性较强。即使作为访客，受试者也可以看到该网站丰富的交流情况。但在具体评分中，B 网站在“学生积极参与”一项得分相对较低，说明该网站应该继续在“增加学生有效参与”方面努力。最后，所有受试者均表示，指标表测评能提供更多的参考项目，让他们更全面地考察网络教育的交互，从而使得自己的评价更为客观有效。

7. 问卷结果描述分析

下面我们对回收问卷进行统计，并进行简单分析。

7.1 学生与学习资源的交互

学生与学习资源的交互是指学生能够顺利通过网络平台获取学习资源，同时，能够通过学习资源的内容与安排，顺利学到知识、获取语言能力。根据统计结果，使用者对“学习内容要求学生进行有效交互”一项满意度最高，对“学习内容或讨论主题有吸引力”、“学习内容或讨论主题多样化”的满意度相对较低。

由此可见，现阶段的网络教学网站均非常重视“交互”这一学习过程，但在具体内容与实际实施上尚有待发展与提高，网站的学习内容与讨论主题较为单一，很难吸引学生的学习兴趣，也很容易影响和限制学生的参与程度。

7.2 学生与教师的交互

学生与教师的交互是指学生在学习过程中，能够充分得到老师的指导、及时解决学习困难和少走弯路。根据统计结果，使用者对“老师能及时批改学生作业”和“老师能按照课程需要设计合适的讨论主题”两项满意度较高，对“老师对讨论、交流的方式有明确的规定”、“教师能给予学生鼓励”、“学生在遇到问题时能及时与老师沟通”的满意度相对较低。

由此可见，虽然各大网站已经开始重视“交互”，网站教师在教学设计中也有了一些“交互”的体现，但是，落实到具体的教学方法上还有待提高，老师如不能明确的限定合作交流的方式、不能适时恰当的给学生反馈沟通，不能及时与学生互通有无，那么所谓的“交互”也只能是形而上的作秀罢了，无法真正落到实处发挥作用。

7.3 学生与学生的交互

学生与学生的交互是指网络学习者能顺利与其他学习者交流合作、分享学习心

得，能建立学习的参与感和氛围感。根据统计结果，使用者对“讨论话题与课程内容直接相关”、“愿意与其他学生一起分享讨论成果”两项满意度较高，对“学习者能积极参与协作学习”、“学生回答内容详细、表达准确”两项满意度相对较低。
由此可见，在网络学习中，学生虽然能参与合作，与同伴分享学习成果、讨论学习问题。但是由于自身条件的限制或对讨论方法的不明确等原因，他们的合作讨论往往成效不高，对于解决问题没有多大帮助，他们的参与积极性也就此大打折扣。因此，这也就要求网站的教师充分发挥作用，引导学生正确高效的参与合作讨论。

7.4 技术支持

技术支持是指为保证交互能够顺利实施，网络平台设计者和维护者必须提供一系列技术支持和数据统计分析。根据统计结果，使用者对“提供多种有效的交互方式”、“网站用户界面美观”、“网站使用方便”满意度较高，对“有意识营造出目的语文化氛围”、“提供优秀学习案例”、“建立优秀学习库”满意度相对较低。

由此可见，现今的学习网站在使用者友好性方面已经有了长足进步，使用者登陆网站后都能顺利快捷的找到自己想要的学习内容并且顺利的进行学习，网站所提供的各种技术支持也基本能够满足学习者的学习要求。但是，对于二语学习网站来说，现有的学习网站对营造目的语文化氛围的意识尚且薄弱，大部分汉语学习者网站并不能很明显的体现中国特色，而文化氛围的营造对学习者目的语的学习和学习兴趣的保持都有很大的促进作用。另外，现有二语学习网站虽然拥有不错的点击率，但是大都缺乏对学习者的分类与管理，我们很难看到网站树立起优秀学习者为榜样，也基本上没有网站建立起优秀学生库，这其中虽然有学习者多而杂等客观原因的影响，可也反映出网站管理者此方面意识的缺失。

8. 结语

本研究主要依据网络教学在交互方面的已有成果，结合对外汉语教学的特点与原则，形成了网络教学交互质量评价体系及应用程序。经过初步使用显示，该评价体系能够顺利完成评价任务，真实反映网络教学的交互质量，为教学设计人员、远程教育教师提供帮助、给学习者提供选择标准、为建设者提供改进建议和方向。

参考资料

陈丽. (2004). 术语“教学交互”的本质及其相关概念的辨析. *中国远程教育*, 3, 1-9.

董艳, 黄荣怀, 李晓明, 申瑞民.(2003). 《网络课程课件质量认证标准》的研制与修订. *电化教育研究*, 6, 65-70.

刘志波. (2003). *网络课程评价及其评价体系的建构.* 硕士学位论文.陕西师范大学.

李红. (2007). 远程教育中学生与学习资源交互的实证研究. *中国成人教育*, 6, 98-99.

赖文华. (2008). 层级分析法在网络课件评价中的应用. *软件导刊（教育技术）*, 4, 84-86.

魏志慧, 陈丽, 希建华. (2004). 网络课程教学交互质量评价指标体系的研究. *开放教育研究*, 6, 34-36.

王萍, 李立新. (2003). 论现代远程教育系统的交互. *河南师范大学学报（哲学社会科学版）*, 30, 136-139.

徐娟. (2007). *远程对外汉语教学评价研究*. 北京：语文出版社.

杨在宝, 张杰. (2010). “教学系统设计”网络课程的交互设计探索. *中国教育信息化*, 3, 74-76.

张建伟, 吴庚生, 李绯. (2003). 中国远程教育的实施状况及其改进——一项针对远程学习者的调查. *开放教育研究*, 4, 7-11.

Britain, Sandy & Oleg, Liber. *A Framework for Pedagogical Evaluation of Virtual Learning Environments*. Retrieved from www.jisc.ac.uk/uploaded_documents/jtap-041.doc.

Chai, Shaoming. (2011). Practical Research on the Assessment of Online Collaborative English Learning—A Case Study of Blackboard –based course “Intercultural Communication”. in *Proceedings of GCCCE 15th*, 2, 521-524.

Gillis, Lynette. *E-Learning Certification Standards* Retrieved from http://www.chinaret.com/user/article.aspx?cid=1583b916-64e3-4638-a166-4a415d0a1fe4.

Lai, Wenhua. (2011). Evaluation Research Based on SECI modeling E-learning. *Electrical and Control Engineering (ICECE) International conference*. pp. 6571-6573.

Roblyer, M.D. & Wiencke, W.R. (2003). Design and Use of a Rubric to Assess and Encourage Interactive Qualities In Distance Courses. *The American Journal of Distance Education 17(2)*, 77–97.

Roblyer, M.D. & Wiencke, W.R. (2004). Exploring the interaction equation: validating a rubric to assess and encourage interaction in distance course. *Journal of Asynchronous Learning Networks.* 8, 25-37

Sanders , E. S. (2001). *E-Learning Courseware Certification Standards.* American:

American Society for Training and Development.

Yuan, Feng. (2011). Design and Implementation of Computer Supported Collaborative Learning based on Blackboard Learning System. *Proceedings of GCCCE 15th*, 2, 1236-1238.

Zhu, Chunying, & Kun WANG. (2011). The analysis of the WebQuest cases and the research of the model improvement. *Electrical and Control Engineering (ICECE) International conference*, pp. 6819-6822.

http://www.tclt.us/journal/2013v4n2/zhang.pdf pp. 69-85

利用视频短片促进高级表达技能的获得
(Using video to promote the acquisition of advanced proficiency)

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摘要：网络和移动技术的迅速发展使视频资源日益扩大。然而，面对快速发展的新资源和便捷的新技术，中文高年级的教学在很大程度上仍然停留在传统单一的课本教学方式上。当前中文教师面临的挑战是，如何利用日益丰富的视频资源和便捷的新技术来优化教学方式、促进高年级学生的表达技能发展。尤其需要注意的是，高级程度所要求的描述、叙述等表达技能向来是我们传统教程中的薄弱环节。笔者认为，视频教学是训练叙述技能的理想方式和手段，短时而高效, 应融入教学主体之中。本文将针对高年级的教学设计提出建议，从讲授教导式与建构式教学法的角度探讨视频教学的优势和潜力，并以自己制作的叙事短片教学设计和学生写作为例，分析视频方式在描述与叙述技能发展中所起的积极作用。

Abstract: The rapid development of web and mobile technologies enabled the wide spread availability of video resources. However, despite the explosion of new resources and the ease of use of new technologies, Chinese instruction at advanced levels seems to linger on at the traditional single-mode of material delivery. The new challenge that Chinese teachers face is the effective use of increasingly rich video resources to optimize language instruction and promote the development of advanced proficiency. In fact, the expected skills in narration and description are the weakest links in our advanced-level materials. The author believes that video is an ideal medium for these skills, allowing fast language development in a relatively short period of time. Video therefore should be built into the instructional structure. This article will address advanced Chinese instruction and propose some instructional designs for using video from both the instructivist and constructivist perspectives. The author will analyze the role of video in the descriptive and narrative writing activities using her self-made narrative video segments with student writing samples.

