



# Effectiveness of Using Game-based Mobile Application for Chinese Classifiers Learning

Lay Shi Ng<sup>1</sup>, Chun Keat Yeap<sup>2\*</sup>, <sup>1</sup>Faculty of Social Sciences & Humanities, Universiti Kebangsaan Malaysia, Malaysia, <sup>2\*</sup>Academy of Language Studies, Universiti Teknologi MARA, Melaka Branch, Campus Alor Gajah Melaka, Malaysia, Correspondence Email: <sup>2\*</sup>chunkeat@uitm.edu.my

In recent years, the use of mobile learning for languages has been a trend in Malaysian universities. The present study investigated the usability of a game-based mobile application named “Penjodoh Bilangan B. Cina” towards the learning of Chinese classifiers in a Malaysian public university. This mobile application was developed by a Chinese language instructor from Universiti Kebangsaan Malaysia (UKM) in 2016 as an open educational resource to promote an enjoyment of learning the Chinese language among Malay students in UKM. Although there are already several mobile applications available in the market to enable learners to learn Chinese classifiers, none of them was designed specifically for Malay native speakers. In this study, 69 public university undergraduates from UKM (Experimental group: n=31 undergraduates; Control group: n=38 undergraduates) were selected to examine the usability of the two learning approaches (Experimental group: the mobile learning approach; Control group: the traditional classroom approach) in assisting Malay students in learning Chinese classifiers. The findings showed that the respondents were satisfied with their mobile learning experience and alleged that it was more effective and useful in helping them to learn Chinese classifiers compared to the traditional classroom learning approach.

**Key words:** *CALL; MALL; Chinese classifiers; game-based mobile applications; usability*



## 1. Introduction

Learning Chinese vocabulary is tough especially when learning how to use the correct classifiers for nouns. Classifiers are a basic feature of Chinese grammar, and they typically occur after a numeral and before a noun. In Chinese, more than one classifier may have similar physical attributes but have to be used for different nouns, and the same classifier may also be used for physically quite disparate objects. Allan (1977) has categorised the Chinese language as “A numeral classifier language and stated that a classifier denotes some salient perceived or imputed characteristic of the entity to which an associated noun refers”. Chinese classifiers are found to be a category that is challenging for the second language (L2) Chinese language learners. Research has also identified that even Chinese native speakers may not be able to use the correct classifiers after years of living in a non-Chinese speaking community (Gao, 2010). One of the most common grammatical mistakes made by second and foreign-language learners in Chinese grammar is the wrong usage of classifiers.

In the public university under investigation, Malay students constitute a large proportion of the foreign-language learners in Chinese classes. A Chinese language instructor of the said university revealed that the Malay students in her classes tended to be uncertain regard to the correct usage of Chinese classifiers. She attributed this to the interference from the Malay language classifier system. For example, in Chinese ‘ba’ (把) can be used for objects with a handle such as a knife, umbrella, toothbrush, and chair, but in the Malay language, there is no specific classifier that is similar to ‘ba’ (把). Instead of using one classifier for all these objects, the Malay language uses ‘bilah’ for knife, ‘kaki’ for umbrella, ‘batang’ for toothbrush, and ‘buah’ for chair respectively. According to Othman (2004), the numeral classifier system of Malay language is very complex. Salehuddin & Winskel (2008) have categorised the complex numeral classifier of Malay language as “shape-based numeral classifiers that classify objects based on dimensionality of the objects”. For further categorisation, it is based on the size of the objects and rigidity. Malay classifiers are very different from Chinese classifiers. Therefore, the interference of Malay classifiers may result in a negative transfer for Malay learners’ efforts in learning Chinese classifiers. Some of the problems that they face may be the result of multiple categorisations of a noun referent (i.e. a single entity may belong to more than one category, depending on the properties that attribute to it rather than on its intrinsic ones) (Allan, 1977). For example, one single classifier can associate itself with several nouns from different noun categories and at the same time, one single noun from certain categories can be associated with not one but two classifiers.

Due to the differences between Chinese classifiers and Malay classifiers, hence, Malay students tend to face difficulty in learning Chinese classifiers. Nevertheless, the process of learning Chinese classifiers can be made easy with the help of technology. There are countless CALL (Computer-Assisted Language Learning) and MALL (Mobile-Assisted Language Learning) programmes and applications that can be used in second language teaching and learning. It is



widely agreed among educators that CALL and MALL are effective in supporting second language teaching and learning (Kannan & Munday, 2018; Hashim et al., 2017; Hazaea & Alzubi, 2016; Miangah & Nezarat, 2012 ).

