Exploring the Relationship between Undergraduate Students' Uses of Mobile Assisted Learning and Their Learning Performance of Chinese as a Foreign Language in Thailand

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Article History
Received: 21 March 2019 **Revised:** 4 April 2019 **Published:** 30 September 2019

Abstract
This study mainly aimed to explore the relationship between undergraduate students' uses of mobile assisted learning and their learning performance of Chinese as a foreign language at a high education institution in Thailand. Questionnaires adopted from Amanda and Zhang (2017) were distributed to 260 undergraduate students who were learning Chinese as a foreign language, their learning performance were evaluated based on their final scores of Chinese course scores. The results of study revealed that the undergraduate students' uses of mobile assisted learning of Chinese language "very often", the overall students' Chinese performance was at the level of "moderate", and there was a moderate positive relationship between students' use of mobile application in Chinese and their learning performance (r =.476, p <.05). Conclusion and Discussion on the finding were provided at the last part of the study.
Keywords: Mobile Assisted Learning, Chinese Learning Performance, Chinese as a Foreign Language, Thailand

Introduction
For the purposes of communication, study, and socialization, human beings need to learn a language, and sometimes need to learn more than one language. In the modern society, language learning is not only for promoting the communication, but also for developing the cognitive ability for communication, and exploring the opportunity in this modern world (Gass & Selinker, 2008). Therefore, in this era, more people don't rely on one language only, they also like to learn a second, or a foreign language for the purpose of better communication and opportunity seeking.

With the recent great economic development in China, the numbers of learners of learning Chinese as a foreign language are rising all over the world; non-Chinese people are learning CFL on almost every continent. More than 40 million foreign people are learning Chinese; this number is expected increase to 100 million within a few years (Free Chinese lessons, 2010).

More specifically, the tide of learning Chinese also came to Thailand, more and more Thai students start learning Chinese, and Chinese language courses are opened almost in every university of Thailand. Besides, there were 13 Confucius Institutes and 18 Confucius

classrooms in Thailand as Hanban (2015) reported. With the total number of 31 teaching institutions, Thailand owns the largest Chinese learning students number in Asian countries.
This study was mainly designed to investigate the undergraduate students' use of mobile assisted learning, and to assess their Chinese learning performance at a high education institution in Thailand, as well as to determine the relationship between the undergraduate students' use of mobile assisted learning and their learning performance of Chinese as a foreign language at the selected institution in Thailand.

Literature Review

Difficulties of Chinese Learning in CFL Education

For CFL learners, Chinese language learning actually means learning Mandarin. Mandarin can be called the modern standard Chinese language, which uses Beijing standard for pronunciation and Chinese characters for writing. It is the official language of the People's Republic of China. Mandarin is used by over 70% of the population of China, the use area across northern and southern China (Wheatley, 2011).
The written form of Chinese language is called as Chinese characters (Hanzi). No matter which dialect is used by Chinese speakers, the Chinese characters system is the sole written form for writing Chinese. The Chinese characters system is non-phonetic, and was developed from pictographs to ideographs. There are two formations of Chinese characters (Hanzi): simplified Chinese (Jianti Hanzi) and traditional Chinese (Fanti Hanzi). Simplified Chinese is used by the vast majority of Chinese people, in mainland China, Singapore, Malaysia and other Asian regions. Thus, Simplified Chinese is also the main form taught to CFL learners (Norman, 1988; Ye, 2011).
The nature of Chinese language leads to difficulties of reading and writing in CFL education. Researchers have suggested that CFL learners and teachers should focus on the following areas: 1) there is no direct relationship between forms and pronunciations of Chinese Characters; 2) Chinese characters should form the basis of reading text, namely, knowing the meaning of certain character (Hanzi) is helpful to memorize more words involving this character (Hanzi) and ultimately improve Chinese reading and writing skills [5] [6]. For instance, if a learner needs to understand a Chinese character, he or she must learn three elements: pronunciation, form and meaning. It is a major challenge for learners whose first language is an alphabetic system (Hoosain, 1991; Ye, 2011).

