



# **Journal of Technology and Chinese Language Teaching**

**Volume 7 Number 2, December 2016**

**二〇一六年十二月 第七卷第二期**

**ISSN: 1949-260X**

**<http://www.tclt.us/journal>**



科技与中文教学

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**Journal of Technology and Chinese  
Language Teaching**

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*A peer-reviewed online publication with in-print supplement*  
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## Digital Vocabulary Competition as Motivator for Learning in CFL Classrooms (数字化词汇比赛作为外语汉语教室中的学习动力)

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**Abstract:** Existing literature indicates that there is an urgent need both for second language acquisition (SLA) theory informed research in game-based learning (Reinders, 2012) and for vocabulary instruction research with real students in real classrooms rather than in short-term experimental settings (Spada, 2005). Under the framework of motivational dynamics in language learning (Waninge, de Bot, & Dornyei, 2014) and designing a course as a multiplayer classroom (Sheldon, 2012), the researcher investigated an innovative pedagogy in a college level beginners Chinese course by using Quizlet<sup>1</sup>, a web 2.0 flashcards website. The results demonstrate that vocabulary game competitions promote engaging vocabulary learning. The research proven pedagogy draws attention to strategies in tutorial CALL vocabulary instruction research and praxis for motivation and learning in an intact classroom. The findings shed light on the Directed Motivational Current (DMC) model by Dornyei, Muir and Ibrahim (2014) that stimulates second language learners to perform to full potential.

**摘要:** 现有文献表明目前有两个领域急需研究: 一是在二语习得理论指导下的游戏式学习研究(Reinders, 2012); 二是以真实教室真实学生为研究载体, 而非在短期试验性环境中进行的词汇教学研究(Spada, 2005)。基于语言学习动机多样性的理论框架(Waninge, de Bot, & Dornyei, 2014) 和多人游戏式教室的课程设计理念(Sheldon, 2012), 本研究利用目前流行的电脑辅助语言学习网络工具 Quizlet 为教学媒体, 探索大学初级汉语词汇教学法。教学研究结果表明词汇游戏比赛能促进学生自主学习词汇。本教学研究对使用电脑辅助语言学习工具的词汇教学策略和在正规教室中促进学习动机的教学实践有借鉴作用。其研究结果与学习动机控制理论(Directed Motivational Current, Dornyei, Muir, & Ibrahim, 2014) 相符, 旨在刺激二语学习者发挥最大的学习潜力。

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<sup>1</sup> Quizlet (<https://quizlet.com/>) is an online flashcard platform that offers free study tools and apps for students and educators. The varieties of study modes and vocabulary games meet diverse needs and/or learning styles of students in class

**Keywords:** Web 2.0 tool, CALL, Chinese vocabulary instruction, language learning games, learning motivation

**关键词:** 网络 2.0 工具, 电脑辅助语言学习, 中文词汇教学, 语言学习游戏, 学习动机

## 1. Introduction

New technologies have changed the way we teach foreign languages in the 21<sup>st</sup> century. With the accessibility of language learning technologies, opportunities for language learning outside of the classroom have become an increasingly integral part of instruction (Stauffer, 2014; Xu, 2015). Such integration is, nevertheless, the result of implementing computer assisted language learning (CALL) in language classrooms. A general definition of CALL is “any process in which a learner uses a computer and, as a result, improves his or her language” (Beatty, 2003, p.7) or what Egbert simply (2005) puts, “learners learning language in any context, with, through, and around computer technologies” (p.4). The growth of educational games has largely impacted the procedures of learning (Shin, Sutherland, Norris, & Soloway, 2012).

Researchers pointed out the urgent need both for second language acquisition (SLA) theory informed research in game-based learning (e.g., Reinders, 2012; Peterson, 2013) and for vocabulary instruction research in intact classrooms (Laufer, 1986). Vocabulary acquisition research was neglected in the SLA research literature before 1980s (Meara, 1980), then developed as child steps (Laufer, 1986), and revived in recent years in game-based vocabulary learning (e.g., deHaan, 2005, deHaan, Reed, & Kuwada, 2010; Zheng, Bischof, & Gilliland, 2015). Researchers like Yamamoto (2014) and Vandercruyse, Vandewaetere, Cornillie, and Clarebout (2013), however, have noted that limited qualitative research exists about learner perspectives on the use of foreign language learning games. Few studies have researched how CALL is practically and instructionally employed in Chinese as foreign language (CFL) instruction (Xie & Yao, 2008; Xu, 2015).

To better understand how games can promote vocabulary learning inside and outside the classroom, this article explores qualitatively how web-based competitions pedagogy in a college level beginners CFL course can (1) inform routine vocabulary instruction, and (2) motivate learners to learn vocabulary through gameplay. Through course reflection, learner feedback, vocabulary competitions, and tests. In the last, the author reports results of pedagogical explorations and concrete examples of utilizing Quizlet vocabulary games in CFL day-to-day vocabulary instruction.

## **2. Literature Review**

### **2.1 Gamification: Promoting Competition and Motivation**

Researchers have identified that gamification provides players (learners) with “the sense of engagement, immediate feedback, feeling of accomplishment, and success of striving against a challenge and overcoming it” (Kapp, 2012, p.xxii). Thus, the social dimension of competition-driven educational games motivates students to participate in learning activities, through peer competition (Chen, 2014). Recent research indicated that game competition, especially competitive situation in gamification, motivates students to learn and helps maintain student interest and becomes an important force in learning (Giota, 2010). Vandercruysse et al. (2013) insightfully pointed out that game competition provides an additional challenge that results in greater attention and excitement, or improved motivation to learn.

Although constructive competition can be an effective pedagogical means to motivate students to go beyond their own expected abilities, the scope offered by the learning environment and the opportunities teachers have to facilitate competition are purposefully arranged (Sheridan & Williams, 2011). While games have become more affordable and the above research reveals the motivational aspects of games, it has been suggested that current research should focus on how these approaches can be incorporated in SLA classroom instruction (Tobias, Fletcher, Dai & Wind, 2011). Researchers such as Vandercruysse et al. (2013) discovered that there is a major lack of research and evidence of effectiveness regarding the added value of game-based learning as well as regarding the students’ learning outcomes and motivation. Even rarer is research regarding learner perspectives on the uses of foreign language learning games, particularly pedagogical evidence of how such games can influence instruction in a formal language program.

### **2.2 Vocabulary Language Gains with Digital Gaming**

Vocabulary instruction has been a major objective of computer-based instruction since computer use expanded in education in the 1980s (Beatty, 2010; Ma & Kelly, 2006). The reason might be that it is challenging to teach all vocabulary through classroom instruction alone, considering the quantity of words students needed to learn and the limited instructional time available (Kamil & Taigague, 2011). With the emerging development of CALL, many technology- or game-incorporated vocabulary learning systems are designed to make vocabulary learning more interesting, more effective, and easier to remember (Chiu, 2013; Smith et al., 2013; Yip & Kwan 2006). Researchers found that learners gain significantly more vocabulary (Sundqvist & Wikstrom, 2015) or retain it longer/better (Neville, Shelton, McInnis, 2009) with technology enhanced learning or games in formal settings (Cobb & Horst, 2011; Fehr et al., 2012; Sundqvist & Wilstrom, 2015), incidental environment (Thornes, Fischer, & Lu, 2012), or through commercial computer games (Cobb & Horst, 2011).

Researchers also reported that multimodal exposures of vocabulary play an important role in facilitating vocabulary learning at lower levels (Bisson, van Hueven,



Conklin, & Tunney, 2013). Online vocabulary games not only strengthen students' intention in autonomous learning (Yip & Kwan, 2006) but also enhance learner's perceived perception, concentration, immersion, and knowledge improvement (Syahrir & Yusri, 2012). The gamified features in vocabulary learning that are self-paced, self-directed, and self-controlled keep students aware of their proficiency, making them agents of their own progress, and motivating them to engage in sustained play (Abrams & Walsh, 2014).

While technology- and game- enhanced vocabulary learning are effective to a certain extent, researchers (Ranalli, 2008; Rankin, Gold, & Gooch, 2006; Reinders & Wattana, 2012) identified that game plays are not effective for lower level language learners and inexperience gamers, when considering learner profiles. Competition may have negative impact on novice learners' performance and self-efficacy, and reduced performance (Vandercruysse et al., 2013).

### **2.3 Lack of Authentic Second Language Classroom Research**

Many second language (L2) classroom researchers prefer large-scale, cognitive-interactionist, (quasi)experimental research using classroom observations, questionnaires/interviews, and language measures (Nunan, 1991; Spada, 2005). Spada defined this trend in L2 research as laboratory SLA research. Such instructed SLA research collect data from outside of real classrooms in laboratory, simulated, and naturalistic settings. In genuine classroom-based research, an intact classroom setting suggests that "striving for generalizability...may not be a reasonable or appropriate goal for L2 classroom research" (Spada, 2005, p.334). Laboratory methodologies, according to Spada, are difficult, if not impossible, for teachers to duplicate in real classroom settings. Emphasis on lab settings and generalizability precludes teachers as researchers.

Unfortunately, laboratory SLA research is particularly evident in game-based language learning research. For instance, Zheng, Bischof, and Gilliland (2015) designed a two-hour vocabulary learning session during a quest-play game mediated in English between a Japanese student and a native speaker of English to investigate the affordance and effect of language games. Neville, Shelton, and McInnis (2009) conducted a three-day study for learner vocabulary retention, transfer, and attitudes toward the text-based game, reading a German short story and vocabulary homework based on the story. deHaan, Reed, and Kuwada (2010) utilized a music video game to study the effectiveness of interactivity on second language vocabulary recall. Aghlara and Tamjid (2011) conducted a longer laboratory SLA research in a 45-day experimental study among primary school learners with or without a digital game. Although all this research indicated positive vocabulary gains, game-based, exploratory vocabulary learning research supports game-design, not classroom instruction. It is hard for teachers to adopt or to implement it in a real language curriculum that supports their daily instructions. As such, "far more of classroom-based, as opposed to classroom-oriented studies" (Nunan, 1991, p.130) are needed in game-based L2 learning.

On reviewing instructed SLA research with technologies, Hubbard and Bradin Siskin (2004) argued that teachers should not neglect the benefits of tutorial CALL in L2 classrooms. According to them, the tutor role and/or tool role of tutorial CALL is “the implementation of computer programs...that include an identifiable teaching presence specifically for improving some aspect of language proficiency” (p.457). Instead of dismissing the tutorial CALL, Hubbard and Bradin Siskin (2002; 2004) called for bringing the marginalized tutorial CALL back to the mainstream of language education. Another important point they made is that, researchers and practitioners should change the dichotomous views of tutor/tool role of CALL and move from evaluation of tutorial CALL to teaching presence that includes evaluation along with other teacher roles in assessments. Researchers or practitioners should ensure that “CALL is an integral rather than separate component of the total program of instruction” (Robinson, 1989, p.132). Instead of describing the affordance of games and motivating functions, more research should be conducted to demonstrate what the games are used to achieve instructional goals (Tobias, Fletcher, Dai & Wind, 2011).

## 2.4 Promoting CALL in Vocabulary Instruction

Learning vocabulary is a task of the utmost importance for all foreign language learners. The National Reading Panel (2000) recognized the importance and effectiveness of using computers in vocabulary instruction and suggested examining the ability of computer technology to deliver vocabulary instruction.

The above reviewed research indicates a dearth in vocabulary instruction research in CALL. In this current study, there are several considerations to exploring the pedagogical gains in CFL vocabulary instruction with tutorial CALL, namely, Quizlet.

(1) Vocabulary learning is a necessary component of language acquisition yet is the least studied area in the SLA research (Laufer, 1986). If we want to promote learner-centered L2 teaching and learning, “... vocabulary instruction and consequent research into vocabulary learning are bound to gain importance” (Laufer, 1986, p.73).

(2) Vocabulary research literature notably lacks the qualitative understandings of what learners think when learning vocabulary (Yamamoto, 2014). [...] “learner perceptions of games have hardly been addressed and remain empirically underexamined” in game-based learning (Vandercruysse et al., 2013, p.930). Yamamoto’s (2014) research on learner perceptions proved that explicit, systematic routine of monitoring and reviewing vocabulary lists benefit both beginners and advanced language learners. Engaging users in games for vocabulary review and competition through CALL practice can promote that type of explicit yet engaging learning.

(3) Research about gaming has been marginally addressed in the SLA literature (Peterson, 2013). There is urgent need for SLA theory informed research in game-based language learning (Reinders, 2012). While CALL is appealing to practitioners in the SLA field (Hubbard & Bradin Siskin, 2004) and has pedagogical benefits, there is a lack of empirical research to support the gaming experience or “gains on standard proficiency measures of L2 development” (Cornillie, Thorne, & Desmet, 2012). Unfortunately, much

of the data from game-based research is collected outside of the classroom. Far more data are needed from intact classrooms (Spada, 2005) or classroom-based studies, instead of classroom-oriented studies (Nunan, 1991). Moreover, L2 classroom researchers should strive for helping teachers find connections and research findings that coincide with their day-to-day instruction (Spada, 2005).

### 3. Challenges of Teaching Chinese Language Vocabulary

Vocabulary instruction has posed a big challenge for Chinese instructors because CFL vocabulary instruction involves three aspects of learning: the shape (structure & stroke orders) of the characters, the sound (initial, final, and tone), and the meaning (Shen, 2004). Figure 1<sup>2</sup> demonstrates the many facets of vocabulary (Chu, 2005; Xu & Padilla, 2013) a Chinese language learner needs to navigate when learning a new word:

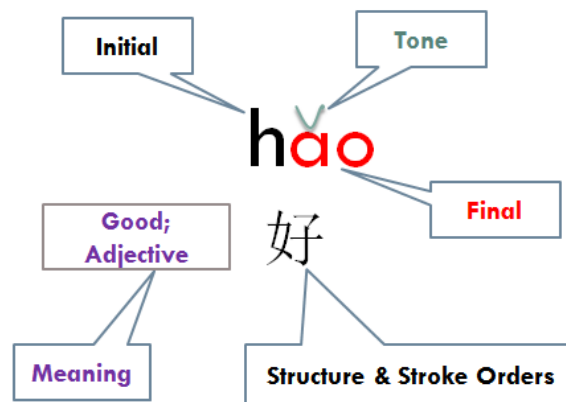
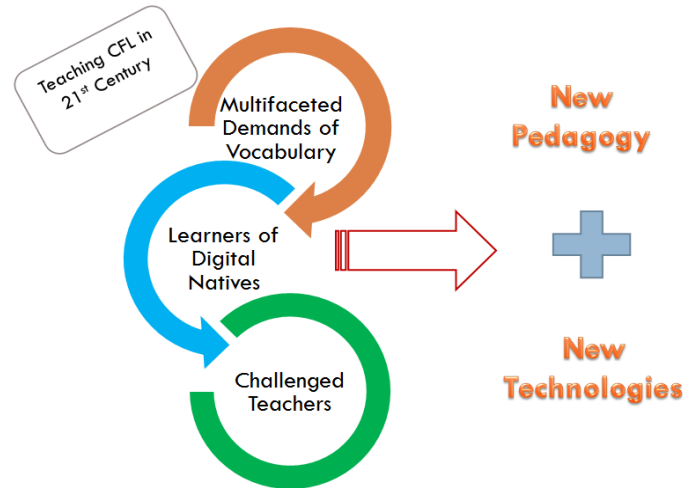


Figure 1: Elements of Learning a New Chinese Word

In addition, the particularities (e.g., the tone and the drawing of the stroke orders) in the new word are most CFL learners have never encountered in their native language systems. The multi-faceted requirements in Chinese vocabulary learning have delayed many students' mastery of reading and writing in Chinese language. It is therefore an ongoing challenge for all CFL instructors to find effective methods for vocabulary instruction (Xu, Chang, Zhang, & Perfetti, 2013; Xu & Padilla, 2013).

In the 21<sup>st</sup> century, even more challenging to CFL instructors is the profile of Chinese learners who are digital natives (Prensky, 2001). These learners view vocabulary learning as boring (Yip & Kwan, 2006). They expect their instructors to use technology for more engaging and meaningful learning activities (Arnold & Ducate, 2011; Tapscott, 1998). Figure 2 visualizes the challenges of teaching Chinese vocabulary in the 21<sup>st</sup> century digital age along with urgent needs every CFL teacher should consider:

<sup>2</sup> Figure 1 is created based on the concepts of Chu (2005), Shen (2004), and Xu & Padilla (2013).



**Figure 2: Challenges of Teaching Chinese Vocabulary Instruction in 21<sup>st</sup> the Century**

The multiple facets of Chinese language learning, namely, complexity of the language system, new generation of learners, and accessibilities of new technologies, have imposed challenges to CFL teachers. Researchers and practitioners agree that to teach the 21<sup>st</sup> century CFL learners, teachers need to find an efficient method to use computer/new technology to assist, promote, and/or extend learning beyond classrooms (Xu, 2015). The tutorial CALL features of Quizlet and the varieties of Quizlet games encouraged this researcher to explore the pedagogical effects of competition and to understand her student's perspectives of using CALL games in CFL vocabulary instruction. The following sections first discuss the theories that shape the pedagogical design, then the methodology of investigation and the results. The final section discusses the benefits of utilizing digital vocabulary game as a motivator in vocabulary instruction and the importance of continued investigations into vocabulary learning in instructed SLA and in the tutorial CALL.

#### 4. Theoretical Framework

The theory that guides this vocabulary instruction research with CALL is the motivational dynamics in language learning (Waninge, de Bot, & Dornyei, 2014). Under this framework, motivation is no longer seen as a stable variable in individual language learners, but continuously dynamic and changeable in the process of language development. Within a certain context, language learners may demonstrate an intense motivational drive to pursue a language learning task (e.g., learning vocabulary). Dornyei, Muir, and Ibrahim (2014) define such motivational drives as Directed Motivational Current (DMC) "which depicts unique periods of intensive motivational involvement both in pursuit of and fueled by a highly valued goal/vision" (p.9).

According to DMC, L2 motivation in the 21<sup>st</sup> century is a factor that changes over time at both the individual and the environmental level. The dynamic, emerging changes make it possible for the teacher researcher to direct the motivational current in instruction (Waninge, de Bot, & Dornyei, 2014). The heightened motivational state of individuals or

groups involved in a DMC is maintained through the deployment of a salient facilitative structure. When applied in L2 context, DMC stimulates learners to perform at the full potential in both short-term and long-term learning (Doiz, Lasagabaster, & Sierra, 2014; Dornyei, Muir, & Ibrahim, 2014):

[I]f the correct conditions can be engineered to allow motivational pathways to be created, a motivational jet stream will emerge that is capable of transporting individuals forward, even in situations where any hope of progress had been fading. Once a DMC is in place, through its self-propelling nature learners become caught up in this powerful flow of motivation and are played forwards towards to achieve their goals. (Dornyei, Muir, & Ibrahim, 2014, p.11)

An approach that also influenced this CALL study is the multiplayer game as classroom (Sheldon, 2012). Sheldon designed his course as a multiplayer game. Students play games in the real time, real world of the classroom, and the teacher as game master charts the game. The game competition (the quest) is wide open. The students (as players) have any number of decisions to make regarding time commitment, level of playing, and quests. In the multiplayer classroom, all students start from level one (letter grade F) in terms of learning. Through questing and crafting (i.e. the required learning tasks), students climb up to level twelve to get an A. The scaled experience points of the game are in accordance with letter grade scales throughout the semester. To win, students must acquire knowledge and demonstrate their learning in their final level of game play. Sheldon (2012) claims that the multiplayer classroom course design enhances student motivation, student attitude, and student performance. While learning as questers or game players, students engage with several times more learning content than they do in traditional classrooms. The competitive motivation and determination students demonstrated in the multiplayer classroom are ideal for vocabulary learning entailed in the Quizlet flashcard games.

## **5. Methodology**

### **5.1 Research Questions**

When designing an innovative vocabulary instruction qualitative research utilizing the Quizlet flashcard website, the research questions (RQ) are as follows: RQ1. To what extent did students like the Quizlet game competition and how did they perform in the vocabulary test? RQ2. What are students' perspectives regarding digital game competition in learning Chinese vocabulary?

The central idea for this innovation is to (1) turn routine vocabulary instruction into multiplayer game competitions, and (2) empower Chinese language learners who are digital natives to be constructivists in vocabulary learning. The focus of vocabulary instruction was explicit textbook vocabulary list learning by using the Quizlet flashcard

website. This investigative pedagogy spanned three semesters (from spring 2014 – spring 2015) in the same course Chinese I, consisting of different cohort of students.

## 5.2 Background of Study

Forty-six (N=46) college students who took Chinese I in three different semesters (N=13, spring'14; N=19, fall'14; N=14 spring'15) at a northeast private technological institute participated in this study. The purpose was to explore how tutorial CALL tools (namely, Quizlet games) can be utilized to promote day-to-day vocabulary instruction and participant L2 vocabulary acquisition. There were no repeating students in any of the three semesters. Most of the students did not have prior knowledge or formal instruction of the Chinese language. Each student was required to purchase a laptop upon admission to the institute. The instructional pacing was one new lesson per week. Students were expected to learn 15-24 new words in each lesson and recognize Pinyin, Hanzi, and English meanings of each word.

## 5.3 Data Collection

The data for this qualitative classroom research were collected from the same course, Chinese 1, taught in the three different semesters. Vocabulary instruction was driven by the facilitations of the teacher through the following pedagogical means in an integrated, cohesive flow over the week: (1) guided learning via mini lectures identical to all traditional vocabulary instruction for word meaning, pronunciation, and usage; (2) self-paced, self-regulated learning through Quizlet website before and after each class; and (3) competing with oneself and with other peers through the Quizlet vocabulary games asynchronously and in real class time. Assessments were dictations and Quizlet vocabulary game competitions when each lesson is complete. Additionally, four Likert scale questions and three open-ended questions were included at the end of each semester course survey to gauge what students thought about learning vocabulary digitally through CALL. The survey questions were:

1. The Quizlet website is useful for Chinese language vocabulary learning (1=strongly disagree; 5=strong agree).
2. I like Quizlet game competition (1=strongly disagree; 5=strongly agree).
3. I neither like nor dislike Quizlet game competition (1=strongly disagree; 5=strongly agree).
4. I do not like Quizlet game competition (1=strongly disagree; 5=strongly agree).
5. What did you gain from Quizlet self-paced study and class competitions?
6. What were you aware of when competing with yourself and with others?
7. What were your motivations to break the records of yourself and others?

## 5.4 Data Analysis

### 5.4.1 CALL/Quizlet Competitions

The Quizlet website has embedded four study modes: “Flashcards”, “Learn”, “Speller”, and “Test” and two vocabulary game plays: “Scatter” and “Space Race (now Gravity)”<sup>3</sup>. The Flashcards allow the teacher to input bilingual glosses and Pinyin into the vocabulary list of each chapter. Each mode of study and/or game play can configure new words for students to study the sound, shape, or meaning alone or combinations of any of the three. The varieties of vocabulary learning features allow language teachers to direct vocabulary learning by their instructional goals. Mini vocabulary learning lectures, Quizlet vocabulary competition, and vocabulary dictations were cohesively paced out in weekly pedagogical practices throughout the semester. The scores on Quizlet game competition and regular dictation were counted towards final grades. The scoreboards of the Quizlet games enable students to view his/her own progress as well as the names of peers who have higher or lower scores than the student player. Figure 3 and Figure 4 demonstrate screenshots of students’ Quizlet page and how the game competition mechanisms motivate students to quest for higher vocabulary test achievements.

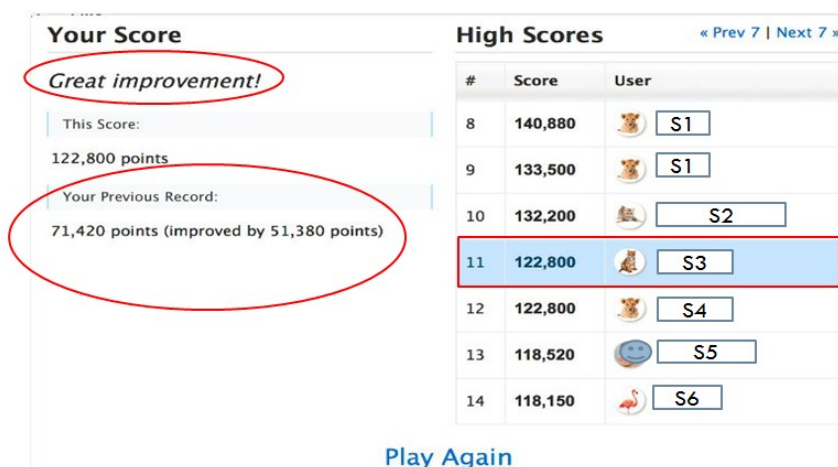


Figure 3: Self-Competition Scoreboard

Student 3 (“S3”) is the owner of this scoreboard (Figure3). From this, he/she can see individual vocabulary play records as well as other students who have higher or lower scores in this vocabulary set.

<sup>3</sup> There are some changes for the title of the learning modes since 2016. For details and/or functions of each type of learning modes or game plays in Quizlet, visit this website <https://quizlet.com/help/what-is-quizlet>

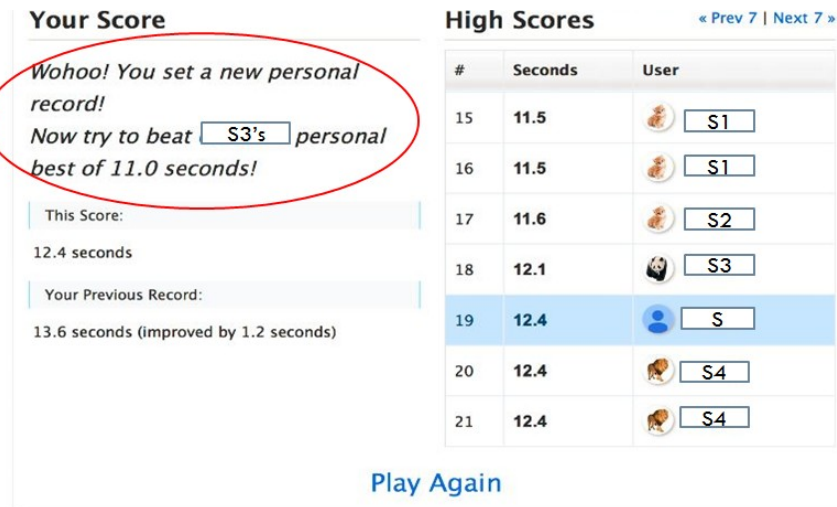


Figure 4: Multiplayer Group Competition Scoreboard

“S” is the owner of this scoreboard (Figure 4). “S” is encouraged by Quizlet instant messages to compete with one’s personal record and is able to see other peers’ best record.

In addition to being able to see one’s own records and classmate competitors in his/her own Quizlet account, the students are informed of the top 10 players of the vocabulary competition on the Quizlet scoreboards (Figure 5):

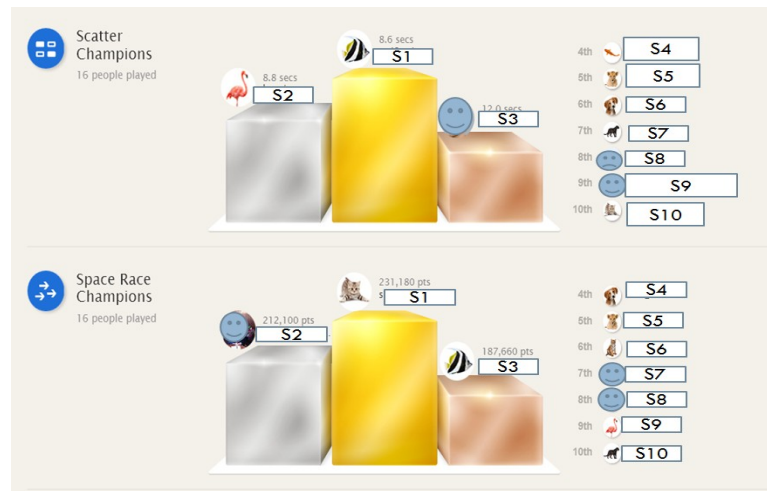


Figure 5: Quizlet Vocabulary Game Competition Rankings

Other than the competition results displayed on the Quizlet website, to give students a better sense of where each individual stands in the whole class regarding vocabulary learning, graded competitions administrated by the researcher were periodically conducted during class time and competition results were posted to the class course site (Figure 6):



Time Used: Seconds	Points Earned	
11.1	10	
11.4	10	
11.8	10	
11.8	10	
11.8	10	Mode: Scatter
11.8	10	Shortest Time: 11.1
12.6	10	Longest Time: 19.2
13.3	10	Average Time: 13.72
14.3	9	
14.6	9	
14.8	9	
14.9	9	
15.1	8	
17.3	8	
19.2	7	

**Figure 6: Graded Game Competition**

When doing real time graded vocabulary competitions, students were given a designated period of time to play with the required mode of Quizlet game. Based on instructional needs, the researcher sometimes asked the students to test on the vocabulary lists for individual lessons or a combined list for several lessons.

#### 5.4.2 Survey Responses

This section reports the pedagogical results using Quizlet games for deliberate, explicit vocabulary instruction. Student perspectives toward the utilization of Quizlet vocabulary games from the three semesters about the same course, Chinese 1, are presented in the order of the research questions.

RQ1: To what extent did students like the Quizlet game competition and how did they perform in the vocabulary test?