关键词：视频，YouTube，网络，高级中文，技能，描述，叙述，叙事，教学方式 ，建构式教学

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Keywords: video, YouTube, web, advanced Chinese, proficiency, description, narration, narrative, approach, constructivism

1. 引言

视频向来被视为一种重要的教育工具和手段, 特别是在进入网络视频及移动工具日益普及的 21 世纪后，数码视频 (digital video，或称“数字化”或“数位”视频) 的上传率和使用率也随之激增。2009 年，YouTube 视频数量达到 8 亿，而且新上传的视频以每天 20 万的速度递增（Prensky, 2009)。 如此庞大的视频网络是一个取之不尽用之不竭的素材库，外语教师应加以利用。对中文教学界来说，长期以来视频资源贫乏，远不及欧洲语种（Da & Li, 2008）。特别是高年级的教学，对视频的利用还处于摸索阶段。当前教师们面临的挑战是，如何利用丰富的视频资源和便捷的新技术来优化高年级的教学方式和学习环境，从而促进高年级学生表达技能的发展提高。

自 1986 年始，ACTFL 制定的口语及写作能力测试标准中将成段描述与叙述的能力作为高级程度的主要标志。 因此，从中高级起，我们的教学设计中应加强描述与叙述的训练。由于描述与叙述类的语料和训练在我们的书本教材里相对缺乏，我们可以充分利用视频资源来弥补这个空白。那么，视频教学方式会带来哪些收益？在高年级教学中应扮演什么角色？素材的利用是否应融入高年级的教学主体之中？非目标语的网络视频素材对中文高级语言技能的训练能起什么样的作用？作为外语教师，我们当前应如何充分利用 YouTube、优酷等各种强大而便捷的视频资源和服务？

在过去几年中，笔者在高年级的“会话与写作”课中尝试用视频短片，发现对描述与叙述技能的获得有极大的促进作用。本文将先说明视频有利于外语教学的理论依据，介绍选择视频的简单方法; 然后通过对讲授教导式（以下简称“讲练式”）与建构式教学法的比较, 本文详细探讨视频教学设计、分析学生习作，最后做出进一步教学建议。

2. 视频为理想的教学工具和手段

如今，数码视频不但成为不可或缺的社交、商务、学习、和娱乐的媒体，而且由于数字化视频所涵盖的内容及容量无限发展，视频资料得到广泛使用，也逐渐成为一种能量巨大而又便捷灵活的教学方式。Berk (2009) 列举了 20 种用视频教学的收益，其中包括视频有助于吸引注意力、引起学习兴趣、激发想象力、加强学生之间的联系互动、培养原创性、激发学习动力和灵感、作为合作方式和工具等等。一些专家认为，由于观看视频需要同时用到人的左脑（处理语言及逻辑思维）及右脑（处理非言语信息、创意行为、情感等），因此视频方式有助于调动更多的大脑智能，加强对新知识的学习、理解和记忆 (引自 Berk, 2009)。由此 Berk 的结论是，

在学习中，媒体“多即好”：多种媒体优于单一媒体，在影像及声像条件下的学习优于文字（及音频）条件下的学习。

Altman（1989）指出，视频是外语学习联系现实世界的最佳媒体。视频可充分提供语境（maximum contextualization), 同时由于视频资料由教师规划选择，也使教师有充分的掌控(maximum control) ，因此教师应设法利用视频来最大限度地加速学生的语言习得。他认为，视频材料不应只作为学习的对象（内容和材料），而应作为一种学习方式和技巧(a manner of study，a technique) 。因此不应将视频作为额外的或锦上添花的附加成分(add-ons), 而应将其融入并贯穿日常教学规划和结构之中 。

Kitajima 和 Lyman-Hager (1998) 列举出视频对外语学习的诸多功效，指出视觉效果利于产生对语言形式结构以及语义的联想，判断交际要点，生词的词义、从短片对话中捕捉并重组信息等。Homstad & Thorson (1996) 认为，影视媒体能够将影像、声音及文化元素融为一体，为学生喜闻乐见的形式，用于写作训练，能使其变得具有互动性。 视频材料也可作为主课内容的前期导入（advance organizer), 使主课的学习有的放矢，更为有效（Kitajima & Lyman-Hager, 1998）。

3. 视频用于高年级输出训练的合理性

虽然视频材料最常用于听说练习（输入），但在语言输出——特别是描述与叙述的训练上——效果十分显著。视频内容不仅包括语言内容（如文字、字幕、口头解说、对话等），也包括用其他方式传达的内容（如影像、图片、颜色、音响、特效、动作、表情等视觉信息) (Shrum & Glisan，2010)。可见，视频是高年级表达技能训练的理想工具，教师们只要稍微发挥一点想象力，就能使视频生成各种生动活泼的输出活动来促进语言的习得（Altman，1989）。教师若将多媒体用于系统的写作训练，能使教学变得更加积极，给学生更大的语言输出空间（郑艳群，2012）。

研究表明，视频用于高年级的表达、输出训练有显著收效。一项研究显示，在中高级日语课上，使用视频教学方式后，学生的描述和叙述能力从中级上升到高级的人数提高了 20%（Fujioka-Ito, 2009）。视频也可作为测试评估手段。一项俄语研究的结果显示，以学生制作视频短片的教学实验说明，通过视频练习方式，学生不仅可在发音、语法结构和文化得体性方面达到较好的效果，同时也激发了学生的学习兴趣和动力（Nikitina, 2010）。

3. 1 叙事片作为描述叙述技能训练的手段

叙事视频（narrative video) 这里指的是表现和讲述事件经过的视频。虚拟或真实的对话、某事件的发生和经过、或显示人物动作行为的连续画面、场景等都可算作叙事视频，而新闻报道、访谈、个人介绍等不归在此类。叙事片形式可包括故事片（如电影电视剧片段）、情景对话、有解说或没有解说的系列叙事图片或动画（如卡通）、或一连串表现事件的场景和镜头等。可见，叙事类的短片，语言反而

不是最重要的部分，有时甚至哑剧也可以利用其故事线作为练习材料。因此，任何语种的短片也都可以加以利用。

为何选择叙事视频做叙述、描述训练？叙事带有故事性（storytelling)，故事的功用之一在于有利于回忆和记忆，讲述故事可激发学习者对内容的兴趣和学习热情（Lockett 2011)。同时，从学习技能上看，叙事技能对认知能力的发展起到积极推动作用：人物的描述、故事的讲述、解说、概述、顺序的安排、情节的编创等教学活动直接需要运用到高层次认知能力（Bloom's Taxonomy, 1956, 2000），如分析（analyzing）、应用（applying）、组合整合（synthesizing）、创造 (creating) 。

在美国中文教学界，近年来也有许多教师尝试利用影视片进行中文教学。许德宝在 90 年代中就开始系统地研发多媒体教学方式，包括利用《霸王别姬》《我的父亲母亲》等影片教授文学、电影课程，并设计制作出一套完整的具有交互性能的播放影片、进行语言学习训练的 DVD 程序（Xu, 2003）。过去 10 年来，不少语言老师也在教学中尝试利用网络影视片段训练学生的叙事能力、句段连接和语句连贯、或综合表达、交际能力（Wang 2008，刘宇明 2008，范捷颀 2008）。还有的老师鼓励学生自录生活视频作为学练活动，如录制下出国留学旅程，然后配上叙述和解说（Kupler, 2008）。这些尝试都在不同层面、不同程度上获得较好的收效。遗憾的是，基于语言技能的视频教学目前还多半是见缝插针式的活动，尚未成为常规，教师们有待进一步摸索各种教学技巧，使视频不仅作为教学内容而且作为方式手段融入日常教学系统之中。

3. 2 促进表达技能的视频教学设计

综上所述，视频用于语言输出训练的方式其实并没有一个固定方式，老师可以根据教学需要设计各种活动。需要记住的是，不必根据视频的语言难度选择片段。前面提到过，视频教学是一种方式手段，而不仅仅是取其内容作听说练习，如用静音方式播放就是一个例子。我们看电视的时候，有时会突然转到一个外语电视台，这时正播放着一个电视剧，虽然我们什么也听不懂，但不知不觉也可能被人物和剧情吸引住而接着看下去；此时人物所说的语言并不重要，我们仍然能看懂个大概。所以就教学而言，重要的是利用短片中的画面、场景、人物动作行为等等。也许可以让学生充当翻译或解说人，讲解剧情？也许可以让学生预测人物下一步将有什么行动，为什么？或者让学生看上 10 秒钟，然后关闭视频，复述描述刚才看到的东西，…… 诸如此类的方式， 都可以不妨一试。

下面试举 10 例活动，根据用途的不同，我们可将其划为三类：

A 类：短片作为主课前期导入（advance organizer）

短片内容非教学核心内容，而作为教学前期导入，此为建构式教学法所提倡并广泛运用的方式之一。即在开始新教学单元时，先把教学元素通过视频短片简洁呈现，以便激活学生原有的知识，联系于此相关的知识，以便在此基础上学习或建构新知识。有很多种活动可作为前期导入，下面是与外语教学相关的两例：

1	导入话题	短片作为该单元的主题导入，使学生尽快“进入状况”，联想相关的话题，以便做进一步描述、叙述或相关讨论
2	熟悉词汇	以画面为主的视频及图片系列引导词汇复习和学练，为之后的输出任务做准备（类似预热活动); 用静音方式

B 类： 短片作为教学内容主体（core content)

此类活动主要基于短片的内容进行学习练习。短片中所呈现的主要信息，包括非语言部分，均可作为核心内容。

3	讲述复述	基于视频呈现的故事做叙述、多角度复述
4	概述转述	基于视频内容（如一段对话），学练概述、转述方式
5	诠释解说	基于一系列图片、动作、或场景，诠释解说其内容，如讲述某人的故事、经历、事件经过等；或针对短片中的部分内容（如到某地旅游的视频或图片）叙述旅途经过，描述当地风土人情，列举事例，比较文化，讨论问题等

C 类：短片作为教学活动导体（stimulus）

此类活动着重于创意发挥，短片故事充当背景材料，衍生出其他单项、多项、或系列叙述、描述、甚至观点讨论活动。也就是说，短片内容作为输出任务的起点，学生在视听或静音观看故事之后，可完成以下单项或多项叙述描述任务（C 类活动示例详见本文第 5 节：教学设计示例）：