CFL Education and Performance in Thailand

As mentioned before, one of the languages in the Asian region that has gained tremendous popularity is Chinese, which is also true in Thailand. More and more Thai learners start learning Chinese, and Chinese language courses are opened almost in every university of Thailand. In fact, Chinese language teaching starts quite early and has a long history in Thailand; however, Thai students' learning performance, was not satisfactory as concluded a study about CFL education in Thailand conducted by Kanoksilapatham (2011). According to her findings, teaching techniques and learning material/aids were the common concerns by both and Thai and Chinese teachers. As the most traditional and common electronic materials available for teachers were VCD, DVD, and CD-ROM, which to some degree, were difficult and inconvenient to use frequently as most of these were using in the classroom only. Moreover, Thai learners and Chinese teachers had different views on their ideal teaching materials, based on her survey, Chinese teachers like to use Thai translation accompanying Chinese texts at all times in the classroom teaching process, while the Thai learners somehow expected to see more colorful and attractive materials that can facilitate them to learn the language together with understanding more about Chinese culture (Kanoksilapatham, 2011).

Learning Strategies of CFL Education

With the increased number of CFL learners in the world, several researchers begun to focus on the language strategy by CFL learners. In early years, two researchers (Wang, 1998; Shen, 2005) conducted a study of this field in the US University context, then another study was conducted with adolescent learners in UK (Grenfell & Harris, 2015). Their findings all similarly implied that most CFL learners rely heavily on mechanical repetition strategies, for example, they may do the characters' writing repeatedly, practice the correct stroke order, and do many dictations on their own in order to memorize the new words. The effort in doing this in fact consuming lots of time but regarded as low effective strategies, if the learners fail to make connections with previously learned words or apply in a new language context (Schmitt, 1997).

It is not easy for anyone to start studying a foreign language, the learner not only needs a heavy interest, a strong determination but also needs to know some learning strategies. In this regard, Oxford (1990) had explored the Learners' use of Language Learning Strategies (LLSs), which was regarded as a very successful starting point for understanding and guiding the learners of English as a foreign language (EFL). Later, Schmitt (1997) developed a taxonomy of Vocabulary Learning Strategies (VLSs), however, it is targeted for EFL learners still. As the English pronunciation, spelling and writing system are very different to Chinese language, thus, the learning strategies that has been explored in the EFL education could not be able to apply directly in CFL educational context. For instance, to learn a new word in Chinese requires the learner to understand not only the word structure, the stroke order, the pronunciation, and the tone; on the contrast, to learn a new word in English may not be complicated like this (Mason & Zhang, 2017).

Mobile Assisted Language Learning

Considering the challenges of Chinese language learning, researchers tried to review the foreign language learners' vocabulary strategies that could assist the CFL learners in terms of Chinese language learning. During this course, the advantage of electronic dictionaries or designed language software were studied and confirmed (Nyikos & Macaro, 2007). For the CFL learners, electronic dictionaries with handwriting or pronunciation (Chinese pinyin) input tools could facilitate the learners to find an unknown character rapidly, which simplify the steps of vocabulary checking a lot. With the technology and digitalization, this kinds of dictionary, or the similar function language Apps were developed and could be installed in the mobile easily, which is applied more in the CFL education by teachers and students (Godwin-Jones, 2011). In this regard, mobile assisted language learning may not only directly help the learner to improve their language efficiency, but may provide more learning opportunities for with the new language (Rosell-Aguilar & Kan, 2015).

Recently, mobile app or mobile application was invented and connected with a mobile device, which leads to a new year of learning, mobile assisted learning. This kind of learning in fact used Apps that downloaded from application distribution platforms and internet. Usage of mobile apps has become increasingly prevalent across mobile phone users, including the GPS, online purchase, and language learning functions (Ludwig, 2012). With the technological innovation in the current era, on one hand, more and more mobile applications were invented and became available, on the other hand, as the capabilities of smartphones were also improved rapidly, hence, more and more people enjoyed downloading and installing more mobile applications to their mobiles for various purposes (Pham, Nguyen, and Chen, 2017).