The survey questions 1-4 answered research question one. Here are the percentages of students who replied to each of the four questions:

Usefulness (%)		Quizlet Game Competition		
		Like (%)	Neutral (%)	Do not Like (%)
Spring 2014	71.4	44.7	6.2	49.1
Fall 2014	93.8	68.8		31.2
Spring 2015	88.9	77.8	10.0	12.2

The aforementioned multi-dimensional explicit vocabulary learning cycles of each lesson were cohesively repeated as weekly routines throughout the semester. While it is beyond this article's scope to discuss the engagement of students participating in classroom activities as a result of the prepared vocabulary knowledge, the end of semester, paper-pencil vocabulary test for the required vocabulary list (total N=240 words) indicated high percentage of correct vocabulary spelling and Hanzi recognition (Table 2):

**Table 2: End of Semester Vocabulary Test for All the Required Words**

	Percentage of Students Scoring 90 and Higher (out of 100pts)	Highest Score (out of 100pts)	Lowest Score (out of 100 pts)
Spring 2014	90% of the students	100	76
Fall 2014	98% of the students	100	82
Spring 2015	100% of the students	100	92

Table 1 indicates that the majority of the students thought the Tutorial CALL tool Quizlet is useful in learning Chinese vocabulary and more than half of the students (in fall 2014 and spring 2015) liked the Quizlet vocabulary games and competitions for Chinese vocabulary learning. Table 2 indicates the percentage of students who scored above 90% of the required vocabulary list of the semester is surprisingly high. Even though near half of the students in the first semester (spring 2014) did not like Quizlet competitions, 90% of the students scored 90 or higher out of 100 points and the lowest score was 76 out of 100. In the third semester (spring 2015), all students scored 90% or higher in the required vocabulary list test and the lowest score was 92 out of 100. The different percentage of test scores might result from different facilitations of game competition, i.e. how the instructor directed the motivational current (Waninge, de Bot, & Dornyei, 2014) in vocabulary learning, a suggested topic for future research.

RQ2. What are students' perspectives regarding digital game competition in learning Chinese vocabulary?

RQ2 is answered by the three open-ended questions in the survey: (1) What did you gain from Quizlet self-paced study and class competition? (2) What were you aware of when competing with yourself and with others? (3) What were your motivation to break the records of yourself and others?

By following Patten's (2002) protocols of coding qualitative data, four themes emerged from the open-ended questions: (1) benefits of Quizlet, (2) attitudes towards competition, and (3) motivation to compete. The notable benefits students mentioned in the survey include the accessibility of new vocabulary at their own pace. One student said, "*I could effectively study anywhere that I could hold my laptop in front of me*". Another student found Quizlet flashcards a good means to pass time: "*I mostly played the matching game whenever I was bored*". Most students used the Quizlet flashcards and/or

other modes of learning to study, review, or prepare for tests and quizzes. It was impressive for the frequency with which students mentioned that they used Quizlet games to study regularly for weekly dictations and to break their vocabulary learning records. Another benefit of Quizlet that students mentioned was typing and Hanzi recognition. A student said he typed faster in general after using Quizlet to study new vocabulary and compete. Here are some quotes highlighting the benefits of Quizlet for Hanzi recognition:

- *I used it to help me learn how to read characters.*
- *[I use it] to reinforce my memory of the vocabulary*
- *Helped me learn vocabulary faster and it was fun. It specifically helped me recognize hanzi better.*
- *The flashcards were very helpful in learning hanzi and matching them with pinyin.*
- *I did better on the tests because of Quizlet.*
- *The space race and scatter games help me to recognize and read characters very quickly even if I cannot write them*
- *Even when I cannot write words, at this point I can recognize pretty much everything without even thinking about it*
- *Quizlet helped me recognize characters better when I write Hanzi on the computer for any assignment where I have to write online.*

As mentioned earlier, the pedagogical design for this novel mode of vocabulary instruction is the concept of the multiplayer classroom. Apart from self-competition and self-paced vocabulary learning, the researcher purposefully required students to compete live as a whole class by using one of the Quizlet games and posted results, based on the pedagogical goals of each week (i.e. new or review lesson). These competitions were graded based on the aforementioned scales -- one variation of experience points in Sheldon's (2012) multiplayer classroom course design. Not surprisingly, the answers to the survey indicated two types of attitudes regarding competition with Quizlet vocabulary games:

**Table 3: Attitudes Towards Quizlet Competition**

<b>Competition Is Good</b>	<b>Competition Is Not Good or Somewhat Good</b>
<ul style="list-style-type: none"> <li>• I agreed with its 'gamification' of the learning process</li> <li>• We should have more quizlet competitions. I think it would really benefit the class if you forced them to use it more often by having the graded competition</li> <li>• Competition between students was a very fun way to learn.</li> <li>• I think quizlet should be a weekly homework (the competition)</li> <li>• Quizlet is a great vocabulary learning tool. I think it is helpful to</li> </ul>	<ul style="list-style-type: none"> <li>• It was hard to navigate in some cases but I really like the overall concept. Some of the games were really buggy and it was irritating needing to be somewhere with a mouse to do some of the challenges.</li> <li>• Remove the competition aspect, as it can be very stressful for students and isn't fair when some students have prior knowledge</li> <li>• I didn't see much use in the competitions. the flash cards were</li> </ul>

<p>know how one compares to the rest of the class to see if they are lagging and need to catch up or if they are learning at a good pace.</p> <ul style="list-style-type: none"> <li>• I was able to know how I was doing relative to the rest of the class and whether I had to study more or not.</li> <li>• It made me think on my feet a lot more</li> <li>• The time limit was useful for making me work harder</li> <li>• From self study and competition, I learned about the areas that I'm weak in. It helped me a lot since I focused on those weak areas afterwards. When competing with others, I was aware that I needed to study more.</li> </ul>	<p>good though</p> <ul style="list-style-type: none"> <li>• The time limit was useful for making me work harder, but that coupled with competition for a grade made it somewhat stressful.</li> <li>• I didn't play many of the games, I just liked having the whole list on flash cards on an easily accessible website.</li> <li>• When it came to competitions, I tried to beat my own records more than my classmates because I felt like those were more realist</li> <li>• I did not like competitions, but individual learning was useful.</li> <li>• Competing with others did not make me aware of anything.</li> </ul>
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The third theme found from the answers to the survey questions was motivation to compete, either to compete with oneself or with peers. In this category, there are two types of motivations in display: intrinsic and extrinsic. The intrinsic motivation for doing well in competition was to challenge oneself or beat other peers. While some students enjoyed self-improvement more than group competition, some loved the multiplayer group competitions: *“I used quizlet [sic] every week partly to study but mostly to crush my opponents' - I mean... classmates' - records. “ and “YES. I used quizlet [sic] to study so much. And I was very determined to break records in competition”*.

As for extrinsic motivation to learn with Quizlet games and to have good scores in competition, most students explicitly expressed that their motivation to do well in Quizlet vocabulary competition was to get good grades. Some students were motivated both intrinsically and extrinsically. For example, one student said, *“My motivation to break records was not only to challenge myself on how well and fast I could match up the vocabulary but to also get a good grade.”*

It can be seen from the above data analysis that the competitive nature of the Quizlet vocabulary games has motivated students to put more time and effort to beat themselves or their peers. While almost every student thought the Quizlet flashcards and games were useful for their language learning due to personalities and preference of learning styles, not all students welcomed the competition aspect of vocabulary games as shown in Table 3.

It is worth noting, however, that even though some students did not like the concept of competition, the outcomes of vocabulary learning were still impressive, as seen from the high percentage of high scores (90 or higher out of 100 points) in the end of semester vocabulary test for all required words in Table 2. The following student's

reflection succinctly articulated his perspectives towards the Quizlet vocabulary learning games and competition:

*I use often and I would spend a good 1-2 hours trying to improve my scatter score before I submitted it. Quizlet was helpful in reviewing vocabulary words in index card format without having to make the index cards. I used quizlet [sic] to review for the hw [sic], dictation and competitions. My motivation to break records was not only challenge myself on how well and fast I could match up the vocabulary but to also get a good grade.*

## 5.5 Discussions

The results presented in the last section indicate that the tutorial CALL Quizlet flashcards resulted in high performance scores during explicit vocabulary instruction in semester long foreign language course where required vocabulary list is set forth to follow the instructional pace of the textbook. They shed light on the research discussed in Section 2.2 in that, while complicated games are not effective for lower level language learners and novice gamers, mini-games embedded in tutorial CALL web 2.0 tools such as the ones used in current study are ideal for day-to-day language learning operation.

The multi-dimensional modes of learning embedded in the Quizlet games enable both students and teachers to learn/teach new vocabulary's English meaning, pronunciation, Hanzi recognition, and typing skills for the goals of day-to-day instruction. The different modes of learning/playing with Quizlet games such as flashcards, learn, speller, test, scatter, and space race assist students' learning vocabulary receptively and productively. It needs to be pointed out that competition can only be effective if there is room for students to improve their performance (Vandercruysse et al., 2013). Improvement is also a highly valued goal for learners to pursue and be fueled for intensive motivational involvement. Depending on which of the dimensions students needed to practice, the researcher of this study created specific competitive situations (i.e., the different Quizlet game competitions presented in Section 5.4.1). The vocabulary test scores verified Yamamoto's claim (2014) that a systematic routine of learning and reviewing vocabulary and structured approach of vocabulary instruction using Quizlet games are effective in vocabulary acquisition.

The positive perspectives of students regarding learning and game competition of Quizlet games have demystified some of what Hubbard and Bradin Siskin (2002) identified. Tutorial CALL such as the Quizlet vocabulary flashcards is no longer a passive behaviorist tool for passive learning. Students found it fun and engaging when competing with themselves and with peers. The game competitions empowered students to control their own learning and to construct the learning frequency and intensity of their own pace. If they want to win or score high, they must be active and productive in the vocabulary competition.

Machines cannot replace the role of teachers, however. Teachers should not be dismissed from game-based vocabulary learning in intact classrooms. The students' perspectives on learning Chinese vocabulary with Quizlet games in the current study reflect all six dimensions of "constructive competition", namely, "being neither winners nor losers, social comparison of competences, constructive motivation, reciprocal guidance, to win, and stretching beyond one's own expected potential" (Sheridan & Williams, 2011, p.152). Teachers can utilize constructive competitions to focus on the process of or the results of competition for pedagogical purposes. It is the teacher's responsibility to identify when to use what mode of learning to promote higher degree of student motivations in learning through tutorial CALL (i.e. digital vocabulary games in this case). It is important for teachers to design a salient facilitative structure (e.g., self-paced competition vs. real-time, graded competition) and competition grading scales in order to stimulate students to perform at the full potential in both individual and group level.

The various game competitions used in the current study comply with DMC that L2 motivation is dynamic in the 21<sup>st</sup> century language classroom. It is possible for teachers to take advantage of digital vocabulary games to direct the dynamic motivational currents in CFL classroom. The graded Quizlet game competition, as pointed out important by a student in the study, creates "a motivational jet stream" (Dornyei, Muir, & Ibrahim, 2014, p.11) that transforms individual student forwards towards higher goals. The DMC model stimulates learners to perform at the full potential in both short-term (e.g. weekly) and long-term learning (e.g., semester long). Student feedback indicated that constructive competitions of Quizlet games in this study motivate students to learn and to do better beyond their expectations.

## 5.6 Limitations of the Current Study

The current study shed light on the positive effect of tutorial CALL tools (e.g., Quizlet) in CFL vocabulary learning. However, it is inevitable to have limitations. The first is, as with all qualitative research, the research findings may not be generalizable to other settings, although there are informative for researchers and practitioners regarding procedures of utilizing game competition as motivator in foreign language classrooms. The second limitation is that the data were collected through natural classrooms whose participants were default by course registrations. It was beyond the researcher's control to balance learner background and learning styles in each of the three classes over time. A set of longitudinal data might have more accurate student achievement test scores and perspectives of game competitions in vocabulary learning. The third limitation is the lack of pre- and post- test for the motivation of students. Future studies can design a pre- and post- test to better understand the role of digital game competition in L2 vocabulary learning motivation as well as individual motivation change throughout the semester. The last but not least limitation of the current study is the narrative nature of data collection in instructed L2 classrooms. To enrich data analysis and triangulate data types, future studies could keep an instructional journal to record teacher observations or conduct follow-up student interviews for more in-depth understandings on motivation change or student perspectives of constructive competitions in vocabulary learning.

## 6. Conclusion

As discussed in Section 2, there is a dearth in qualitative SLA research on game-based vocabulary learning with real students in intact classrooms. This research provides pedagogical evidence and reports how the researcher utilized the Quizlet vocabulary game competition as motivator to achieve day-to-day instructional goals in a technical school's CFL classroom. The research findings indicate that the tool function of tutorial CALL web 2.0 tools (e.g., Quizlet) is valuable and easy to adopt into daily language instruction. From a pedagogical viewpoint, tutorial CALL web 2.0 tools are still appealing for classroom practitioners for its user-friendly quality and for its systemized operation in daily instructions. More research in this area will help connect theory and practice and will demonstrate *which games* should be used in *what manner* to achieve instructional goals.

The researcher intends to draw attention to strategies in tutorial CALL vocabulary instruction research and praxis for motivation and learning. Although games are designed to maintain student interests through fun activities and competitions, we cannot, however, ignore the important role of teachers. In the dynamics of foreign language classrooms, teachers who are familiar with the different functions of web 2.0 tools are decisive in directing the motivational current when guiding students to be more self-determined in terms of second language vocabulary acquisition.

Although it is not intended to generalize the pedagogical results and approach of the current study, students' Chinese vocabulary learning and satisfaction in using vocabulary game competitions indicate that the use of digital games in CFL vocabulary instruction is "the correct condition" that "allows motivational pathways to be created" (Dornyei, Muir, & Ibrahim, 2014, p.11). The fact that students wanted to spend time improving competition records at their own pace is actually a motivator to autonomous learning.

Based on this classroom research, the researcher believes that turning vocabulary instruction into a multiplayer game classroom has several advantages. They are (a) having greater learner autonomy; (b) facilitating vocabulary learning at student's own time and own pace; (c) providing student-centered, age appropriate vocabulary learning; (d) empowering students to have more responsibility for vocabulary learning, and (e) achieving better vocabulary attainment by the end of the semester.

While there are benefits of vocabulary learning through games (gamification), there needs to be continued investigations with real language curricula and more qualitative research because "instructed SLA research carried out in real classrooms with real learners and teachers has a greater potential to inform classroom practice than research carried out in a laboratory" (Spada, 2005, p.330). If we deemphasize the behaviorist concept of generating research findings through (quasi)experimental, quantitative research (Spada, 2005), qualitative studies such as this provide practitioners with evidence-based techniques for utilizing digital games (e.g., Quizlet) to promote autonomous vocabulary learning.

**Acknowledgements:** I would like to express my most gratitude to Dr. Donna Bain Butler and Dr. Lisa Winstead. Their constructive feedback and suggestions are instrumental in revising the early versions of this paper. All errors that remain in the paper are my own.

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## **E-Learning Readiness in Language Learning: Students' Readiness Survey and Normalization Process** (語言學習中的電子學習準備度： 學生準備度調查和正常化過程)

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**Abstract:** This paper presented a case study concerning students' e-learning readiness in a tertiary institution in Hong Kong. The study used questionnaire survey and focus-group discussions to elicit students' expectations towards using information technology in language learning. Students' expectations were compared with institutional targets; which were analyzed through institutional documents and meetings with teachers and course leaders. The result showed that the characteristics, habits and expectations of students; though may subject to change with the advancement of computer technologies; may not always match with institutional targets. If such mismatch happened, institution/teachers needed to understand students' IT habits and expectations, on one hand; and on the other hand, instructional strategies, trainings for teachers and students are needed to be developed in order to smooth the normalization process.

**摘要:** 本文是一個案例分析，討論了香港高等教育機構學生的電子學習準備程度。文中的研究使用了問卷調查和焦點小組討論，探討學生使用信息科技學習語言時的期望。本文亦通過文本研究和與教師及課程負責人面談分析學院期望及所訂立的電子輔助語言教學目標。本文將學生的期望與學院教學目標進行比較。結果顯示，學生的特點，學習習慣和期望雖然可能隨著計算機技術的進步而改變，但不一定能匹配學院或教師所訂立的教學目標。如果這種不匹配的情況發生，學院或課程主管需要了解學生對於使用科技產品學習的習慣和期望，從而製定教學策略及為教師提供培訓。另外教師也需要為學生提供適當的培訓和為學生訂立清晰的學習目標，以便順利完成正常化進程。

**Keywords:** e-learning readiness, students' expectation, institutional targets, normalization

**關鍵詞:** 電子學習準備度，學生期望，學院目標，正常化

## 1. Introduction: Institutional background and targets

I would like to give my readers some background information of this paper. I am currently working in one of the tertiary institutions in Hong Kong. My university caters hundreds of exchange students every year from all over the world. Exchange students are interested in learning Chinese and selected Hong Kong as their exchange destination. Apart from Chinese (Putonghua and Cantonese) courses for exchange students, university provides Putonghua trainings for local Hong Kong undergraduates and Cantonese trainings for non-local undergraduates. Non-local undergraduates constitute about 13.3% of the university enrolment (The Chinese University of Hong Kong, 2015). These students came from Mainland China, Taiwan, Singapore, Malaysia, Indonesia and India etc. It is because of the "Trilingual and Bilingual official language policy" stipulated by the *Basic Law of Hong Kong* since 1997, both Putonghua and Cantonese are two official spoken languages in Hong Kong. University undergraduates can take Putonghua or Cantonese courses from beginning level to advanced levels depending on their language background and academic needs.

Each Putonghua/Cantonese course constitutes 3 credits with 3 contact hours. Since 2009, Hong Kong education had gone through a series of education reform. One of which was to extend the 3-year university curriculum to 4 years. A general belief, in view of this, considered that university needed to cater a lot more students with existing resources. Since then, university senior management suggested to implement e-learning in language courses offered to university undergraduates. Because of the implementation of these e-learning projects, language centers and language teachers were very "excited", but in fact, nervous about the change. Teachers had to follow the instructions and finish the task on time. Since it is a top-down administrative policy, university administration provided teacher training on computer literacy and on the use of educational technologies on university and on departmental level.

## 2. Institutional targets and linguistic theories behind the language curriculum

From official documents from the university, university language courses focuses on outcome-based learning and on the pragmatic use of language in real life contexts. Program outcomes (PO1 to PO3) of the courses were set forth by senior management of the university according to this principle. The learning outcomes indicated that the language courses need to focus on language use, such as, the abilities "to ask and respond to questions" (in PO1), "to communicate personal meanings" (in PO2), "to participate actively in conversations on various topics in some formal and most informal settings" (in PO3). Detailed descriptions of major programme outcomes (PO) are listed below.

- (PO1: for levels 1-2) Able to ask and respond to simple questions, convey minimal meaning and satisfy a very limited number of immediate needs.
- (PO2: for levels 3-4) Able to participate in simple conversations on predictable topics, obtain information by asking and answering questions, combine learned materials to communicate personal meanings, can satisfy basic personal needs and

- social demands.
- (PO3: for Advanced levels) Able to participate actively in conversations on various topics in some formal and most informal settings, handle a wide variety of speaking tasks with communicative strategies, deal effectively with unanticipated complications in oral communication, can satisfy the requirements of school and work situations.

### 3. Teachers' design of e-learning materials

From several formal and informal discussions organized with language teachers at the university, all teachers put lots of efforts to create e-learning materials and courseware after the official implementation documents had been published. All teachers tried to use their knowledge of linguistic theories as well as teaching methodologies to design the e-materials and pilot them in their courses. With this urgent and important task, teachers just used their best knowledge to accomplish it. This came to a situation that teachers with structural linguistic trainings focused designing e-learning materials based on linguistic structures, such as correct usage of vocabulary items learnt, syntactic correctness, etc. To use the term in Xu (2015), these are behaviouristic/structural CALL or restricted CALL. Behaviouristic/structural E-learning courseware consisted of listening comprehension questions, listen-and-respond question and answer, based on grammaticality and correct use of lexical items. E-learning question types are mainly multiple-choice, true/false and matching.

On the other hand, teachers believing language as a communicative tool focused to design interactive CALL or communicative CALL (Xu, 2015). Interactive E-learning courseware included speaking tasks, express-your-opinion tasks and small report task. E-learning task types are mainly open-ended speaking questions.

Institutional documents and meeting records showed that teachers all worked hard to fulfill the tasks set out by the university. E-learning materials designed and used by teachers for students' weekly practice at the pilot stage of e-learning implementation were collected. Table 1 below summarized and analyzed the general picture of e-learning tasks prepared by teachers teaching Cantonese to non-local students as well as teachers teaching Putonghua to local students at the piloting stage of e-learning implementation. The e-learning materials shown in Table 1 was categorized according to teachers own categorization.

**Table 1: Collection of e-materials designed by course teachers of Cantonese courses for non-local students (CCAN) and Putonghua courses for local students (CPTH) from beginning to advanced level**

Course codes and course titles	E-learning materials for weekly listening skills practices	E-learning materials for weekly speaking skills practices
CCAN1703 Elementary	<b>Recognition of speech sounds</b> (20 multiple choice questions)	<b>Pronunciation practices</b> (1 reading aloud exercise)

Cantonese for non-local students	<p><b>Listening comprehension</b> (10-12 multiple choice questions) (10 true/false questions)</p>	<p><b>Vocabulary exercises</b> (5-10 multiple choice questions) (5-10 matching questions) (10 fill-in-the-blanks questions)</p> <p><b>Speaking exercises</b> (1 Question-&amp;-answer question) (1 situational topic) (1-3 picture descriptions questions)</p>
CCAN2703 Intermediate Cantonese for non-local students	<p><b>Pronunciation recognition</b> (2 multiple choice questions)</p> <p><b>Listening comprehension</b> (5-10 multiple choice questions) (10 question-&amp;-answer questions)</p>	<p><b>Vocabulary exercises</b> (5-10 picture description questions) (6-10 multiple choice questions) (5 matching questions)</p> <p><b>Speaking exercises</b> (10 question-&amp;-answer questions) (1-4 question-&amp;-answer questions based on video viewing) (2 situational topics) (1 picture description speaking question)</p>
CCAN3703 Advanced Cantonese for non-local students	<p><b>Not available</b></p>	<p><b>Vocabulary exercises</b> (3 translation questions) (10 matching questions) (5 multiple choice questions)</p> <p><b>Speaking exercises</b> (3 question-&amp;-answer questions) (1-2 situational topic) (4 question-&amp;-answer questions based on video viewing)</p>
CPTH1703 Beginning Putonghua for local students	<p><b>Pronunciation recognition</b> (20 multiple choice questions)</p> <p><b>Listening comprehension</b> (2 multiple choice questions)</p>	<p><b>Vocabulary exercises</b> (10 multiple choice questions)</p>
CPTH2703 Intermediate Putonghua for local students	<p><b>Pronunciation recognition</b> (20 multiple choice questions)</p> <p><b>Reading comprehension</b> (3 multiple choice questions)</p>	<p><b>Vocabulary exercises</b> (15 multiple choice questions) (3-4 fill-in-the blanks questions)</p> <p><b>Speaking exercises</b> (1 situational topic)</p>

CPTH3703 Advanced Putonghua for local students	<b>Pronunciation recognition</b> (5-9 multiple choice questions) (10 matching questions)  <b>Listening comprehension</b> (30 questions)	<b>Pronunciation exercises</b> (10 multiple choice questions)  <b>Vocabulary exercises</b> (10 multiple choice questions)

Table 1 summarizes different types of e-learning materials prepared by teachers teaching Cantonese to non-local students and teachers teaching Putonghua to local students from beginning level to advanced level. If we look at e-learning materials prepared by teachers, we can see that there were different emphases with different task types. However, majority of the exercises focused on language structures. Structural CALL was used as a mean to the communicative end. The implementation of Structural CALL is understandable for its easiness to administrate and to quantify students learning results.

By observation and from informal feedback from students, it is discovered that some e-learning materials were more popular or claimed by students more helpful and useful. Then I started to develop some research questions concerning the implementation of the e-learning project. These questions included, Are our students ready to e-learning in language learning? Are our students' expectations matching with the current e-learning courseware design? Are our students' satisfied with the e-learning design?

#### 4. Literature review: "E-learning readiness"

In the literature, there were articles or research reports talking about e-learning readiness on different levels. There were articles discussing information and communication technology (ICT) readiness on national level (Aydin & Tasci, 2005; Schreurs, Ehlers, & Sammour, 2008; Laohajaratsang, 2009; Omoda-Onyait & Lubega, 2011; and Hashim & Tasir, 2014). These studies mainly focused on developing assessment tools to review the readiness to e-learning in education on a national level. Aydin & Tasci (2005) discussed the availability of human resources when developing e-learning projects, emphasis were given to institutional cultures and stressed the importance of staff training. Laohajaratsang (2009) analyzed the situations in Thailand and discussed the infrastructure related to e-learning development; the readiness of educational institutions in terms of hardware availability and staff arrangement as well as promotion strategies of e-learning projects. Omoda-Onyait & Lubega (2011) analyzed the Ugandan situations and revealed that awareness, culture, technology available, pedagogy



and content needed are important in assessing e-learning readiness.

There were also some research focusing on institutional readiness towards e-learning in different parts of the world at educational settings. Mafenya (2013) researched institutions providing distance learning in South Africa. Oketch (2013) did their research in Nariobi, Kenya focusing on tertiary education. Tubaishat & Lansari (2011) studies a university in the Gulf Region. These studies concluded that students in these regions think that e-learning contribute positively to learning in general. Kaurs & Abas (2004) studied an Open University in Malaysia and found out that policy makers and regulatory bodies have to take into account the degree of e-readiness of the students and teachers in order to design and implement efficient e-learning programmes. Mercado (2008) and Saekow & Samson (2011) focused on tertiary education in Thailand and discussed that the common successful factors included, clear and well-defined goals of the e-learning programmes as well as systematic teachers training. Ouma & Awuor (2013) studied some secondary schools in Kenya and analyzed teachers' and students' computer literacy and their perception towards the use of e-learning. Their results showed that there was a positive correlation between computer literacy and e-learning acceptance in the secondary schools. Nisperos (2014) studied tertiary education in Sudan and pointed out that successful implementation depended on the assessment of organizational readiness which helped to determine how best the e-learning project can be implemented with the available recourses and culture. Hetty Rohayani, Kurniabudi & Sharipuddin (2015) studied higher education in Indonesia and highlighted that e-readiness is one of the most vital aspect for achieving successful implementation of e-learning programmes.

Some research targeted at teachers' readiness to new e-learning environment (Eslaminejad, Masood, & Ngah, 2010; Paturusi, Chisaki, & Usagawa, 2014), while some focused on students' perceptions and expectations towards e-learning learning model (Hung, Chou, Chen, & Owen, 2010; Paechter, Maier, & Macher, 2010; Wu, Tennyson, & Hsia, 2010; Vilonis, Bakanoviene, & Turskiene, 2013). In the literature, some studies (Hung, Chou, Chen, & Owen, 2010; Eslaminejad, Masood, & Ngah, 2010; Paturusi, Chisaki, & Usagawa, 2014) attempted to build up a framework to assess e-readiness from teachers' and students' perspectives and most studies emphases that apart from hardware and physical resources availability, factors such as computer self-efficacy (Hung, Chou, Chen, & Owen, 2010; Paturusi, Chisaki, & Usagawa, 2014), motivation for learning (Hung, Chou, Chen, & Owen, 2010), design of e-learning based courses (Eslaminejad, Masood, & Ngah, 2010; Paturusi, Chisaki, & Usagawa, 2014) were important factors in e-learning implementation. On teachers' side, willingness to teach by adopting new technology, ability to deliver e-materials and to provide e-content for teaching, willingness to use the virtual environment and utilization of computer and internet, familiarity with online teaching principle became the most important factors. On students' side, e-learning system functionality, content feature, amount of interaction, learning climate, achievement goals and performance expectations significantly affected learning satisfaction (Wu, Tennyson, & Hsia, 2010). In addition, students' assessments of teachers' expertise in e-learning as well as teachers' supports and peer-support in collaborative learning were related to learning achievement and course satisfaction (Paechter, Maier, & Macher, 2010).

From the literature, we can see that e-learning readiness, either in institutional level or in individual level, are of great concern to education policy makers, administrators, curriculum developers as well as frontline teachers. Topics including readiness of administration and management of e-learning project, course design and content, computer self-efficacy of teachers and students, teachers' and students' motivations to use e-learning as well as trainings for teachers and students were emphases. This paper presents a survey with focus group study to look at tertiary students' ICT habits and e-learning expectations in Hong Kong. The research result can provide some relevant data to educators interested in the implementation of e-learning projects in the area and some insights in research methodology and to administrators who are going to implement e-learning in educational contexts.

## **5. The survey**

In the implementation of e-learning curriculum, it suggested that educators and teachers need to look at the real situations so as to engineer education process (Colpaert, 2016). Colpaert (2016) suggested that language teachers or institutions needed to make clear which technology to use, which content to use, why, how, when and where as well as the justifications for the choice. This paper investigates how ready students are from a university in Hong Kong about using computer technology in language learning. In the research of this paper, 600 questionnaires were randomly sent out to undergraduate students studying in different faculties in my university. All the students were given a set of pre-course questionnaire and a set of post-course questionnaire. The pre-course questionnaire showed students' learning habit with educational technology and expectations. The post-course questionnaire tried to elicit if there was any change in learning habit, expectations and satisfaction towards e-learning. 533 valid questionnaires were returned with a return rate of about 89%. Of the 533 questionnaires, 365 were from Hong Kong local students and 168 were from non-local undergraduate students who came from different areas, such as America, England, Japan, Korea, Indonesia, India, different parts of Mainland China, etc. At the end of each post-course questionnaire, respondents were invited to focus group discussions. 10 students (including 5 local students and 5 non-local students) attended the focus group discussion arranged in casual settings. Data collected from the focus group study was mainly used to check and to re-confirm the questionnaire survey data.

## **6. Students' readiness to e-learning**

From the pre-course questionnaire survey, we can understand the device that students are using. Looking at the ICT device CUHK students are using, majority of the students possess "Windows<sup>TM</sup>" device either desktop (41%) or notebook (84.1%). Only 2.8% uses Macintosh desktop and 9.2% uses Macbooks. For mobile devices, 29.3% of the students possess iphone<sup>TM</sup>, ipad<sup>TM</sup> or a version of ipods. 10.9% students possess Android device. The data shows that since the number of students possess

mobile device (iOS and Android) is quite large 83.8% (58.6% iOS+25.2% Android), there is a potential to develop online materials based on mobile device or with cloud technology.