Various studies have been undertaken in Malaysia involving the use of mobile applications such as WeChat and WhatsApp to learn Chinese vocabulary. For instance, Chu & Toh (2014) have proposed that WhatsApp is a better tool to motivate Malay students in enhancing their learning of Chinese characters. Kumar, Lian & Vasudevan (2019) have also confirmed that students preferred using WhatsApp as a tool in learning the Chinese language. However, studies on the usability of mobile applications as learning support tools for Chinese grammar learning are still lacking. To address this knowledge gap, this study was conducted to investigate the usability of a game-based mobile application called “Penjodoh Bilangan B. Cina” for learning Chinese classifiers, particularly to identify which learning approaches (i.e. mobile learning and traditional classroom learning) are more effective in assisting Malay learners in acquiring Chinese classifiers. In addition to that, the student’s preferences and the factors that influence their preferences would be discussed. In this study, ‘usability’ refers to the effectiveness, efficiency and satisfaction of using a certain approach. The research questions that this study seeks to answer are as follows:

- (1) What are the students' perceptions of the usability of a mobile application for learning a second language?
- (2) What are the determinants affecting students’ choices in choosing a mobile learning application?
- (3) Can mobile learning replace traditional classroom learning?

Presently, there are a few mobile Chinese classifiers applications available in Google Play Store, such as Measure Cards, Chinese classifiers, and Daxiang Classifier, but none of them were designed specifically for Malay learners. The “Penjodoh Bilangan B. Cina” mobile application adopted in this study provides definitions in Malay and guides the users in understanding the correlations between classifiers and their associated nouns.

## **2. Related Research**

### **2.1. Chinese Classifiers**

Classifiers are a basic feature of Chinese grammar, and they typically occur after a numeral and before a noun. Most of the nouns in Chinese have one or more particular classifiers associated with them, often depending on the nature of the things they denote. According to Chao (1968), Chinese classifiers can be divided into 9 categories; classifiers associated with V-O, measures for verbs of action, partitive measures, group measures, individual measures, container measures, temporary measures, standard measures and quasi-measures. Studies have shown that achieving a full understanding and good mastery of Chinese noun classifiers is



difficult for L2 learners (Gao, 2010). Additionally, Gao (2010) has mentioned that some native Chinese speakers may lose the ability to use classifiers properly after years of living in non-Chinese communities.

## **2.2. Malay Classifiers**

Othman (2004) and Drin (2000) have stated that the selection of numeral classifiers in classifying Malay nouns has a high degree of arbitrariness. According to Salehuddin (2013), Malay classifiers can be categorised to animate and inanimate nouns or objects. For instance, in the categorization of animate objects the noun 'buffalo' co-occurs with the classifier ekor [animate: animal], while the noun 'child' co-occurs with the classifier orang [animate: human]. The categorisation of inanimate objects shows that the noun in Malay can be classified into shape-based attributes and specific-based attributes of the numeral classifier. Specific numeral classifiers involve a one-to-one mapping between the numeral classifier and the object, for instance, 'kuntum' can be used for all flowers; whereas shape-based numeral classifiers involve mixed semantic criteria comprising dimensionality and size or dimensionality and rigidity.

## **2.3. Chinese CALL and MALL**

Nowadays, technology plays an important role in people's lives; similarly, in teaching and learning as well. It is generally believed that integrating technology into a foreign language class helps students to create a more effective learning environment. According to Wang (2005), computer technologies and the Internet are powerful tools to provide an interactive and authentic environment for second language learning. The field of Chinese teaching has also transformed in line with technological advancement. The first Chinese CALL programme that gained prominence was a character teaching programme developed in the 1970s by Chin-chuan Cheng from the University of Illinois. It was made to run in the PLATO (Programmed Logic for Automated Teaching Operation) mainframe environment. Following Cheng's footsteps, a variety of Chinese language instructional software programmes also made their appearance. Currently, there are thousands of websites and learning tools designed to help students learn Chinese. For example, CD-ROM-based and courseware (e.g. ABC Interactive Chinese, Chinese LearnWare and Follow Me Chinese), and online dictionaries (e.g. Wenlin, Clavis Sinica and NJSTAR). In Malaysia, Chinese language educators have increasingly become aware of the usefulness of using such computer applications in enhancing their language teaching.

According to Bax (2003), CALL has gone through considerable changes over time. With the transfer of computer functions to mobile devices such as smartphones and tablets, MALL has emerged as a new aspect in the field of language teaching and learning. Tseng (2007) has stated that the prevalence of mobile devices and the advancement of wireless networks have enabled mobile learning to seamlessly supplement traditional learning activity both inside and outside of the classroom environment.