6	来龙去脉	自编自创，介绍人物或故事的背景
7	添枝加叶	在原有故事上增补人物和情节，进一步创作发挥，着重于描述、叙述技能
8	补前续后	补充故事的开头、以及故事的发展和最终结局
9	改头换面	改变短片中的对话或解说，然后给短片重新配音（可在课上边播放边配音）；不同的小组（或个人）汇报不同的故事，百花齐放
10	接龙串珠	继续原有的故事的各个人物和故事情节，继续完成续集

4. 如何准备视频短片

如果没有时间和条件自己录制，可以选择从各种视频网络上选择合适的内容和片段。

4.1 视频选择标准

视频短片内容和语言可以根据教学目标设定，如果短片不是作为教学主体，选择的范围就更自由了。但所选的素材应注重其可教性、有效性，而不是其复杂性（郑艳群，2012)。以下是选片段时需要注意的方面：

内容: 可以是任何语种影视片里的某个片段，对话、或有连续人物动作行为的画面或事件发生的场面等；也可以是带解说或不带解说的图片系列、卡通等。须注意内容是否对学生合适，应避免不适合课堂讨论的话题。

片长: 课上用：3 分钟以内短片最为理想 (Berk, 2009)；若超过 3 分钟，可剪成小片段
课下用：每个短片尽量控制在 8 分钟以内；或剪成 3-5 分钟一个片段

难度: 若需要视听理解，则应选择语言难度适中的短片，另外提供词汇表（可列出中文词汇让学生做为听力判断或查出意思）
若不需要听力理解，则选择画面内容适合教学需要的短片

其他: 选择标准还应考虑以下因素：

- 是否有足够的视觉信息和画面，如用静音方式也可用
- 是否比其他媒体（图片、PPT 、录音等）更有效
- 是否需要花费太多时间准备
- 是否能够多次使用或有多种用途（如，可用于不同活动或程度）

4.2 利用“短频快”免费工具：屏幕录像截取片段

笔者用“短频快”来指简短、频率高、很快能完成的任务（Zhang, 2011)。这里所说的“短频快”工具指的是操作简便直观的免费工具，使用者可在几分钟内掌握其操作要领，再加上 10 多分钟的练习也就可开始尝试使用了。对于语言教师来说， 借助于免费的“短频快”工具来选取视频素材可行性很高。

凡是可在自己电脑上播放出来的视频或图像，都可用屏幕录像(screen capture)或屏幕录像播放 （screencast) 软件截取所需要的画面和片段，然后存于自己电脑上或软件公司所提供的云端网站上随时播放或发送。免费的屏幕录像工具很多，其中包括可兼容 Mac 和 PC 的软件或服务网站。以下两个便捷的网上免费工具均可在 5 分钟内学会，并均有在线视频指导：

1） Jing（http://www.techsmith.com/download/jing/)
可下载软件存于电脑，随时可用。免费软件录制长度限制为 5 分钟, 可加文字，存盘或上传到公司服务网站上随时点击播放(screencast)，空间 2G，也可发送到自己其他网络帐户（email, twitter, facebook）。若需要更多功能或存储空间，

可一次性付费购买该公司的其他专业版本（教师有优惠，约 30 美元可购买功能更多的软件 Snagit），不收年费。

2) Screenr (http://www.screenr.com/)
与 Jing 不同的是，该工具不用下载，直接在网上使用，然后发送到该播放服务网站上。专业版收年费。

5. 教学设计示例

下面示例用的是笔者自己编制的叙事短片《离婚?》，始用于 2001 年，通过笔者所在的大学流媒网播放；后改用 YouTube 播放（Zhang, 2008），上传简便，播放更为流畅，也便于嵌入其他网页。 短片说的是一对 30 多岁的夫妇的婚姻发生变化的经过，约 5 分钟，共分为三个片段（图 1）。

第一段：

夫妻为一般工薪阶层，丈夫下班后无所事事。妻子认为，男子汉要有事业心，因此她劝丈夫出去闯闯。

第二段：

两年后，丈夫成功了，有了自己的公司，越来越少回家了。妻子埋怨丈夫不关心家和孩子.....

第三段：

终于有一天，丈夫提出离婚。妻子感到吃惊.....

图 1: 短片《离婚?》的三个片段

5.1 教学用途

这个短片在教学中可有不同用途 ，或作为主体（短片内容为学练重点），或作为导体（短片内容作为切入点，生成其他创意活动）。若时间有限，可根据需要选择（图 2）。

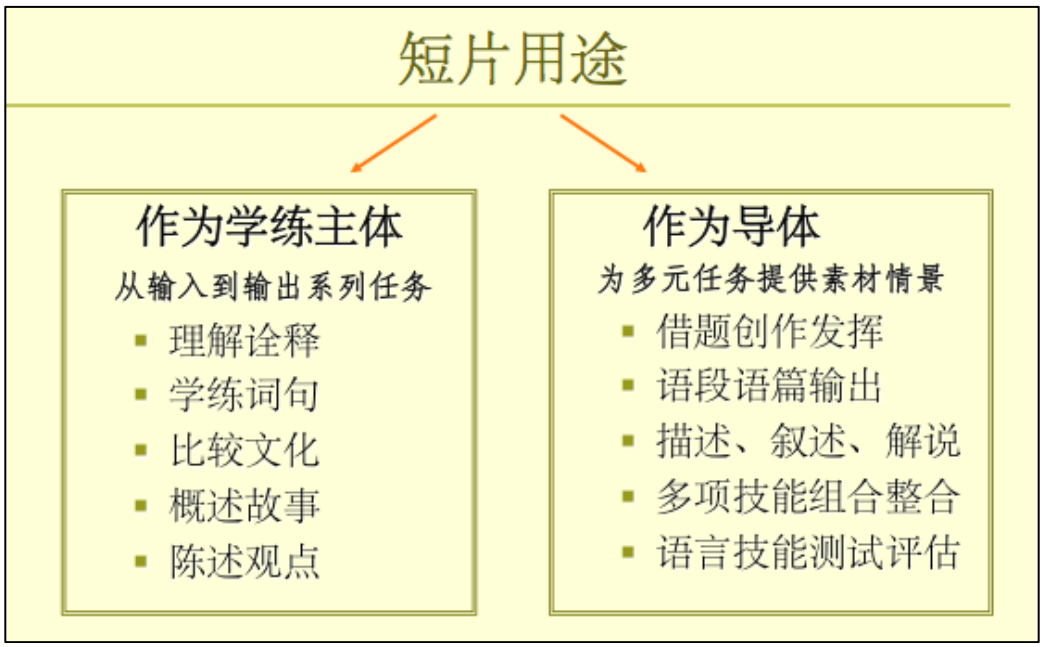


图 2《离婚》短片用途

5.2 呈现方式：先读脚本还是先看视频？

有时教师为了让学生了解对话内容，会事先把脚本上的对话原文发给学生，让学生阅读之后再看短片，这其实会失去视频可能发挥的效力。视频可显示说话者的外表、动作、表情、眼神、甚至周围环境等视觉效果，因此在对话的呈现方式上让学生获得直接的感受远比书本、录音等方式更有帮助。许德宝在介绍 DVD 用途时强调多媒体提供的视觉印象所产生的特殊效果：

> 生动形象地再现人类的语言活动、社会行为、复杂心理、错综感情以及非语言的交际方式比如身体语言、手势、面目表情、凝视等等，有助于 L2 学习者在较深意识层面(或潜意识层面)上理解和学习目标语；而移动画面、视觉记忆、真实语境、情景联想等均有助于对词汇、语法的理解记忆和内化作用(Canning-Wilson 2000; Gregersen 2007; Sherman, 2003) （Xu , 2009)

可见，与文字和声音不同，视频最显著的效果是在传递非话语信息，因为“80%的人类交际属于非言语方式。 我们的手势、表情、姿态、乃至穿着打扮、周围物体其实与我们说出的话语一样有分量。”（Stempleski & Tomalin, 1999）。因此，作为阅读能力有限的学生，若先读对话脚本，得到的信息量是很有限的。阅读能力

强的学生对人物的理解和表达方式会各有自己的想象，也许与视频上大不相同。试比较下面的两类呈现方式：

1）书面呈现方式：

例：《离婚?》片段（第三段选节）

夫　哎, 我说, 我有点事要跟你商量。
妻　什么事？
夫　是这样的，都怪我不好——你千万要冷静，可不要发火啊—
妻　诶 ei，我说你今天是怎么了？说话吞吞吐吐的。
　　你有什么事就说嘛，又不是外人。
夫　也好，是这样的： 我看——我们俩——还是离婚吧！
妻　什么？！ 离婚！！ 你疯了？ 为什么？
夫　不为什么，只因为——我的心已经给别人了。
妻　你说什么？你在外面有新欢了——是不是？
　　难怪你整天整夜不回家，还说是加班！你说！她是谁？

以上对话文字不包括正规的脚本里含有的动作、表情、语气等提示，学生只能凭想象来补充这些缺失的信息。同时，通过书面阅读对话来学习，学生各自对人物和话语的理解基于主观想象，所读的语言难以留下深刻印象，甚至可能过目即忘。由于缺乏情感、心理反应等各种信息的交代，进行叙述技能训练时，教师还需要补充很多说明，以便衔接话语，使叙述自然流畅。如叙述中丈夫提出离婚时， 母语者通常会加一句描述心理反应的衔接语，如“妻子听了感到吃惊，.... 。”

2）视频短片呈现：（图 3)

图 3《离婚》镜头

若换用视频呈现对话，效果则大有不同，从图 2 的一组镜头中可略见一斑。如上所述，学生在短片中看到不仅是语言部分，而更多的是其他非语言信息： 房间布置、人物外表、面部表情、情绪的微妙变化、自然或突发的肢体动作，甚至话语之间的空白和停顿，都能传达丰富的信息和场景的气氛。如在观看短片第二段时，学生可从房间的外观以及人物的穿着打扮上看出丈夫地位的改变。 在第三段丈夫提出离婚前，并没有人说话，而只表现丈夫的一连串动作和表情：心事重重地先倒了一杯水递给妻子，接着又递给妻子一只香蕉，…… 这些微小的动作和人物的互动，都体现了人物的关系和各自内心的心境，同时营造出一种故事所需要的气氛，对学生的理解和印象起到辅助和强化作用，也为其后的叙述任务做了铺垫和准备。