### **6.1 Students' ICT habit**

There are media report saying that youngsters nowadays are addicted to mobile devices, such as tablets and smartphones (Wallace, 2016). It is interesting that the data in the survey data shows that the motivation of using computers and mobile devices to learn languages is just average.

Majority of the CUHK students (63.8%) spend 1 to 4 hours every day for using ICT device for various learning activities including web-based learning, blogging, social networking, web-surfing for information. 97.1% of the CUHK students indicated that they will use ICT device for learning and all the respondents (100%) in the non-local Mainland group indicate a positive answer. 88.4% of CUHK students indicated that they are willing to use ICT devices in language learning activities. Majority of the non-local Mainland students (97.6%) are willing to use ICT in language learning. This is due to the fact that primary and secondary school in Mainland already have systematic plans in e-learning and students from Mainland already get used to this mode of learning (Zheng, Bao, & Chen, 2014).

### **6.2 Students' willingness to use ICT devices in language learning**

77.9% of CUHK students are willing to use notebook computers in their language learning activities. 92.3% of non-local Mainland student population indicated that they are willing to use notebook computers in their learning activities while 71.2% of local student population indicates their wishes.

The university targeted most of the piloting designs in the e-learning project on Cantonese courses for non-local Mainland students and on Putonghua courses for local students. We can take a look at students' preference in using ICT devices for their language learning in terms of language skills when we put the language skills in rank order which the students are willing to use ICT devices to practice. Among the different language skills, listening skills are in the highest rank of the list that students are willing to use ICT device to practice. 73.5% of CUHK students are willing to use ICT devices in practicing listening skills. The second and third in the rank are pronunciation practice (55.5%) and reading comprehension practice (49.7%). The fourth in the rank is speaking skills (25.9%). The lowest in the rank is writing skills (18.2%). The willingness between local and non-local Mainland students are similar however, the percentage of non-local students indicate that they are willing to use ICT devices to practice the different language skills is overall higher than that of the local students. This result reflects that the non-local Mainland students group is more ready to use ICT device in language learning.

In terms of e-exercises or e-activities formats, CUHK students like "multiple choice" and "interactive Q/A" most. Non-local Mainland students are in favour of "interactive Q/A". However, "fill in the blanks" and "short answers" are less favorite e-activities types. 28.7% of CUHK students (44% of CU non-local Mainland students) indicate that e-learning should be linked to classroom activities.

### **6.3 Students' expectations of e-learning in the context of second/foreign language learning**

About expectation of effectiveness in e-learning, 68.5% thinks that the effectiveness is average. When asking what kind of language skills students think ICT devices/e-learning can help, the highest rank is listening skills. The second is pronunciation improvement. The third is speaking ability. The fourth is reading skills and the lowest is writing skills. This result echoes with the results from the questions asking which skills students are willing to practice with ICT devices.

The questionnaire data provides important information for e-learning designers. According to the data, of course e-learning developers or teachers can develop some pilot courses and implement e-learning step by step. However, we can see that there are some mismatch among students' expectations, teachers' e-learning design and the institutional targets. Students ranked high for practicing listening skills with ICT technology while relative low for practicing speaking skills. The expectations and expected effectiveness of students showed similar result. However, in the analysis of institutional documents and teachers' meeting minutes, speaking skills is of top priority in language courses. Looking at the e-materials designed, there were a large variety of CALL tasks, including structural CALL and communicative CALL. From students' perspective, students are willing to work on multiple choice questions in listening e-tasks and interactive Q/A in speaking tasks. In view of these differences, if e-learning developers emphasized "customer's" or "user's" views, the e-learning design will lean on the questionnaire data. On the other hand, if the e-learning developers look more at the institutional targets, the design will become a top-down approach. Under such approach, both teachers and students needed to be trained to accommodate and follow the instruction from the "higher authority". In such a situation, language teachers will struggle among the different forces, which is "learners' habits and expectation", "teachers' training" and "institutional orientation". In many cases, an equilibrium point is hard to reach because such equilibrium depends on the relative strengths and interplays of the different forces and relies on so many factors. In such cases, it is useful to look at the "normalization" process in the e-learning implementation.

## **7. Normalization process: Matching Institutional expectations, teachers' beliefs and students' expectation**

"Normalization" refers to social process through which ideas and actions come to be seen as "normal" and "natural" in everyday life (Foucault, 1990; May et al., 2009). Foucault (1990) used the term "normalization" to describe an idealized norm of conduct.

He used the standard ways that soldiers should stand and march as an example. Conforming to or deviating from this ideal will be rewarded or punished. Foucault (1975) described the power of "normalization" in a community as "disciplinary power" and suggested that "the power of normalization imposes homogeneity; but it individualizes by making it possible to measure gaps, to determine levels, to fix specialties and to render the differences useful by fining them one to another" (Foucault 1975, P.184). Normalization process had its root in technological innovation in healthcare. May et al. (2009) suggested a framework for understanding the social process by which news ways of thinking, working as well as technology become routinely incorporated in everyday work. They discussed three major issues in normalization process, namely "implementation", "embedding", and "integration". "Implementation" in normalization process refers to a social organization that brings a practice or practices into action. "Embedding" means "the process through which a practice or practices become. (or do not become), routinely incorporated in everyday works of individuals and groups" (May et al. 2009, p.2) and "integration" means "the process by which a practice or practices are reproduced and sustained among the social matrices of an organization or institution" (May et al 2009, p.2). When discussing the use of technology in language teaching and learning, such normalization process is of utmost important. Whether students and teachers are treating the innovation or implementation of technological aspects in teaching by the university as "natural" routine affects the success and result of the implementation. On teachers' side, teachers' trainings and meetings in e-learning projects narrows the gaps between the teaching ideology teachers and the institutions they are working at. On the students' side, training and well-planned curriculum can help students "normalize" the innovation into their learning habits.

Many e-learning research shows that teachers are struggling with the implementation of e-learning project due to heavily daily teaching load (Eslaminejad, Masood, & Ngah, 2010) and that teachers have different professional training on linguistic theories which shaped their e-learning task designs (Eslaminejad, Masood, & Ngah, 2010; Paechter, Maier, & Macher, 2010). Teachers' e-learning task design may or may not match with institutional targets or learning outcomes. Systematic teachers' training and periodic meetings are necessary to guide teachers in designing the e-learning task as well as to implement the e-learning project by conveying the designated targets and purposes to the students. Such trainings and periodic meetings are important both in the e-learning designing and preparation phase and during the implementation phase. Trainings and periodic meetings can help balance the different language skills, such as listening, speaking, reading and writing according to the teaching and learning targets set by the institution and by the university. Trainings and periodic meetings can also help standardization of question types, such as multiple choice questions, vocabulary item matching and open-ended speaking questions, etc, according to institutional targets and balance the weights of different CALL types (structural CALL, communicative CALL and interactive CALL) according to institutional targets and students' expectation. In the case of my university, adjustment and restructuring of e-learning materials through meetings, internal workshops had come up with a revised version which put emphases on speaking proficiency and balance the weight among different CALL types. The revised versions, shown in Table 2, regulated question types, amount of questions and balanced

of skills according to the institutional targets discussed in teachers' meetings and trainings.

**Table 2: Finalized e-materials used in Cantonese courses for non-local students (CCAN) and Putonghua courses for local students (CPTH) from beginning to advanced level**

Course codes and course titles	E-learning materials for weekly listening skills practices	E-learning materials for weekly speaking skills practices
CCAN1703 Elementary Cantonese for non-local students	<p><b>Recognition of speech sounds (pre-class exercises)</b> (10 multiple choice questions)</p> <p><b>Listening comprehension (post-class exercises)</b> (10 multiple choice questions)</p>	<p><b>Pronunciation drills (pre-class exercises)</b> (1 reading aloud exercise)</p> <p><b>Vocabulary exercises (pre-class exercises)</b> (10 fill-in-the-blanks questions)</p> <p><b>Vocabulary exercises (post-class exercises)</b> (10 multiple choice questions)</p> <p><b>Speaking exercises (post-class exercises)</b> (1 situational topic)</p>
CCAN2703 Intermediate Cantonese for non-local students	<p><b>Listening exercises (post-class exercise)</b> (1 speaking topic responding to video viewing)</p>	<p><b>Pronunciation drills (pre-class exercises)</b> (1 reading aloud exercise)</p> <p><b>Vocabulary exercises (pre-class exercises)</b> (10 fill-in-the-blanks questions)</p> <p><b>Speaking exercises (post-class exercises)</b> (1 situational topic)</p>
CCAN3703 Advanced Cantonese for non-local students	<p><b>Listening exercises (post-class exercise)</b> (1 speaking topic responding to video viewing)</p>	<p><b>Pronunciation drills (pre-class exercises)</b> (1 reading aloud exercise)</p> <p><b>Vocabulary exercises (pre-class exercises)</b> (10 fill-in-the-blanks questions)</p> <p><b>Speaking exercises (post-class exercises)</b></p>

		(1 situational topic)
CPTH1703 Beginning Putonghua for local students	<p><b>Recognition of speech sounds (pre-class exercises)</b> (10 multiple choice questions)</p> <p><b>Listening comprehension (post-class exercises)</b> (10 multiple choice questions)</p>	<p><b>Pronunciation drills (pre-class exercises)</b> (1 reading aloud exercise)</p> <p><b>Vocabulary exercises (pre-class exercises)</b> (10 fill-in-the-blanks questions)</p> <p><b>Vocabulary exercises (post-class exercises)</b> (10 multiple choice questions)</p> <p><b>Speaking exercises (post-class exercises)</b> (1 situational topic)</p>
CPTH2703 Intermediate Putonghua for local students	<p><b>Listening exercises (post-class exercise)</b> (1 speaking topic responding to video viewing)</p>	<p><b>Pronunciation drills (pre-class exercises)</b> (1 reading aloud exercise)</p> <p><b>Vocabulary exercises (pre-class exercises)</b> (10 fill-in-the-blanks questions)</p> <p><b>Speaking exercises (post-class exercises)</b> (1 situational topic)</p>
CPTH3703 Advanced Putonghua for local students	<p><b>Listening exercises (post-class exercise)</b> (1 speaking topic responding to video viewing)</p>	<p><b>Pronunciation drills (pre-class exercises)</b> (1 reading aloud exercise)</p> <p><b>Vocabulary exercises (pre-class exercises)</b> (10 fill-in-the-blanks questions)</p> <p><b>Speaking exercises (post-class exercises)</b> (1 situational topic)</p>

In the process of normalization, not only teachers' trainings are important. Students' trainings are also needed. As we can see from the student readiness survey data, there are some mismatches between students' expectations and institutional targets.

In the pre-course survey data, more students are willing to use IT device in practicing listening skills (73.5%) and pronunciation practice (55.5%) than learning other language skills, such as reading (49.7%), speaking (25.9%) and writing (18.2%). However, speaking skills of Cantonese/Putonghua in different contexts, "speaking skill to satisfy immediate needs" (in PO1), "speaking skill to satisfy basic personal needs and social demands" (in PO2) and "speaking skill to satisfy the requirements of school and work situations" (in PO3) are the targeted learning outcomes. Such a mismatch resulted in an average rating of expected effectiveness. Majority of the students (68.5%) feel that the expected effectiveness of e-learning towards language learning. In view of this, the institution re-designs the language curriculum and puts e-learning modules as part of the teaching curriculum and teaching activities.

<b>Online/ Classroom Activities</b>	Online practice (Pre-classroom activities)		Classroom teaching activities	Online practice	Online assessments	Classroom tasks	Course assessments & learning outcomes
<b>Purposes of tasks &amp; teaching activities</b>	Semi-authentic language inputs	Analyzing & Mimicking semi-authentic inputs →	Vocabulary usage with pragmatic focuses	Reinforcement	Diagnostic	Feedback & Learning outcomes 1 →	Learning outcomes 2
<b>Tasks and teaching activities</b>	- Listening to texts (audio/video)	- Read aloud tasks and speaking drills	- Voc. Usage - Voc. Activities - Question-and-Answer - Sentence making	- Pronunciation practices - Listening comprehension practices	- Text reading - Speaking tasks (with language situations)	- Situational role-plays - Presentations	- Mid-term presentation - Final presentation - Oral Exam

**Figure 1: Curriculum integrating e-learning and classroom teaching in a blended mode**

Figure 1 shows the curriculum design which incorporate e-learning modules with classroom teaching. E-learning modules in the curriculum are not only part of the grading requirements, but e-learning tasks also become part of the classroom activities as pre-task activities. Before the implementation of e-learning project, drilling exercises focusing on pronunciation accuracy as well as practices on vocabulary items and language structures were done in classroom. After the implementation of e-learning project, these exercises were placed online for students to work on before the class. Adopting the flipped classroom concept (Greg, 2011; Abeysekera & Dawson, 2015), the language classroom focuses on language. Activities, such as topical discussions, role-plays and debates can be organized in classroom. These activities not only foster actual language use in authentic or semi-authentic settings, but also encourage team work and collaborative learning. This flipped classroom and blended learning mode becomes a weekly routine of students.

### 8. Conclusion

The present study attempts to investigate the readiness of university students



toward the use-learning/information technology in language teaching and learning. Survey on e-learning readiness is important for teachers and administrators understand students' ICT habits and expectations. Students' expectations do not always match with teachers' expectations as well as the pedagogical beliefs of the institution. To implement CALL, normalization process is an important aspect for administrators to investigate when analyzing e-readiness and efficiency in implementation. For effective implementation, not only teachers need training, students also need adjustments and trainings in terms of computer efficacy, motivation for e-learning and self-directed learning, learners' learning habit and culture in order to naturalize or normalize e-learning in their academic life.

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## Supporting Collocation Learning and Teaching with a Chinese Collocation Profile Database (建立汉语搭配语料库, 促进汉语搭配教学)

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**Abstract:** Recent studies on collocation have indicated that L2 collocation competence is a crucial factor that distinguishes L2 learners from fluent native speakers. However, mastery of collocation has proved difficult because of the sheer number of collocations in the targeted language. Although a great number of ICT tools have been integrated into language teaching and learning, academically sound and pedagogically enriched computer assisted collocation learning environments are still rare and inadequate in the field of Teaching Chinese as a Foreign Language (TCFL). This paper reports an attempt to construct a Chinese Collocation Profile Database (CCPD) with more targeted selections of collocations, an improved database, and more pedagogically sound online activities in collocation learning. The study first identifies commonly confused collocations for CFL learners from the HSK corpus, and then obtains each collocation's high-frequency collocates from the BCC corpus based upon the strictly applied set of criteria using the corpus analysis toolkit AntConc. Collocation patterns for each collocate are also summarized for learners and teachers. Five types of activities are designed accordingly to train learners on methods for improving upon their collocation competence.

**摘要:** 近年来的搭配研究表明, 第二语言学习者的词汇搭配能力是他们有别于流利的母语使用者的关键因素。然而, 由于目标语言中搭配的数量非常庞大, 第二语言学习者学习并掌握搭配的难度也相当大。尽管目前的语言教学和学习采用了很多的 ICT 工具, 但在对外汉语教学领域中, 真正以科学的学术研究和合理的教学方法为基础的计算机辅助汉语词汇搭配学习系统还非常少见。本文介绍了构建汉语词汇搭配数据库 (CCPD) 的理论依据和实现方法。CCPD 对于搭配的选择将更有针对性, 所使用的语料库数据也更为准确, 针对搭配模式所设计的练习也更符合认知规律。CCPD 的设计的第一步是确定 HSK 动态作文语料库中汉语学习者经常混淆的搭配, 然后根据严格设定的统计标准, 使用语料库分析工具 AntConc 从北京语言大学 BCC 语料库中提取高频搭配词语。在此基础上笔者再对每个高频搭配词语的搭配模式进行总结和描写。在这些信息的基础上, CCPD 设计了五种类型的练

习，以帮助提高汉语学习者的词汇搭配能力。

**Keywords:** L2 collocation competence, collocation acquisition, Chinese collocation database, TCFL

**关键词:** 二语搭配能力, 搭配习得, 汉语词汇搭配数据库, 对外汉语教学

## 1. Introduction

In recent years, collocation research has received wide attention as it relates to the field of second language education. A large number of studies have suggested collocational knowledge is a crucial factor that distinguishes second language learners from fluent native speakers (Palmer, 1933; Hornby, 1974, Hill, 1999, Nation, 2000, Mueller, 2011). Marton (1977) identifies that the incorrect use of collocations constitutes a significant percentage of errors committed by second language learners. Nation (2000) points out that language knowledge is in essence collocational knowledge and the process of learning words requires knowledge of their collocates. Wray (2002) and Nesselhauf (2003) contend that the mastery of collocation is of great importance for second language learners who strive for a high level of competence in a second language, as it helps to enhance both accuracy and fluency.

## 2. Literature Review

In the field of Teaching Chinese as a Foreign Language (hereafter TCFL), many scholars have identified the acquisition of vocabulary as one of the most challenging aspects for Chinese as a Foreign Language (hereafter CFL) learners (Luo, 1997; Jiang, 1998), and that vocabulary research should play a leading role in the research of TCFL (Zheng, 2005). Research on the learning and teaching of Chinese collocation has received much attention recently, and many studies have been conducted on collocation from multiple perspectives (Fang, 2002; Fu, 2010; Liu, 2010; Zhou, 2007). Taking “Verb + Noun” collocations as an example, Fu (2010) points out that typical patterns of nominal collocates should be identified and taught first to CFL learners, so they can learn more efficiently. Liu (2010) also discusses the need for identifying the patterns of the most frequently used collocations and for creating a corpus-based collocation profile database. Such fundamental work, as she notes, would greatly benefit both teachers and students. With such a set of useful collocations at their disposal, teachers will no longer have to rely on intuition; instead, they will be able to select and create a list of level-appropriate high-frequency collocates for their students and design more effective practice activities. The database will also be able to help draw students’ attention to those collocation patterns in context and will help develop their language sensitivity as a result. By studying high-frequency collocates, learners are more likely to generalize to a more abstract pattern and hence increase their ability to produce a more native-like language.

Recognizing the importance of collocation, and the role collocations play in the production of second language, second language teachers have successfully taught collocations by using the corpus linguistics approach. For example, Shin and Nation (2008) argue that determining what to learn and teach remains a challenge as there are so many collocations in English. They believe that identifying the most useful English collocations is an efficient way to improve the language fluency of ESL students. Using the ten million word BNC spoken section as the data source, the study generates a list of the most frequently used collocations in spoken English. As they stated, the list could be useful for teaching elementary speaking courses, and could also serve as the starting point for syllabus design. To address the lack of research in computer assisted collocation acquisition and the limitations of current online collocation learning tools, Wu, Franken, & Witten (2010) proposed a scheme for supporting the learning of English collocation with a digital library. Their design is based on “the psychological conditions that facilitate acquisition: noticing, retrieval and generation” (p. 23). Using a digital library collection prepared by teachers in advance, the design allows learners to search, study, and collect collocations that they have noticed or want to learn through an interface that is specifically tailored for their ease of use. Using this digital library, learners also have the opportunity to expand their knowledge by studying naturally occurring collocations that appear in texts retrieved from corpora such as the British National Corpus or live web data. As the two authors report, the library was tested by student users and the results show that their knowledge of collocations was enriched in a new and engaging way (p. 24). Apart from the aforementioned research and scheme, several useful collocation tools are also available for learners of English, including JustTheWord, COCA, Tango, and the Gutenberg Collocation Tool.

In the field of TCFL, researchers have proposed some computer assisted tools or projects for helping CFL learners expand their collocation knowledge. For example, Chen, Wu, Yang & Pan (2014) report their design of a Chinese collocation retrieval tool that can help CFL learners and teachers search for collocations. The tool is entitled ICE (Intelligent Collocation Engine) and is based on a large part-of-speech-tagged Chinese news corpus. The authors report that the tool was tested by both CFL learners and in-service CFL teachers. The results show that users can successfully find proper Chinese collocates for a given noun, and teachers see this as a useful tool in preparing their teaching materials. Using three corpora including Chinese internet, Lancaster Corpus of Mandarin Chinese, and Corpus of Business Chinese, Sharoff (2006) also created an online automated search engine which can be used to search for Chinese collocations. In addition, Zheng (2005) also proposes to construct a CFL learner-focused lexicon that is both explicit and descriptive in terms of the lexical interdependence. He exemplifies his design principle by providing a compilation sample of the micro structure of the word 解, including its free, fixed and syntactic combination forms with other words. He points out that the future direction for vocabulary instruction in TCFL should be the integration of both a bilingual and learner-focused dictionary as this is an ideal way to provide learners with standardized and prefabricated information (p. 227). He further elaborates that it is imperative for TCFL research to be more dependent on the integration of descriptive linguistics, corpus linguistics and computational linguistics in order to make the discipline a more modernized and scientific one.

### 3. The significance of the study

Despite the body of research in current literature and the design of computer assisted collocation learning tools in the field of TCFL, there is still much scope for further research and development. Taking the aforementioned factors into account, this paper reports an attempt to construct a Chinese Collocation Profile Database (hereafter CCPD) with more targeted selections of collocations, improved database capabilities, and a more pedagogically sound exploitation of technology in collocation learning. Its design is based on four elements that help to develop the reliable approach to describing Chinese collocation.

Firstly, CCPD is based on the analysis of the learner corpus HSK (*Hanyu Shuiping Kaoshi*, Chinese language proficiency test) Corpus (hereafter HSK Corpus), therefore it targets the challenges and difficulties learners of Chinese encounter in their language production. Nesselhauf (2003) points out that although researchers have made some suggestions on teaching collocations, which of the vast number of collocations in a language should be taught and the manner in which they are to be taught remains unclear (p. 223). He then further suggests that it is crucial to identify the challenges that learners have with collocations. In the field of TCFL, a few scholars also point out the most confusing and frequently misused words should be the core of learner-focused dictionaries, and such a vocabulary list should be based on statistical analysis of inter-language corpus (Zhang, 2008). Although Zhang's (2008) discussion is on the issue of distinguishing synonyms, the principle applies to the creation of a collocation database or dictionary compilation as well. Indeed, the traditional method of compilation of Chinese dictionaries is not sufficient enough to meet the increasing demand of CFL learners' actual learning needs. For example, traditional dictionaries usually provide little explanation about the usage of words, such as context, connotations, pragmatic and register. However, such information is crucial for CFL learners. For this reason, collocations collected for this database are the most frequently misused and confused ones retrieved from HSK Corpus. The detailed procedure of extracting erroneous collocations is discussed in the procedures section.

In addition, the collocation lists and examples that CCPD offers for teachers or learners is based on analyzed and processed data instead of raw data extracted directly from large scale corpora or live web data. While current collocation tools such as the digital library proposed by Wu *et al.* (2010) and the ICE proposed by Chen *et al.* (2014) are useful for both teachers and learners to efficiently search for proper collocates in authentic language data, learners may be overwhelmed by the sheer number of instances of collocation extracted from various genres of texts. As a result, they may get lost in limited and fragmental information by bogging themselves down into unproductive tangential explorations. Since they are the result of automatic extraction, some instances may also not be real examples of collocations and therefore may confuse CFL learners.

In order to tackle this issue, CCPD uses a dataset with various types of possible collocations firstly extracted from the BCC Corpus and then analyzed and selected according to clearly defined criteria. It is hoped that this approach will be more accurate

and efficient in helping students to notice, learn and reproduce collocations in their learning process.

CCPD also seeks to describe the collocation patterns of the most commonly misused collocations for both CFL learners and teachers. Without careful analysis and systematic descriptions of the frequent collocates, learners who search for collocations using a collocation tool may only be able to notice individual high frequency collocations while failing to see the big picture, which includes the collocation patterns of certain lexical items. These patterns have been argued by some scholars to be more beneficial for learners to learn collocations (Ellis 2013). Lexicological studies in recent years have shown that the importance of the prefabricated lexical chunks and the high-frequency patterns in second language learning process (Sample, 2014). For example, when discussing the theory of priming, Emmott (1997) argues that since speakers or writers often use certain word combinations repeatedly in discourse, listeners or readers may grow to expect the word sequence in text and co-text. He therefore believes that readers may have pre-fabricated patterns in their mind which make the reading comprehension process much faster and more effective. Hoey (2005) further develops the priming theory and claims that “collocation is fundamentally a psychological concept” (Hoey, 2005, p. 7), and each word sequence has a semantic association at a more abstract level. As Hoey explains, in English, the word *hour* is semantically associated with the pattern NUMBER-hour-JOURNEY, which is summarized on the basis of a corpus-based analysis and can be exemplified by the following instances (taken from Hoey, 2005, p. 16):

*thirty-hour ride, half-hour drive, four-hour flight, two-hour trip, three-hour journey*

Hoey (2005) argues that “every word is primed to occur with particular other words” and “every word is primed to occur with particular semantic sets” (p. 13). In other words, each word in language is pre-fabricated in abstract patterns, which are particularly useful for second language learners. According to Hoey (2005), such patterns are like shortcuts which may help speed up the second language learning process. Compared with native speakers, who have been exposed to such patterns in their everyday life, second language speakers have far less opportunities to encounter such high-frequency patterns in their language teaching materials and outside of their classroom. Hence, providing “repeated instances of a word sequence, collocational observations and illustrations” provide a means of shortcutting the language learning process. (p. 185).

An initial analysis of the erroneous collocations in HSK corpus indicates that CFL learners’ lack of knowledge about collocation patterns may contribute greatly to error. For example, Li’s (2016) study reports that some learners of Chinese have difficulties using 丰富 and 丰盛 with collocate to produce correct collocations. Using BCC Corpus as a native speaker reference corpus, the study obtains the following high-frequency collocates of the two words 丰富 and 丰盛:

**Table 1: The collocates and frequencies of 丰富 and 丰盛**

Collocates	Frequency	Collocates	frequency
丰盛的晚餐	467	丰富的货物	5137
丰盛的早餐	281	丰富的经验	2792
丰盛的午餐	225	丰富的维生素	1318
丰盛的年夜饭	105	丰富的文化	1002
丰盛的菜肴	87	丰富的资源	993
丰盛的食物	66	丰富的内涵	963

By studying their high-frequency collocates, certain collocation patterns can be summarized. Table 1 shows that (1) what high-frequency nominal items in particular can go with 丰盛 and 丰富 (2) what kind of nouns in general can go with these two words. For example, 丰盛 goes with 晚餐 / 早餐 / 午餐 as high-frequency collocates, but in general, it goes with nouns in the semantic field of MEAL, which would include some low-frequency items such as 酒席、宴席、大餐. So drawing attention to the general pattern is just as important as teaching the individual items. Similarly, 丰富 has its own collocates such as 经验 and 文化, which, by contrast, are abstract nouns. 丰富 also has some collocates such as 货物 and 维生素, which are concrete nouns but without meaning of MEAL. Therefore, it can be said that drawing attention to the general pattern is as important as teaching the individual items.

Lastly, CCPD provides some collocation activities for learners on the basis of sound pedagogical considerations. Lewis (1993) points out that pedagogical chunking should be a frequent classroom activity, and authentic language materials should be provided for learners to experience, analyze, generalize, and experiment with lexical chunks. Studies on collocation have also suggested that three aspects should be taken into consideration when teaching collocation: awareness raising, retrieval, and production (Nation, 2000). He further suggests that learners should first be made aware of the most frequent and immediately useful collocates. Using authentic data extracted from the BCC corpus, CCPD aims to provide a variety of activities that help learners of Chinese notice, remember, and use collocations appropriated in various contexts. Detailed activity demos are illustrated in the CCPD design section.

Thus, by using analyzed controllable data and targeting at the challenges CFL learners face in their collocation learning process, CCPD aims to develop a more systematic approach to providing CFL learners with a more accurate, efficient and engaging way to learn collocations. The tool also emphasizes the importance of offering a variety of pedagogically tuned learning activities, which have proven effective in helping learners notice collocations, use them in their language production, as well as internalize them and add them into their lexical reservoir.



## 4. The proposed CCPD

### 4.1 The Definition of Collocation in this study

In the current literature, researchers have defined collocations from various perspectives, but in general, these definitions can be classified in two groups: phraseological view or statistical view based on frequency of co-occurrence. For example, Firth (1957) defines collocation as statements of the habitual or customary places of certain words. Halliday and Hasan (1976) regard collocation as linear co-occurrence of certain lexical items that have significant proximity in terms of syntagmatic relation. Adopting a corpus linguistic approach, Sinclair (1991) defines collocation as the occurrence of two or more lexical items within a short space of each other in a text. In this study, we adopt a definition similar to that of Benson, Benson, & Ilson (1986) and that of Wei (2001). In their definition, Benson, Benson, and Ilson define collocation as “certain words combined with other words or grammatical constructions” (p. ix). They further define such constructions as recurrent, semi-fixed combinations and classify them as grammatical and lexical collocations. Wei (2001) also divided such combinations into three categories: free combination, restricted combination (collocations), and fixed combination (idioms). This study focuses on lexical collocations. Table 2 shows some examples of the erroneous collocations in the list.

This study first identifies high frequency combinations in the BCC Corpus through statistical procedure, and then includes and excludes specific word sequences according to an analysis of the word combinations identified. Detailed procedure is reported in the procedures section.

**Table 2: Examples of commonly confused and misused collocations in HSK Corpus**

Misused collocations	Correct collocations suggested by HSK Corpus
*危害人权	侵犯人权
*丰富的晚饭	丰盛的晚饭
*社会里	社会上
*调试心情	调节心情
*在他的眼光里	在他的眼里
*健康地生长	健康地成长
*提高生产	提高产量
*用力学习	努力学习

### 4.2 The two corpora used in this study

The study uses two corpora - the HSK Corpus and the BCC Corpus. The HSK Corpus is developed and maintained by the Research Center for Studies of Chinese as a Second Language at Beijing Language and Culture University. The HSK Corpus collects about 11,600 essays (approximately 4.3 million Chinese characters) written by learners of Chinese for the HSK test. It not only contains important text attributes such as nationality, gender, and age of CFL learners who took the test, but also provides a wealth of inter-language information such as the statistical data of characters, vocabulary, sentences, and discourse contained in compositions. Various types of learner errors are also tagged

in this corpus, which makes it possible for researchers to extract them by using its online search engine at <http://202.112.195.192:8060>. The following examples explain how the coding system works for tagging incorrect use of vocabulary in the HSK Corpus:

- (1) 在路上闻不到烟的味，看不到烟蒂{CC 烟根}。
- (2) 吃过丰盛{CC 丰富}的晚饭后，我们一家人就坐在饭厅里长谈到深夜。

In sentences (1) and (2), CC stands for any erroneous words, wrong choice of words, self-made words, and erroneous collocations. The word in Sentence (1) 烟根 is a self-made word, the correct word should be 烟蒂, while in Sentence (2) the word 丰富 is a wrong collocate of 晚饭, the correct collocate should be 丰盛。Therefore the wrong words are put in the curly bracket after the symbol CC, and the suggested correct words are placed before the first curly bracket.