According to Kukulska-Hulme (2006), “Language may be a fruitful area for informal learning with mobile devices”. By utilizing mobile devices, learners can arrive at a deeper and broader understanding of their knowledge. According to Wang & Leland (2012), in comparison to CALL, mobile devices could bring changes to gaming, social computing and tutorial functions. Although MALL has attracted the attention of an increasing number of researchers in the past two decades (Burston, 2013), there have been relatively few studies on mobile applications to support Chinese as a second language, both in teaching and learning. This study is an endeavour to address this knowledge gap.

#### **2.4. Games for Language Learning**

Today, computer games have received increased attention from educators for their potential to enhance the language learning experience. In recent years, many computer games that can support language learning have emerged (Peterson, 2010; Cornillie et al., 2012). Playing augmented reality games such as Pokémon GO has also been discovered to promote language learning (Godwin-jones, 2016). Muhammad Sabri & Nor Aziah (2011) found that the majority of the Arabic language learners in a Malaysian university have positive attitudes and perceptions of using online games as a learning tool in their class.

A prior study by Ang & Zaphiris (2006) has portrayed that two types of game design can be used in education, i.e. extrinsic types and intrinsic types. According to Ang & Zaphiris (2006), “Intrinsic types usually have built-in challenges and activities that are more seamlessly integrated and more dependent on the narrative of the game. In contrast, extrinsic games usually consist of a structured series of puzzles or tasks embedded in a game or narrative structure with which they have only the slenderest connection to the game. In a language learning context, extrinsic games are commonly used to attract users to learn a language. In general, extrinsic game design can be used to develop language-learning games for spelling, character recognition and vocabulary that require memorization and repetitive learning.” The mobile application in this study is considered as an extrinsic game, it is mainly for learners to learn vocabulary and to understand its usage.

Although the use of digital games in learning gained attention among educators, many of the Chinese Language educators in Malaysia have yet to use game-based learning applications to facilitate and supplement their teaching. The reason is they do not believe that game-based learning programmes and applications will enhance the teaching and learning process. Thus, it is evident that a considerable amount of research is necessary to change their views on this matter. The present study is an attempt to do so.

### 3. Materials and Methods

#### 3.1. *Penjodoh Bilangan B.Cina* - The Game-Based Mobile Application

The purpose of this study is to test the usability of a newly developed mobile learning application called “*Penjodoh Bilangan B.Cina*” for enhancing the acquisition of Chinese classifiers. The purpose of this application is to create a fun learning environment for learning and memorising Chinese classifiers, which are usually learned in a classroom through the rote learning approach. This application is specially designed for Malay speakers who are keen to learn Chinese, therefore the instruction of the game is in the Malay language.

“*Penjodoh Bilangan B.Cina*” is a quiz game that can be downloaded from Google Play Store for free. This application used Picture Superiority Effect to enhance the learning experience as it is believed that our brain can process images much faster than words. Pant (2019) has stated that the human brain process images 60,000 times faster than text. The application consists of two parts: a dictionary and a quiz game as shown in figure 1. The users can either choose to learn the Chinese classifiers through the dictionary or choose to perform the quiz activities. 25 commonly-used Chinese noun classifiers were listed in the dictionary with detailed explanations and descriptions.



Figure 1. Screenshots of the dictionary and quiz game of *Penjodoh Bilangan B.Cina*

#### 3.2. Traditional Classroom Learning

Traditional classroom learning was carried out by the instructor with face-to-face interaction and students received printed notes as their learning materials. The notes consist of 25 commonly-used Chinese noun classifiers and each of them came with examples of usage. In a traditional classroom setting, students will be able to clarify their queries with the instructor





and getting their questions answered right away. Regular attendance in classes was required for every student to engage the learning materials with the guidance of the instructor.

### 3.3. Data Collection

Two groups of undergraduates were selected for a comparative study on learning outcomes. The first group (henceforth experimental group) comprised of 31 undergraduates and the second group 38 undergraduates (henceforth control group). Both groups had enrolled in Chinese as a foreign language class which was offered as an elective course in UKM for learners with no prior knowledge of the Chinese Language. Both groups were made up of students from different faculties. For the experiment, the experimental group utilised a game-based mobile application (touch-screen interaction) to learn up to 25 commonly-used noun classifiers. Meanwhile, the control group underwent a traditional classroom lesson in which they utilised the printed materials given by their language instructor to learn the same Chinese classifiers. The total learning time involved for each group was four weeks (each week was three hours).

Three methods were used to collect data:

(1) Final examination– This was designed to determine how much of the content presented by the mobile application and classroom lessons could be recalled by the two groups of students respectively. A set of fill-in-the-blank questions were designed for the students to identify the right classifiers for the objects of the sentences. The maximum scores of the examination were 30.