5.3 平衡讲练式与建构式

近年来建构式教学法(constructivist paradigm) 在教育领域受到广泛提倡（Educational Broadcasting Corporation, 2004; Shrum and Glisan, 2010）。此教学方式主张以学习者为中心，注重学习者已有的知识基础，及其建构新知识的主动性、参与性及合作性。 学生通过积极主动地参与学习过程、思考学习方式、合作互动、修正认识、在已有知识上重建新知识（这与“温故知新”的道理相吻合。）建构主义者认为这样以学习者为中心的方式能够使学生提高学习自主性和判断、认知能力。不言而喻，网络技术的发展和丰富的信息资源为建构式教学法提供了极大的方便。但同时，学者们也注意到建构教学方式的局限，特别是与传统的教师主导的讲授教导式 （instructivist paradigm）相比，其教学内容、程度与评估手段均难以掌控。这给教育工作者提出新的挑战：如何在放手让学生积极主动、合作互助学习的同时确保达到课程预期的教学目标（Nikitina, 2010）。

就外语教学而言，由于语言的准确性、文化的得体性以及语言表达的规范、形式结构等要求，教师的指导必不可少，完全放手用建构式进行学生自主活动并不一定能获得最佳收效。反之，完全由教师掌控的讲练式会束缚学生的手脚，使学生的主动性与创造性得不到应有的发挥。从教学实践看，讲练式与建构式双管齐下、兼收并蓄，收效最高。以下教学设计兼顾了讲练式与建构式的教学活动（图 4)。

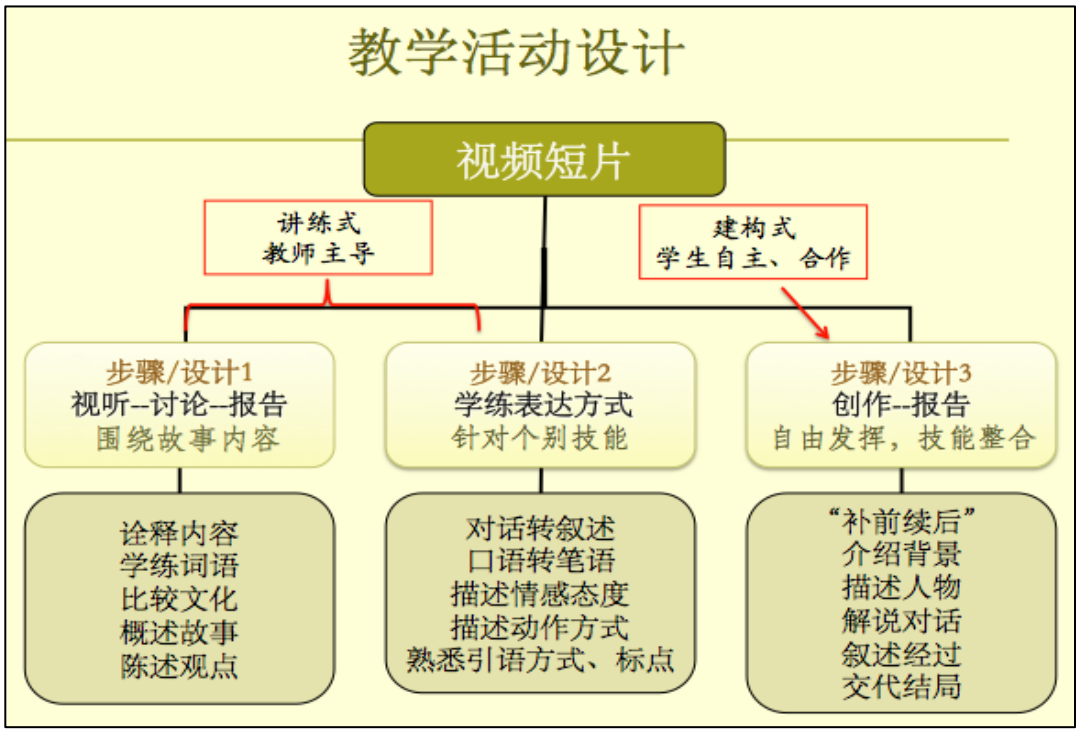


图 4 教学活动设计及步骤

5.4 教学内容概要

以下为短片《离婚?》教学内容和形式，可据需要选择其中部分或全部（表 1）。(详细教案可从网页上下载：http://laoshilink.org/laoshilink/youTube_lihun.html)

表 1 教学内容概要

视频短片	《离婚?》， 片长约 5 分钟
所需课时	3-4 课时
内容提要	第一段：夫妇为平民，丈夫无所事事，妻子劝丈夫出去闯闯 第二段：两年后，丈夫事业发展了，很少回家了 第三段：有一天，丈夫突然提出离婚……
语言程度	中高级－高级
技能	叙述经历经过、描述人物、描述、解说言语行为、复述、转述
交际方式	理解诠释、语段表达演示
词语	(注：教程配有分类词汇表)
人物简况	生理特征、穿着打扮、言谈举止、性格爱好特长、职业职务 成语、四字格词组
关联词语	时间、因果、条件等 在……之前 /之后，后来，接着就， 突然、没多久， 过了两个月、这时候……
言语行为动词	（直接引语及间接引语） 说、问、回答、 建议、鼓励、解释、 劝、 责怪、 埋怨、指责、质问
方式短语	中级：小声/大声说、高兴地说、笑着说、..... 中高级：轻轻地、结结巴巴地、眼泪汪汪地、气愤地、低声地
教学活动程序及形式	**讲练式**（教师主导 ） 理解诠释：分段视听短剧 《离婚?》, 在每段之后提问、讨论 词语学练：方式短语； 言语行为动词； 描述/解说言语行为 **建构式**（学生自主、合作 ） 创作发挥： "补前续后", 小组构思故事背景和结局 技能整合：描述人物及背景、叙述事情经过、描述对话场面、补充故事结局 报告演示：如：角色扮演、PPT 加故事解说，第三者转述等 书面作文：个人或小组完成书面创作任务及修改稿

5.5 建构式学练任务示例：创意发挥

上面教学设计的第三部分让学生创意发挥，给《离婚》短片“补前续后”。学生可独立完成或小组合作完成。在教学中，大多数学生选择小组合作方式，认为在一起编创故事比较有趣，另外，最后的课堂报告每人负责一部分，相对负担较轻，而且多人叙述故事更为活泼生动。从学生的体会来看，大部分小组组员能配合其他组员，顺利完成写作、报告任务，而在此过程中感到互助协作对学习有帮助。

需要说明的是，在此单元之前，学生已学过有关人物描述的词语，如外部特征、穿着打扮、性格爱好、特长、教育背景、工作经历等。同时紧接着这个任务之前，也学练过动作词汇。这时学生构思人物背景时和对话行为方式时就如再次循环，并灵活运用已有的知识。 积极参与与同学和互动、合作创作过程需要涉及各种层次的认知能力，这对学生也是一个提升总体学习能力的机会：

- Knowledge: 熟悉词语句式、了解文化背景
- Understand: 理解词句用法、诠释人物对话、了解文化背景及行为方式
- Apply: 应用适当的语法句型结构、表达结构
- Analyze: 分析人物心理状态和感情变化、文章结构
- Synthesize 组合信息、排列顺序、整合技能
- Create 创意发挥，写出有原创性的语篇作品

5. 6 学生写作样例分析

在 3-4 课时之后，学生按要求完成写作任务。由于自由发挥，学生的故事“百花齐放”，各不相同。总体来看，在描述叙述方面达到预期目标。下面的写作样例 1 和 2 主要显示描述动作及言语行为方式，在结构上主要运用方式短语，包括情感、态度、动作、语气等。同时，叙事的文字格式也是教学内容之一，包括段落、对话的呈现方式、直接引语的标点符号等。样例 3 显示的是故事结尾的叙述部分，可以看出在叙述上的段落表达能力。

样例 1: 学生 1 作文节选—— 言语行为方式（下页图 5）

从样例 1 可以看出这位学生对某些词语的意思把握不够好（如“好奇地说”、“毫不犹豫地回答），有些表达显然是翻译了英文表达 （如“爸爸不喜欢她的态度”），但从总体上看，学生的描述中用了不同的行为方式短语，如“……地”，“V 着（说）”，“突然……” 等方式短语，包括情感、态度、和伴随表情（笑着说、愣愣地看着、冷冷地问等），在形式结构上、引语结构及标点符号基本合乎要求。