The study also uses the BCC Corpus as a L1 reference corpus. It was developed by the Institute of Big Data and Education Technology of Beijing Language and Culture University. The corpus has a 15 billion character collection of samples of present-day written language from a wide range of sources such as microblogging, science and technology, literature, and the press. Similar to the HSK Corpus, the BCC Corpus also has an online search engine interface at <http://202.112.195.249/bcc/>. The online concordancer also offers a statistical function, which not only allows any user to search collocations using some formulaic expressions, but also provides statistical data of frequencies of different collocates.

### 4.3 The procedures

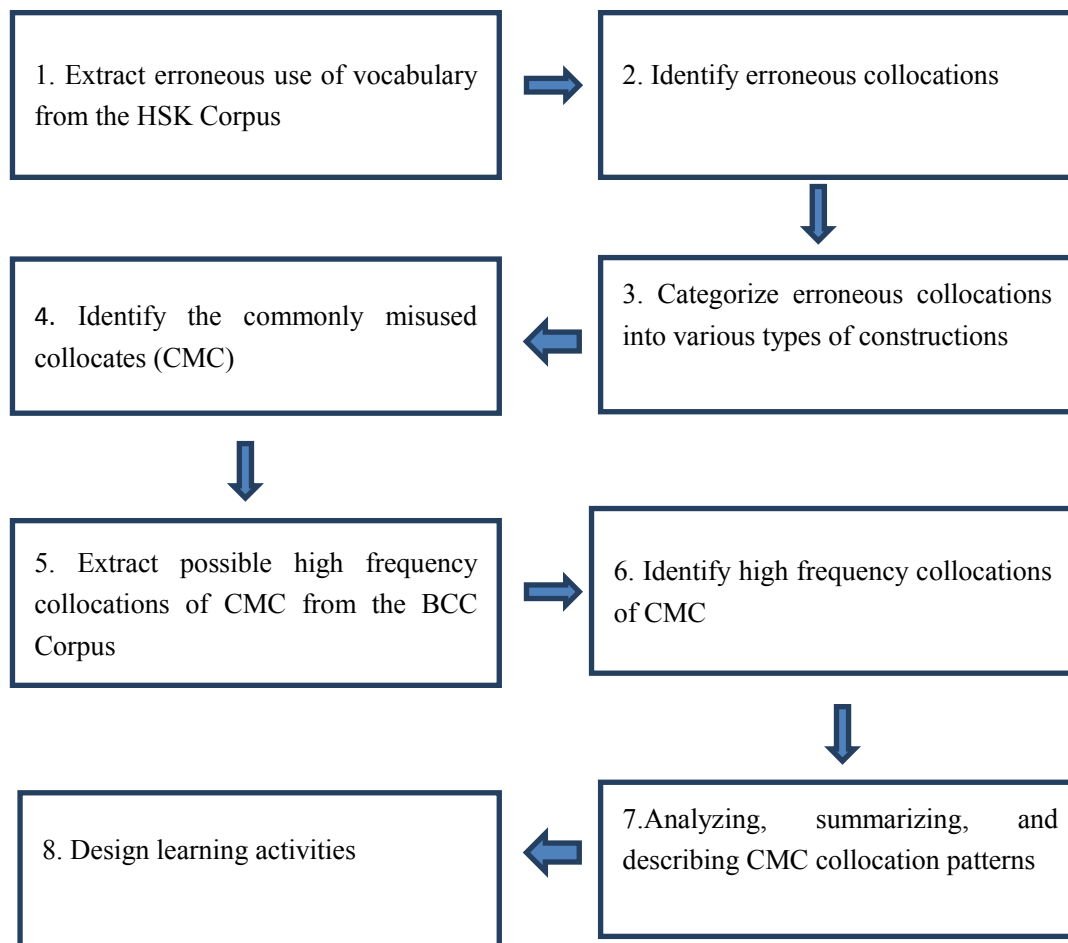
The procedure of the establishment of CCPD can be illustrated as in Figure 1 (c.f. next page).

Since CCPD aims to provide collocation patterns of the most commonly misused collocations, the first step is to extract all the erroneous production of collocations from the HSK Corpus using its online concordance tool. By searching CC as a string type, 49178 tokens of CC were returned. The next step is to manually exclude instances that are not erroneous collocations. For example, the word 烟根 in Sentence (1) is a self-made word, not a wrong use of collocation. Therefore, it is removed from the list. This process proves to be time-consuming due to the sheer number of instances extracted from the HSK Corpus. The end result of this process is to produce a list of the most commonly confused and misused collocations (hereafter CMC) in the HSK corpus, which is then categorized into the various types of collocations as shown in Table 3:

**Table 3: Collocations types in HSK Corpus**

Collocation types	Examples
Verb + Noun	侵犯人权
Adjective + Noun	丰盛的晚餐
Number + Measure word + Noun	一只蝴蝶

Noun + Location Noun	社会上
Preposition + Noun + Location Noun	在他的眼里
Adjective + Noun	健康地成长
Gerund + Noun	创业精神
Noun + Noun	工薪阶层
Noun + Adjective	竞争激烈



**Figure 1: The procedure of establishment of CCPD**

Once the CMC list and the categorization of CMC are completed, the next step is to extract possible high frequency collocations of CMC from the BCC corpus. Because collocations are domain and/or genre specific (Hoey, 2005, pp. 9), this study only uses one of BCC's sub-corpora - literature sub-corpus - as its source data to ensure that the text properties are relatively homogeneous. Future development of CCPD may include more types of text such as newspapers and magazines, scientific and technical text, etc.

Extracting instances of possible collocations of a CMC is relatively straightforward by using the online search tool offered by BCC. For example, the authors typed 丰盛的 N (N stands for noun) into the search box and chose literature sub-corpus.

2213 instances were returned and downloaded as a text file, which were then further processed for the identification of high frequency collocates using AntConc (Windows 3.4.4). The process of the text file includes two steps: firstly, the <u> and </u> marks surrounding the word“丰盛的 N (such as 晚餐/大餐)” are removed. The Chinese words in the file are then parsed using ICTCLAS (Institute of Computing Technology, Chinese lexical Analysis System), and then the parsed text is saved as a .txt format with the encoding code set as UTF-8.

The next step is to use AntConc to perform a collocation analysis. Drawing on previous studies on the identification of Chinese collocations using a statistical approach (Bai, 2004; Sun, 1998; You, 2005, and Wang, 2006), this study sets the span of words as (-3, +4) for analyzing verbs, (-2,+1) for nouns, and (-1,+2) for adjectives, and uses the three most commonly used statistical measures - frequency, MI value, and T-score - to determine whether two words co-occur by chance or if they are lexically primed to collocate with each other. This study adopts Wang’s (2006) approach, setting the two measures as  $MI \geq 3$ ,  $T \geq 2.33$ , if the MI value and T score of a certain co-occurrence meet the condition, then it can be potentially regarded as a typical and most commonly used collocation. Below is a screen capture of the analysis result of the collocates of 丰盛:

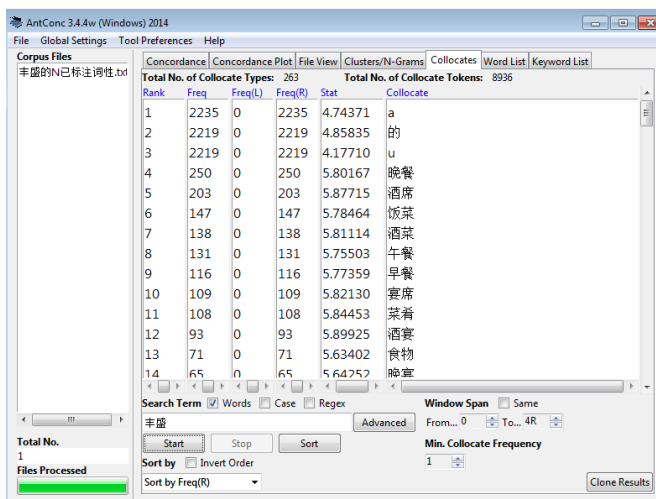


Figure 2: The screenshot of the analysis result of the collocates of 丰盛

The analysis results is then exported and input into an excel sheet, Table 4 shows the list of collocates that can enter into the collocational construction 丰盛+的+N.

Table 4: Results of AntConc collocation analysis ( $T \geq 2.33$ )

Frequency	T-Score	Collocates	Frequency	T-Score	Collocates
257	15.75165	晚餐	21	4.49844	礼物
204	14.04104	酒席	21	4.49143	美食
147	11.90441	饭菜	20	4.38233	宴会
139	11.58136	酒菜	18	4.17449	午宴
134	11.36629	午餐	17	4.04129	食品

118	10.66758	早餐	13	3.54763	酒食
114	10.49653	宴席	13	3.53426	早饭
110	10.30888	菜肴	12	3.40382	家宴
93	9.48207	酒宴	10	3.11148	嫁妆
72	8.33193	晚宴	10	3.1064	年夜饭
71	8.25647	食物	10	3.01496	地方
56	7.35666	筵席	7	2.60325	美餐
49	6.87149	大餐	7	2.60325	早点
35	5.79932	晚饭	7	2.59111	犒劳
33	5.64948	酒筵	7	2.49396	美味
33	5.62152	佳肴	6	2.40358	祭品
26	4.95095	招待	6	2.39702	礼品
26	4.93205	款待	6	2.39047	酒饭
22	4.59452	午饭	6	2.39047	宴请

Table 5: Results of AntConc collocation analysis (M≥3)

Frequency	MI	Collocate	Frequency	MI	Collocate	Frequency	MI	Collocate
252	5.813	晚餐	18	4.402	款待	4	4.500	饮食
204	5.884	酒席	18	5.960	午宴	4	4.960	草地
147	5.784	饭菜	17	5.655	食品	4	5.638	膳食
138	5.811	酒菜	13	5.960	酒食	4	5.152	羊肉宴
132	5.766	午餐	13	5.660	早饭	4	5.375	海鲜
117	5.785	早餐	11	5.719	家宴	4	5.960	年饭
109	5.857	菜肴	10	5.822	年夜饭	4	5.152	伙食
109	5.821	宴席	10	5.960	嫁妆	4	5.375	人生
93	5.899	酒宴	10	4.423	地方	4	5.960	中餐
71	5.634	食物	7	5.960	美餐	3	5.544	自助餐
69	5.728	晚宴	7	5.960	早点	3	3.223	生活
55	5.858	筵席	6	5.375	酒饭	3	5.544	爱情
48	5.737	大餐	6	5.737	祭品	3	4.375	烤肉
35	5.663	晚饭	6	5.544	礼品	3	4.737	成果
33	5.916	酒筵	5	5.960	饭食	3	5.960	夜餐
33	5.544	佳肴	5	5.696	酒肴	3	5.544	夜宵
22	5.612	午饭	5	3.638	美味	3	5.960	供养
21	5.651	美食	5	5.960	筵宴			
21	5.767	礼物	5	5.474	猎物			
20	4.727	招待	5	5.960	果实			
19	5.564	宴会	5	5.960	席面			

The list of collocates are then further checked to achieve accuracy. For example, in both Table 4 and Table 5, the word 地方 is listed, although its T and MI value are

high, 丰盛的地方 doesn't seem to make much sense. By checking its context, the authors found that 地方 is actually used in a structure like 物资最丰盛的地方/水草较丰盛的地方. Here, 地方 is not modified by 丰盛, but by 物资最丰盛/水草较丰盛 instead. 地方 should therefore be removed from the collocates list.

Based on this result, the collocation pattern of 丰盛+的+N is then summarized. This is done by analysing the semantic features of all collocates in Table 4 and 5 and identifying the similarities between them. In Table 4 we can see that there are 33 nouns that are in the semantic field of [MEAL], which represents 89% of the total number of nouns. Similarly, in Table 5, 87% (50 out of 57) of the nouns have the semantic property of [MEAL].

The last step of the procedure is to design activities for learners of Chinese. The goal of these activities is to help learners gain a degree of familiarity with the collocations presented in CCPD, and consequently develop an awareness and sensitivity to them. Through these activities it is hoped that they can eventually acquire the collocational competence and add these important collocations into their reservoir. The following sections describe the proposed learning activities in detail and the pedagogical considerations behind them.

#### 4.4 Collocation activities

Once high-frequency collocates of CMC are identified and CMC's collocation patterns are summarized, the next step is to design learning activities. Before going into detail about the activities, however, one important pedagogical principle which needs to be noted here is the concept of *noticing*. In the current literature on collocation learning, many studies have pointed out that noticing is crucial for L2 learners to learn collocations (Lewis, 2000; Nation, 2000). By noticing, learners are made aware of the existence of collocations and therefore pay close attention to them as part of the language rather than as part of a message. Lewis (2000) also emphasizes that if learners can focus explicitly on some aspect of linguistic form of the input (for example collocation), it helps to accelerate their acquisition process. (p. 160). By noticing high-frequency collocations, learners are encouraged to think beyond the words, and realize that collocations are pre-constructed chunks that are at the disposal of native speakers during communication. This is a key to achieving collocation competence (the awareness of collocations and the capacity to use them) that differentiates these learners from native speakers. Although noticing is of great importance, collocations are often ignored by L2 learners, as Lewis (2000) warned, "don't assume students are noticing collocations and recording for themselves, they won't unless you train them to" (p. 163). The learning activities proposed here, therefore, mainly focus on raising CFL learners' awareness of high-frequency collocations. Take the word 树立 as an example. The CCPD provides a collocation pattern for learners (see Figure 3). The pattern page lists the high-frequency collocates, and also describes the main semantic feature of these collocates, namely that they are all in the semantic field of [+ABSTRACT]. The CCPD also provides some sentence examples that these collocates are used in (see Figure 4). These examples are

also purposely used here to raise their awareness that collocations (such as 树立...观念, 树立...意识, 树立...榜样) are similar to pre-constructed chunks, and that often there are only certain nouns that can enter into such pre-construction. The sentences presented in CCPD are all taken from the BCC corpus, and minor changes are made to better suit CFL learners. On the basis of these patterns and examples, various types of activities are then designed to train learners to internalize and absorb such collocational constructions into their mental lexicon by noticing and practicing.



Chinese Collocation Profile Database

词语搭配 搭配模式 搭配练习 退出

搜索

“树立”的搭配特点：  
大部分跟“树立”搭配的词语都有[+抽象]的语义特征，如

中心词	搭配词（名词）	频率
树立	观念	1809
	意识	1607
	形象	419
	榜样	236
	风气	168
	信心	161
	理想	125
	丰碑	97
	典型	82
	道德	68
	权威	57
	牌子	43
	信念	36

Figure 3: The collocation pattern of 树立



搜索

树立 (shùlì) 动词

建立，建树。

树立 + 名词词组

树立...理念 面对这种压力，中国银行应该树立以效益为中心的经营理念。

树立...意识 因而要求教师树立为学生服务的意识。

树立...观念 因此要树立做事与做人相结合的观念。

树立...形象 创立名牌种子，树立名牌企业形象。

树立...榜样 信泰在香港打官司，为温州民营企业树立了一个好榜样。

树立...风气 在座谈会上，大家各抒己见，畅所欲言，树立了一个认真讨论学习的好风气。

树立...理想 他劝诫我不要过早交女朋友，年轻的时候应该把精力都用到学习上去。要树立远大的理想，要有自己的人生目标。

查找更多搭配用例请点击：[BCC](#) 和 [CCL](#)

形容词 + 树立

牢固树立 一定要牢固树立安全第一的思想

Figure 4: Sentence examples of high-frequency collocates of 树立

Drawing on insights from these studies and the collocation digital library designed by Wu *et al.* (2010), the CCPD includes five types of exercise: gap filling, matching, multiple choice, error correction, and re-writing.

### (1) Gap filling activity

This type of exercise is in essence another form of presentation for the collocation patterns of certain CMC. Learners are given some words from a high-frequency list of a certain CMC and are asked to choose the right collocates to complete each collocation. Figure 6 demonstrates one such activity, which focuses on finding the right noun for the verb 树立. The purpose of this exercise is to reinforce the collocational construction learners have just noticed on the collocation pattern and examples pages.

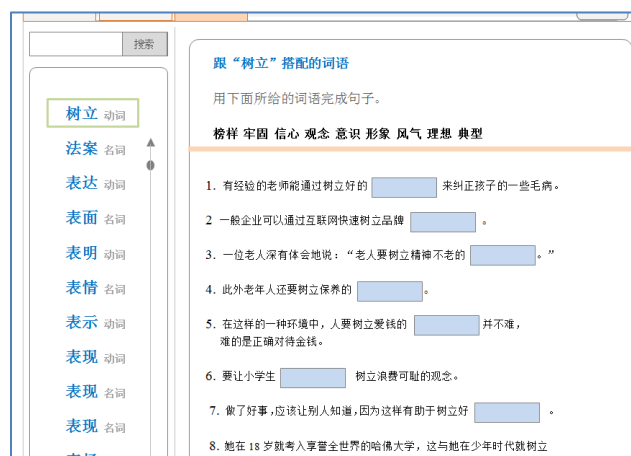


Figure 5: Gap fill exercise example of 树立

## (2) Matching

Matching is to some extent similar to gap filling activity, however, CCPD uses this activity more to help learners differentiate groups of words that share similar meanings or commonly confused words that have different collocates. For example, 选拔 and 选择 are two similar commonly confused words (Liu, 2010). Using the aforementioned procedure of finding high-frequency collocates, the authors identified the high frequency collocates of the two words from the BCC literature sub-corpus, Table 6 lists some of these (the list is not complete due to the space limitation).

Table 6: Collocates of 选择 and 选拔

(选择+) N			(选拔+) N		
职业	目标	时间	人才	官员	官吏
对象	道路	方案	干部	贤能	贤才
机会	地方	人才	人员	将领	士兵
方向	方法	专业	接班人	英才	高手

It can be seen that apart from the word 人才, 选择 and 选拔 actually do not share their collocates. It is therefore useful for learners to notice their high-frequency collocates respectively by drawing attention to this difference.



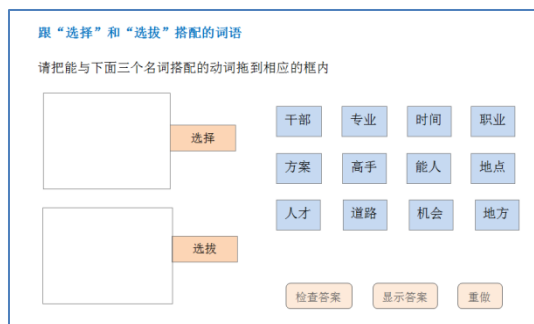


Figure 6: Matching exercise example of 选择 and 选拔

### (3) Multiple choice

The multiple choice activity is very similar to the gap filling exercise, but offers more limited choices for learners. This exercise serves well when attempting to differentiate collocates of synonyms. For example, Li (2016) points out that 丰富 often collocates with words such as 经验, 知识, 信息, which are all in the semantic field of [+ABSTRACT], and words such as 资源, 维生素, 食物, which are in [+CONCRETE], while 丰盛 often collocates with words such as 晚餐, 早餐, 午餐, 年夜饭, 饭菜, 食物, which are all in the semantic field of [+CONCRETE, +MEAL]. The following example shows that multiple choices can be used to focus learners' attention explicitly on such differences.

1. 已经有不少国家在这一问题上具有了相当\_\_\_\_\_的经验。  
 丰盛  
 丰富

2. 从宝宝出生开始, 就能自觉地接受大量信息和学习\_\_\_\_\_的知识。  
 丰富  
 丰盛

3. 胡萝卜、苹果、黄瓜都含有\_\_\_\_\_的维生素和微量元素。  
 丰盛  
 丰富

4. 他们长寿的共同点之一是: 每天吃一顿\_\_\_\_\_的早餐。  
 丰富  
 丰盛

5. 爸爸也说过, 骨头也有很\_\_\_\_\_的营养。  
 丰富  
 丰盛

检查答案 显示答案 重做

Figure 7: Multiple choices example

### (4) Error Correction

This activity is designed to check if learners have grasped the collocational constructions after they study the collocation patterns of certain CMC and their actual use in the sentence examples provided in CCPD. The erroneous sentences are all taken from

the HSK corpus and some minor changes are made to suite L2 learners. Compared with the above three activities, correcting errors is relatively more difficult, as learners have to first read and identify which group of words are collocations and then decide which of them are wrong. By providing learners with such erroneous collocations, they hope to consolidate their internalization of collocational constructions and hence help them achieve a greater acquisition of collocations.

找出下面句中错误的搭配，并把整个错误搭配写到方框中。

1. 因此我们一直在游动的状态，一会儿赶到这儿灭火，一会儿又要赶到那边解决难题。  
错误的搭配是：
2. 即使我因为吸烟而得到癌症，那也是我个人事。  
错误的搭配是：
3. 为了保持公众利益，就是身体健康与精神健康，我认为这个措施是绝对必要的。  
错误的搭配是：
4. 人们去公共场所是要享受社会的利益，而不是去受二手烟的危害。  
错误的搭配是：
5. 在公共场所抽烟的人得到罚款是理所当然的。  
错误的搭配是：

Figure 8: Error correction example

### (5) Rewriting

Unlike the above four activities, which focus learners more on acquiring receptive knowledge, rewriting activity targets more at learners' productive knowledge. As Wu *et al.* (2010) discuss, repetition and use are two effective ways to help learners remember a collocation (p. 7). When learners use a collocation to produce a sentence or construct a conversation, they firstly have to retrieve it from their lexical repertoire, and then have to decide if the collocation is semantically and pragmatically appropriate for that circumstance. This process is very productive as it not only consolidates the receptive knowledge (what they noticed about the collocation) but also encourages them to productively control the collocation in a specific context.

Figure 9 (c.f. next page) shows an example of such activity. It firstly presents a paragraph of text with a few high-frequency collocations. In this example three collocations can be identified: 得出... 结论, 提高...水平, 承担...成本. Depending on learners' language proficiency level, the collocates 结论, 水平, and 成本 can either be underlined or not underlined. Once these collocates are identified, learners are required to use these collocations to rewrite the whole paragraph. For this exercise, the following short paragraph can be provided as a reference answer:

最近的一项研究得出这样一个结论，适度的低出生率可以提高一个国家里人们的生活水平，因为出生的人口少了，每个家庭所承担的养孩子的成本就降低了。

阅读下面的一段话，把其中划线词语的搭配词找出来。

来自 40 个国家的研究人员将出生率与经济数据联系起来，得出了这样一个结论，即：适度的低出生率-每个妇女生育不超过两个孩子-实际上可以提高一个国家的整体生活水平。研究发现，虽然为了保证劳动力供应，保障养老金、医疗和其它福利的资金来源-税基，政府通常都会支持较高的出生率，但往往是家庭承担了生养孩子的成本。

答案：得出...，提高...，承担...

使用你所找出来的词语搭配，把上面这段话的大体意思用自己的话写出来：

检查答案    显示答案    重做

Figure 9: example of rewriting activity

Learners can also be required to underline the collocations used in their writing again, which further enhances the awareness of these pre-constructed chunks.

## 5. Limitations and Future development

One limitation that CCPD has is that it only investigates the collocations on the basis of the literature sub-corpus of BCC. Therefore, the high-frequency collocates listed in CCPD only present part of the big picture. Future development can include more sub-corpora of BCC. High-frequency collocates of certain CMC in different text genres can also be compared and analyzed, and the result may be helpful for teachers and learners to raise the awareness of genre-specific collocations.

Another limitation may lie in the lack of design present in the automatic activity and answer generation in what Wu *et al.* (2010) created. In their proposal, an exercise design interface is provided for teachers and learners to create exercises at different levels of linguistic difficulty, as well as to make the activities more collaborative and competitive. Since the goal of establishing CCPD is to form a foundational database of Chinese collocations, offering more in-depth knowledge such as collocation patterns and a high-frequency collocate list of each collocate, the manual processing and analysis involved in this project are essentially necessary and time consuming. It is currently not viable to design an exercise design interface similar to that in Wu *et al.* (2010). Such a design could be beneficial for both teachers and learners if it can be accomplished in the future development of CCPD.

## 6. Conclusion

This study presents a design of a Chinese Collocation Profile database for supporting CFL learners' development of collocation competence. Drawing on current studies on L2 collocation acquisition, the study first identifies commonly confused collocations for CFL learners in their writing for HSK. Once the list has been generated, the high-frequency collocates of each collocation component from the list are then identified using the corpus analysis toolkit AntConc and based on carefully applied criteria. The high-frequency collocates provide a solid foundation for the authors to carry out semantic analysis of the collocation patterns for each collocate. Such patterns are crucial to enable CFL learners to firstly learn a collocation pattern by studying high-frequency items, and then generalize to a more abstract pattern. To draw learners' attention to these high-frequency collocates and their patterns, CCPD provides five types of activities to help learners notice and practice collocations in context, with an aim to raise awareness regarding collocations as pre-constructed lexical chunks in language, and to increase their familiarity with the linguistic features of collocations. Among these types of exercises, gap filling, matching, multiple choice, and error correction are rather receptive, while rewriting activity is more productive and engaging.

The description of the CCPD in this study is only a theoretical attempt. More practical issues are to be taken into consideration when constructing the actual online learning environment. A demo website has been built to demonstrate the ideas discussed in this study. The URL for the demo site is <http://ccpd.space/>.

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## Learning Through a CMC-Based Tandem Project with Native Speakers: A Descriptive Study of Beginning CFL Learners (网络环境下中文教学配对学习活动的设计: 一个描述性研究)

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**Abstract:** Tandem learning through conferencing tools, one form of computer-mediated communication (CMC), has been proven beneficial to language learning. This study investigates the implementation of a tandem learning activity that was designed, based on the multiliteracies' view of pedagogy, to allow CFL learners in America to interact with native speakers of Chinese in China. It explores how learners interact with native speakers via Skype, QQ or WeChat, with the purpose of completing a culture project, how they perceive this learning experience, and how the design of the tandem activity might be improved. Data collected include: chat records, learner reflections on the tandem learning experience, a survey, project presentations, researcher/teacher field observation notes, and an informal focus group interview. Grounded theory was used in data analysis. The findings show that the learners were able to communicate with the native speakers online successfully by adopting various strategies. A majority of the learners enjoyed the tandem activity, primarily because they felt that it had enhanced their learning. Various topics were covered in their conversations. The learners enjoyed connecting with native speaking college students in China despite some challenges. Specific ways were suggested to improve integration of tandem learning into beginning level CFL courses.

**摘要:** 利用网络视频或音频社交工具进行配对学习已被证明有益于语言学习。本研究旨在探讨基于多元认读理论 (Multiliteracies theory) 设计的利用网络社交工具 (Skype, QQ, 或者微信) 进行配对学习的活动的设计与实施, 包括中文学习者在完成一项文化课业中如何与中国大学生通过网络社交工具用中文交流, 他们对此项活动的感受与认知, 以及此设计如何进一步改进。作者利用人类学的扎根理论 (Grounded theory) 分析数据, 研究数据包括会话记录, 学生反思, 调查问卷, 学生活动报告, 老师观察记录, 以及非正式小组访谈。研究结果表明, 学习者通过利用不同策略成功地完成了与操母语者交流并取得文化信息的目的; 多数学生认为此活动虽然

有一些挑战，但是增强了他们对目的语言及目的文化的学习，因此喜欢并享受整个活动过程。

**Keywords:** CMC, Tandem Learning, Learning with Skype, Learning with QQ/WeChat, Culture learning, Multiliteracies

**关键词:** 电脑辅助沟通, 配对语言学习, 利用网络会议工具, 多元认读理论, 中国文化学习

## 1. Introduction

Computer-mediated communication (CMC) refers to communication taking place between human beings via networked computers (Herring, 2001; Warschauer, 1999). The use of CMC in education (Luppicini, 2006; Romiszowski & Mason, 2004; Wallace, 2003) and in language learning (Abraham, 2008; Lin, Huang, & Liou, 2013; Mahdi, 2014; Nguyen, 2008) has been thoroughly examined. Research in the field has revealed that CMC benefits the learning process by increasing learner motivation (Lee, 2004; Sotillo, 2000), supporting active learning (Bikowski & Kessler, 2002; Lee, 2005; Warschauer, 1999), enhancing learner autonomy (Arnold, 2002; Payne & Whitney, 2002; Chiu, 2008), and fostering collaborative learning (Leahy, 2008; Savignon & Roithmeier, 2004). Research on the effects of CMC on language education has revealed that, as a student-centered tool in language learning, CMC can help improve the learners' various language skills (Chun, 2008; Davis & Thiede, 2000; Dussias, 2006; Godwin-Jones, 2008; Levy & Stockwell, 2006; Lund, 2006; Payne and Whitney, 2002; Thorne & Payne, 2005).

CMC has the characteristic of space and time independence (e.g., synchronous or asynchronous). CMC users may choose their means of communication from a variety of formats, such as text, audio only, video only, or a mixture of these formats. With these features, many types of CMC activities, including synchronous and asynchronous, have been designed to facilitate authentic communication between language learners and native speakers (Levy & Stockwell, 2006; Kern & Warschauer, 2000). This study focuses on the use of Skype/QQ/WeChat tandem language learning—one type of CMC activity, by Chinese-as-a-Foreign-Language (CFL) learners, to complete a culture project. The design of this tandem culture project was based on the multiliteracies theory (The New London Group, 1996). The goal of this study was to find out whether or not the design of the tandem activity helps CFL learners to better learn the target language and culture, to explore the ways learners interact with native speakers of Chinese, and to understand how the learners perceive this learning experience.