(2) Questionnaire survey– This comprised of nine questions (measured using a five-point Likert scale) on the students' perceptions of the use of the mobile application to learn Chinese classifiers, focusing on efficiency (Q1, Q2 and Q3), effectiveness (Q4, Q5 and Q6) and user satisfaction (Q7, Q8 and Q9). A total of 30 students from the experimental group participated in this survey. Two sets of responses were excluded because they were incomplete. Out of the 28 responses, 68% were females and 32% were males, representing various disciplines: 71% were from the Sciences and 29% from the Humanities. All of the participants possessed either a smartphone or a tablet.

(3) Focus group interview – This was conducted on four students (two females and two males) from the experimental group. The participants were asked to share their experiences in using different mobile applications and to give their views regarding the usability of the applications.

## 4. Findings

### 4.1. Final Examination

The examination was designed to determine how much of the content presented by the mobile application and classroom lessons can be recalled by the two groups of students respectively. The independent-sample t-test results revealed that the students that were engaged in learning the Chinese classifiers through the mobile applications scored significantly ( $P < 0.001$ ) higher than the students in the traditional classroom. In terms of average mean score, the students using mobile applications scored 22.71 which is higher than the students in the traditional classroom (16.76), (see Table 1).

**Table 1. Students' performance in the final examination**

Groups	Mean Score (Max Score: 30)	SD	The difference in mean scores	Sig
Experimental group (n=31)	22.71	3.91	6.0	<0.001
Control group (n = 38)	16.76	5.02		

### 4.2. Questionnaire Survey

In the classification of the findings, the category of “Strongly Agree” and “Mostly Agree” were classified as highly positive, “Somewhat Agree” as moderately positive and “Disagree and strongly disagree” as highly negative.

### 4.3. Students' Perceptions About Efficiency of Using Mobile Application

Table 2 shows the students' perceptions about the efficiency of using the mobile application, i.e. features on learners' devices, user-friendly learning application, and able to link formal learning into informal learning spaces by providing anywhere and anytime learning opportunities.

The findings of the survey revealed that the majority of the students (82.1%) agreed that the mobile applications worked with the features on their devices (Item1) and was able to link formal learning into informal learning spaces by providing anywhere and anytime learning opportunities (85.7% agreeing - Item 3). However, they were only moderately positive concerning the user-friendliness of the applications (57.1% somewhat agreeing – Item 2).



As a whole, most of the respondents provided very positive feedback about the efficiency of the mobile application.

**Table 2. Students' perceptions about the efficiency of using the mobile application**

Item	Strongly agree		Mostly agree		Somewhat agree		Disagree		Strongly disagree	
	%	N	%	N	%	N	%	N	%	N
1) The mobile application works with the features on learners' device	32.1	9	50	14	17.8	5				
2) It is a user-friendly learning application			32.1	9	57.1	16	10.7	3		
3) The mobile application links formal learning into informal learning spaces by providing anywhere and anytime learning opportunities	32.1	9	53.6	15	14.3	4				

#### 4.4. Students' Perceptions About Effectiveness of Using Mobile Application

Table 3 shows the students' perceptions about the effectiveness of using the mobile application, i.e. leads to faster learning, enable learners to construct clearer understanding, and improves knowledge retention and information recall.

The findings of the survey revealed that they were highly positive concerning the mobile applications enabling them to construct a clearer understanding (57% agreeing - Item 5), improve knowledge retention and information recall (67.8% agreeing – Item 6). However, they were inclined towards highly negative views with regard to leads to faster learning of the mobile application (with only 39.2 % disagreeing and 32.1% strongly disagreeing – Item 4).

**Table 3. Students’ perceptions about the effectiveness of using the mobile application**

Item	Strongly agree		Mostly agree		Somewhat agree		Disagree		Strongly disagree	
	%	N	%	N	%	N	%	N	%	N
4) Mobile application leads to faster learning	10.7	3	7.1	2	10.7	3	39.2	11	32.1	9
5) The mobile application enables learners to construct clearer understanding	17.8	5	39.2	11	32.1	9	10.7	3		
6) The mobile application improves knowledge retention and information recall	32.1	9	28.6	8	35.7	10	3.6	1		

#### 4.5. Students’ Perceptions About User Satisfaction with Mobile Learning

Table 4 shows the students’ perceptions of user satisfaction with mobile learning, i.e. intention to use, makes learning more enjoyable, meaningful and accessible and motivated to learn the Chinese classifiers more than class activities that did not use the mobile application.

The findings of the survey revealed that they were highly positive concerning the mobile application enabling them to develop further interest in the subject matter, makes learning more enjoyable, meaningful and accessible (60.7% agreeing – Item 8). 82.2% of the respondents expressed highly positive intention to use it when they had access to it (Item 7) and 42.9% of the respondents expressed highly positive that the mobile application motivated them to learn the Chinese classifiers (Item 9).