（注：图中引语部分为短片中的对话原文。）

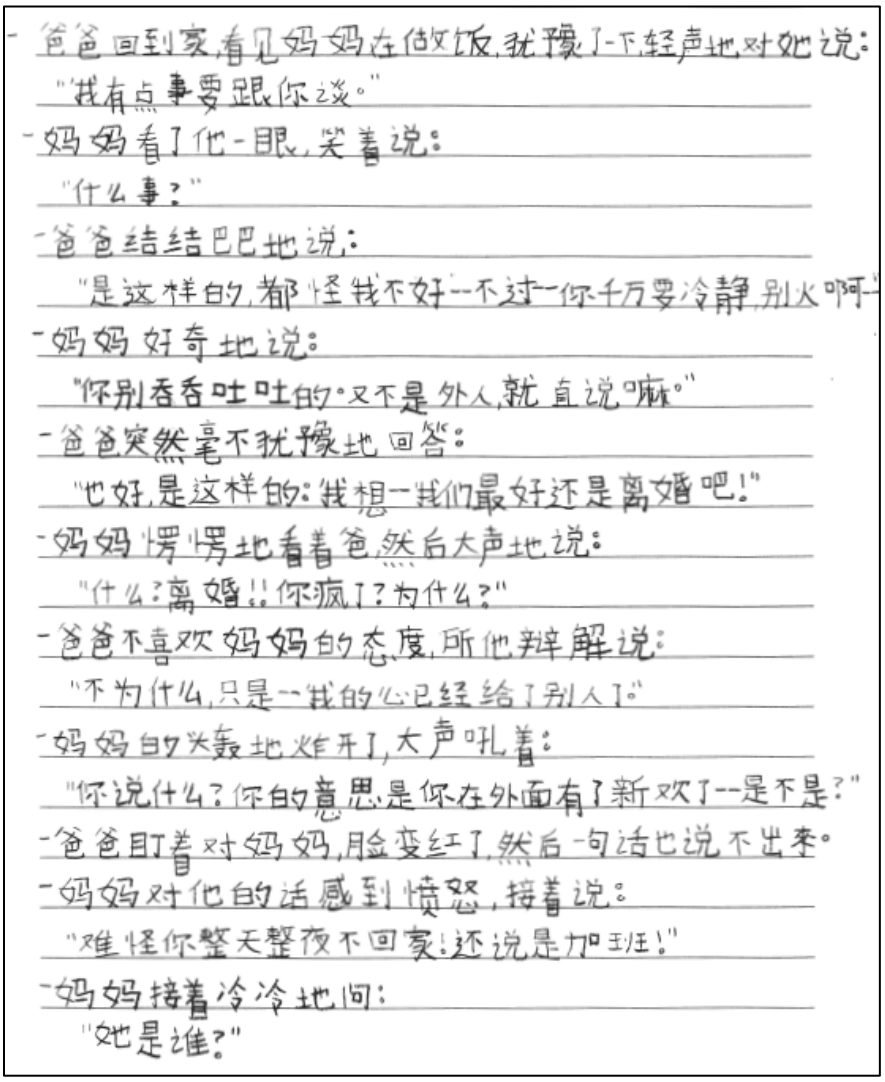
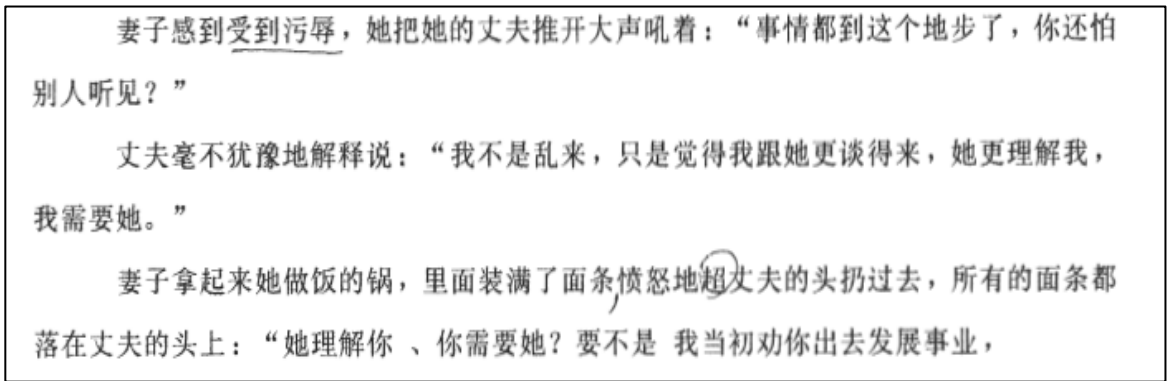

爸爸回到家，看见妈妈在做饭，犹豫了一下轻声地对她说：
"我有点事要跟你谈。"
妈妈看了他一眼，笑着说：
"什么事？"
爸爸结结巴巴地说：
"是这样的，都怪我不好——不过——你千万要冷静，别火啊！"
妈妈好奇地说：
"你别吞吞吐吐的。又不是外人，就直说嘛。"
爸爸突然毫不犹豫地回答：
"也好，是这样的：我想——我们最好还是离婚吧！"
妈妈愣愣地看着爸，然后大声地说：
"什么？离婚！！你疯了？为什么？"
爸爸不喜欢妈妈的态度，所他辩解说：
"不为什么，只是——我的心已经给了别人了。"
妈妈的头轰地炸开了，大声吼着：
"你说什么？你的意思是你在外面有了新欢了——是不是？"
爸爸盯着对妈妈，脸变红了，然后一句话也说不出来。
妈妈对他的话感到愤怒，接着说：
"难怪你整天整夜不回家！还说是加班！"
妈妈接着冷冷地问：
"她是谁？"

图 5 样例 1（学生 1 作文节选——言语行为方式）

样例 2：学生 2 作文节选——动作方式（图 6）


妻子感到受到污辱，她把她的丈夫推开大声吼着："事情都到这个地步了，你还怕别人听见？"

丈夫毫不犹豫地解释说："我不是乱来，只是觉得我跟她更谈得来，她更理解我，我需要她。"

妻子拿起来她做饭的锅，里面装满了面条愤怒地超丈夫的头扔过去，所有的面条都落在丈夫的头上："她理解你 、你需要她？要不是 我当初劝你出去发展事业，

图 6 样例 2（学生 2 作文节选——动作方式）

样例 2 显示对话过程中的动作描述，使故事叙述更具动态感；描述带有戏剧性，虽然显得有些夸张，但能让读者感到当时的紧张气氛和情绪逐步升级。也就是说，从语言交际角度看，描述达到生动形象的效果。从用词上看，还有些生硬、不够恰当（如“毫不犹豫地解释说”），但从行文上看，已经开始具有母语者叙事的味道和效果。

样例 3：学生 1 作文样例节选—— 叙述故事结局 （图 7）

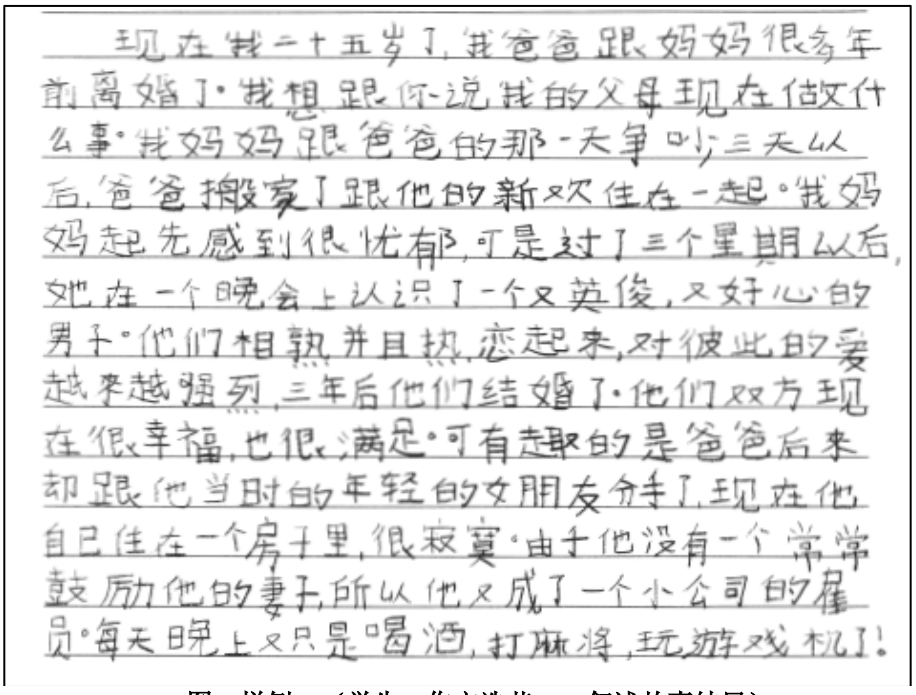

现在我二十五岁了，我爸爸跟妈妈很多年前离婚了。我想跟你说我的父母现在做这什么事。我妈妈跟爸爸的那一天拿叫，三天以后，爸爸搬家了跟他的新欢住在一起。我妈妈起先感到很忧郁，可是过了三个星期以后，她在一个晚会上认识了一个又英俊，又好心的男子。他们相熟并且热恋起来，对彼此的爱越来越强烈，三年后他们结婚了。他们双方现在很幸福，也很满足。可有趣的是爸爸后来却跟他当时的年轻的女朋友分手了，现在他自己住在一个房子里，很寂寞。由于他没有一个常常鼓励他的妻子，所以他又成了一个小公司的雇员。每天晚上又只是喝酒，打麻将，玩游戏机了！

图 7 样例 3 （学生 1 作文选节——叙述故事结局）

样例 3 显示学生 1 的成段叙述能力。可以看出，语句之间的衔接转换都比较自然通顺，连贯性也比较好。有趣的是，故事的结尾出人意料，而且巧妙地呼应了视频短片的开头部分（丈夫下班后在家里和儿子打游戏机消磨时间……) ，所以从作文的整体构思上看也很有创意。

6. 教学建议：学生自主的视频活动

教学实践表明，利用叙事视频不但可达到短时高效，而且调动学生的积极主动性使学练活动充满趣味性。视频的利用空间非常广阔，老师们在学期里不妨安排出一周时间给学生做自由发挥报告，可尝试以下话题和方式：

- **解说故事**：让学生各自用屏幕录像软件截取自己喜欢的影视片的一个片段（3 分钟以内），然后在班上演示并解说其中的内容。

- **讲述大学生活**：让学生 3 人一组，拍摄小组组员的日常生活，自选题目，如“我在大学的一天”，“一个难忘的周末”，“一次糟糕的约会”等，然后轮流在班上演示介绍