## 2. Literature review and rationale

Tandem language learning refers to learning from exchanges between two learners with different native languages. It originally took the format of Face-to-Face (FTF) interaction with the major channel of communication being oral (Brammerts, 1996;



Chung, Wesche, & Barfurth, 2005; Appel & Mullen, 2000). However, it is often difficult to use tandem language learning in an FTF environment due to limited number of available learning partners. It is much more convenient to use CMC to arrange tandem language learning.

Researchers originally examined the use of email in tandem language learning and found that it was an effective tool for language learners of both groups to learn the target language (Little, Ushioda, Appel, Moran, O'Rourke, & Schwienhorst, 1999). Kötter (2003) attempted to determine whether tandem language learning could be implemented in a format “in which the learners could interact with each other in real time over a computer network” (p. 145) and found that it works in situations where the learners need to respond to each other more quickly than when they communicated via email. Chung, Graves, Wesche, & Barfurth (2005) examined the online tandem task performance between a native speaker of Korean and an American student who was learning Korean. This research showed that the native speaker of Korean used guiding questions to provide scaffolding which helped the learner to self-regulate his learning experience and internalize the language and culture. Appel & Gilabert (2003) examined the efficiency of learning via email tandem, comparing two groups of tandem learners. One group was assigned a specific task and the other was not. Results show that the first group produced more language output, had more frequent exchange with their partners, and became more interested in sustaining exchange with their learning partners.

Skype is a free downloadable software application first introduced in 2003 (Wikipedia, 2016). QQ and WeChat, functionally equivalent to Skype, are widely used in China. These communication programs allow users to communicate either through video/audio in synchronous chat, or by text message or video/audio message in asynchronous chat. The her empirical study of the use of Skype in learning, Yanguas (2010) compared the interaction patterns used in communications with Skype (audio/video and written) with the patterns used in FTF communication among intermediate Spanish learners. Skype can be used in tandem learning to facilitate communication between two people of different mother tongues (Elia, 2006). In their study, Tsukamoto, Nuspliger, & Senzaki (2009) used Skype to connect Japanese high-school students of English with American Japanese language students in the United States, and found that the English learners played a more active role in learning via Skype than they did when they were doing similar activities in the classroom. Wang, Fang, Han, & Chen (2016) evaluated the affordances of WeChat for the development of a community of inquiry (CoI) in semi-synchronous language exchange. The findings of their study indicate that WeChat helped establish the cognitive, social and teaching presences in CoI.

These studies examined whether or not synchronous and semi-synchronous CMC, using Skype (or QQ/WeChat), was an effective tandem learning tool. Few studies have attempted to determine whether or not Skype can be used in tandem learning in cases where the learners have the choice of using synchronous and asynchronous formats. Scholars have been calling for principles of using CMC in language learning that can be applied, studied and developed in order to successfully implement CMC in language

teaching and learning (Chapelle, 2003; Mahdi, 2014). No research, however, has been done to determine how the teacher should integrate Skype/QQ/WeChat-based tandem learning into an existing curriculum, and how they should organize the tandem learning tasks. Research is needed to investigate ways by which a teacher may implement tandem learning using Skype/QQ/WeChat without specifying synchronous or asynchronous format of interaction. Such research will help contribute to the understanding of the principles of the effective use of CMC in learning.

### 3. The theoretical framework and the design of the tandem project

This study was informed by the multiliteracies learning theory developed by the New London Group (1996). Based on the assumption that the human mind is embodied, situated, and social, the multiliteracies learning theory encourages a pedagogical approach that prepares learners for a successful life in a more and more globalized world. This approach supports inclusion of cultural, linguistic, communicative and technological diversity in teaching and learning. The necessity to communicate meaning amidst the constant change in today's communications milieu requires that learners be able to figure out differences in patterns of meaning in different contexts, and be able to use a variety of multimodal representations, especially those of the new digital media. The pedagogical framework, based on the multiliteracies theory, breaks down the teaching and learning process into four segments: situated practice, overt instruction, critical framing, and transformed practice. When these four segments are employed together, regardless of order, learners are encouraged to develop their own critical thinking skills, and are able to improve their learning styles to better fit the rapidly changing and globalized world.

In this study the researcher/teacher designed the tandem project, using the pedagogical approach that the multiliteracies theory encourages. Thus, the project incorporated four components to introduce different methods of learning and communicating to the CFL learners in order to improve their ability to communicate and navigate bilingual and bi-cultural differences: *Situated practice*, *Overt Instruction*, *Critical framing*, and *Transformed practice*.

*Situated practice* comprises “immersion in meaningful practices within a community of learners who are capable of playing multiple and different roles based on their backgrounds and experiences” (The New London Group, 1996, p. 85). This immersion brings together experts (the teacher and the native speakers) and learners, and at the same time motivates learning by giving learners an opportunity to “use and function with what they are learning” (p. 85). During this process, evaluation is not used to judge, but to guide learners to experiences and to assist learners in becoming members of a new culture.

Two of the primary purposes of learning a new language are to know a new culture and to be able to communicate with native speakers of that culture. In contrast to most classroom activities such as reading aloud, drills, translation, pair or group work among the learners, the intent of designing situated practice into the tandem project was

to immerse the learners in a “community of practice” (Lave & Wenger, 1990) with native speakers of Chinese, and as the first step of achieving which, by pairing each learner with a native speaker and asking them to communicate in Chinese about culture differences between China and America.

*Overt Instruction* includes “all those active interventions on the part of the teacher and other experts, that scaffold learning activities; that focus the learner on the important features of their experiences and activities within the community of learners; and that allow the learner to gain explicit information at times when it can most usefully organize and guide practice...” (The New London Group, 1996, p. 86). Overt Instruction here refers not to direct transmission, drills, or rote memorization of information, but rather to the collaborative relationship between the teacher (or other experts) and learners. Within this kind of collaboration, learners are able to “accomplish a task more complex than they can accomplish on their own” (p. 86), and be able to become aware of and have control over what is being learned. Most importantly, learners develop a metalanguage that describes the form, content, and function of the discourses of practice.

Overt instruction involves identifying learners' needs and explicitly explaining and addressing those needs. Through active interaction with the teacher (and other experts) in the situated learning, overt instruction not only aids learners in understanding what they are learning (Henderson & Exley, 2012), but helps them know how they are learning at a metacognitive level (Gee, 2002). To become engaged in the tandem project, the learners receive overt instruction not only from the teacher, but also from the native speakers of Chinese during their one-on-one communication.

*Critical framing* allows learners to stand back from what they are doing and view it critically. The goal of critical framing is to “help learners frame their growing mastery in practice (from Situated Practice), and [their] conscious control and understanding (from Overt Instruction)” (The New London Group, 1996, p. 35). The teacher needs to help the learners to “denaturalize and make strange again what they have learned” (p. 86). Learners need to reframe what they have learned into a broader context by comparing it with a different context, in other words by “foregrounding” what has been taken for granted. Through critical framing, learners are able to distance themselves from what they have learned, critique it, account for its importance and uniqueness, and apply it in their life. Critical framing is the basis for an improved (i.e., transformed) practice.

Through critical framing learners have an opportunity to develop the skills necessary to question, evaluate, and re-evaluate knowledge, and to frame and reframe information in different contexts. The tandem project was designed to give the learners two opportunities to critically reflect, one related to the cultural knowledge they will acquire from their partner in China; the other related to their learning. After situated learning, the learners had an opportunity to compare their partner's culture with their own, thereby compelling them to re-frame information as they received it from their partners. At the end of the project, the learners wrote a reflection paper to critically evaluate the entire process of learning through this project.

*Transformed practice* should demonstrate that “the learners can design and carry out, in a reflective manner, new practices”, and that they can “implement understandings acquired through Overt Instruction and Critical Framing in practices” (The New London Group, 1996, p. p.35). The teacher should re-create a discourse in which learners can implement what they have learned and re-practice it in a reflective manner.

Transformed practice occurs when learners apply what they have learned to new situations, such as learner-teacher role reversal activities. The tandem project was designed to include a culture presentation. In this presentation, the learners were required to reflect on what they had learned while interacting with their native speaker partners, to compare their partner's culture with their own, and to plan a pathway to further learning. The learner's culture presentation, and comparison of the learner's communication at the beginning of their interaction with their native speaking tandem partner, and towards the end of that interaction, served as an indicator of whether or not their practice had been transformed.

#### **4. Research questions**

This study is an effort to examine whether or not the tandem project, as designed, could be successfully implemented within the CFL course, how the learners had perceived their tandem learning experience, and how the project design might be improved in the future. Three major research questions were raised in this study:

- 1) Does the tandem project work for beginning CFL learners? What are the learners' perceptions about the tandem learning activity?
- 2) How do beginning level CFL learners interact with native speakers online via Skype/QQ/WeChat, with the purpose of completing a culture project? What are the strategies adopted to make the communication successful?
- 3) Is there anything in the design that should be changed? If so, what is it?

#### **5. Methodology**

##### **5.1 Context and participants**

The participants consisted of 12 college students and one high school student (six male and seven female) enrolled in a second-semester 5-credit Chinese course (after finishing the first-semester 5-credit Chinese course) in a large Mid-western university. Out of the 12 college students, four were freshman, two were sophomores, four were juniors, and two were seniors.

##### **5.2 Procedures**

The tandem project began in the 8<sup>th</sup> week of the semester (Note: There are 15 weeks in total in one semester.) The learners were asked to establish communication with

a native speaker of Chinese in China, using either QQ, WeChat or Skype, for the purpose of completing a project on Chinese culture over a 4-week period. Upon completion of the project, the participants were required to present what they had learned about Chinese culture with the help from their tandem partners to the class, and then to write a reflection paper on their experience of interacting with the native speaker and on their class presentation.

Each participant was randomly paired-up with a tandem partner—a native speaker of Chinese who was a junior English major in China. The native speakers were asked to help the American students to complete a project on Chinese culture. The native speakers were also encouraged to ask their learner tandem partners questions about American culture or about the English language.

The researcher/teacher gave instructions to help the CFL participants get started. First, the teacher clarified the purpose of the project, explained the project requirements, and gave suggestions on online chat/instant messaging. Three main goals of the project were established—that upon completion of the project, the learners would: (1) Feel more comfortable when talking with a person from China online, (2) improve their understanding of Chinese culture, and (3) become more aware of the differences between the English and Chinese languages, and between American and Chinese culture.

The requirements of the exchange included adhering to a timeline, and spending a specified amount of time each week talking in Chinese synchronously. The project was introduced in the week before the spring break. The learners were required to install Skype, QQ, or WeChat and start to use it by sending the teacher a message during the spring break. In the week after they came back from the spring break, they were instructed to contact their tandem partner and introduce themselves, and subsequently to begin to converse with their tandem partner using Skype, QQ or WeChat, with the choices of using voice, text-chat, and/or recordings. Participants were required to spend a minimum of one hour per week conversing. During this time, at least 40 minutes were to be spent talking in Chinese, and at least 30 minutes were to be spent in synchronous talk. Each Monday, a chat record was to be submitted to the teacher. The participants were required to use Chinese characters (not to use pinyin) if they choose to use text-chat.

After finishing the tandem project, the participants delivered oral presentations in Chinese on the culture topic in class. In their presentations, the participants introduced their tandem partners, the culture topic that they had researched, what they had learned during the tandem exchange, and their thoughts about their tandem partner's culture as compared with their own. After making their presentations, the participants wrote a paper in English reflecting upon their experience communicating with their tandem partners, and on the process of completing the tandem project.

### **5.3 Data collection**

In order to examine whether or not the project design worked, how the learners interacted with the native speakers, and whether or not the learners encountered

difficulties while completing their culture project, the study adopted a descriptive research design through collecting qualitative data. One important feature of descriptive methodology was that differing data collection methods are employed to illustrate a case from different angles (Yin, 2003). Triangulation ensures the validity of the study (Berg, 2004).

In order to capture the process of tandem partner interaction and the learner's perception of the tandem culture-learning project, a variety of data were collected. These data included the learner's Skype/QQ/WeChat chat records, their culture presentations, their reflection papers, a survey given after the project was completed, the researcher/teacher's observation notes, and an informal focus group interview.

#### **5.4 Data analysis**

The open-and-axial coding approach from the grounded theory (Corbin & Strauss, 1990) was used to analyze the tandem chat record and the reflections data. Initially the researcher/teacher perused the Skype/QQ/WeChat logs and the reflection papers in order to identify emerging thematic patterns. Communication key characteristics were extracted from the conversations and marked with a series of codes completely generated from the data. The codes were grouped into categories. The initial coding was revisited and re-evaluated to determine whether the identified patterns and categories needed to be revised. The codes were grouped into similar categories in order to make the data more workable. From these categories, which were the basis for the creation of a theory, patterns were identified. In addition to the chat records and the reflection data, the researcher/teacher's observation notes (Note: these notes are composed of 1) the students comments made about their tandem project, 2) their communication with their partners, 3) and the observation notes the researcher/teacher made when the students did their oral presentations in class.) were documented to supplement and confirm the categories and patterns identified during the analysis of the records and reflections data. The culture project class presentations served as an artifact of the tandem activity product. The survey results supplemented the findings.

### **6. Findings and discussion**

The tandem project design proved to be effective, and all but one participants reported that they had learned a great deal about Chinese language and culture. Eight participants used QQ, four used Skype and one used WeChat in communicating with their partners. (At the time when this study was being conducted, WeChat was not as popular as it is today.) During the exchange with their partners, the participants adopted various strategies to approach the culture topic and to make the communication successful. Notwithstanding the effectiveness of the project design, a number of modifications were identified that might serve to improve it.

## 6.1 The design of the tandem project was effective

The chat records, the class presentations, and the reflection papers all indicated that the tandem project design was effective in improving the learner's language skills and in improving the learner's understanding of the target culture. A variety of topics appeared in the chat records. These topics included: day-to-day activities, movies, class schedules, academic majors, eating habits, hobbies, raising kids, college life, games, girlfriends and boyfriends, growing-up experiences, and the time difference between China and the United States. All of these topics were closely related to the tandem partner's daily lives, but only about half of which had been covered in their Chinese study. Topics that were only remotely related to daily life, such as domestic or international news, rarely appeared in the conversations.

Each participant successfully completed a class presentation in Chinese. Eleven participants used PPT in their class presentations (see Figure 1 for sample PPT slides). One participant made a video, which was played for the class. Due to a scheduling conflict, one participant made an online presentation. The 13 presentations covered ten topics. See table 1.

**Table 1: Topics covered in the culture project. (Zhang, 2015)**

<p>Weddings. This report was in the format of a conversation in Chinese between the participant and his fiancée (his fiancée was also learning Chinese). This humorous conversation included a description of Chinese bridal apparel and of the special foods served at a Chinese wedding.</p>	<p>Funerals. This report described the differences between funerals in American and Chinese culture including: customary funeral attire, funeral setting(s), funeral directors, and funeral activities. In this report, the learner included the Chinese family custom of refraining from wedding until at least, three years after a family funeral.</p>
<p>Education (two learners reported on this topic). These presentations revealed two different perspectives on education in China. One focused on the Chinese educational system including the college entrance exam and course settings within the colleges. The other focused on relationships between teachers and students, parent involvement in their child's education, and the pressure on students to achieve academic success.</p>	<p>Food (three learners reported on this topic). The three presentations described college student eating habits, each from a different perspective. One learner described the typical day-to-day eating habits of Chinese college students, for example, where they eat and why they do not cook. Another learner described the differences between the foods customarily served in Northern China and those served in the United States, and described American restaurants found in China. Another student reported foods served on special occasions.</p>
<p>Dorm life. This presentation described Chinese college dorms, how many students share a room, and typical dorm activities.</p>	<p>Relationships. This report described various kinds of relationships, and the differences between them in China and American. These relationships included: parent-kid relationships, man-woman relationships, girlfriend-boyfriend relationships, and teacher-student relationships.</p>

<p>Extracurricular activities of Chinese college students. The learner used a poster (see below) to describe what Chinese college students like to do when they have free time.</p>	<p>Internet café. This report described the Internet café, why people use them, why responsible parents discourage their children from going to them (their negative influence on children's studies), and why their tandem partner did not like Internet cafés.</p>
<p>Travel in China. In this report, the learner described things she had seen and heard while on a trip to China during the tandem project, ways she had become confused by things she had observed, and how she resolved her confusion with the help of her tandem partner.</p>	<p>The cultural differences, in my eyes. In his report, the learner described the primary cultural differences he had observed while on a trip to China and how, with the help of his tandem partner, he came to understand the reasons for the differences he had observed.</p>

### 首先：我的中国同学

- 她叫李云含
- 她住在中国河北省秦皇岛市 (Qinhuangdao City, Hebei Province)
  - 是一个很有名的旅游城市
  - 环境(environment)很好
  - 有大海 (sea)
  - 有长城
  - 非常漂亮



### 为什么我的笔友对网吧不感兴趣?

- ❖ 她说：“在大部分中国人看来，网吧是个不好的地方。”
- ❖ 人们都相信很多孩子去那儿会影响学习。
- ❖ 网吧的声誉得不好。



### 中国的高中和美国的高中

<p>中国高中和美国高中的相同点:</p> <ul style="list-style-type: none"> <li>■ 有相同的课程:               <ul style="list-style-type: none"> <li>■ 数学</li> <li>■ 英语</li> <li>■ 物理</li> <li>■ 化学</li> <li>■ 历史</li> <li>■ 体育</li> </ul> </li> </ul>	<p>中国高中和美国高中的不同点:</p> <ul style="list-style-type: none"> <li>■ 有不相同的课程:               <ul style="list-style-type: none"> <li>■ 比如说: 中文</li> <li>■ 在中国学生有时住在学校宿舍</li> <li>■ 可以说中国高中的课程比美国的难得多</li> <li>■ 中国的学生有很大的学习压力</li> </ul> </li> </ul>
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新词:  
相同点: Similarities  
压力: Pressure

### 尿布 (Niàobù – Diapers)

在中国很多人不用尿布。  
孩子的裤子有一个孔。(kong3 – hole)





**朋友关系**

在美国，我觉得有很多‘最’好的朋友。平时四个或者五个。但是中国人常常有一个非常好的朋友。

*This is just a generalization obviously it doesn't apply to every student*

**葬礼上穿什么衣服和在那儿**

在中国	在美国
<ul style="list-style-type: none"> <li>多数人穿白色的衣服</li> </ul> 	<ul style="list-style-type: none"> <li>多数人穿黑色的衣服</li> </ul> 
<ul style="list-style-type: none"> <li>城市的葬礼会在火葬场举行，在农村，葬礼会在家里或者村子里举行。</li> </ul>	<ul style="list-style-type: none"> <li>美国人葬礼去在教堂</li> </ul>

在中国的城市和在美国，人们都穿黑色的衣服。因为他们觉得那个颜色很让人悲伤。

Figure 1: Sample slides from participant presentations

## 6.2 Two categories of perceptions about the tandem project were identified

The first category comprised enjoyable experiences during the project. The second category comprised adjustments required to succeed in the tandem project including: being a little nervous, not knowing how to approach the native speakers, and learning to enjoy what the project taught them.

Eleven out of the 13 participants enjoyed the tandem project experience. The reasons participants gave for liking the project varied. Some liked it because it combined all of the components of language learning into a single experience. One participant said, “I like it—culture, connection, grammar, vocabulary, presentation, speaking and listening, on the spot”. Another stated that the project had forced her to think faster in Chinese, and to learn more by “forcing students out of their comfort zones and making them utilize what they have been learning in class.” Other participants commented that the project helped them to “learn new grammar and new vocabulary that is important for conversation”, and to become aware of what they knew of the language. One participant said, “I believe that chatting with my Chinese partner helped me with my Chinese learning. I was forced into a position where I had to use grammar that I had learned, look up words, translate what she was saying, and generally ask for help when I didn't understand what she was saying. Chatting with my partner made me utilize what I knew of the Chinese language”.

All participants enjoyed connecting with their tandem partners in China, discovering what they do and what they think, and learning about the similarities and differences between their cultures. Most participants reported that they had learned a lot from the tandem communication. The participants enjoyed learning about, as one described it, “a culture that behaved differently on a daily basis” from their own, and yet “had many similarities in terms of what might be accomplished, in terms of work, school, family and etc.” Other learners expressed appreciation for having been given the opportunity to participate in the tandem project because their Chinese partners had helped

them in their “understanding of Chinese, if not grammatically, at least culturally, and that that was an experience second only to actually visiting a different country.” Another learner expressed similar feelings in his reflection,

Using the technology to talk with our partners helps us all keep connected and helps to break down barriers and differences that we perceive about each other. For example, in my project, my partner and I were surprised to find that American and Chinese students do very similar things in their free time (shopping, doing laundry, eating with friends, etc.), and there was not very much difference at all between things we liked to do. ... As I was making my poster (the presentation), I was again surprised by how much more we had in common than I originally had thought. This project is definitely one that should be kept for future classes, because it has really helped me in both learning more Chinese as well as learning more about Chinese culture and life.” Another participant wrote,

In most cases, the participants liked the project, not because of one aspect, but because of several. For example, one participant wrote in his reflection paper,

In completing this project, I found it to be a very rewarding and worthwhile experience. I not only developed a further knowledge of Chinese vocabulary, but also developed in my ability to effectively communicate a topic or idea in Chinese. I thoroughly enjoyed this project because I grew in my knowledge of Chinese, developed friendships with students studying English in China, and learned how to effectively communicate an idea orally in Chinese.

One participant commented that the class presentations served as an excellent culmination of the project,

Additionally, I enjoyed this project because it allowed students to practice their speaking and listening comprehension skills. Viewing and listening to other students' presentations gave our class the opportunity to learn some new words, as well as practice overall listening comprehension. I felt that while presenting my project, it was a very relaxed environment where there was not a lot of pressure, allowed me to critically think about formulating sentences. In addition, a decent portion of my presentation was made up on the spot, so I was able to practice thinking and communicating in Chinese on the spot without prior preparation.

Not all participants enjoyed the project at the onset, but most experienced an improvement in the in the process of interacting with the native partner as they became less worried, happier, and more relaxed. Worries at the beginning of the project were mainly due to the lack of experience in interacting with native speakers. For most of the participants, their experience in speaking Chinese with native speakers had been limited to that of speaking with their instructor. After the partners began communicating, they

discovered that the flow of their conversations was improving. Their worries ceased and they began to enjoy the project. One learner described this transition from worrying to enjoyment, “When I first started working on this activity, I was a little bit worried that I wouldn't be able to understand/communicate with my partner, or that the conversation would be awkward or forced. However, as I began the project and began communicating with my partner, I was amazed by how well the conversation seemed to flow”.

Another participant recounted the psychological process she experienced,

I remember how nervous I was and how unprepared I felt at the beginning. This was not going to be like practicing with other Chinese learners or with our Chinese TAs. I was a little worried about messing up, and my biggest fear was that my Chinese partner would not like me or that she would think my Chinese was terrible. Still I was very excited to have the opportunity to develop my Chinese with natural-born speakers. Not only was it a fun experience, it also allowed me to make friendly connections with people in China. I hope to continue my Chinese education by chatting with the friends I have made.

Most of the participants enjoyed the project so much that when asked whether they and their native speaker partner would keep in touch with each other after the project, 60% of them said, yes, and those who did not say, yes, said maybe.

### **6.3 Different strategies were adopted to communicate effectively**

While some strategies commonly used in face-to-face communication such as, requests, clarification checks and self-correction, greetings, leave taking, and inter-subjectivity, were applied to online communication, other strategies were also adopted to make message exchanges more efficient. Four categories of strategies were identified: (1) Using text chat instead of audio chat, (2) rapid code-switching when necessary, (3) getting to know their partners through natural conversation before learning about culture, and (4) utilizing available online resources to help with smooth communication.

Although participants were given the choice to use either audio/video chat or the text chat, or both, most of them chose to use the text format synchronously. Of the 13 participants, only two used audio chat, even minimally, during the 4-week tandem interaction period. All other participants used synchronous text chat exclusively. The main reason given for preferring synchronous text chat over audio/video chat was that audio/video chatting was too challenging for beginning Chinese learners, and that audio/video chatting often raised learners' anxiety. One participant wrote in her survey in Chinese, “Speaking makes me nervous, but I can write/type.”. Another one commented, “My partner used a larger vocabulary and I was continually translating characters that I didn't know. If I had used video or audio chatting, I think that I would have gotten really lost in the conversation”.

About 50% participants used synchronous chat at least twice a week and 60% participants chatted with their partners for at least 30 minutes each time. Four participants chatted for over an hour each week. Asynchronous chat was tried occasionally and found to be less preferable than synchronous chat. The general consensus of the participants was that asynchronous chat was less efficient. One participant wrote, "I would generally try to chat with my partner twice a week, but sometimes it would be a struggle to chat with her once a week because our schedules wouldn't align. In that case, we would try to send messages back and forth so that we would get a response once the other logged online. When that would happen, things would be very slow going". Another participant stated in his survey, "My partner and I would try to chat for an hour when we would actually be online at the same time; if we were chatting back and forth over the course of several days while the other was offline, it was a smaller amount".

While most participants used Chinese in their text chatting, they code-switched between Chinese and English when necessary. Their synchronous conversation usually began and ended in English. Conversations often began in English to more easily set up the next meeting time, and often ended in English to quickly clarify any uncertainties and conclude the conversation. Occasionally they mixed both English and Chinese using English only for clarification. In general, over 85% of the communication was in Chinese. One participant said, "I used 99% of the time to chat in Chinese. I feel that trying to use as much Chinese as possible was most effective."

The majority of participants found their cultural topic within the natural flow of conversation with their tandem partner during the 4<sup>th</sup>, and last week of the tandem project. During the first three weeks, the participants and their tandem partners talked about their daily lives. When asked how they arrived at the topic of their culture project, most said that the topic just came naturally. One participant wrote, "We randomly talked about various foods one day and [I] decided to follow up on that subject." When the participants were asked what suggestions they would give future tandem project participants, as to how to approach the culture project with their partner, most participants said that they would suggest that culture project ideas be discovered within their natural conversations. One wrote, "I would tell students in the future to maybe get to know their partner first, their likes and dislikes, and then see what works naturally for both of you." Another one encouraged the future students to follow what they are curious about and she said, "If you have something you are curious about, you can go for it and ask. It might just lead to the culture topic you want to discuss."

Another strategy unique to online communication utilized by the participants was the use of online resources, such as web tools, dictionary, and images to make the communication smooth, especially at the beginning of the tandem project. One participant commented, "I found that at first it was a little challenging, and I had to use some translation software, but after a while it became a bit more natural." Another said, "I found that if I looked up the words and phrases that my Chinese partner sent to me, I could usually figure out what she was saying." When they did not know how to say something, they occasionally found a helpful image on the web and sent it to their partner. All participants made use of emoticons to express their feelings.

## 6.4 Individual Differences

When using these above-mentioned strategies to communicate, individual differences emerged. There were four different communication styles shaped by the individual differences. The first style was *open and direct*. A majority of the participants interacted with their partner in this style. These participants simply started interacting with their partner as a new friend and asking questions which were closely related to their daily life. Sometimes miscommunication occurred, but with effort, communication became increasingly smoother. The second style was *cautious and very prepared*. Participants using this style prepared their questions in advance. The other two styles were only used by two participants, respectively. The third style was *explaining all situations he or she was in meticulously for fear of being misunderstood*. The other was *minimalism*, the participants of this style used the minimum number of words required to communicate the question, in a telegraphic style.

## 6.5 Challenges

Despite the fact that most participants enjoyed the project, they did encounter challenges along the way. Some participants found it challenging to formulate questions necessary to elicit the information needed about Chinese culture to compare it with their own. Asking good questions requires prior knowledge. However, neither the participants in the United States nor the Chinese students in China were familiar with each other's culture. As one participant commented, "I considered it hard to just think of differences [to ask] and how to compare them, without actually knowing of the differences already." The challenge of question formulation resulted in questions that were too broad, such as, "are there any differences between Chinese weddings and American weddings?" One participant suggested that questioners should "have some ideas prepared so that you and your partner can discuss them."

Another challenge was scheduling synchronous talking times with their tandem partner. This challenge was caused primarily by the time difference between the US and China. There is a 9 to 13-hour time difference between the two countries depending on time location in the US. This had made scheduling synchronous talks very challenging, especially for college students who go to bed very late. Most participants had to get up very early in order to talk with their partner.

Replying to tandem partner messages in a timely fashion and acceptable fashion was occasionally found challenging. If there were many new words in the partner's messages that the participants had to look up in the dictionary, it often took the participants more time to prepare a reply, often leaving the participant unsure as to whether they had conveyed their message clearly and concerned that their delayed reply would bore their Chinese partner. One participant said, "the hardest part of all was making sure I was typing the correct Chinese to my partner before I sent it. I was self-conscious of my Chinese and checked it about three or four times before I replied to her"

messages. I need to feel more comfortable in my learning and trust myself; otherwise, my delayed responses will bore my Chinese classmates.”

## 6.6 Project design strengths and weaknesses

Overall all, the tandem design, based on the multiliteracies theory, successfully provided enough scaffolding and media for the CFL learners to learn Chinese language and culture. The broad range of format choices available through Skype/QQ/WeChat offered users great flexibility to choose the method of communication that worked the best for them. Following is an examination of the strengths and weaknesses of the four components of the project design.

Situated practice was the essential component of the tandem project design. The findings specified in the above section proved that situated practice greatly enhanced the learners' learning of culture, and maximized exposure to the language. This component brought experts to the learners, and immersed the learners in an environment second only to visiting China. Based upon the perceptions of the participants, a few adjustments could be made to allow the situated practice to work even better.