**Table 4. Students' perceptions of user satisfaction with mobile learning**

Item	Strongly agree		Mostly agree		Somewhat agree		Disagree		Strongly disagree	
	%	N	%	N	%	N	%	N	%	N
7) When I have access to this application, I would intend to use it.	28.6	8	53.6	15	10.7	3	7.1	2		
8) The mobile application develops a further interest in subject matter, makes learning more enjoyable, meaningful and accessible.	32.1	9	28.6	8	43.2	11				
9) The mobile application motivated me to learn the Chinese classifiers more than class activities that did not use the mobile application.	14.3	4	28.6	8	32.1	9	17.9	5	7.1	2

#### 4.6. Interview Data

To have a clearer understanding of the students' views regarding the mobile application, four volunteer respondents were selected for a short focus group interview. The four respondents choose the mobile application approach over the traditional approach. Below are the answers given by the four respondents taken from the full interview conducted by the researchers:



**Table 5. Students' perceptions and experiences of mobile learning**

	<b>Subject 1</b>	<b>Subject 2</b>	<b>Subject 3</b>	<b>Subject 4</b>
1. Reasons for choosing mobile applications.	I will choose mobile learning because I like technological products and I like flexible learning!	I prefer mobile learning if it is useful to my study, and I believed that mobile learning allows me to work at my own pace and enjoy the interactivity at home.	I prefer 30% classroom learning and 70% mobile learning because I am not disciplined enough to go for 100% mobile learning, I think I still need the lecturer's guidance and supervision.	I am a tech-savvy guy! I like mobile learning because it allows me to learn whenever and wherever I want.
2. Features in mobile apps that they find attractive.	It has to be user-friendly and interactive. I will choose an application that provides informative content with live tutorial interaction.	I prefer those applications that offer clear explanations, provide interactive learning.	I agreed with what they (answer 1 and answer 2) said!	Yes, being user-friendly is very important, but creative design is also important. I like those applications that come with pictures or animations.
3. Is simplicity in use an indication of usability? Supporting reasons.	Not prefer it, but I will still try to learn how to use it, I think we just need more practice.	Not practical if the tool is too difficult to use.	Definitely NO! I think we should not spend more time trying to use a mobile application than being productive in our studies.	I will try to spend some time figuring out how to use it, and I think after few times using the application I will be able to master it.
4. Willingness to spend time learning the new mobile educational product.	Yes!	I will try, maybe I can also get help from friends.	Will learn together with friends.	Yes, definitely!



<p>5. Mobile learning replaces traditional classroom learning.</p>	<p>Yes, but not 100%, maybe only 50% of our learning can be replaced by mobile learning.</p>	<p>I don't think so. I believe that mobile teaching can assist traditional classroom teaching, but it can't completely replace traditional teaching because some of us are lack motivation and determination in learning, we need a lecturer to push us.</p>	<p>I think we still need a lecturer to guide us.</p>	<p>I think mobile learning can replace those monotonous lectures, but for subjects like mathematics, we still need help from lecturers.</p>
--	--	--	--	---

Table 5 shows the students' perceptions and experiences of mobile learning. The focus group interview revealed that respondents preferred mobile learning because mobile learning allows them to learn whenever and wherever they want. From their point of view, the ideal features of a mobile learning application should include informative content, simplicity, user-friendly, interactive and creative design. However, the respondents agreed that if a mobile learning tool can effectively improve their performance in their study, they are willing to spend time learning how to use it even if the application is not so user-friendly. On the other hand, the findings from the interview revealed that all respondents prefer mobile learning more than classroom learning, but they were not in favour of it replacing traditional classroom learning with mobile learning.

## **5. Discussion**

### **5.1. Analysis of Final Examination**

The results of this study showed that using mobile applications to learn Chinese classifiers achieved higher knowledge results than the traditional classroom lesson. This is consistent with many other mobile learning studies' findings.

It shows that computer technologies, the Internet and mobile applications are powerful tools to provide an interactive and authentic environment for second language learning (Wang, 2005). The traditional Chinese classroom lesson emphasizes the lecturer and deep learning through memorising (Marton et al., 1996). Therefore, students are more inclined to the game-based mobile application rather than the dull class-traditional classroom lesson.

### **5.2. Analysis of Questionnaire Survey**

#### **5.2.1. Students' Perceptions About Efficiency of Using Mobile Application**

The survey revealed that the overall students' perception of the mobile application is relatively positive. According to the results shown in Table 2, all the students found that the mobile application works with the features on their devices and they can access it anywhere and anytime. A high percentage (89%) of students agreed that the application is user-friendly to them. Besides, all the students agreed that the mobile application has linked formal learning into informal learning spaces by providing anywhere and anytime learning opportunities.