- **讲述旅行经过**：让学生把自己旅行的照片或录像做成视频短片，在班上讲述旅行经过、其中发生的趣事、事件等

以上的报告也可用视频配上解说的方式，发布在课程的网页上与大家分享。但为了达到教学的目的，学生应事先将解说的脚本请其他同学审读反馈，并给老师过目、指导，然后改进。

7. 结语：就地取材、勇于尝试、不断修正

谢天蔚（2012）指出，教育技术的潮流向着云计算和移动技术两个方面发展。可以预见，视频资源将越来越不受存储空间的限制，无论是个人录像还是网络资源，都可随时随地调出播放。自制数码视频短片、选择网络视频及影视片段已经非常便捷，因此技术层面的问题已经不再使师生们望而却步。这就使我们有了更多选择。一方面，我们期待着面向各种程度、针对各种技能的中文数字化视频素材库迅速建立起来，实现“交际项目－话题内容－语言形式－场景提示”有机结合， 从而有效地促进汉语教学质量的提高（郑艳群，2010）。但另一方面，我们不能消极等待，而需要主动跳出传统教学的框架，打破固有的思路。正如我们数码时代的学生一样，数码时代的教师应融入时代潮流，勇于尝试新工具、试用新资源，也勇于不断地修正我们习惯的教学方式，创造条件来加速学生的语言技能的发展提高。我们的教学方式和语言学习环境会随着我们的尝试逐步优化，也许会更加灵活地“就地取材”，更加多元化，更有创建性，从而也更加适应数码时代的学习、工作的需要。

参考文献

范捷颀. (2008). 浅谈高年级多媒体教学中多媒体教学信息的有效呈现即教师的角色与作用. In D. Xu et al (Eds.), *Proceedings of the 5th International Conference and Workshops on Technology and Chinese Language Teaching* (pp.79-91). University of Macao.

刘宇明. (2008). 多媒体影视资料在课下作业中的应用. In D. Xu et al (Eds.), , *Proceedings of the 5th International Conference and Workshops on Technology and Chinese Language Teaching* (pp.196-199). Macao: University of Macao.

谢天蔚. (2012). 在虚拟世界进行汉语教学的工具 (Tools for teaching Chinese in the virtual world) In D. Xu et al (Ed.) *Technology and Chinese Language Teaching in the U.S. -2012-* (pp. 3-14). Beijing: China Social Sciences Press.

郑艳群. (2010). 多属性标注和多媒体化的汉语口语教学素材库建设及应用 (Construction and application of multiattribute-labeled and multimedia material database for oral Chinese teaching) In D. Xu, J. Da & P. Zhang (Eds.), *Proceedings of The 6th International Conference and Workshops on Technology and Chinese Language Teaching* (pp. 289-294). The Ohio State University.

郑艳群. (2012). *对外汉语教育技术概论*. 北京：商务印书馆.

Altman, R. (1989). *The video connection: Integrating video into language teaching*. Boston: Houghton Mifflin Company.

Berk, R. A. (2009). Multimedia teaching with video clips: TV, movies, YouTube, and mtvU in the college classroom. *International Journal of Technology in Teaching and Learning, 5*(1),1–21. Retrieved from http://www.sicet.org/journals/ijttl/issue0901/1_Berk.pdf.

Da, J. & Li, F. (2008). Enhancing CFL instruction with video and web-cased interactivity. in D. Xu et al (Eds.), *Proceedings of the 5th International Conference and Workshops on Technology and Chinese Language Teaching* (pp.70-71). Macao: University of Macao.

Educational Broadcasting Corporation. (2004). Constructivism as a paradigm for teaching and learning. Retrieved from http://www.thirteen.org/edonline/concept2class/constructivism/index_sub2.html.

Fujioka-Ito，N. (2009). Enhancing proficiency level using digital video. *ERIC.* Retrieved from http://eric.ed.gov/?id=ED503996.

Homstad, T., & Thorson, H. (1996). Using writing-to-learn activities in the foreign language classroom. *Interdisciplinary Studies of Writing, Technical Report Series, No. 14.* Retrieved from http://writing.umn.edu/isw/assets/pdf/publications/Homstad_Thorson96.pdf.

Kitajima, R., & Lyman-Hager, M. A. (1998). Theory-driven use of digital video in foreign language instruction. *CALICO Journal , 16*(1), 37-48. Retrieved from https://www.calico.org/memberBrowse.php?action=article&id=639.

Kupler, C. (2008). Learning and teaching Chinese through digital storytelling: Process and outcome. In D. Xu et al (Eds.), *Proceedings of the 5th International Conference and Workshops on Technology and Chinese Language Teaching* (pp.143-144). Macao: University of Macao.

Lockett , M. L. (2011). Using storytelling to facilitate leaning English as a foreign language. *The Twentieth International Symposium on English Teaching.* Retrieved from http://www.mikelockett.com/downloads/ETA%20Paper%20for%20PAC%20Conference.pdf.

Nikitina, L. (2010). Addressing pedagogical dilemmas in a constructivist language learning experience. *Journal of the Scholarship of Teaching and Learning*, *10*(2), 90-106. Retrieved from http://files.eric.ed.gov/fulltext/EJ890728.pdf.

Prensky, M. (2009). Make those You Tubes! Retrieved from http://www.marcprensky.com/writing/.

Shrum, J. L., & Glisan, E. W. (2010). *Teacher's handbook: Contextualized language instruction.* Boston: Heinle, Cengage Learning.

Stempleski, S., & Tomalin, T. (1990). *Video in action: Recipes for using video in language teaching*. New York: Prentice Hall.

Wang, Y. (2008) Helping advanced learners become proficient in narrative writing through web-based videos and online exercises. In D. Xu et al (Eds.), *Proceedings of the 5th International Conference and Workshops on Technology and Chinese Language Teaching* (pp.243-246). Mcao: University of Macao.

Xu, D. (2003) A new software for DVD-based film studies in Chinese. Presentation given at the *Conference on Chinese Language Instructional Materials* at University of Howaii, July 28.

Xu, D. (2009). Incorporating DVD into Powerpoint for language and film studies instruction. *Journal of the Chinese Language Teachers Association, 44*(1), 103-123.

Zhang, P. [laoshilink.org] (2008) *Divorce*? Retrieved from http://laoshilink.org/laoshilink/youTube_lihun.html.

Zhang, P. (2009). Video Podcasting: Perspectives and Prospects for Mobile Chinese Learning. *Journal of the Chinese Language Teachers Association, 44*(1), 51-67

Zhang, P. (2011). Using VoiceThread to boost proficiency development: Performance-based activity design (利用 VoiceThread 提升语言技能——注重能力表现的活动设计**).** *Journal of Technology and Chinese Language Teaching, 2*(1), 63-80. Retrieved from http://www.tclt.us/journal/2011v2n1/zhang.pdf.

What can a smartphone offer to learners of Chinese?[1] (智能手机能为中文学习者提供什么？)

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Abstract: This article describes an experiment with integrating smartphones into a university's introductory Chinese-language classroom. A summary of the use of the smartphone as a tool for teaching and learning is provided followed by the instructor's observation and reflections as well as learners' perception after a trial run. Finally, recommendations and suggestions are offered for further use.

摘要：智能手机能为中文学习者提供什么帮助？针对这一问题，作者在大学第二学期的初级中文班作了初步尝试。本文首先描述该尝试的概况，然后报告教师的观察反思及学生的反馈意见。文章最后为今后的实践提出建议。

Keywords: Smartphone, Chinese Language Teaching

关键词：智能手机，中文教学

1. Introduction

As documented by the American Foreign Service Institute regarding the number of hours required in order to achieve proficiency, it is a well-known fact that learning Chinese as a foreign language (CFL) can be challenging to English-speaking learners (Stewart and Wang, 2005). For beginners, speaking Chinese with correct pronunciation is a daunting task due to the distinctive tonal features of the language. Furthermore, identifying logographic characters so as to learn to read and write is even more formidable. John DeFrancis regarded learning to speak Chinese is as difficult as speaking French but he claimed in his book, *The Chinese Language: Fact and Fantasy*, that for native English speakers, "It is in the traditional writing system that the greatest difficulty is encountered." (DeFrancis, 1984, p. 52). In search for effective ways towards ameliorating these two difficulties, one accepted solution is to integrate technology into

[1] The author gratefully acknowledges the strong support from the Teaching, Learning, and Technology Center at Seton Hall University for providing Windows Phones to all students in the course. Special thanks should go to Wendy Sue Williams, Director of Language Resource Center at Seton Hall University for her great assistance throughout this project. Sincere thanks to the JTCLT reviewers for suggestions and comments on the revision of this article. All remaining errors are mine.

the learning process. For example, Chen (2005) shows that inputting Chinese characters using a web-based Chinese-learning program can conveniently but effectively ease the burden of associating the sound of a word with its meaning and "look." In Xu and Jen's (2005) empirical research, they found that students using the "penless" computer application performed far better not only in reproducing Chinese characters, but also in speaking, listening and reading.

Since Apple released iPhones in 2007, the smartphone industry has advanced considerably. As a result of multiple functionality and moderate affordability, owning a smartphone is commonplace. Kurtz (2012, p. 9), citing data from the Pew Research Center, pointed out that over a third of all adults in America own a smartphone of some kind. More impressive is Lytle's (2012) observation that 69% of university students own a smartphone. A similar percentage of foreign language students at the University of Colorado in Boulder was reported by Simon and Fell (2012). At Seton Hall University where the author teaches, the annual 2013 survey indicates that 82.9% of its undergraduate students claim to own either a smartphone or PDA (Seton Hall University, 2013). What is amazing is that, of foreign-language students surveyed by Simon and Fell (2012), 60% already started using smartphones for language-learning purposes, mostly in terms of either looking up dictionaries or doing translation (Simon and Fell, 2012).