While it is feasible to engage beginning Chinese learners with native speakers through situated practice via tandem communication, it is critical to the learning experience that the native speaker understand, and accommodate, the beginning learners' limited command of Chinese language. The process of “legitimate peripheral participation” is a necessary component of situated learning, according to Lave & Wenger (1990). Situated learning—a method of engaging learners in a “community of practice”—necessitates the movement of the beginner or newcomer to move, by participation in simple and low-risk tasks, from the periphery to the center of the community, that is, to become experts themselves capable of helping incoming newcomers or beginners. In the tandem-learning environment, the learners were put at the center of community of practice from the outset, that is, they started to communicate with the experts—native speakers/target culture experts, from outset of the project. Therefore, employment of the tandem learning method requires that the experts understand and accommodate the beginning learners' competency level, and the learning process, in order to be effective (e.g., the expert accommodating the beginning learner by using less complicated expressions, or by being more tolerant to the learners response speed).

The experts in this study knew that they were communicating with learners who had completed just 6 months Chinese learning, and strived to accommodate that learning level by, for example, providing the English translation their Chinese message if they did not hear back from the participants in a timely fashion. However, despite the expert's efforts, their lack of detailed knowledge of exactly what the learners knew, and of exactly how learning occurs, impeded the learning process. One participant said, “Since my partner did use a lot of vocabulary that I didn't understand, I had to translate some sentences. It helped me learn some new words, but at the same time it was nerve wracking because if I didn't respond quickly enough, my pen pal would ask me if I had understood or not”.

Another consideration when designing tandem communication to better utilize the situated practice component is time zone difference. The time zone difference between the US and China challenged some participants when finding mutually acceptable times to do synchronous chat. Although this challenge was overcome, and the participants succeeded in their situated practice, an alternative method of scheduling asynchronous chat sessions might be to schedule whole class sessions once a week, all participants would assemble in a classroom and chat with their native speaker partners in China, which would require one group to either get up very early or stay up very late. While this alternative might be achievable, it eliminates individual flexibility by requiring all learners to chat at the same time and place. Since both the participants and the native speakers were students, their conversations usually began with what they were doing at the moment. Since most students' lives are focused on completing classwork, starting conversations with that subject may have a tendency to limit the scope and depth of conversation, indicating a need to make some adjustment to the project design.

Expert overt instruction is essential when learners are required to complete complex tasks in tandem learning. Project participants were appreciative of the overt instruction provided by the instructor and the tandem partners and perceived them as useful. The overt instruction provided by the instructor provided the learners with an understanding of the purpose of the tandem project, etiquette of online communication, and general requirements for completing this project. The instructor's overt instructions successfully prepared the learners to plan and direct the course of their learning experience. At the same time, the overt instruction from tandem partners, acting as experts in their capacity, helped the learners to gain an understanding of Chinese culture, a better command of the Chinese language, metalanguage skills, and skill and confidence in directing their learning experience. Figure 2 (c.f. next page) shows an example of the overt instruction from the tandem partner:

An analysis of this chat record suggests that a few elements need to be incorporated into the overt instruction. For example, learners need overt instruction to help them plan and complete their culture project. The instructor should encourage the learners to explore Chinese culture and become familiar with it before they begin a conversation with native speakers about it, so that once the conversation has begun the learners can focus on their conversation, equipped with an understanding of the culture adequate to allow the conversation to flow naturally toward a culture project topic. Furthermore, learners need to know how to verify that their tandem partner understands their level of competency with the Chinese language. The instructor can facilitate this understanding by instructing the learners, from the outset of the learner-tandem partner relationship, to express their appreciation of their tandem partners' patience. One participant suggested, "I think it was important to communicate to my partner that I might take a while to respond because it takes time to process and think of a response." Research has shown that text-based chat can reduce foreign language anxiety (Kelm, 1992; Kern, 1995; Warschauer, 1996) However, only after the native speakers understand the Chinese proficiency level of the CFL learners, could the anxiety be reduced. This

22:32:23 Tandem Partner 是啊，因为我们要高考（College entrance examination），这个考试对我们很重要，所以老师对我们要求很多，作业非常多。	22:32:23 Tandem Partner Yes, because we have CEE (College entrance examination). This exam is very important to us, so teachers have high expectations of us and give us a lot of assignments.
22:35:48 Tandem Partner 你知道中国的高中要“文理分科”的吗？	22:35:48 Tandem Partner Do you know that the high school students in China are divided into two tracks (literal arts and science)?
22:36:45 CFL Student 在美国我们也有高考。它叫 SAT 或者 ACT(我们有两个)。在中国的高考很竞争的吗？	22:36:45 CFL Student In America, we also have examinations like CEE and they are SAT and ACT.(there are two of them). <u>In China, is it very competition to enter a college?</u>
22:37:20 CFL Student 不知道	22:37:20 CFL Student I don't know.
22:39:11 Tandem Partner “竞争”是动词也是名词，不是形容词，所以不能说“很竞争”，可以说“竞争很激烈”。	22:39:11 Tandem Partner “Competition” is a noun and “very” cannot be put in front of a noun. You can say, <u>“is it highly competitive” or “is the competition very fierce?”</u>
22:40:32 CFL Student /OK 啊，谢谢	22:40:32 CFL Student /OK, oh, thank you!
22:42:35 CFL Student <u>中国的高考很竞争很激烈吗？</u>	22:42:35 CFL Student <u>In China, is the competition very fierce in order to get in a college?”</u>
22:42:58 Tandem Partner 是的，在中国高考竞争很激烈。因为我们都觉得，考上好的大学以后才能找到好的工作。在中国每年的考生都有几百万人。	22:42:58 Tandem Partner Yes, very fierce. Because we all feel that only after we get a bachelor's degree, can we find a better job. Each year there are about several million who take the CEE.

**Figure 2: Excerpt from Chat record (with researcher added translation) showing overt instruction from native speakers (underlined part is overt instruction on language, the rest is on culture.)**

measure will encourage the tandem partner to bear in mind the learner's language proficiency level during the ensuing conversations, and will relieve the participant of pressure and anxiety related to such things as slow in response time. Finally, overt instruction should be provided to the participants which will encourage them to use the simple expressions that they have learned in class to express complicated issues that arise in the course of their conversations, rather than to engage in the tedious, time consuming, and uncertain task of looking up new words and composing new expressions for every occasion. For example, instead of looking up words in the dictionary and trying to figure out how to say “Is it very competitive to enter in college?” The learner can use what they have learned to express the same meaning with, e.g. “Is it very difficult to get in college?”

In addition to providing overt instructions to the learners, the instructor should provide overt instruction to the learner's Chinese tandem partner, if necessary. This instruction might cover such things as the purpose of the project, the ways in which the tandem partner would be expected to help the learner, and the definition of important terms that will be used in conversation, such as *culture*. Chat records and participant reflection papers indicated that occasionally the tandem partner had misconception of what *culture* meant in the context of the project. One participant wrote in her reflection



paper, “[My partner] was trying to tell me all sorts of things about the Qing Dynasty (1645-1911) until I got the point across that I had to focus on something much smaller.” By offering overt instruction on the term *culture*, for instance, the instructor, by defining big C culture as architecture, literature, and arts, little c culture as the daily life and body language, misunderstandings could be minimized.

In this study, the format of participants' reflection papers was Critical Framing. “We do not learn from experience. We learn from reflecting on experience” (Dewey, 1933, p. 78). The participants extended and deepened their learning through critical reflection upon their tandem and presentation experience. Through critically reflecting on their learning, they began to discover how to plan and direct their tandem learning experience. One participant wrote, “... the hardest part of all was making sure I was typing the correct Chinese to my partner before I sent it. I was self-conscious of my Chinese and checked it about three or four times before I replied to her messages. I need to feel more comfortable in my learning and trust myself.”

Learning occurs not merely from what learners are told by their tandem partners, but from reflecting upon them, synthesizing the information, and relating the information to their own lives. One participant gathered information about college students' extra-curriculum activities and prepared presentation for their tandem partner. In her reflection paper, she related her tandem partner's life to her own life and concluded by saying,

From the way [my tandem partner] talked about students in China, Chinese students seem to be a little more studious than American students (in general). This may be because of the fact that schooling in China is more rigorous than schooling in the United States. It also seemed like Chinese students think of free time less as a way to have fun, and more of a way to catch up on work, or even get ahead of other students, whereas American students generally think of free time as a time to relax completely. Again, I think that this is probably due to how much more competitive and selective the education system is in China compared to the way it is in the United States.

In this project, the class presentation format was Transformed Practice. The class presentations demonstrated that the learner knowledge of Chinese culture had been expanded and deepened. Learner use of Chinese in the class presentations was fluent and included an expanded vocabulary. Learner practice had been transformed through doing the tandem project. Of course, the ideal way to implement transformed practice is to “walk the culture,” by going to China and practicing what is learned in the real life. However, since in most cases that is not practical for most of the learners in America, tandem learning offers a very practical alternative.

## 7. Conclusion

This study has examined whether or not tandem learning, designed for beginning level CFL learners, based on the multiliteracies theory, works. Additionally, it investigated, also, how beginning level CFL learners interact with a Chinese partner via Skype, QQ or WeChat to complete a culture project. The results of the study showed that the learners enjoyed the communication, conducted mostly in Chinese via text chat, and successfully used strategies to make their communication successful. Overt instruction given by the instructor, and by the learner's tandem partner through interaction, combined with the completion of the culture project and reflection on their learning experience by way of preparing the class presentation, clearly improved the CFL learners' knowledge of the target culture ability to use the target language.

Furthermore, the tandem project opened another world to the learners. The participants were given the opportunity to talk to the native speakers assigned to them—some finding opportunities to talk to other native speakers they got to know on Skype/QQ/WeChat as well—and afforded them a newfound confidence to talk to native speakers of their own age.

The field of foreign language education is in need of principles of using CMC (Chapelle, 2003; Mahdi, 2014). This study has shed valuable light on our understanding of how to design CMC activities to maximize learning. The findings of the study confirm the feasibility of using the multiliteracies pedagogy in designing CMC activities, especially tandem learning. The successful implementation of the tandem design confirmed that the four integrated components of the design complimented each other, and all of them are indispensable to the learners' learning. As the situated practice takes the form of tandem learning, it does not necessarily mean that immersion in the language environment, with a native speaker partner, will automatically ensure that learners learn. As cautioned in New London Group (1996), “while such situated learning can lead to mastery of practice, learners immersed in rich and complex practices can vary quite significantly from each other (and from curricular goals), and some can spend a good deal of time pursuing the ‘wrong’ leads” (p. 31). Because “situated practice does not necessarily lead to conscious control and awareness of what one knows and does,” situated practice itself cannot “create learners or communities who can critique what they are learning” (p. 32). Therefore, overt instruction and critical framing are required. In the tandem learning, both the instructor and the native speakers provide such instruction to help learners take control of their learning experience. The inclusion of overt instruction and critical framing in the design of the tandem learning is as essential as is situated practice in helping the CFL learners to master the practice in learning Chinese language and culture. Transformed practice provides the learners an opportunity to articulate what they have learned, and to demonstrate mastery of learning the target language and culture.

The findings of the study also confirmed the importance of assigning a specific task to the tandem learning process, as suggested by the study of Appel & Gilabert (2003). In this study, the culture project was used, not only as the anchor of the participant's tandem communication, but also as a device to connect the four integrated components of

the pedagogy of multiliteracies. Without this device, the four components could not have been meaningfully integrated.

By examining the interacting process between the CFL learners and their tandem partner, this study revealed that beginning CFL learners adopted strategies in order to communicate efficiently with their tandem partners when they were given the choice of using either audio/video chat or using text chat. The findings of this study will, no doubt, help researchers to better design CMC (including tandem) activities, to improve language learners' efficiency in communicating with native speakers, and to strengthen learners' learning from these activities.

This study represents the first attempt to use the multiliteracies theory to design a tandem language learning activity, thus further research is needed to fully develop this important learning pedagogy. For example, although the participants' self-reported perception of the project design, and their culture project presentation (as artifacts) served sufficiently to affirm the validity of the design, quantitative data collected by comparing the learners' culture knowledge and language ability, before and after the tandem project, would probably better furnish this affirmation. Administering a pre-test on culture knowledge might help to improve the way that the participants' approach the culture project in the future. In this study it was the culture project that cohesively bonded the four pedagogy components together, and it worked very well for that purpose. Further research can be done to determine whether or not the design will need to be modified to accommodate expansion of tandem learning to include such activities as a collaborative writing project, a reading club project, a drama performance task, or other different types of activities that the learner and the tandem partner could complete together. Finally, it would be worthwhile to gain a greater understanding of the tandem partner in China—what strategies the native speakers use to help their American partners, and what effect tandem learning has on the native speakers' understanding of their own culture and of the English language. On the same line, it'd be interesting to find out, if the native Chinese speakers (the tandem partners) have lower English proficiency, whether or not the research result will be the same.

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## Using WeChat in Teaching L2 Chinese: An Exploratory Study (微信在中文教学中的应用：低年级教学活动初探)

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**Abstract:** Chinese language teachers and scholars have recently been interested in the potential of using the WeChat app in Chinese language teaching and learning. However, empirical research on the effectiveness of applying WeChat to Chinese language classrooms has been scarce. This study reports on the implementation of a five-component WeChat project in the second-semester first-year and second-year Chinese language courses at a liberal arts college in the U.S. Adopting a mixed-method design, the researchers examined the student feedback on the WeChat project in the form of an end-of-semester questionnaire and interviews. Results showed that the WeChat project was, in general, well received by the students. The participants reported five major benefits of using WeChat in Chinese language teaching: expansion of time in learning, linguistic gains, promotion of cultural learning, enhancement of learning motivation, and establishment of a supportive Chinese language learning community. Drawbacks and suggestions for improvement were also discussed.

**摘要：**微信应用在中文教学中的潜力已受到中文教师和学者们关注，然而相关的研究却寥寥无几。本研究基于美国一所私立文理学院的一年级和二年级第二学期的中文课设计的微信教学方案，此方案由五个部分组成；此外，通过期末问卷和访谈的方式向参加的学生征求对微信教学的反馈。结果表明，学生总体上认可微信教学，认为微信教学有五大好处：增加中文学习时间、促进语言学习、促进文化学习、提高学习动机和建立良好的中文学习社区。本报告也讨论总结了学生提出的微信教学的不足及改进建议。

**Keywords:** Mobile-Assisted Language Learning, WeChat, Chinese language, Chinese as a Foreign Language

**关键词：**移动辅助语言学习，微信，中文，对外汉语

## 1. Introduction

College-level Chinese language students belong to the cohort of Generation Z, also known as iGeneration. An important characteristic of this generation is the unprecedented amount of exposure to technology they have in their upbringing. Members of Generation Z are typically comfortable with technology and fond of socializing through social media platforms. Technology has strongly influenced this generation's life, communication, and education.

Many studies have shown that a significant majority of university students in the U.S. own a smartphone or another type of mobile device, such as iPad (e.g., Chen, 2013; Simon and Fell, 2012). In a study investigating learner usage patterns of mobile learning, Stockwell (2008) found that over two-thirds of the learners expressed an interest in using mobile phones for language learning. More interestingly, Simon and Fell (2012) reported that 60% of the foreign-language students surveyed in their study already started using smartphones for language-learning purposes, such as using dictionaries or translating sentences.

Since smartphones and mobile social media platforms have become part of life and education among college students in the U.S., it is reasonable to expect that they would welcome WeChat as a part of their Chinese language learning. WeChat, the most popular social media platform in China, is a powerful smart phone application that incorporates the features of Facebook, Instagram, Skype, and Twitter. WeChat is a free messaging and calling app that allows one to easily connect with family and friends across countries. It is an all-in-one communications app for free text (SMS/MMS), voice and video calls, moments (known as "Friends' circle" among Chinese users), photo sharing, and games. In addition to its popularity in China, the unique voice messaging and other functions make it a good supportive tool for teaching Chinese.

Plenty of WeChat-based Chinese languages teaching tips are documented online<sup>1</sup> and considerable anecdotal evidence of the effectiveness of WeChat in teaching Chinese has been shared at several foreign language pedagogy workshops and conferences. However, to date, little empirical research to investigate the effectiveness of implementing WeChat in teaching Chinese as a Foreign Language (CFL) has been reported. To bridge this research gap, we run an empirical study to examine the effectiveness of integrating WeChat into CFL teaching in a U.S. liberal arts college.

## 2. Literature Review

### 2.1 Mobile-Assisted Language Learning

With the rapid development of mobile technology and the growth of mobile

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<sup>1</sup> <https://wp.nyu.edu/urbanyouthnyu/2015/10/20/auto-draft-504/>  
<http://gaed21.blogspot.com/2014/03/guest-blogger-rebecca-liu-using-wechat.html>  
<http://www.mandarinpathways.org/wechat-for-education-chinese-teachers-connecting-globally/>



device ownership, Mobile-Assisted Language Learning (MALL) has attracted the attention of an increasing number of researchers in the past two decades (Burston, 2013, 2015; Chinnery, 2006; Cho, 2009; Kukulska-Hume, 2009; Li & Hegelheimer, 2013; Wu, 2015). Notwithstanding some potential disadvantages (e.g., Chinnery, 2006), many researchers discussed the benefits of MALL at length. The most frequently discussed merits of MALL include the mobility of learning devices, the inexpensiveness of the equipment, the accessibility to extensive learning materials, and the expansion of social inclusion in language learning (e.g., Chinnery, 2006; Kukulska-Hulme, 2009; Kukulska-Hulme & Shield, 2008).

In his annotated bibliography of MALL 1994-2012, Burston (2013) provided a comprehensive historical background of MALL applications and identified 345 articles on project implementation studies. These studies covered a wide range of topics, including technical specifications, mobile device ownership, pedagogical design, learning theory, user attitudes, motivational effects, institutional infrastructure, and instructor training. In another study, Burston (2015) conducted a meta-analysis of learning outcomes of the MALL project implementation studies over the past twenty years. Out of the hundreds of studies on MALL implementation, only 19 can reliably serve as the basis for analyzing the learning outcomes of mobile-based language applications, due to limitations such as the short duration of projects, small numbers of participants, or serious design shortcomings. His analysis showed that 15 out of the 19 studies reported positive learning outcomes on reading, listening, and speaking, evidencing a MALL application advantage.

## 2.2 MALL Studies among Chinese Language Learners

Along with the emergence of an international interest in learning the Chinese language in the past decade, MALL studies among Chinese language learners have started to catch up. For example, Yang and Xie (2013) reported on an action research study using iPads to facilitate the teaching of Chinese idioms to heritage learners at a private research university in the U.S. Generative learning was adopted as the theoretical framework in designing and implementing the teaching procedures. Through examination of students' short-term and long-term learning, responses to a questionnaire, and artifacts created during the learning process, the researchers found that the textual and visual illustrations created by the heritage learners themselves facilitated their learning of the idioms. The learners in this study were reported to have enjoyed the iPad-assisted process.

Wong, Chin, Tan, and Liu (2010) also focused on teaching Chinese idioms, but the MALL design was implemented through smartphones. Their participants were 40 11-year-old primary school students, and their design was grounded in seamless teaching, which advocates the integration of formal and informal language learning. In the learning process, students were guided to use smartphones to collect real-life photos relevant to the idioms, and to construct sentences with them. Subsequent discussions were facilitated to reinforce the students' understanding of the proper usage of the idioms. Analysis of the student artifacts generated through the process revealed that the learner-created content

and the contextualized meaning making potentially helped learners transform language learning into an authentic learning experience.

Chinese language teachers and scholars have also started to incorporate mobile technology into regular teaching in the Chinese language classroom. For example, Zeng (2012) demonstrated how the Palm Treo smartphone with Chinese input, handwriting and dictionary software was used to assist and complement classroom teaching among high-school Chinese language students. Chen (2013) reported on an experiment with integrating smartphones into a university's introductory Chinese-language classroom. Pedagogical arrangements were made so that students needed to use smartphones to learn Chinese both in class and out of class. In particular, Chen was interested in exploring whether smartphones can be used to assist beginning learners of Chinese with tone acquisition and character learning. Student feedback indicated that many appreciated the convenience and usefulness of smartphones in learning Chinese. However, students were not yet ready to use smartphones for educational purposes, although they seemed to be proficient in personal use. It was suggested that design and development of in-class and out-of-class MALL activities should be based on clearly defined curricular goals. As Chen's experiment shows, students' use of smartphones in learning Chinese should be guided and mobile learning activities should be well integrated into the syllabi of Chinese language courses.

In contrast, Wang and Leland (2012) investigated how eleven university CFL learners voluntarily used mobile technology to study Chinese outside the classroom. Their study used journal entries and interviews for data collection. Results suggested that participants were enthusiastic about using mobile devices to learn Chinese, but they mainly used dictionary and translation applications for quick reference and practice, without fully tapping into the potentials of mobile devices. In order to ensure the effective incorporation of mobile devices to Chinese learning, the researchers argued that the discrepancy between appeal and use of MALL highlighted the necessity of collaboration among learners and scaffolding from the instructor. In other words, students' use of mobile devices outside the Chinese language classroom needed proper pedagogical guidance.

### **2.3 Using WeChat to Teach Chinese**

As mentioned previously, little empirical research has been done to investigate the effectiveness of using WeChat in Chinese language learning. However, Chinese language teachers and scholars have started to speculate on the possibility and experiment with using it in the classroom. For example, Da and Wang (2014) proposed that language teachers use WeChat to engage learners in speaking practice, conduct group activities, enhance learners' interest and motivation, and stay connected with students and share resources. Similarly, Xie (2014) discussed advantages and disadvantages of using WeChat in teaching, and recommended a number of activities, including reading and writing tasks, picture-based discussions and micro-learning strategies such as "a sentence/character a day".

Drawing on insights and resources provided by Chinese language scholars and teachers, the researchers designed a WeChat component for the second-semester first-year and second-year Chinese language classes at a private liberal arts college in the U.S. in Spring 2015. This paper will first provide a description of the WeChat project and then investigate the effectiveness of incorporating WeChat in L2 Chinese teaching by answering the following research questions:

1. To what degree is using WeChat effective in teaching Chinese?
2. What are the benefits of using WeChat in teaching Chinese?
3. What are the disadvantages of using WeChat in teaching Chinese and what possible improvements can be made?

### 3. Description of the WeChat Project

The WeChat project was built into the course syllabi of CHN102 (i.e., second-semester first-year Chinese) and CHN112 (i.e., second-semester second-year Chinese), accounting for 10% of students' final grades. At the beginning of the Spring 2015 semester, an official WeChat account was created for the Chinese language program at the liberal arts college under discussion. One class meeting was devoted to introducing WeChat and the WeChat project to the students. In this class meeting, every student created their own WeChat account and experimented with using the different functions. Meanwhile, class WeChat groups were created for CHN102 and CHN112.

Students were informed that WeChat would be used to assist classroom instruction in the following five ways, and that their participation in the first four components would be graded in terms of involvement, completion of assignments, quality of comments, and contribution to the WeChat community. Most of these activities were done outside of class by the students, but the instructor allocated a small amount of time at each class meeting to comment or review what they had done. The five components were:

- **Ask/Answer questions:** Each student is expected to ask at least one real-life question that they want to know about their classmates by using the new vocabulary covered in the lesson. Questions asked by others do not count. Students are also expected to answer each other's questions on WeChat. Questions and answers should be typed out rather than spoken out for this component. A prize will be awarded for the most interesting question for each lesson. The instructor collects nominations from the students and the question that receives the most nominations wins the prize.
- **Mini-writing tasks:** For every lesson, the instructor asks students to do a mini-writing project on a topic related to the lesson, and students should post their final product on the class WeChat group. Students are encouraged to read each other's writings and post comments.

- **Mini-oral project** (pair work/small-group work): For every lesson, the instructor assigns at least one pair-work or small-group oral project. Students are expected to post their oral project on the class WeChat group, listen to each other's oral project, and post comments. A prize will be voted for the funniest mini-oral project for each lesson. The oral project that receives the most student nominations wins this prize.
- **Socializing and information sharing:** The instructor encourages students to make use of the class WeChat group to the fullest. They are encouraged to socialize and share information on this platform. Sharing of Chinese language learning resources (e.g., books, websites, videos, events) are particularly welcomed.
- **Non-graded extracurricular input:** The official WeChat account of the Chinese language program is used to update weekly news about China in English, share Chinese-learning resources, publish Chinese Bulletin Board, and post pictures of cultural events organized by the Chinese language program. Students are encouraged to comment on these posts, but their participation is not graded.

#### 4. Methodology

This study adopted a mixed-method design. Data were collected through an end-of-semester questionnaire and follow-up interviews. Participants were 22 Chinese language students enrolled in the second semester first-year and second-year Chinese classes at a private liberal arts college in the U.S. Thirteen students were from CHN102 and nine were from CHN112. All the participants were required to engage in the WeChat project as described above as a part of the course requirement.

At the end of the semester, the participants were asked to fill out a questionnaire (see Appendix A) eliciting their opinions of the use of WeChat in learning Chinese. They were asked to give ratings on a number of items on a 7-point Likert scale and provide reasons for their ratings. Among the 22 questionnaires returned, 21 were valid and used for data analysis.

Ten students participated in the follow-up interviews, five from CHN102 and five from CHN112. The interviews were semi-structured and guided by three general questions: 1) What do you think of the WeChat project this semester? What do you like about it? What do you dislike about it? 2) What benefits or drawbacks does the WeChat project have in terms of learning Chinese? 3) Do you have any suggestions for improvement? However, the interviews were open-ended and the participants were encouraged to pursue whatever topics they chose. Each interview lasted 10-15 minutes. The interviews were then transcribed and each participant was given a pseudonym.

For research question 1, results of the questionnaire were analyzed. For research questions 2 and 3, the interview data were examined. The grounded-theory based strategies (Clarke, 2005) were adapted to code and analyze the transcripts of the

interviews.

## 5. Results and Discussion

### 5.1 Research Question 1: Effectiveness

#### *Overall Experience*

In order to see how the students perceived their overall experience with WeChat in the Chinese language courses, the item “Please rate how well you like the WeChat project this semester” was designed. As Table 1 shows, the students, in general, had a fairly positive experience in using WeChat to learn Chinese ( $M = 5.29$ ,  $SD = 1.00$ ). On average, the students enjoyed the WeChat project incorporated into the courses.

**Table 1: Overall WeChat Learning Experience**

	Minimum	Maximum	Mean	Standard Deviation
Overall Experience	3	7	5.29	1.00

The frequency of the students’ ratings for this item was also calculated to examine the distribution of the responses. As can be seen from Table 2, eleven students evaluated the WeChat project highly, providing ratings of “6” and “7”. Nine of the students were positive but not too enthusiastic about WeChat, providing ratings of “5” and “4”. One student really did not like it, providing the rating of “3”.

**Table 2: Frequency of Ratings on Overall WeChat Experience**

Ratings	Frequency
3	1
4	4
5	5
6	10
7	1

A close examination of the reasons for the ratings showed that they welcomed the WeChat project because it was “fun and interesting”, “simple and informative”, and “a new way of learning.” They also liked it because “it was a nice way to communicate with the class and professors” and “it was interesting using an app well-known in China.” Some students were not extremely satisfied with it because it was “too hard to stay on top”, “too demanding”, or “too overwhelming.” Some students found WeChat “a hard program to use.” One student commented, “Since WeChat could be a bit ‘buggy’, it was a bit difficult to do.”

### *Usefulness of Different Components*

The students were also asked to rate the usefulness of the different components of the WeChat project in meeting their needs in learning Chinese and provide reasons. The components included: weekly news about China in English, asking and answering real-life questions about classmates by incorporating new vocabulary in the lesson, mini-oral tasks (e.g., uploading conversations or dialogues to WeChat), mini-writing tasks (e.g., typing a sentence by using a certain grammatical pattern, writing a paragraph of summer plan), and socializing and information sharing. The summary of the ratings for the five components is listed in Table 3.

**Table 3: Usefulness of Different Components of the WeChat Project**

	Minimum	Maximum	Mean	SD
Weekly news related to China	3	7	4.67	1.46
Asking & Answering real-life questions	1	7	4.95	1.53
Mini-oral tasks	1	7	5.14	1.39
Mini-writing tasks	2	7	4.95	1.40
Socializing and information sharing	1	7	4.95	1.66

The results in Table 3 show that the students acknowledged the usefulness of all the five components of the WeChat project, but their opinions were not entirely enthusiastic. In comparison, the students perceived the mini-oral tasks to be the most helpful, followed by asking & answering real-life questions, mini-writing tasks, and socializing and information sharing, with weekly news related to China being the least helpful. However, results of 10 paired sample t-tests showed that the means of these five ratings were not significantly different.

Mini-oral tasks through WeChat were considered the most useful in that it helped “practice communicating in Chinese” and “develop oral skills”. Students also thought “it was an interesting way to do homework.”

Although the component of asking and answering real-life questions about classmates did not receive the highest average rating, students’ comments for this item were mostly positive. Representative comments included: “this was a cute and effective way to practice the new vocabulary”, “it helped increase my understanding of the language”, and “it helped me visualize other people’s sentences rather than just hearing them.” One student mentioned that “I knew more about my classmates though this exercise, really eye-opening.” However, some students “would rather do it face to face than over the internet.”

The WeChat mini-writing tasks “facilitated grammatical practice,” “helped with developing writing skills on relevant topics” and “helped practice character recognition.” However, a number of students mentioned that it might not be necessary to do the writing tasks through phones. For example, “I wish we did that on paper instead of the phone. I want to learn to write the characters and not depend on the internet.”

As for the socializing and information sharing function, the students appreciated the fact that “it helped everyone connect with each other” and “it was a fun way to practice Chinese with friends and classmates.”

Some students enjoyed reading the weekly news related to China because “it helped gain cultural knowledge” and “it kept students aware of Chinese events and cultural issues.” However, a number of students confessed that they did not spend much time on it (e.g., “It was nice, but I didn’t really follow it too much”). This was probably because following weekly Chinese news on WeChat was not graded as stated in the course syllabi.

### ***Recommendation for Future Use***

Finally, students were asked whether they would recommend the WeChat project to other students and whether they would like the Chinese language program to continue the WeChat project in the future. On a 7-point Likert scale, students provided ratings indicating to what degree they agree or disagree with the following two statements: “I would recommend this WeChat project to other students interested in taking Chinese” and “I hope the Chinese language program will continue the WeChat project in the future.”