#### **5.2.3. Students' Perceptions About Effectiveness of Using Mobile Application**

Although the perceived efficiency of mobile learning in Chinese classifiers was quite positive, more than half of the respondents (71.3%) were not satisfied with the mobile performance in terms of speed. Owing to the slow loading time, they found that the application restricted their learning capabilities. However, the majority of the students (89.1%) said that they were able to construct understanding



and connect to the knowledge effectively through this mobile application. Besides, the students also found that mobile learning managed to improve their knowledge retention and information recall.

#### **5.2.4. Students' Perceptions About User Satisfaction with Mobile Learning**

In general, the findings showed that the respondents were satisfied with their mobile learning experiences. All of them agreed that mobile application can further develop their interest in subject matter, makes learning more enjoyable, meaningful and accessible. A majority (75%) of the respondents preferred to use this mobile application to learn Chinese classifiers rather than traditional classroom learning.

### **5.3. Analysis of the Interview Data**

#### **5.3.1. Reasons for Choosing a Mobile Learning Application**

The focus group interview revealed that respondents preferred mobile learning more than a classroom lesson because mobile learning allows them to learn whenever and wherever they want. In other words, flexible learning is what this group of students yearned for. Despite the positive feedback, the findings from the survey have also revealed that the slow loading time of the application had disappointed some of the respondents and this had led to negative views regarding the mobile applications.

From the interview conducted with the students, it was found that their intention and preference to use mobile apps for learning is influenced by both the perceived usefulness and perceived ease of use. Three respondents said that they would not consider adopting a mobile learning application if it is not user-friendly. According to them, they would rather go for classroom lessons if the mobile learning process is too complicated and time-consuming. For instance, respondent C said, "I think we should not spend more time trying to use a mobile application than being productive in our study". However, all respondents agreed that if a mobile learning tool can effectively improve their performance in their studies, they were willing to spend time learning how to use it even if the application is not so user-friendly. It is therefore important to understand the determinants of the usability construct because it influences students' intention to use a mobile learning application. In other words, the factor which influences student's intention to use a mobile learning tool the most is the perceived usefulness of the tool. This result is consistent with Davis (1989) that usefulness was the stronger determinant linked to the usage of information technology in his studies.

It is interesting to note that students' interest in technological products has a direct influence on how they perceived usefulness and perceived ease of use of a mobile learning tool. During the interview, two respondents (A and D) told the researcher that they have not encountered any mobile learning application that is too difficult to use thus far. These two respondents are students from the Faculty of Science and Technology, and they always enjoy using mobile learning tools in their studies. When the respondents were asked about the ideal features that a mobile learning tool should have, these two

respondents have relatively high requirements. To them, a useful mobile learning application should come with the features of informative content, simplicity, user-friendly, interactive and creative design. This shows that perceived usefulness and perceived ease of use may not completely explain students' intention to use a mobile application for learning. The factors that influence students' intention to use a mobile application may also come from themselves rather than from the product.

From the interview, three respondents have agreed that they would not consider adopting a mobile learning application if it is not easy to use. According to them, they would rather go for classroom lessons if the mobile learning process is too complicated and time-consuming. For instance, respondent C has mentioned that “I think we should not spend more time trying to use a mobile application than being productive in our study”.

### **5.3.2. The Possibility to Replace Traditional Classroom Learning by Mobile Learning**

All of the respondents preferred mobile learning more than classroom learning, but they were not in favour of it replacing traditional classroom learning with mobile learning. The focus group interview revealed that respondents believed that mobile learning will not be able to completely replace traditional classroom learning, it can only be used to reinforce what has already been learned in the classroom. This is so as they supposed that the role of the lecturer in mobile learning is necessary to obtain the best learning outcomes. As can be seen from the responses to the question regarding replacing classroom learning with mobile learning in the focus group interview, three respondents have agreed that they may lack motivation when they do not have a lecturer there to help them to push through.

## **6. Conclusions**

Mobile learning is not just a flashy way to accomplish the same thing as analog instruction in the classroom. The random use of mobile applications in learning language will not guarantee a rise in comprehension and satisfaction among students. The application of a mobile-assisted language learning approach must be able to provide the users with a more enjoyable learning environment and particularly in a condition where poor learners are being provided with the opportunity to still effectively learn well in an independent manner. Last but not least, it must also be able to prompt better learning outcomes. The findings of this study only revealed the usability of one particular mobile application. Although the results are not generalizable, this reflects the needs and preferences of students in choosing a mobile learning tool. It is believed that the findings of this research will help to throw light on the capability of the current MALL in Malaysia.