While smartphone technology is fairly emerging as compared with other mobile devices such as laptops or PDA, research has been conducted to examine its potentials in foreign language education. For example, Godwin-Jones (2011a) reported the use of smartphones in language learning, including apps for the different types of smartphones (i.e., Apple iPhone, Google Android Phone, and Microsoft Windows Phone). He also noted that smartphones are ideal for individualized informal learning (Godwin-Jones, 2011b). Kurtz (2012) summarized several benefits of integrating mobile phones in language classrooms based on his literature review in MALL (Mobile Assisted Language Learning): which range from "learning enjoyment and motivation to personalized informal learning, social interactivity, context sensitivity, and immediacy" (Kurtz, 2012, p. 21). Zeng (2012) is the only published study that the author is aware of which examines the application of mobile technology in Chinese-learning classroom. In the article, the high-school Chinese-language teacher demonstrated how he integrated Palm Treo smartphone with Chinese input, handwriting and dictionary software in his Chinese classroom.

As more college students start to own smartphones and as more apps are developed for foreign language learning, it will be necessary to ask questions that explore what smartphones can offer to learners of Chinese. These include: How can smartphones be implemented in Chinese language classroom? Are there any pedagogical benefits by using the smartphone in teaching and learning Chinese? What should the instructor do in order to enhance the learning process? What activities can be assigned for students to do in and outside of the classroom? What are the learning experiences with smartphones? To this end, the author describes the experiment completed in Spring 2013 with a group of university students learning introductory Chinese in the second semester. In other

words, the author examined the impact of ubiquitous mobile technology on the learning environment for Chinese language teaching and learning.

2. The Experiment

In Fall 2012, for trial purposes, Seton Hall University provided each of the incoming freshmen with a Nokia Lumia 900 smartphone running Windows Phone and cloud services through Office 365 together with either a Samsung Series 9 Slate PC or a Samsung Series 5 laptop running Microsoft Windows. By launching this program, the University, based on its 17 years of Mobile Computing Program, aimed at further "establishing a state-of-the art technology ecosystem to enhance the living and learning environment for the class of 2016" (Landry, 2012). As part of this exciting program was the opportunity for faculty to examine the potential of the new digital tool in teaching different subjects. Inspired by the ubiquity and convenience of smartphones, the author was particularly interested in exploring whether smartphones can be used to assist beginning learners of Chinese with respect to the aforementioned learning issues, i.e., the difficulty with tone acquisition and character learning. In the following, the procedures of smartphone distribution and app installation are introduced first, followed by a description of how smartphones were used in and out of class.

Each of the students in the Introductory Chinese II course (including freshmen, sophomore, and juniors) was provided with a Nokia Lumia 900 smartphone running Windows 7.[2] A 45-minute orientation session was scheduled at the end of the Add/Drop period. Other than synchronizing login to the school network on the phone so that students could send and receive emails just as they did on laptops, students were guided to configure the setting so as to have the Chinese keyboard, which would enable them to either key in Chinese characters or input Chinese by handwriting. For English-speaking learners of Chinese, these keyboard features are very helpful when learning how to write characters. Furthermore, students were also assisted with downloading the four free basic apps: (1) **Tip Tap Tones**, an application to practice Chinese TONES; (2) **Chinese Pinyin**, an application that provides the capability to tap to hear the pronunciation of all the possible Chinese syllables; (3) **Engkoo App**, a English-Chinese and Chinese-English dictionary; (4) 武写, a game to learn to write Chinese characters (see Appendix A for the instructions on configuration and installation). The goal of this orientation was two-fold: it helped students to set up so that they can start immediately to use the programs while inculcating them with the notion that the phone was provided only for language learning purposes and that they were required to bring it to class throughout the semester.

Besides habituating students to the regular use of smartphones in class, a second objective is their use outside the classroom. For reflection purposes, the author kept detailed journals on the use of smartphones throughout the semester. For demonstration,

[2] At the end of Fall 2012, all the freshmen returned their university phones back to the school when the trial was over. So for this experiment which started in Spring 2013, a distribution of the smartphone had to be re-arranged.

Table 1 lists some instances of the journals, arranged in terms of what was done, and what the teaching and learning objectives were.

Table 1 Selected Uses of Smartphones inside the Classroom

Things Done on the Smartphone	Objectives
Feb. 4, 2013 a. Students completed the last question in Unit Test 1 by describing in Chinese a poster for the Year of Snake, which contains new words. b. Students tried Tip Tap Tone twice. c. Students wrote three sentences about themselves in a Word file, then sent to it themselves.	Using the **Engkoo** dictionary Practicing tones Getting students familiar with the function of Word File
Feb. 11, 2013 Students read a passage about how Chinese people celebrate New Year, (see Appendix B). For the new words, they looked up in a more user-friendly Chinese-English/English-Chinese dictionary, **KUAISHUO CHINESE DICTIONARY**, which they download the passage.	Engaging students to read with the aid of the dictionary, which provides pronunciation.
Feb. 13, 2013 Students tried handwriting the words learned: 人，好人，老人，大人，小人, then they completed Quiz 4 by doing the following: a. Handwriting the three words in Chapter 6-II, 说， 下个，帮 b. Keying in the words, 练习，准备，跟，见面，回来 **c.** c. Using **KUAISHUO CHINESE DICTIONARY** to find the Chinese translation for the two English words, *but, must*	Practicing handwriting characters Practicing inputting characters Practicing looking up English words in the dictionary
Feb. 18, 2013 a. Using **TIP TAP TONE** (2min): students did this individually b. b. Using **CHINESE PINYIN**: The instructor gave *pinyin*, and students located it in the app, and tap it. If the student selected a right syllable, the instructor would know whether that is correct or not.	Practicing tones Warming up with Chinese PINYIN to prepare students for doing future quizzes using the app
Feb. 20, 2013 Students did Quiz 5 through **CHINESE PINYIN**: they listened to the words pronounced by the instructor, located them in the app, and tap it.	Helping students distinguish the pairs: *shuo* vs. *shou*; *zhen* vs. *zheng*; *zhen* vs. *shen*
March 18, 2013 Students wrote down what they did for a day of their self-selection. Students then downloaded **DIARY**,	Engaging students to develop writing skills

installed the app, and put in their journal into the diary.	
March 27, 2013 Students learned new words on different types of clothes, and currency for different countries in **Speak Chinese** & **China Finance**	Learning and expanding vocabulary
April 1, 2013 Students reviewed the vocabulary of color, clothes and currency in **Learn Chinese Free**	Reviewing Chinese words on color, clothes & currency.
April 10, 2013 With the dictionary, students did the activity *The Price is Right*	Practicing speaking price

In addition to the regular use of smartphone inside the class, three small-scale projects were assigned for completion outside the classroom. One was to call the instructor to ***Book an Appointment***. To help students with this assignment, the following two activities were accomplished in class:

1. Work in Pairs
A: A student learning Chinese
B: Li Laoshi, the teacher of Chinese

Student A did not attend the Chinese class last Wednesday, because s/he was sick (b ìng le). S/he wants to book an appointment with B, *Li Laoshi*, to ask some questions about Chapter 6 (D ìLi ù K è) that was just learned.

2. Work on your own
You have some questions to ask your Chinese-language teacher. You call her/him to book an appointment. Unfortunately, s/he is not in the office. You need to leave her/him a message, telling her/him your name, the time when you want to have a meeting with her/him, and the reason why. If you'd like the teacher to call you back, please be sure to leave your phone number.

The two activities were designed to prepare students with a script about what to say if the teacher picked up the phone and what to say if the teacher was not available. The instructions for this project are as follows: *Call Chen Laoshi at 862-252-4285 between 4:30 p.m. on February 18 and 12:00 p.m. on February 20 for an appointment. If the teacher is not available, please leave a message. Your message must include your name as well as when and why you want to see the teacher*.

The second mini project is ***Interview a Friend Learning Chinese***. To prepare students for this project, the instructor asked them, while in class, to locate 5 to 10 verbs, thinking about how to use the verbs to describe how well someone did something using the structure V + de + adj./adv. Two weeks were allocated for students to finish this project. Below are the instructions for this assignment:

1. *Write 5 to 10 verbs that are related to learning Chinese.*
2. *Recall and review all the questions that you have learned so far.*
3. *Prepare 5 to 10 questions using the above 5 to 10 verbs.*
4. *Practice your questions until you are fluent.*
5. *Locate a friend/classmate who is learning Chinese.*
6. *Video tape the interview.*
7. *Ask him/her the 5 questions prepared in #3.*
8. *Upload your video to Blackboard – Discussions – Interview.*

Related to the interview is a third project: ***Writing about Your Friend's Experience with Learning Chinese***. For this assignment, students were required to write up the interview they had completed. That is, students need to organize the answers from the interviewee into a cohesive and logical paragraph. To make the description both personal and interesting, they were also instructed to add a couple of lines at the beginning to introduce this friend. The composition must be written in Chinese characters, but it could be done either in handwriting using pen and paper, or using the smartphone/computer. The project was due in two weeks.

3. Discussion and Conclusions

This experiment on the use of smartphones suggests a few benefits. First of all, students can easily look up new words from the phone. The Engkoo app that students installed at the orientation was developed by Microsoft Research; it is a useful English-Chinese and Chinese-English dictionary.[3] Kuaishuo Chinese Dictionary that was later downloaded provides the pronunciation for each item. In addition, this dictionary app offers compounding expressions that contain the word in question. These compounds are the vocabulary from HSK Levels 1 and 2. Simple and easy to use, this dictionary is readily and immediately accessible thus serving as a virtual teacher to get meaning and pronunciation. This feature was greatly enjoyed by students as reported in the Spring 2013 issue of *Asian Voice Newsletter*, published by Asian Studies Program, Department of Languages, Literatures and Cultures, Seton Hall University:

> *"Thank goodness for the accessible dictionary." -- Student 1*
> *"This technological learning method allowed everyone to practice writing and speaking Chinese even when Dr. Chen was not available. There have been many times that I have been confused with the Chinese language and had my questions answered within minutes. The apps available for us to download helped us expand our knowledge of the Chinese language. Looking back now, I realize that I learned words in Chinese that would be helpful in the work field."*
> *-- Student 2*

[3] At the time of writing this article, the app was already phrased out.