**Table 4: Recommendation of WeChat for Future Use**

	Minimum	Maximum	Mean	Standard Deviation
Recommendation	2	7	5.33	1.53
Future use	2	7	5.48	1.50

As shown in Table 4, the means of the ratings on the two items were fairly high, indicating that the WeChat project was, in general, well received and positively perceived among the students.

## **5.2 Research Question 2: Benefits**

The reasons provided in the questionnaires tended to be simple and short. Thus, follow-up interviews were conducted and the interview data were analyzed. As a result of theme analysis based on grounded-theory strategies (Clarke, 2005), five themes related to benefits emerged from the data: expansion of learning time, linguistic gain, cultural learning, motivation, and Chinese language community.

The WeChat project obviously extended students’ time spent on learning Chinese beyond the classroom. According to the students, the WeChat project “added extra work”, “turned the Chinese class into a 24-hour-a-day course”, and “pushed part of the class to outside-class learning.” As an example to further illustrate this point, one student said, “often times, in the mid of the night, I received messages from someone in the class, reminding me of studying Chinese.”

The WeChat project was also perceived to have helped improve students’ Chinese

language skills in a wide range of areas, including vocabulary, character recognition, grammar, speaking, listening, reading, and writing. A representative comment was, “WeChat provided different ways of exposure, listening, watching, writing, reading, and helped reinforce different skills through different assignments.” Students seemed to have particularly enjoyed the component of asking and answering real-life questions because it “helped practice using new vocabulary and grammar with classmates in a fun and creative way” and “gave students the opportunity to think of words that they really want to learn and say but not covered in the textbook.”

A number of students viewed “cultural learning” as “the best part of the WeChat project” as WeChat “added a space to learn about China and Chinese people” and created opportunities to “look into many aspects of Chinese culture outside of class.” Through “weekly news”, “Chinese articles”, “YouTube videos posted on WeChat” and “discussions with classmates”, students reported to have “gained cultural knowledge about China and Chinese people” and “seen many similarities and differences between cultures.”

Moreover, the WeChat project helped enhance student motivation in learning Chinese in different ways. Students unanimously agreed that WeChat made the class more “fun”, “interesting”, “enjoyable”, and “exciting”, and that they “learned a lot”. When comparing this Chinese class with many of other classes conducted through lectures, one student pointed out that this class was more “engaging” because “it used different ways to teach the materials through WeChat” and “all the different ways made the materials much more fun than it actually did”. In addition to the fun added to the class, frequent peer interaction on WeChat was seen as another motivating factor because “it’s cool to see your classmates’ responses” and “realizing how good your classmates are at using the new vocabulary makes you want to speak better.”

Last but not the least, the WeChat project facilitated a supportive Chinese language learning community as WeChat “encouraged communication”, “helped students connect to each other”, and “created lots of bonding among the class.” The students appreciated the convenience of this community as demonstrated in the following comments: “We can ask questions and everyone else in the group is there to answer us right away”; “We got to know each other better. If I forgot someone’s name, I can just click and see their face”; “If you get stuck at some point with your assignments, you can log on in WeChat and listen to your friends.” More importantly, the students valued the bonding among the class created by this WeChat community. Here is a very interesting anecdote cited by one student: “I once posted a question to our class Wechat group and meant to ask all the boys in class: what are you going to do with your girlfriends during this weekend? But I typed it as: 这个周末你们要和你们的奴朋友去做什么? My classmates quickly checked up the meaning of 奴 in online dictionary and got to know it means “slave”. Then, it became a big joke in our class and a signature mistake of mine. It made all of us laugh hard all though the whole course. It was a lot of fun”.



### 5.3 Research Question 3: Disadvantages and Improvements

Students who participated in the interviews also identified a number of drawbacks of the WeChat project and proposed a wide variety of suggestion for improvement. Some of the suggestions pertained to the limitations of the WeChat app, some to the management of the course, and some were constructive ideas arising from their experience of using WeChat for Chinese language learning.

The most common complaint of the WeChat project was the heavy workload imposed on learning outside of class, which made the class “hectic”, “overwhelming”, or “too much to handle.” A suggested solution is to make some of the WeChat components optional, “an opportunity for students to obtain extra credit rather than a required component in the syllabus.”

Another frequently mentioned drawback stemmed from “the different components” of the WeChat project and the “randomness” of the WeChat assignments. One student said, “College students have a lot of other courses too. If we have a lot of components for Chinese homework, we should put it in one assignment. Often times, you just mentioned the WeChat assignments at the end of the class. It is very easy to forget those assignments and it is really hard to keep track of the whole thing.” Students, in general, hoped that the WeChat project could be more “systematic” and better organized, as was reflected in another student comment, “The Wechat assignments were unclear and not on the syllabus, so they were hard to follow. It would be useful if everything was laid out on the syllabus, but I felt overwhelmed because it was unclear.”

Students also complained that the WeChat app could be “buggy”. An obvious limitation was the time limit for the voice message. As mentioned by one student, “WeChat has a time limit for the voice function. It’s really annoying. When I had a long conversation with my partner, it was a pain to have to cut off and split into different parts.” However, students in general appreciated the convenience brought by WeChat (e.g., “We can send stuff easier and we can use it to do small oral projects”).

Lack of actual character writing was another concern raised by the students. While students recognized that “typing Chinese characters is a lot easier than writing them” and “WeChat helped character recognition”, many students believed that “writing characters through the right stroke orders can help memorize and internalize the characters.” One student commented, “I really missed writing everything out on a piece of paper. It’s the traditional way of learning, but it works the best for me.”

Based on their experience of using WeChat in the Chinese classes, the students proposed a number of suggestions for improvement.

1. Making more use of YouTube Videos. Students suggested that “the instructor can post more videos on WeChat” and that “students can search for videos related to China and share them over WeChat”. They seemed to especially welcome videos in English (e.g., “if the videos are in English, I will like it better”) probably because

their Chinese proficiency was too limited to understand complicated authentic Chinese videos.

2. Targeting Chinese news that is related to the topics covered in the lesson. Many students viewed the weekly news “a random thing” as it was not graded or relevant to the textbook. If “the news is related to the topics in the textbook” or if they are “tested in a quick quiz”, or followed by “a discussion or response requirement”, students will view it “more applicable to the class” and be willing to spend time on it as “it is incorporated into the curriculum.”
3. Journal writing. A number of students suggested that students could use WeChat to “record their daily life” and “incorporate pictures with annotations in Chinese”. For more advanced students, they can be asked to “enter journal entries with more extended passages”. Here is a representative suggestion along this line: “Use the ‘Moments’ function on WeChat so that we can post stuff about our actual daily lives in Chinese. It makes WeChat just like Facebook in Chinese, which is very practical and fun, and also makes us check WeChat more regularly. In addition, all members of the class should also add one another as WeChat friends to be able to see the news feed in Moments.”
4. Learning beyond the textbook. A number of students thought “what is covered in the textbook is limited” and wanted to “use WeChat as a resource to expand Chinese vocabulary”. For example, a student suggested “setting community vocabulary goals, such as choosing a topic and having the students look up vocabulary outside the textbook to compile a custom vocabulary list.”
5. Using WeChat to review the lessons. For example, students can “read out loud the text or dialogue over WeChat” so that “tutorial time with the TA can focus on the mistakes and the parts students messed up rather than just reading.” The instructor may post “a list of review questions on WeChat for each lesson” for students to “study for tests”; students may discuss and answer these questions to build a learning resource for the class.

## 6. Conclusion

In general, the first-year and second-year Chinese language students who participated in this study welcomed the WeChat project and they hoped that the instructor would continue to use WeChat to assist Chinese language teaching in the future. Among the different components, students viewed the mini-oral project as the most helpful and the weekly news as the least helpful, with mini-writing tasks, asking and answering questions, and socializing and information sharing receiving the same rating in terms of usefulness. The interview data showed that students perceived the WeChat project to have helped them expand the time of learning Chinese, improve their Chinese linguistic skills, promote Chinese cultural learning, enhance Chinese language learning motivation, and create a supportive Chinese language learning community. The participants also

identified a number of drawbacks and proposed suggestions for improvement.

This study has a few limitations. First, the number of participants ( $N = 21$ ) was small. Second, the participants were all elementary or intermediate Chinese language students. It is worth exploring how WeChat can be incorporated into advanced-level Chinese language curriculum. Third, the evaluation of the WeChat project was completely based on student feedback. Future studies may need to examine student production data as generated in the language learning process to assess the usefulness of the WeChat project more objectively. Finally, as many participants mentioned that the WeChat project was difficult to keep track of, future endeavor in using WeChat in Chinese language teaching needs more monitoring from the instructor. Ideally, every aspect of a WeChat project needs to be planned ahead and spelled out in the syllabus, ensuring that the WeChat project is systematically implemented in language teaching.

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## Appendix

### WeChat Questionnaire

Instructions: Please give a rating of the following questions and give your reasons.

1. Please rate how well you like the WeChat project this semester.

Very Low 1 2 3 4 5 6 7 Very High

Reasons:

2. Please rate the usefulness of the following components of the WeChat project in meeting your needs in learning Chinese and explain your reasons.

Weekly news related to China

Not Useful 1 2 3 4 5 6 7 Very Useful

Reasons:

Asking and answering questions that you really want to know about your classmates.

Not Useful 1 2 3 4 5 6 7 Very Useful

Reasons:

Mini-oral tasks (uploading conversations or dialogues to WeChat)

Not Useful 1 2 3 4 5 6 7 Very Useful

Reasons:

Mini-writing tasks (e.g., typing a sentence by using a certain grammatical pattern, writing a paragraph of your summer plan, etc)

Not Useful 1 2 3 4 5 6 7 Very Useful

Reasons:

Socializing and information sharing

Not Useful 1 2 3 4 5 6 7 Very Useful

Reasons:

3. Please rate to what degree you agree or disagree with the following statements:

I would recommend this WeChat project to other students interested in taking Chinese.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

I hope the Chinese language program will continue the WeChat project in the future.

Strongly disagree 1 2 3 4 5 6 7 Strongly agree

Reasons:

## Lightboard and Chinese Language Instruction (“光板”与对外汉语教学)

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**Abstract:** The Lightboard, which consists of a specialized glass board, a video camera, and a real-time presenter monitor, is a novel tool that creates instructional videos for hybrid and online courses. It allows an instructor to face viewers through the glass board while simultaneously drawing highly visible sketches or writing notes. Powerpoint slides can also be merged into the Lightboard video, seemingly projected onto the glass board, so that the instructor can annotate and interact with the slides in real time as the video is recorded. Moreover, the final video has much higher quality than traditionally filmed lectures. All these features render the Lightboard a desirable tool for making pedagogical media that can “flip” language classrooms. For example, the Lightboard will serve instructors and students alike through improving the ease of filming short tutorial videos regarding teaching Chinese characters, explaining difficult grammar patterns, correcting common pronunciation errors, while likewise offering homework feedback and review. This article first introduces the Lightboard, including its component parts, working mechanism, and its development history. The paper then analyzes the major advantages and limitations of using Lightboard followed by addressing its implications for Chinese language instruction. Finally, the article provides an example and tips on how to create instructional videos for Chinese courses with the Lightboard system and introduces two ways for installation of a Lightboard studio.

**摘要:** “光板”系统主要由一块可供书写板书的透明玻璃板，摄像机以及实时的视频合成与显示设备而构成，是一款为在线及混合课程打造的新型教学视频制作工具，亦可为传统课堂制作补充教学视频。与传统教学视频相比，“光板”视频的优势在于它将授课者清晰可见的荧光笔板书与幻灯片巧妙地融合到了一块特殊制作的玻璃板上，摄像机透过该玻璃板可以同时捕捉到授课者以及玻璃板上的板书，使得授课者在板书时仍可面向观众，并与板书及幻灯片互动。其优点还在于操作简便，以及最终生成的视频非常高清。因此“光板”是“翻转”语言课堂的理想工具，特别适用于制作辅导短片来教授汉字，解释语法难点，纠正常见的语音错误，提供作业反馈及复习辅导。本文首先介绍了光板的构成部件及工作机制，回顾了其发展历史，随后分析了使用“光

板”的优势和限制，并讨论了其对对外汉语教学的启示。最后本文通过实例演示了如何操作“光板”制作教学视频，并介绍了建立“光板”工作室的两种方式。

**Keywords:** Lightboard, instructional video, tutorial video, online course, hybrid course, educational technology

**关键词:** 光板，教学视频，网络课程，混合课程，教育技术

## 1. Introduction

A Lightboard is a specialized glass board internally illuminated by bright LED strips around its edges. The Lightboard is placed between a presenter and a video camera (Figure 1). The camera captures, through the glass, the presenter who speaks while writing notes on the glass with fluorescent markers. The writing glows brightly with illumination from LED lighting. PowerPoint images and texts can also be overlaid onto the glass simultaneously so that the presenter can annotate and interact with them during recording. The overlaid PowerPoint slides and the glowing handwritten notes are highly visible and seemingly float in the air in front of the presenter (Figure 2). Once filming is complete, the Lightboard generates a high-quality video and saves it instantly to a flash drive attached to the system. The video is ready-to-upload and can be shared with students via Sakai, Google Drive, YouTube or other hosting websites.

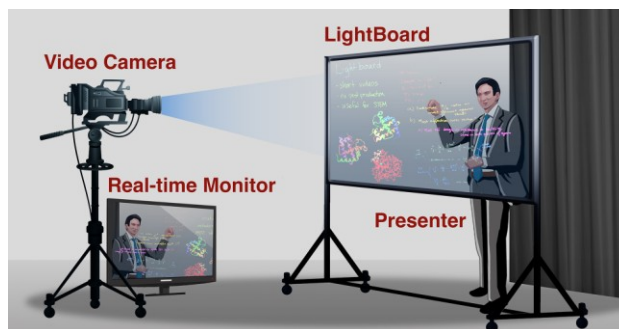


Figure 1: The Lightboard system

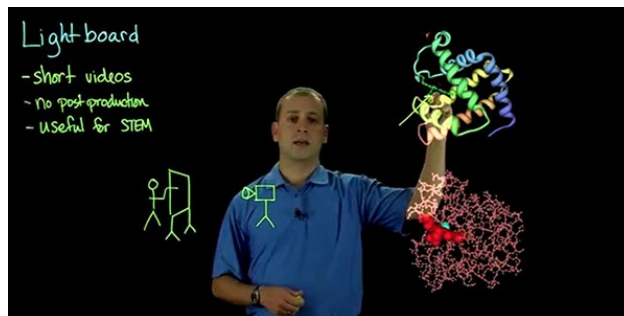


Figure 2: Powerpoint superimposed for demonstration with hand-written annotations  
(Photo courtesy of Jim Parise, University of Notre Dame)

Therefore, the Lightboard gives a low technology solution for non tech-savvy instructors to create stunning and engaging instructional videos that allows them to visually explain the content and to write lecture notes without turning their back to the viewers or obstructing the writing with their body. Facing viewers while teaching and writing allows instructors to communicate with more richness and immediacy and enhances the non-verbal communication and personal connection with students. However, here comes one problem: the handwritten text, viewed through the glass, is backward. So the text orientation must be flipped. This mirror-flipping can be done by pointing the camera at a right angle toward a mirror reflecting the Lightboard and the presenter, or digitally by a videocamera with a “mirror-flip” function (Figure 3).

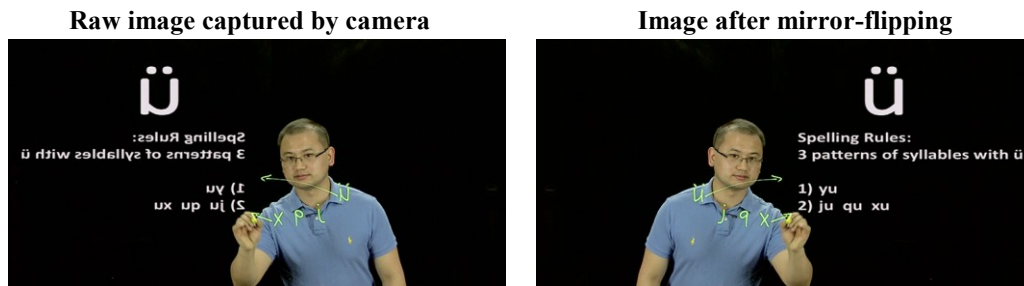


Figure 3: Mirroring the video

### 1.1 Lightboard component parts and working mechanism

A Lightboard consists of six major component parts (Figures 4 & 5): (1) a sheet of heat-tempered glass board for writing notes; (2) a lighting system for illuminating the glass board and the presenter; (3) a video camera to film the lectures; (4) a black background curtain; (5) a control desk to operate the Lightboard system; and (6) a presenter’s monitor to see the real-time video during filming.

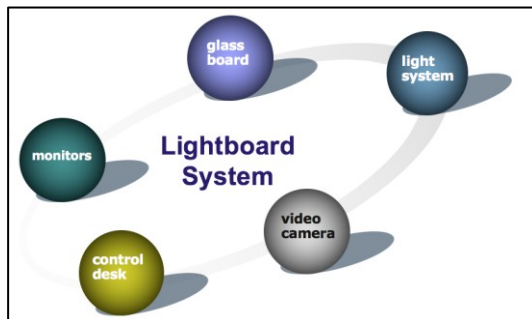


Figure 4: The Lightboard System

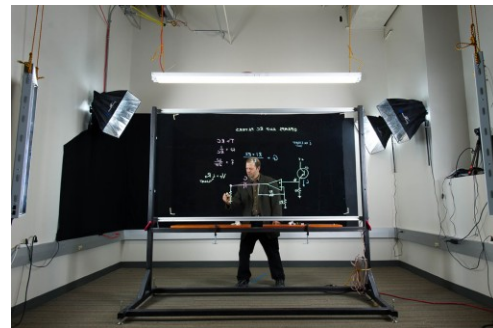


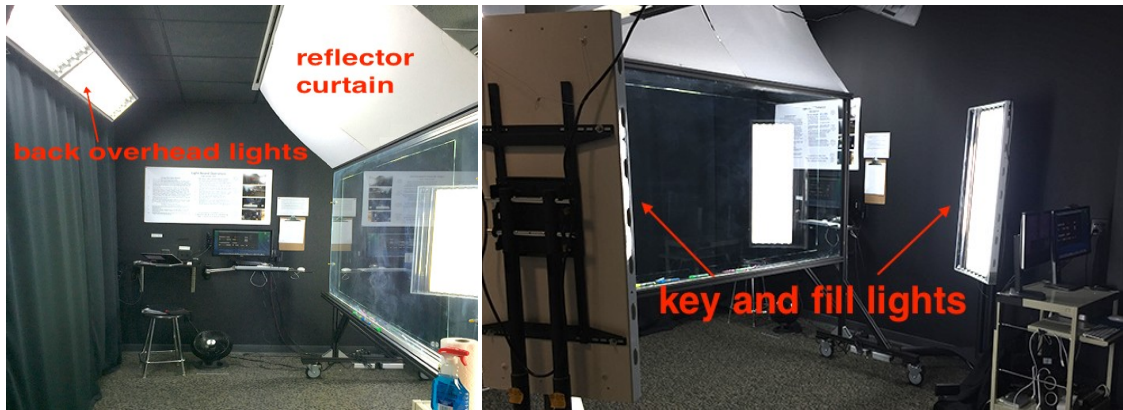
Figure 5: A Lightboard studio  
(Photo courtesy of Michael Peshkin)

Most Lightboards use a 4x8 foot sheet of low iron architectural glass which is mounted on a metal frame so that the glass board will not vibrate or move when the presenter writes on it.

The lighting system, along with the video camera, plays an important role for the video image quality. It consists of three parts: (1) the LED strips along the upper and bottom edges of the Lightboard to illuminate the writings on the board; (2) back overhead

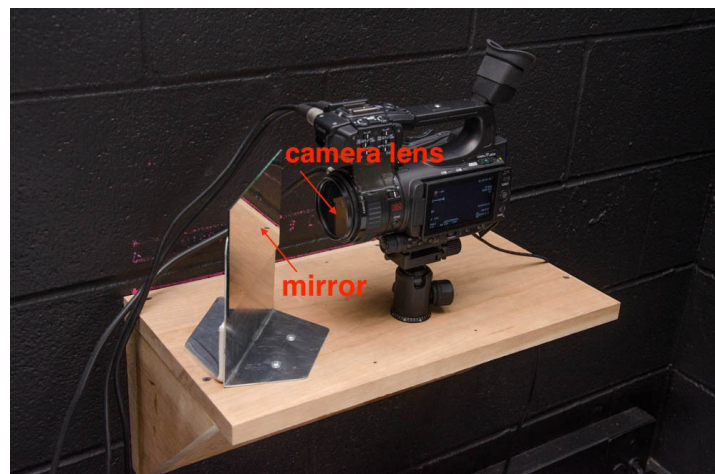


lights with a mylar reflector curtain to illuminate the presenter from top (Figure 5 & Figure 6, left photo); (3) key and fill lights (i.e., main and supplementary lights) that are placed on the right and left sides of the Lightboard to illuminate the presenter and the writings. These lights should be placed far enough from the glass board so that their reflection in the glass is not visible to the camera (Figure 5 & Figure 6, right photo).



**Figure 6: Back and front lights in the Lightboard studio at Notre Dame**

The video camera significantly determines the video image quality so a semi-professional or better camera is always preferred if it is within the project budget. You also want to use a scan-reverse camera which has a mirror-flipping option built in to produce a mirrored video stream. Otherwise, you will need to use a mirror in front of the camera (Figure 7) or a video editing software to reverse the video image so that the final video shows the handwritten texts in the right way.



**Figure 7: Using a mirror for image reversal**

The control desk usually has a computer such as a Mac mini with a monitor. On this computer, you can operate the video switcher (e.g. Blackmagic Design ATEM software, Figure 8). The video switcher combines signals from the video camera and other video resources such as a laptop computer with prepared PowerPoint slides which you can incorporate onto the live image from the video camera.

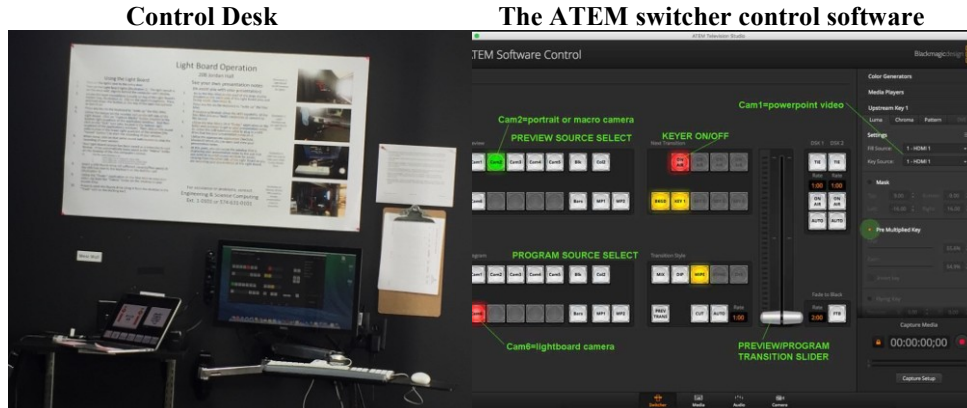


Figure 8: the control desk and the interface of the video mixing control software

A presenter's monitor is usually positioned near the video camera so that the presenter can see it through the glass board (Figures 1 & 9). This enables him or her to monitor the mixed live video image and to interact with the PowerPoint graphics. With this monitor, the presenter can perceive where the marker tip is relative to the graphics.

Other major Lightboard component parts include a black muslin backdrop curtain, sound absorbing foam behind backdrop, wireless microphones, liquid chalk and optionally, an additional monitor as a teleprompter (Figure 9).

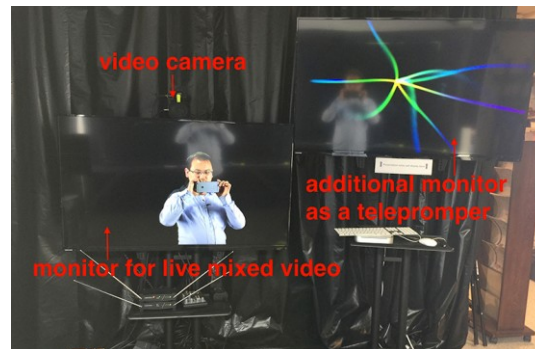


Figure 9: Real-time and Additional Monitors

## 1.2 Development history

The Lightboard was originally developed around 2011 by Michael Peshkin, a mechanical engineering professor at Northwestern University (Peshkin, 2013; Peshkin, 2014). He invented the Lightboard to create visually stimulating video lectures for his students and inspired other faculty members and students at Northwestern to produce their own videos with the Lightboard.

Peshkin also developed the Lightboard as Open Source Hardware allowing for innovation across different institutes and even built a website in 2013 to share step-by-step instructions on how to build a Lightboard (Peshkin, 2013). Many other institutes, including Penn State's One Button Studio team and Duke University, have adopted the technology and modified it to suit their own purposes.

Duke's similar system was designed to be portable so that it can be easily set in place for filming and then returned to storage. Their lighting system has also been simplified for quick setup, and the glass board is switched to lightweight materials (Wells, 2014). At Pennsylvania State University, technicians have successfully integrated the Lightboard into the school's One Button Studio, a studio-control software that provides a simple way for instructors to produce videos in a studio session (Oberdick, 2015). According to Northwestern University's report, over 30 institutes worldwide have installed Lightboards on their campuses. In many cases, the Lightboard has been deployed to enhance their existing One Button Studio (OBS) and other video facilities (Northwestern University's Digital Learning site, 2016).

At around the same time that Michael Peshkin invented his Lightboard (around 2011-2012), some individuals developed their own Lightboard systems independently and nearly simultaneously. Among them was Matt Anderson, a physics professor at San Diego State University who named his Lightboard as "Learning Glass" and used it for his physics classes (Skibinski, 2015). His Learning Glass (Lightboard) uses a smaller glass sheet, 3.5x5 feet (Peshkin's is 4x8 feet). He also shared online an instruction video and detailed written documentation for constructing his "Learning Glass". Anderson and his colleagues later founded a company, Learning Glass Solutions, which markets complete packages. Matt Anderson also has experimented with live audiences in his "Learning Glass" studio at SDSU (Jacobs, 2014; Figure 10). He presented a live mirror-reversed image on a couple of projection screens for studio audience to view.



**Figure 10: Matt Anderson with his Table-Top "Learning Glass (Lightboard)": the center image was not mirror-flipped while the ones on both sides were flipped.**

(Michael Peshkin. *Learning Glass* [digital image]. Retrieved from <https://sites.google.com/site/northwesternlightboard/buy-or-build> )

The majority of current Lightboard users are professors from science and engineering subjects. They have been using it for various purposes, from demonstrating a biochemical reaction to teaching electronic circuit design. However, it's not limited to STEM faculty. At Northwestern, Russian language faculty also uses it for flipped courses and for creating short videos to answer student questions. Moreover, students also use it to create videos for course assignments and presentations (Birdwell, 2015).

## 2. Advantages and Limitations of Lightboard

### 2.1 Advantages

The Lightboard has many advantages when being used to create instructional videos for online or flipped courses. First and foremost, as a replacement for traditional whiteboard or blackboard video, the presenter always faces the camera even during writing notes. So she or he can maintain face-to-face contact with audience (i.e., the camera) and her or his body never obstructs the hand-written notes since the presenter doesn't have to turn her or his back to the camera. In this way, the presenter is able to give a smoother and more natural presentation. The constant eye contact with the audience and the writing that glows in high contrast in front of the presenter make the video more engaging and intimate.

Second, effective use of Lightboard videos can support learning in a range of ways. Effective working memory capacity can be increased by using auditory and visual working memory together rather than using one or the other alone (Mayer, 2001; Sorden, 2005). The combination of narration and gestures from the presenter can support learning. According to Kelly, Manning & Rodak (2008), hand gestures were “a natural, ubiquitous and meaningful part of spoken language” and “[g]esture and speech form a tightly integrated system during language production and comprehension”(p.569). Additionally, better learning transfer occurs when learners can choose their own pace. In this case, learners can control the pace of presentation by stopping or replaying the video. (Plassa, 2003; Sorden, 2005).

Third, compared to regular online course videos, the Lightboard video is more interactive and engaging. Guo, Kim & Rubin (2014) classified the videos used on the edX or MOOC platform into four types: (1) a recorded classroom lecture; (2) an instructor's talking head; (3) a Khan-style digital tablet drawing (popularized by Khan Academy); and (4) a PowerPoint slideshow with voice-over. The videos created with the Lightboard excels these aforementioned videos in the following ways: it combines both PowerPoint slides and hand-written annotations as well as the presenter's gestures and facial expression; additionally, it allows the presenter to convey more information through annotating specific parts of the slides on the glass board with neon markers.

Fourth, owing to the easiness of using Lightboard, very little training is required for an instructor to create instructional videos. In its simplest form, the instructor simply turns on the Lightboard system by clicking the start button on the control desk computer, gives a lecture and finishes it up by clicking the stop button. Then the final video is immediately generated and saved to a flash drive, ready for uploading. Since the lecture is recorded in real-time and little or no post-production is required, it is much less time-consuming than many other methods for producing videos. The quickness and easiness of operating Lightboard definitely helps overcome the reservations of some instructors who feel uncomfortable with video production. Similarly, the lighting system and the semi-professional videocamera (or better ones) help produce very high quality videos. This also makes the Lightboard especially appeal to those instructors who are not tech-savvy but want to engage their students with videos of decent quality.

## 2.2 Limitations

Although it can produce high-quality videos as easily as the Penn State University's One Button Studio (OBS), the Lightboard is not intended for deployment in classrooms. First, the live audience in a classroom will see the presenter's writing in reverse unless the Lightboard is viewed in reflection. Matt Anderson has experimented with live viewers by putting mirror-reversed image on projection screens for the live (Jacobs, 2014), but this practice is not cost-effective enough for extensive implementation in classrooms. Second, a complete set of the Lightboard system costs about \$10,000 (Peshkin, 2013). The high cost renders it impossible to equip many classrooms with the Lightboard. Third, it is inconvenient and even hazardous to move between classrooms the whiteboard-size sheet of glass which is fragile and cumbersome.