Mobile aided language teaching and learning are still in the beginning stage in the Malaysian education system. Language educators may need to continue to explore the possibilities and feasibility of using mobile applications in teaching language courses. They should consider only develop appropriate applications that serve the needs of their students. For future studies, more research can be conducted on different mobile learning applications to investigate their practicality



---

and applicability in the field of language teaching and learning, and both theoretical and practical issues need to be addressed.

Although this research has successfully achieved its objectives, there are unavoidable limitations that need to be mentioned here. It has to be admitted that the study has targeted a fairly narrow demographic segment, namely, a group of undergraduates from one university. This narrow focus may have limited the generalisability of the results to the Malaysian university population as a whole. Hence, for future research, it is suggested that the research should be carried out for different universities.



## REFERENCES

- Allan, K. (1977). Classifier. *Language*, 53(2), 285-311. Available from doi:10.2307/413103
- Ang, C. S. and Zaphiris, P. (2006). Developing Enjoyable Second Language Learning Software Tools: A Computer Game Paradigm. In P. Zaphiris & G. Zacharia (Eds.), *User-centered Computer Aided Language Learning*. New York: Idea Group, 1-22.
- Bax, S. (2003). CALL –Past, Present and Future. *System*, 31(1), 13-28. Available from doi:10.1016/S0346-251X(02)00071-4
- Burston, J. (2013). Mobile-assisted Language Learning: A Selected Annotated Bibliography of Implementation Studies 1994–2012. *Language Learning & Technology*, 17(3), 157-224.
- Chao, Y.R. (1968). *A Grammar of Spoken Chinese*. Berkeley: University of California Press.
- Chu, H. H. and Toh, L. L. (2014). Interactive Character Learning Model (ICLM)— Chinese Character Learning Using WhatsApp for Malay L3 Learners. *US-China Education Review A*, 4(11), 772-786.
- Cornillie, F., Thorne, S. L. and Desmet, P. (2012). Digital Games for Language Learning: From Hype to Insight? *ReCALL*, 24, 243–256. Available from doi:10.1017/S0958344012000134
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340. Available from doi:10.2307/249008
- Dirin, Z. (2000). Kamus Penjodoh Bilangan untuk KBSR. Kuala Lumpur: Fajar Bakti.
- Gao, H. H. (2010). A Study of Swedish Speakers' Learning of Chinese Noun Classifiers. *Nordic Journal of Linguistics*, 33(2), 197-229. Available from doi:10.1017/S0332586510000156
- Gao, H. H. (2010). Computational Lexicography: A Feature-based Approach in Designing an E-dictionary of Chinese Classifiers. *Proceedings of the 2<sup>nd</sup> Workshop on Cognitive Aspects of the Lexicon (CogAlex 2010)*, 56-65.
- Godwin-jones, R. (2016) Augmented Reality and Language Learning: From Annotated Vocabulary to Place-Based Mobile Games. *Language Learning & Technology*, 20(3), 9–19. Available from doi:10.125/44475
- Hashim, H., Yunus, M. M., Embi, M. A., and Ozir, N. A. M. (2017). Mobile-assisted Language Learning (MALL) for ESL Learners: A Review of Affordances and Constraints. *Sains Humanika*, 9, 1-5. Available from doi:10.11113/sh.v9n1-5.1175
- Hazaea, A., and Alzubi, A. (2016). The Effectiveness of Using Mobile on EFL Learners' Reading Practices in Narjan University. *English Language Teaching*, 9(5), 8–21. Available from doi:10.5539/elt.v9n5p8
- Kannan, J. and Munday, P. (2018). New Trends in Second Language Learning and Teaching Through the Lens of ICT, Networked Learning, and Artificial Intelligence. *Círculo de Lingüística Aplicada a la Comunicación*, 76, 13-30. Available from doi:10.5209/CLAC.62495
- Kukulka-Hulme, A. (2006) Mobile Language Learning Now and in the Future, in: Svensson, P. (ed.) *Från vision till praktik: Språkutbildning och IT*. Härnösand: Myndigheten för nätverk och samarbete inom högre utbildning. Sweden: Swedish Net University.
- Kumar, V. S., Lian, T. Y., & Vasudevan, H. (2016) UNiKL RCMP Undergraduates Perception on Using WhatsApp as a Tool for Mandarin Language. *Teaching and Learning*. Retrieved December 01, 2019 from