However, there were still lack of studies concerned on the Chinese learning strategies employed by CFL learners, especially on the learning through mobile applications. Until recently, a study concerning this topic was conducted, in the School of International Education, Xi'an Jiaotong University, China, on how CFL learners at different levels of

proficiency use mobile apps in their Chinese language learning, based on a survey completed by 140 learners and interviews. Their findings showed that quite many of CFL learners would use mobile apps for their Chinese learning. The most frequently used learning strategies as reported from their study were using mobile apps to check the new words with the example sentences, and to view the stroke orders of the Chinese characters (Mason & Zhang, 2017).

Research Methodology

To explore the relationship between undergraduate students' use of mobile applications and their learning performance, the study used a quantitative and correlational design. A questionnaire adopted from previous research of Mason, & Zhang (2017) were distributed to identify the use of mobile assisted learning by learners in their Chinese learning, while, the final scores of their Chinese course were used to determine their Chinese language performance in this study. The adopted questionnaire from Mason, & Zhang (2017) was developed by previous study the based on Chinese learning strategy inventory (Shen, 2005), which was composed of 10 strategies. The validity of the questionnaire was confirmed by a panel of experts, as the overall IOC scores was.72. The reliability of the questionnaire reached.81 as previous study of Mason, & Zhang reported, and was.75 by the current study.

All the undergraduate students from different years who learned the Chinese courses in the academic year of 2018 in a reputed public university in Thailand were used as the target group for this study, the total number of these students was 260. Since the researcher and his colleagues were the course instructors for all these students, and also responsible for their final performance assessment, the students final scores of the Chinese courses were collected by the researcher directly. By the end of data collection, 198 students out of 260, (76 percent of the population) returned the questionnaires. Among these participants, 48.5 percent of them were the first year students, 25.7 percent were the second year students, 23.2percent were the third year students, and 2.6 percent were the last year students. The female students were about 75percent, male students were only 15 percent. Most of them (78 percent) learned Chinese for 1-3 years, 17 percent of them learned more than 3 years, only percent of them learned less than 1 year.

Results

The Use of Mobile Assisted Learning for Chinese as a Foreign Language

Analyzed data from the returned questionnaires revealed that the overall level of undergraduate students' use of mobile application in Chinese learning was "very often" as Table 1 below showed, undergraduate students in the institution very often used a dictionary app in mobiles for checking words, pronunciation and meanings, often used for identifying the component, stroke and memorizing the word, and sometimes used for paraphrasing, practicing and recording the new words.

Table1: Descriptive Analysis of the Use of Mobile Assisted in Chinese Learning

The use of mobile application	**Mean**	**SD**	**Interpretation**
I use a dictionary app to look up words and sentences that contain the characters.	4.17	.91	Very often
I use an app to listen to the pronunciation of the characters.	3.94	.82	Very often
I check characters in an on-line dictionary or app for other meanings.	3.87	.80	Very often
I use an app to provide me with 'meanings' for memorizing a character.	2.80	.78	Often
I use an app to identify the components/radicals of the character.	2.67	.77	Often
I use an animation app to view the stroke order of the character.	2.61	.71	Often
I use an animation app to trace over the stroke order of the character.	2.51	.63	Often
I use an app to place the new word in a group with other words that are similar in some way.	2.37	.73	Sometimes
I use an app to make flashcards with the character on one side and pinyin and the meaning on the other.	2.32	.74	Sometimes
I use an app to keep a record of new characters and words.	2.28	.67	Sometimes
Total	**2.57**	**.76**	**Often**

The Students' Chinese Learning Performance

Based on the course evaluation of their Chinese learning performance scores, the results showed that the overall students' Chinese performance was at the level of moderate as the following Table 2 shown, most students' listening and speaking performance were high but their reading and writing performance are lower.