Furthermore, while the Lightboard can be used to produce long videos technically as long as the storage space for videos is adequate, it works better for making brief videos. The principle reasons are that the space on the glass board for writing is relatively limited and that wiping the glass surface is more difficult than erasing a blackboard or whiteboard. In other words, no further writing can be done in the recording session once the glass board is all filled, which makes the Lightboard not ideal for creating long videos.

Additionally, one small tricky thing to note about Lightboard is that nearly all of the writing seen in Lightboard videos are left-handed. This is the result of mirror reflection which mirror-reserves the handwritten notes as well as the image of the instructor, so right-handers appear as left-handers, and vice versa.

## 3. Implications and Applications of Lightboard for Chinese Language Instruction

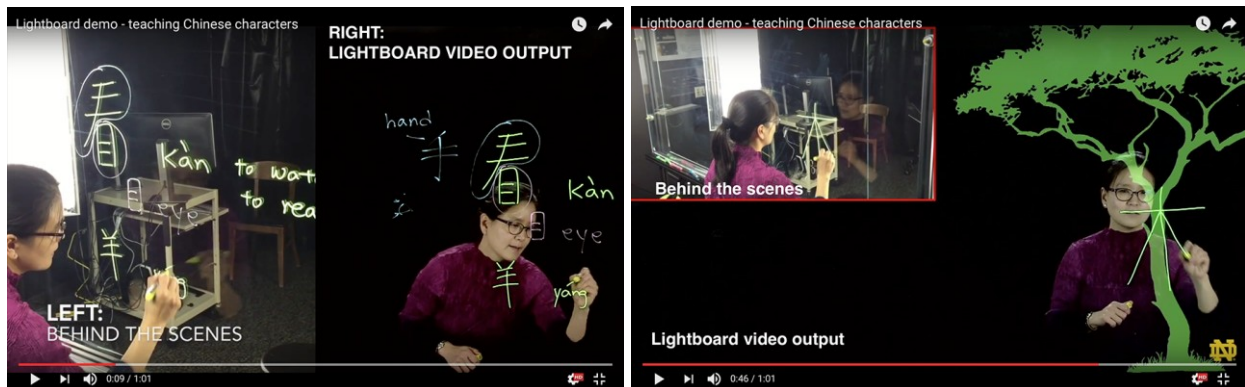
Given that Lightboard is originally developed by engineering professors as a desirable tool for explaining equations and diagrams, most of its current users are not surprisingly STEM faculty. Instructors use it to develop tutorial videos for solving difficult problems, providing homework feedback and explanations of more complex topics, and review sessions. Videos created with Lightboard can also be used as the major way to deliver content for online courses, such as distance learning offerings and MOOCs, for professional programs, and for remotely attended conferences. Additionally, undergraduate and graduate students have used Lightboard to create videos for class presentations and student organizations. Graduate TAs for STEM courses have also recorded demonstrations for their classes.

Hybrid courses have been well adopted in education with its multimedia features, interactivity, and ability to support cooperative and autonomous learning (Reinders, 2011). This module of integrating classroom and online communicative learning has become very popular in European language instruction, but just begun to emerge in the field of teaching Chinese to English speakers (Lin & Huang, 2011; Wang, 2014). The completely online MOOCs are also expanding in Chinese language education (Lin & Zhang, 2014). According to Liu and Luo (2016), a beginning Chinese course titled "Chinese for Beginners" developed by Peking University on the platform of Coursera

has attracted more than 730,000 users across the world with over 330,000 active learners.

As a growing number of Chinese language instructors are exploring ways of flipping courses or moving them completely online, proportional demands are increasing for an easy and quick tool to create high quality engaging videos to deliver the course contents. Lightboard can satisfactorily fit that need for many of those language instructors.

Just as STEM faculty, Chinese language instructors will find that Lightboard is a simple yet powerful tool for recording tutorial videos to complement their traditional and flipped courses. You can illustrate and write lecture notes on the glass board (see Figure 11-a) or annotate a PowerPoint slide (see Figure 11-b) while maintaining your face-to-face contact to the camera to facilitate your teaching of Chinese characters, pronunciation and grammar patterns. Specifically, you can incorporate hand-written demonstrations, stroke order animations, and other multimedia resources as well as your oral instructions into one single video simultaneously to visualize and enhance learning of characters. It can also be used to develop short video tutorials to teach key and difficult new words and grammar patterns. Its versatile features make Lightboard video tutorials more intelligible than a conventional lecture and helps conserve classroom time for drills and communicative activities. Additionally, it also offers chances and flexibility for language students to go back to the videos to review and consolidate their learning.



**Figure 11-a: Writing & drawing on Lightboard**  
(Photo courtesy of Hanna Kang, Notre Dame)

**Figure 11-b: Annotating a Powerpoint**  
(Photo courtesy of Hanna Kang, Notre Dame)

Lightboard videos' nature of brevity also makes them easier for language students to find time to watch and better fits their attention span. Studies show with substantive evidences that shorter videos are much more engaging. Engagement drops sharply after 6 minutes (Guo, Kim & Rubin, 2014). These results can be bolstered by the cognitive load theory which views the limitations of working memory capacity and duration as a major barrier to learning. The theory also encourages learners to lessen working memory load during new information processing (Sweller, 1988). Therefore, a lengthy lecture should be segmented into small chunks. For example, we can deliberately select difficult vowels (such as ü, u, ui, iu, üe, ian), consonants (such as j/q/x, z/c/s), and other pronunciation issues (such as tone sandhi and the complex pinyin spelling rules), and produce individual Lightboard videos to address each item. In many beginning Chinese textbooks and courses, the teaching of pinyin seems too intensive for students to absorb and master.

However, short Lightboard tutorial videos seem more effective than a traditional lecture, as the latter usually seems too daunting for students based on the feedbacks from students on the pronunciation tutorial videos that I created.

Additionally, you can deploy Lightboard to record short videos to give students timely homework or exam feedbacks. For some common errors, such as those grammatical or pronunciation ones, these short videos will be a very effective and efficient way to correct mistakes since you can share the videos with different sections of students and even future students so that you don't have to repeatedly deliver the same content to different students again and again.

## 4. How to Use Lightboard and Install a Lightboard Studio

### 4.1 Step by step: Create a tutorial video using Lightboard

Next I will illustrate how to use the Lightboard to create tutorial videos step by step through a sample video I produced for pronouncing “ü” (Figure 12 shows a screenshot of the video, and the video link is listed in the Appendix).

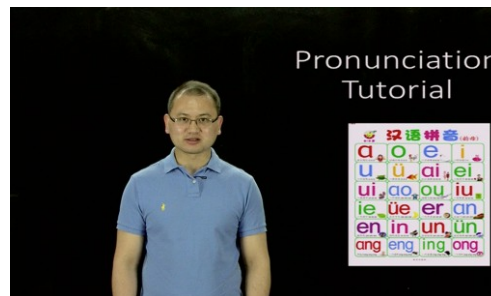


Figure 12: Pronunciation tutorial video for “ü”

#### Step 1: Preparation

Write down lecture notes including the knack of pronouncing “ü”, its spelling rules, common errors with their solutions, and examples for drill. Just as you would for a class, it always helps to prepare an outline or script for each presentation topic. You can also display the outline on an additional monitor and use it as a teleprompter (Figure 10). Considering this type of video needs to be short, I personally prefer to rehearse adequately so that I can give the lecture in a more natural and smoother way without referring to any notes.

Create PowerPoint slides to be overlaid onto the Lightboard. Make sure the PowerPoint background is black and all texts are white to stand out in contrast to the background (see the comparison from Figure 13). You also want to leave space on your PowerPoint slides for your hand writing and for your appearance on the screen (Figure 14). Upon your arrival at the Lightboard studio, connect your laptop, which plays the PowerPoint file, to the Control Desk computer and also insert a flash drive stick to the computer for video storage.

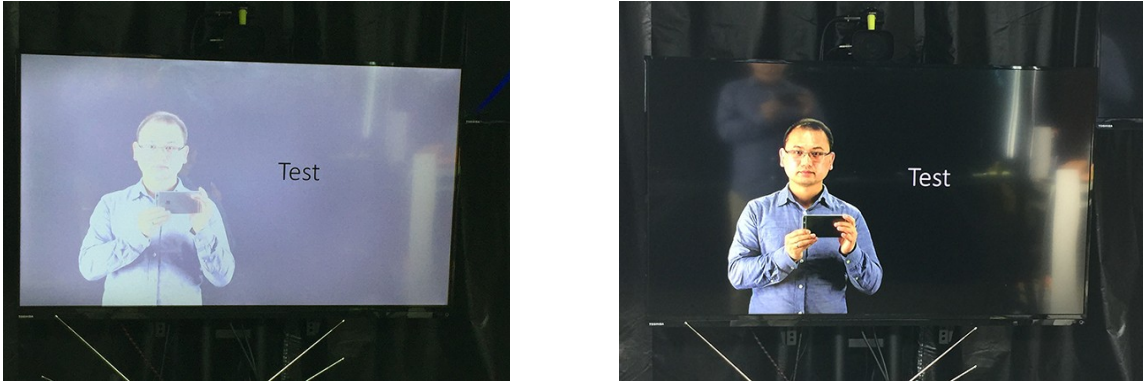


Figure 13: PowerPoint background comparison: left, white background; right, black background



Figure 14: Leave space for you and your writing when making PowerPoint

## Step 2: Turn on the Lightboard Switcher and Film

Turn on the studio lights. Put on the wireless microphone and check its battery level to make sure it's not too low.

The “switcher” panel, which controls the recording and mixes the camera video with the PowerPoint slides, may seem too intimidating to operate, but actually you can keep all default settings and simply click the “unlock” icon and then the start button to film (Figure 15).

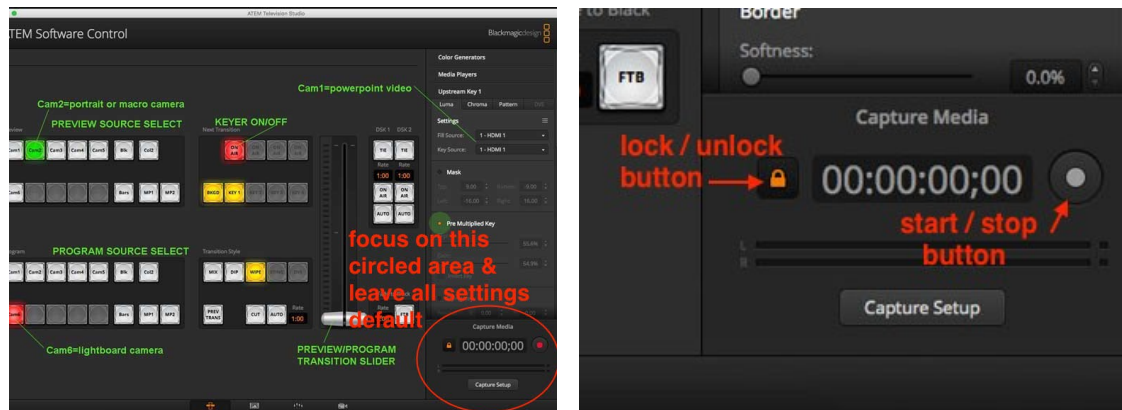


Figure 15: Switcher panel (the Blackmagic Design ATEM software) which controls the recording and mixes videos from different sources



It's recommended to record a short "screen test" snippet and then play it on the Control Desk computer. This helps check if any technical details need to be corrected or refined, such as a malfunctioning microphone. Then it's your show time: click the start button, walk to the Lightboard and start your talk. Stand and face the camera for a few seconds at the beginning and end of each video. This will help you in post-production to find a clean cut point to edit out your walk-in and walk-out.

### Step 3: Finish up Your Lecture and Turn off the Switcher

After finishing up your lecture, walk to the Control Desk again and just click the stop button. Your video then will be automatically saved right into your flash drive and ready to be watched and uploaded. In most cases, you just need to cut off the part of your walks in the video between the control desk and the Lightboard. Some instructors also feel comfortable to leave their walk-in and walk-out there. So usually little or no post-production is needed. The final video can be shared with your students via Sakai, YouTube, Vimeo, Google Drive or other platforms you use for your courses.



Figure 16: Flow diagram: use the Lightboard to create instructional videos

## 4.2 Tips for producing Lightboard videos

Below are a few valuable tips for produce decent videos with the Lightboard. For more detailed best practices, you can refer to Peshkin's website (Peshkin, 2013).

- Make it short! A 3-6 minutes video may be the best. Short videos fit better students' attention span and enhance the likelihood of their watching.
- Don't wear clothes whose color is too dark or too bright. Black clothes make you appear like a floating head on the black backdrop while bright clothes, such as a white shirt, make your writing on the Lightboard hard to read. Light blue shirt seems to work decently.
- Your wear must not have any logos or text on the front side as they will

appear mirror-reversed in the final video.

### 4.3 Installation of a Lightboard Studio

If the aforementioned features of the Lightboard fit your needs to make instructional videos for your Chinese courses, you may want to check first if your home institute has already built one. If not, joining up with STEM faculty at your school will certainly renders it easier to secure funds for building a Lightboard studio. Candidly, your colleagues teaching science or engineering subjects probably find the Lightboard ideas even more tempting for them.

Michael Peshkin, the pioneer of the Lightboard, has built the open-source project website that technicians or other supporting staff from your school will find very helpful. The site contains a detailed parts list and thorough instructions on how to construct a Lightboard studio. The estimated cost for the whole system is around \$10,000. Recently it was reported that Kent State University has built a Lightboard system with a budget of under \$1,000, of course not including labor cost since it was built by school-employed technicians (Earley, 2016). The cost was dramatically economized by switching to cheaper materials. For instance, the video camera on Peshkin's list, Canon XF-105, is a semi-professional camcorder with a "mirror revere" function and costs about \$3,000, while the Kent State uses a \$200 video camera with which they have to mirror-flip the output video with a software.

If your institute prefers to purchase a complete package, you can consider products provided by Learning Glass Solutions. Matt Anderson, who independently developed their Lightboard that he named as "Learning Glass", and his team from their company, Learning Glass Solutions, offer complete packages for sale (Figure 10). For more information about their two types of products, Learning Glass Studio Package and smaller Table-Top Studio Package, you can refer to their website listed in the Appendix. For ambitious DIY technicians, the company also provides the complete build instructions for these products at its website.

## 5. Conclusion

The Lightboard is an innovative and powerful tool to deliver content to students, for both hybrid and completely online courses. It allows instructors to directly interact with their glowing handwritten notes in front of them and to vividly annotate PowerPoint slides superimposed onto the board. In contrast to a blackboard or whiteboard, the Lightboard allows instructors to maintain their face-to-face interaction with viewers even while writing notes on the glass board. Despite its high-quality final video, little training is required for the Lightboard instructions since its operation is pretty simple. All these features render the Lightboard a powerful tool to make short tutorial videos to complement hybrid and fully online courses including teaching of Chinese pronunciation, characters, new words and grammar patterns. As more and more institutes are adopting

the Lightboard, this article hopes to provide a general overview of the Lightboard for those interested in exploration of using the Lightboard for their Chinese courses.

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## Appendix

### Sample Lightboard Videos

- Pronunciation tutorial video for “ü”:  
<https://www.youtube.com/watch?v=x78hjsjJWfY>
- Lightboard demo - teaching Chinese characters:  
<https://www.youtube.com/watch?v=RAXva4jbM5c>
- Sample Videos Using Lightboard by University of Florida:  
<https://mediasite.video.ufl.edu/Mediasite/Play/7c44307b942f424c8bdde637b716dd021d>
- EMC ProtectPoint Lightboard Overview:  
<https://www.youtube.com/watch?v=98y5-qa6nYs&list=PL0dcjleaDomqUk8C9JTMfzEY2uE2fYh&index=9>
- Stanford Online's Lightboard Demo:  
<https://www.youtube.com/watch?v=eRuDGbTuuqo>
- UNC-TV Lightboard Demo:  
<https://www.youtube.com/watch?v=ea2VQ0OAFyc>
- University of Illinois Demo Video:  
<https://citl.illinois.edu/services/for-instructors/instructional-resources/studios/lightboard>

### Introduction and How-to-do

- Northwestern "Lightboard":  
<https://www.youtube.com/watch?v=N1I4Afti6XE&index=8&list=PL0dcjleaDomqUk8C9JTMfzEY2uE2fYh>
- FIRST Lightboard Challenge & What You'll Need by Humber College, Toronto  
[https://www.youtube.com/watch?v=x74rUXki\\_bk&t=1m13s](https://www.youtube.com/watch?v=x74rUXki_bk&t=1m13s)
- Lightboard Basics | Part 1 of 5: It's Easy!  
<https://www.youtube.com/watch?v=g8UpAuBdy9M>

- Introducing the Lightboard:  
<https://www.youtube.com/watch?v=Rmqeakjllu4&t=8s>
- One Button Lightboard Studio Introduction  
<https://www.youtube.com/watch?v=TFF3MEqRE-s&t=29s>
- Digital Learning - active classroom & lightboard  
<https://www.youtube.com/watch?v=jhA0gnTO4-w>
- Lightboard Tips #1:  
<https://www.youtube.com/watch?v=29X8oPrqm4w>
- Lightboard Tips for Recording Preparation:  
<https://www.youtube.com/watch?v=KyhCiOhASBA>
- How to Make a Lightboard for Shooting Videos  
<https://www.youtube.com/watch?v=wNnsU1e8uoM>
- Tech in Teaching: Using A Light Board in Educational Videos  
<https://www.youtube.com/watch?v=x7cpffO-mys&index=7&list=PL0dcjleaDomqUk8C9JTMMyQFzEY2uE2fYh&t=1s>
- Learning Glass Solutions:  
[https://www.youtube.com/watch?v=GJKNR\\_zb0BY](https://www.youtube.com/watch?v=GJKNR_zb0BY)
- FlipCon 2016: How to make and use a lightboard:  
<https://www.youtube.com/watch?v=c79lrxj0pks>
- User Forum: <https://groups.google.com/forum/#!forum/lightboard>

#### Lightboard Construction and Purchase:

- Peshkin's Parts List:  
<https://sites.google.com/site/northwesternlightboard/home/parts>
- Peshkin's Typical Bill of Materials  
<https://docs.google.com/spreadsheets/d/1KuA3cItcWjFl-UmGXpdiONPubo2OaFonnWxl01kuWe4/edit#gid=524173569>
- Kent State University's Bill for Construction:  
<http://delta.stark.kent.edu/lightboard/construction>
- Website of Matt Anderson's Company: Learning Glass Solutions:  
<http://www.learning.glass>
- Learning Glass Product List:  
<http://www.learning.glass/learning-glass-products/>
- Building a Low-cost Lightboard for Video Lectures:  
<https://www.youtube.com/watch?v=FYwXOLU4TKk&list=PL0dcjleaDomqUk8C9JTMMyQFzEY2uE2fYh&index=1&t=40s>

# Mobile Assisted Language Learning APPs for the Chinese Classroom

## (中文语言课堂里的手机辅助学习应用)

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**Abstract:** The development and integration of new mobile devices and applications have changed our daily lives and learning styles. It would be helpful for instructors to be aware of both the benefits and challenges of adapting mobile assisted language learning in their classrooms. This review explores some of these opportunities. It will present current and newly innovated language learning applications to demonstrate the different features in various mobile learning apps, including dictionary, flashcard, pronunciation, writing, and situated learning. The emphasis of this paper will be on the Chinese language. It is suggested that instructors be aware of the needs of their students/classes with app evaluation rubrics and strategies when adapting mobile learning in their teaching.

**摘要:** 伴随着手机跟手机 App 的普及跟多元化, 人们的生活与学习形态也跟着改变。语言老师们应了解手机应用教学所带来的益处跟挑战。这篇文章将介绍一些中文教学 App 并将其依照功能来做分类: 字典, 字卡, 拼音, 写字, 课程, 以及影音教学。在选择语言教学 App 的时候, 老师们可以运用 Rubrics 及教学策略来挑选最合适的 App。

**Keywords:** MALL, Mobile learning, language learning, rubrics

**关键词:** MALL, 手机学习, 语言学习

### 1. Introduction

Mobile technology has become an essential element of our daily life. It has changed our lifestyle, and more importantly, our learning style. The way students communicate and gather information relies heavily on the use of mobile devices. Rather than discouraging students from using their cell phones in the classroom, instructors should find a way to adapt mobile devices in class, and to prepare students for real world learning experiences (Pacansky-Brock, 2013). The cell phone demographic data show that 91% of adults own a cell phone and 72% own a smartphone in the United States. In South Korea, 100% of adults own a cell phone and 88% own a smartphone (Poushter,

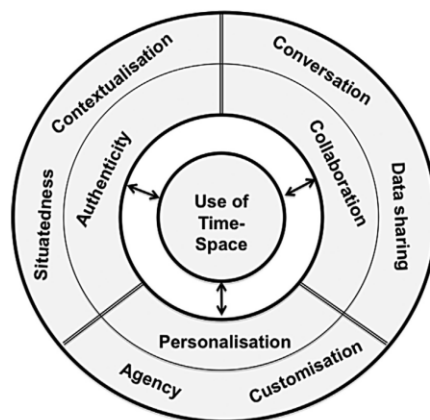
2016). More than 90% of users spend an average of two hours on the phone daily in the USA (Chaffey, 2015). The Cisco white paper (2016) shows global mobile traffic growth is 74% and average smartphone usage grew is 43% in 2015.

One of the new learning trends mentioned in the 2016 NMC Horizon Report is to bring your own device (BYOD), i.e., students bringing their own laptops, tablets, or smartphones to the classroom. Students can use devices that they are already familiar with instead of computers provided by the school. In 2014, more than 42% of US colleges have adapted the BYOD strategy. Some other advantages of BYOD including more innovative ways for instructors to create contents and assignments, and connecting the learning experience to the students' real lives (Johnson, Adams Becker, Cummins, Estrada, Freeman, & Hall, 2016).

## 2. Mobile Assisted Language Learning (MALL)

Mobile assisted language learning (MALL) provides the benefits that students can learn anywhere and anytime with their mobile devices. The advantages of mobile learning includes: 1) accessing information quickly, 2) communication & content collaboration, 3) interact with course contents in various ways, and 4) situated learning (Gikas & Grant, 2013). Students in the mobile learning groups showed significant improvement in the attitude survey and post-test results (Martin & Ertzberger, 2013). Other studies (Chang & Hsu, 2011; Kim & Kwon, 2012; Rahimi & Miri, 2014; Soleimani & Mustafa, 2014) also suggested that students in the MALL group demonstrated higher achievement and motivation. In Ally, Schafter, Cheung, McGreal and Tin's (2007) study on ESL and MALL, over 90% of the participants appreciate the flexibility of mobile learning.

Kearney, Schuck, Burden, & Aubusson (2012) explained the pedagogical perspectives of mobile learning in three theories: personalization, authenticity, and collaboration. The ability to personalize your learning journey, to learn with real-world materials, and to interact with peers.



**Figure 1: Framework comprising three distinctive characteristics of m-learning experiences, with sub-scales. (Kearney, Schuck, Burden, & Aubusson, 2012)**

Although the above-mentioned studies showed positive results of mobile assisted learning, there are also limitations that we should keep in mind. Gikas & Grant (2013) observed these challenges in their study: 1) anti-technology instructors in other classes, 2) device challenges, and 3) devices as a distraction. The challenge came from both user and device. McQuiggan, Kosturko, McQuiggan, and Sabourin (2015) also listed several possible limitations in mobile learning: 1) differentiated access to device and internet, 2) monitor learning progress and usage, 3) student attitude, 4) mobile device shared in group, 5) limited physical attribution. They suggested that mobile learning lecture design should be combined with other learning theories for improvement. To best facilitate meaningful learning using the above-mentioned devices in the classroom, it is important for the instructor to diversify teaching and presentation methods to accommodate the varied needs of a diverse study body, and their learning styles.

### 3. Chinese Language Learning Applications

Language learning applications have been developed and made available in different languages and on different devices (iOS or Android system). The main categories of the Chinese language learning applications are: structured lessons, dictionary, flashcard, game, pinyin, writing Chinese characters, and using video lessons. The price ranges are from free to about \$30 per month. There are more than 40 Chinese language learning applications currently available. The developers of these Chinese applications came from both educational institutions and commercial companies. The levels of these applications are mostly for beginner to intermediate levels.

Below (section 3.1 to 3.6) is a list of Chinese learning applications with varied functions.

#### 3.1 Chinese-English Dictionary

The Chinese-English dictionary applications allow users to search Chinese characters via pinyin, character or English. It provides the English definitions, pinyin, sample sentences, and audio pronunciation. Hanping, Pleco, and trainchinese also provide the animation for learning the stroke order.

Name	Price	System
<a href="#">Hanping</a>	Free	Android
<a href="#">Pleco</a>	Free	iOS, Android
<a href="#">trainchinese</a>	Free	iOS, Android
<a href="#">English Chinese Dictionary by Xung Le</a>	Free	iOS, Android



### 3.2 Flashcard

The Flashcard applications are designed in two different ways. Applications like Anki and Quizlet provide sample flashcard sets and instructors or learners can create their own flashcard sets as well. Other applications come with various Chinese flashcard sets that are designed thematically or based on language levels.

Name	Price	System
<a href="#">Anki</a>	Free for Android; \$24.99 for iOS	iOS, Android
<a href="#">ChineseSkill</a>	\$0.99	iOS, Android
<a href="#">Chinese Flashcards</a>	\$2.99	iOS
<a href="#">CS Zika</a>	\$2.99	iOS
<a href="#">StickyStudy</a>	\$3.99	iOS
<a href="#">Learn Chinese by Brainscape</a>	\$9.99/month	iOS, Android
<a href="#">Quizlet</a>	Free	iOS, Android

### 3.3 Chinese Pinyin

With pinyin applications, learners can practice different pinyin and tones anytime and anywhere they want. These are good tools for beginners or intermediate learners who would like to practice pinyin.

Name	Price	System
<a href="#">Pinyin Trainer</a>	Free	iOS, Android
<a href="#">Standard Mandarin</a>	Free	iOS
<a href="#">Pin Pin</a>	Free	iOS, Android
<a href="#">Standard Mandarin</a>	Free	iOS

### 3.4 Writing Chinese Characters

These applications are designed specifically for learning to write Chinese characters with animation showing the stroke order. Some dictionary applications also provide the stroke order animation. The difference of these applications is that participants can practice writing with fingertips on their mobile devices.

Name	Price	System
<a href="#">Chinagram</a>	\$1.99	iOS
<a href="#">Skritter</a>	\$14.99/month	iOS, Android
<a href="#">eStroke</a>	\$6.99	iOS, Android

### 3.5 Structured Lessons

These applications contain Chinese language lessons with English instructions. The lessons come with features like Flashcard, game, pronunciation; some applications also include practice for writing Chinese characters. One possible limitation is that most of these apps are designed for novice learners.

Name	Price	System
<a href="#">memrise</a>	Free	iOS, Android
<a href="#">ChineseSkill</a>	Free	iOS, Android
<a href="#">Hello Chinese</a>	Free	iOS, Android
<a href="#">Chinese Characters First Steps</a>	Free	iOS

### 3.6 Learning Chinese through Video

These applications are design for learning Chinese vocabulary through video clips with real world context. This means providing authentic context that reflect the way this learning will be used in real-life, which is one of the critical aspects of situated learning design (Herrington & Oliver, 1995). The video clips come with Chinese subtitles & pinyin. They are more suitable for intermediate and advanced learners.

Name	Price	System
<a href="#">ChinesePod</a>	\$29/month	iOS, Android
<a href="#">FluentU</a>	\$15/month	iOS, Android
<a href="#">Yabla Chinese</a>	\$9.95/month	iOS

You will be able to visit the websites by clicking the appropriate apps. This list will also show prices and which mobile platform these applications are best designed for. Instructors and students alike should be aware that the above-mentioned examples are but a few of the options available.

#### 4. Applications Evaluation

According to Ozdamli & Cavus (2011), the five basic elements of mobile learning are: learner, teacher, environment, content and assessment. The most important element among the five is learner. Therefore, when evaluating a mobile learning app, learner should be at center of the design. Other important components for a good learning applications are instant feedback and the opportunity to retry (Ally, Schafer, Cheung, McGreal, & Tin, 2007) and providing supports and tutorials (Pacansky-Brock, 2013).

There are different evaluation rubrics designed for choosing the optimal educational applications for your classroom. One example is the Great App Checklist (McQuiggan, Kosturko, McQuiggan, & Sabourin, 2015), which list purpose, alignment (curriculum), pedagogically based, personalization, sharing, privacy, app citizenship, and access as evaluation criteria. In Vicent's (2012) Educational App Evaluation Rubric, he creates a likert scale rubric with categories like relevance, customization, feedback, thinking skills, usability, engagement, and sharing (data). The rubric created by Lee & Kim (2015) includes categories of teaching & learning, screen design, technology, and economy & ethics. These rubrics are designed for instructors to identify the applications that work best for their students' needs.

#### 5. Conclusion

Mobile assisted language learning has a substantial impact on classroom activity and curriculum design. One common question is how to choose the right applications, another question is how to best integrate mobile learning in the classroom. There are several strategies for making mobile learning work: 1) provide professional development for teachers and administrators, 2) use data to personalize learning, 3) change instruction to facilitate mobile learning, 4) flexible policies on classroom cellphone use, 5) good quality learning applications (McQuiggan, Kosturko, McQuiggan, & Sabourin, 2015).

This paper lists twenty-five Chinese language learning applications in the categories of English-Chinese dictionary, flashcard, pinyin, writing Chinese characters, structured lessons, and video lessons. It should be mentioned that the list was generated in November 2016. Though current, new applications are being added on weekly bases. The twenty-five applications on the list are but a few of the options available.

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