There are many apps that can provide students with the means to practice different linguistic skills. For instance, the **Tip Tap Tone** assists students in brushing up on their ability to perceive and distinguish tones, while **Chinese Pinyin** helped them to orally tease apart different syllables. Other apps—such as **Learn Chinese**, **Speak Chinese**, **China Finance**, and **Chinese Business**— enables students to review the words they have learned, and expand beyond the existing vocabulary. This is confirmed in the following comment from the aforementioned student.

> *"'Tip Tap Tones' is a timed game that challenges you to memorize tone graphs and pronounce tones, and 'Learn Chinese' has great vocabulary practice.'Kuaishuo' has translation between English, Chinese characters, and Pinyin which makes it an invaluable dictionary app. The variety of applications offered by the Windows smartphone made it really helpful for me as a student studying my first year of Chinese. Having the smartphone helped me practice my pronunciation and vocabulary in a fun format." -- Student 1*

All the above combine to engage students because the variety of apps enhance their learning with the element of play, of having fun.

However, despite these benefits, this trial experiment revealed a few limitations. First, students who owned smartphones tended not to remember to bring in the school phones to the classroom. Those who did bring in the phone often forgot to bring in the power cable to re-charge the battery. This happened frequently throughout the semester. As a result, when working in pairs, the interruption annoyed the partner student. A second problem was that the smartphone had no capability to play audio files in the MP3 format. As part of the course requirements, students were asked to listen to the audio files, which were uploaded onto Blackboard (the learning management application). At this time, it is not clear whether it was this Windows phone that could not play the files. Relatedly, a third problem was a defect in Windows phones because they cannot be connected to an LCD projector so as to display the image and sound to the screen in the classroom. The fourth limitation was the fact that as compared to iPhone and Android Phones, there were much fewer apps developed for Windows phones. Simon and Fell (2012) recommended quite a few useful apps for learners of Chinese. However, none of them is for Windows phones.

Other than the teacher's observation, on the last day of class, 19 students took part in an exit survey evaluating the course that included three questions about using smartphones. Responding to the question *What is your learning experience with the smartphone for this semester,* of the total 19 students, 4 selected *Very helpful*, 12 chose *Helpful to some extent*, and 2 selected *Not helpful*. One student provided his/her own option: *Not Clear*. In other words, 84% found smartphones helpful to some degree. For the question *How often did you use your smartphone to learn Chinese*, 5 said *Very often*, 13 selected *Only occasionally*, and 1 student said *Never*. Although only 26% used smartphones "Very often," the majority answered *Yes* when asked *Do you recommend the use of smartphones in all introductory Chinese classes.* Students who gave a positive

answer used keywords like "excellent," "helpful," "useful outside of the class," "effective for tones" "good for learning writing," "a good addition to learning," "interesting because of games," "dictionary." Of the remaining 4 who answered *No*, one student said that using the smartphone to learn Chinese is "a burden," one answered that s/he only "used textbook and reading" to study Chinese. The other two did not give any reasons.

This experiment showed that the majority of our students who were dubbed as "digital natives" (Presenky, 2001, 2008), seemed to be proficient in using smartphones for personal use, e.g., texting friends, listening to music. Yet, they were not ready to use the tools for educational purposes. As required by the 21st Century Skills, students should learn to be able to "use technology as a tool to research, organize, evaluate and communicate information" (Partnership for 21st Century Skills, 2009). We suggest that instructors encourage students to explore their mobile devices for educational purposes. To that end, the instructors, as "digital learners" in the sense of Presenky (2001, 2008), should try to follow the technology trend so as to become updated. For those who wish to try to incorporate the use of smartphone in teaching Chinese, two suggestions are in order. First, refer to the resources about smartphones provided in the references. For apps on other types of smartphones, see the links provided by Godwin-Jones (2011a), and Simon and Fell (2012). Second, design and develop in-class and out-of-class activities based on clearly defined curricular goals. To avoid being overwhelmed by details of various apps, ask yourself: What are the teaching and learning goals of using smartphones? By answering this question, you can then focus only on the pedagogical aspects that are needed to achieve the goals. As emphasized repeatedly by language professionals (e.g., Chen, 2005, 2012; Oxford and Oxford, 2009; Xie and Yao, 2009), technology is not an end, but a powerful means to help achieve what could not reach otherwise, or could not achieve so effectively.

References

Chen, D. (2012). Digital Storytelling in Chinese: a Technology-Assisted Project. *Journal of Chinese Language Teaching and Research in the U.S.*, 5, 150-257.

Chen, D. (2005). Empowering Chinese Language via Technology. *Global Chinese Journal on Computers in Education*, 3, 159-182.

Godwin-Jones, R. (2011a). Emerging Technologies Mobile Apps for Language Learning. *Language Learning & Technology*, *15*(2), 2–11. Retrieved f from http://llt.msu.edu/issues/june2011/emerging.pdf.

Godwin-Jones, R. (2011b). Emerging technologies: Autonomous language learning. *Language Learning & Technology*, *15*(3), 4-11. Retrieved f from http://llt.msu.edu/issues/october2011/emerging.pdf.

Kurtz, L. M. (2012). *Learning from twenty-first century second language learners: A case study in smartphone use of language learners*. M.A. thesis, Iowa State University.

Landry, S. (2012). Seton Hall University Launches SHUmobile, the Evolution of the Mobile Computing Program. Retrieved from http://blogs.shu.edu/doit/2012/08/seton-hall-university-launches-shumobile-the-evolution-of-the-mobile-computing-program/.

Lytle, R. (2012). Smartphone Use among College Students Concerns Some Professors. Retrieved from http://www.usnews.com/education/best-colleges/articles/2012/03/21/smartphone-use-among-college-students-concerns-some-professors.

Oxford, R., & Oxford, J. (2009). (Eds.). *Second language teaching and learning in the net generation* (pp. 1-8). National Foreign Language Resource Center, University of Hawaii.

Partnership for 21st Century Skills. (2009). *P21 Framework Definitions.* Retrieved from http://www.p21.org/storage/documents/P21_Framework_Definitions.pdf.

Prensky, M. (2001). *Digital natives, digital immigrants*. Retrieved from http://www.marcprensky.com/writing/Prensky%20-%20Digital%20Natives,%20Digital%20Immigrants%20-%20Part1.pdf.

Prensky, M. (2008). Engage me or enrage me. Keynote address delivered at the Northeast Conference on the Teaching of Foreign Languages, New York.

Seton Hall University (Teaching, Learning, and Technology Center). (2013). The Mobile Computing Assessment Program: An overview. A report distributed at Faculty Senate IT Committee, Seton Hall University.

Simon, E & Fell, C. (2012). Using Mobile Learning Resources in Foreign Language Instruction. Retrieved from http://www.educause.edu/ero/article/using-mobile-learning-resources-foreign-language-instruction .

Stewart, V and Wang, S. (2005). *Expanding Chinese Language Capacity in the United States*. New York: Asia Society.

Xie, T., & Yao, T. (2009). Technology in Chinese Language Teaching and Learning. In M. Everson and Y. Xiao (Eds.), *Teaching Chinese as a Foreign Language* (pp. 151-172). Boston: Cheng & Tsui.

Xu. P., & Jen, T. (2005). "Penless" Chinese Language Learning: A Computer-Assisted Approach. *Journal of the Chinese Language Teachers Association*, *40*(2), 25-42.

Zen, Y. (2012). How to use English Version Palm Treo Smartphone to teach Chinese. *Journal of Chinese Teaching and Research in the U.S.*, 5, 172-178.

Appendix A

Instructions for Orientation

A. Configuration and Installation

a. Settings
b. Select Chinese

B. Installation of Apps

To prepare, instructions like the following were provided to the students.

a. Go to http://www.windowsphone.com/en-us/store/search?q=chinese
   Or click on the phone, and type in **Windows phone app store**
b. Select **Windowns Phone Apps+Games Store**
c. Click on the top right of the screen, and type in **Chinese**
d. Click See all results for "Chinese"
e. Select **Tip Tap Tones**, an application to practice TONES , and install it.
f. Click on the phone, and type in **Chinese Pinyin APP on Windows Phones**
g. Select Chinese Pinyin, an application to practice PINYIN, and install it
h. Click on the phone, and type in **Engkoo app**
i. Select  , a English-Chinese and Chinese-English dictionary from Microsoft Research, and install it
j. Select 武写,  , (a game to learn to write Chinese characters), and install it.
   Note: 武写 will be placed inside **XBOX LIVE** after the installation.

Appendix B

Reading Passage for February 11, 2013

中国人过新年
Chinese People Celebrate Chinese New Year

中国人的新年是阴历（yīnlì）的一月一号。除夕（chúxī）每个人都回家和家人一起吃年夜饭（ni ányèf àn），他们吃鱼（y ú）、吃饺子、吃春卷（chūnjuǎn）、吃年糕（niángāo）。吃了饭以后他们一起聊天、看电视，有时候也唱歌、跳舞、看电影。他们还常常放鞭炮（fàng biānpào）。阴历的一月一号也叫春节（chūnjié），大家见了面，都说，"新年好！"，"新年快乐！" "恭喜、恭喜、恭喜发财（fācái）！"。小孩子很喜欢春节，因为爷爷（y éye）、奶奶（nǎinai）、姥爷（lǎoyé）、姥姥 （lǎolao）、爸爸、妈妈都给（gěi）他们红包（hóngbāo），红包里（lǐ）放了压岁钱（yāsuìqián）。

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