Table 2: Descriptive Analysis of Students' Chinese Learning Performance

Chinese learning performance	**Mean**	**SD**	**Interpretation**
Listening performance	86.2	.83	High
Speaking performance	80.1	.67	High
Reading performance	74.3	.56	Moderate
Writing performance	70.5	.89	Moderate
Total	77.7	.73	Moderate

The Relationship between Students' Use of Mobile Assisted in Chinese And Their Learning Performance

To determine the relationship between undergraduate students' use of mobile application in Chinese and their learning performance at the institution, Pearson correlation coefficient was used, and the results showed a moderate positive relationship between students' use of mobile application in Chinese and their learning performance existed ($r = .476$, $p < .05$) as the following Table 3 showed.

Table 3: Pearson Correlation Coefficient for the Relationship Test

Correlation test		**Chinese learning performance**
The use of mobile application	Pearson Correlation	.476**
	Sig. (2-tailed)	.001

Discussion

This study revealed that the undergraduate students' use of mobile assisted learning of Chinese language "very often". The results showed that most undergraduate students very often used a dictionary app in mobiles for checking words, pronunciation and meanings, often used for identifying the component, stroke and memorizing the word, and sometimes used for paraphrasing, practicing and recording the new words. It was consisted with the findings of previous study in China, as they also found most of the CFL learners confirmed using mobile apps in their learning process, and the most frequently used mobile-assisted strategies as similarly found by this study were using mobile apps to check the new words with the example sentences, and to view the stroke orders of the Chinese characters (Mason & Zhang, 2017).

The study also found that the overall students' Chinese performance of their Chinese course was at the level of "moderate", in other words, the learners' overall performance was not high not low. Previous researcher (Kanoksilapatham, 2011) also claimed that Thai students' learning performance was not satisfactory though Chinese language teaching in Thailand starts long time ago.

Moreover, a moderate positive relationship between students' use of mobile application in Chinese and their learning performance was determined by this study, which may imply a kind of future trend in teaching CFL. That is, to recognize the value of mobile apps or mobile assisted learning in CFL teaching and learning process, though not every learners realized the assistance of mobile apps for learning a new language, many younger generation are likely to try and use it more frequently compared with the traditional ways of learning. In terms of CFL education in Thailand, teaching techniques and learning material/aids were the common concerns by both and Thai and Chinese teachers. As the most traditional and common electronic materials such as the VCD, DVD, and CD-ROM, were difficult and inconvenient to use daily by each learner, with the expectation of Thai learners to see more colorful and attractive materials that can facilitate them to learn the language together with understanding more about Chinese culture (Kanoksilapatham, 2011), mobile assisted or apps could help the CFL students to solve this problem, as they are more vivid and easy to use at any time.

With the great development of technology in the current era, more mobile applications were invented and became available, the capabilities of smartphones were also improved rapidly, it was true that more people would like to downloading and installing more mobile applications to their mobiles for various purposes. The young generation could be the major customer for the smartphones, but to promote their learning effectively, it was the time that teachers should also learn and improve their knowledge with the assisted information technology, so that to guide and train the young learner to do more self-directly learning through various ways including mobile assisted learning.

Lastly, as this study was conducted to only one institution of higher education, the results may not be full applicable for the other institutions in Thailand. Nonetheless, if viewed from the perspective of how mobile assisted learning is able to enhance the CFL learners and teachers' awareness at least, it would be beneficial to explore more in this area and the future researcher could possibly study the mobile assisted language learning and the learning strategies in depth.

Conclusion

This study explored the relationship between undergraduate students' use of mobile assisted learning and their Chinese learning performance at a higher education institution in Thailand. The findings firstly revealed that the undergraduate students' use of mobile assisted learning of Chinese language "very often", they very often used a dictionary app in mobiles for checking words, pronunciation and meanings, often used for identifying the component, stroke and memorizing the word, and sometimes used for paraphrasing, practicing and recording the new words. The study also found that the overall students' Chinese performance of their Chinese course was at the level of "moderate", and there was a moderate positive relationship between students' use of mobile application in Chinese and their learning performance ($r = .476$, $p < .05$).

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