[https://www.researchgate.net/profile/Vishalini\\_Selva\\_Kumar/publication/305137963\\_A\\_study\\_on\\_the\\_perception\\_of\\_undergraduates\\_on\\_the\\_use\\_of\\_WhatsApp\\_as\\_a\\_tool\\_for\\_Mandarin\\_Language\\_Teaching\\_and\\_Learning\\_A\\_case\\_in\\_UNiKL\\_RCMP/links/5783482308ae9485a43e11cb/A-study-on-the-perception-of-undergraduates-on-the-use-of-WhatsApp-as-a-tool-for-Mandarin-Language-Teaching-and-Learning-A-case-in-UNiKL-RCMP.pdf](https://www.researchgate.net/profile/Vishalini_Selva_Kumar/publication/305137963_A_study_on_the_perception_of_undergraduates_on_the_use_of_WhatsApp_as_a_tool_for_Mandarin_Language_Teaching_and_Learning_A_case_in_UNiKL_RCMP/links/5783482308ae9485a43e11cb/A-study-on-the-perception-of-undergraduates-on-the-use-of-WhatsApp-as-a-tool-for-Mandarin-Language-Teaching-and-Learning-A-case-in-UNiKL-RCMP.pdf)

- Marton, F., Dall’Alba, G. and Tse, L.K. (1996). Memorizing and Understanding: The Keys to the Paradox? In Watkins, D.A. and Biggs, J.B. (eds.), *The Chinese Learner: Cultural, Psychological, and Contextual Influence*. Hong Kong CERC and ACER, 69-83.
- Miangah T.M., Nezarat A. (2012). Mobile-Assisted Language Learning. *International Journal of Distributed and Parallel Systems*, 3(1), 309-319. Available from doi:10.5121/ijdps.2012.3126
- Muhammad Sabri, S., and Nor Aziah, A. (2011). A study on Malaysian language learners’ perception towards learning Arabic via online games. *GEMA Online Journal of Language Studies*, 11(3), 129-145.
- Othman, B. (2004). *Penjodoh bilangan*. Klang, Selangor: Aneka Publication & Distributors Sdn. Bhd.
- Peterson, M. (2010). Computerized Games and Simulations in Computer-assisted Language Learning: A Meta-analysis of Research. *Simulation & Gaming*, 41, 72–93. Available from doi:10.1177/1046878109355684
- Petrovic, O. and Brand, A. (2009). *Serious Games on the Move*. Vienna, Austria: Springer Verlag.
- Petrovic, O., Babcicky, B. and Puchleitner, T.(2014). An Environment for Mobile Experiential Learning. 10th International Conference Mobile Learning, 271-276.
- Ritu Pant (2015, Jan 16) Visual Marketing: A Picture’s Worth 60,000 Words. Retrieved December 01, 2019 from <https://www.business2community.com/digital-marketing/visual-marketing-pictures-worth-60000-words-01126256>.
- Salehuddin, Khazriyati, and Heather, Winskel (2013). An Investigation Into Malay Numeral Classifier Acquisition Through an Elicited Production Task. *First Language*, 29(3), 289-311. Available from doi:10.1177/0142723709103187
- Salehuddin, Khazriyati, and Heather, Winskel (2008). Malay Numeral Classifiers: Sketching Conceptual Representation from a Native Speaker’s Perspective. *SEALS XVI: Papers from the 16th Annual Meeting of the Southeast Asian Linguistics Society 2006*, ed. by Paul Sidwell & Uri Tadmor, 65-74. Canberra: The Australian National University.
- Tseng C.C., Lu C.H., Hsu W.L. (2007). A Mobile Environment for Chinese Language Learning. In Smith M.J., Salvendy G. (eds) *Human Interface and the Management of Information. Interacting in Information Environments. Human Interface. Lecture Notes in Computer Science*, Vol 4558. Heidelberg, Berlin: Springer, 485-489.
- Wang, J., and Leland, C. H. (2012). Exploring Mobile Technologies for Learning Chinese. *Journal of the National Council of Less Commonly Taught Languages*, 12, 133- 159.
- Wang, L. (2005). The Advantages of Using Technology in Second Language Education. *Technology Horizons in Education Journal*, 32(10), 38-41.
- Wu, W., Wu, Y. J., Chen, C., Kao, H., Lin, C., and Huang, S. (2012). Review of Trends from Mobile Learning Studies: A Meta-Analysis. *Computers & Education*, 59(2), 817-827. Available from doi:10.1016/j.compedu.2012.03.016
- Zhao, Y. (2005). The Future of Research in Technology and Second Language Education. In Y.



International Journal of Innovation, Creativity and Change. [www.ijicc.net](http://www.ijicc.net)  
Volume 16, Issue 1, 2022

---

Zhao (Ed.), *Research in Technology and Second Language Learning: Developments and Directions*.  
Greenwich, CT: Information Age Publishing, Inc., 445-457.

Zhang, Zhengsheng. (1998). Call for Chinese ---Issues and Practice. *Journal of the Chinese Language Teachers Association*, 33(1), 51-82.