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Undergraduate's Perceptions on Smartphone Applications in Learning Mandarin

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Abstract: The advance affordance technology of smartphone is giving an impact on how learning takes place in many disciplines and contexts including language learning. Instructors and learners can easily access the materials anytime, anywhere any places and at their own convenient pace. Today, smartphones the newest mobile inventions have the great capability to become important devices not only in language learning in general but particularly in Mobile-Assisted Language Learning (MALL). Smartphone applications engage users in activities either in the class or out of the formal class. This generates the potential for significant change in teaching and learning practices. This preliminary study aims to explore student's perceptions on the impact of smartphone applications in learning Mandarin. The research focus was on how the students use the smartphone applications and their views on language performance, task accomplishment, student's learning process and satisfaction of the usage. A survey with 79 degree students considered as Mandarin learners was conducted. The type of smartphone applications use was clearly identified in 2 based which are dictionary based and teaching and learning based. Based on descriptive statistics all the participants concurred that smartphone applications enhance their language performance; help them in completing task easily and quickly and lastly assisting them in their study. The result found the students were interesting, satisfied and willing to continue using smartphones in their study. There was no significant different between gender and courses attended on the issues mentioned. The result suggests that smartphones are ideal tools for MALL.

Key words: Mobile-assisted language learning, smartphone applications, Mandarin language, degree, ideal

INTRODUCTION

Technology is a "social and cultural phenomenon" (Kukulska, 2009) which "cannot but influence the ways in which people learn" (Beetham and Sharpe, 2007). Now a days, the whole world is going mobile. Everyone has at least one mobile phone which can be fit in the pockets to get varieties of information any time and everywhere. Smartphone, the newest invention with plenty of advance affordance technology has gained popularity and attention of everyone especially the instructors and learners. In the same time, the Mobile-Assisted Language Learning (MALL) is growing so fast and there are plenty of attempts in arguing this concept for educational use. Efforts have been made to adopt Information and Communication Technology (ICT) to promote learning excellence in various educational settings (Cuban, 2001). For instance, Cui and Bull (2005) discovered, mobile phones can make learning activities more motivational, interesting and different from traditional ones.

Bergman (2012) discovered that language learning using mobile devices leaves a positive impact on student's test scores as well as their behaviour. The other fact is mobile devices have changed Foreign language instructional methods and learning strategies (Abdous *et al*., 2009) and it is proven that technology aids learning.

The integration of the mobile technology into language learning especially Mandarin across Malaysia is relatively still in its infancy. Furthermore, Kukulska and Traxler (2005) have mentioned that the use of these technologies turns out to be well aligned to improve student's retention and achievement. Indeed, mobile devices are already influencing how people learn; educators need to do more than just watch it happen. Considering this preliminary study attempts to explore on student's perceptions regarding mobile-learning in learning Mandarin. This study, therefore, aims to investigate how university students in Universiti Malaysia Terengganu (UMT) use and consider on

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smartphone applications usage on language performance, task accomplishment and student's learning process. Even though, many factors might influence individual performance besides ICT itself, the study initially paid the attention to the usage of smartphone applications in learning Mandarin. In order to achieve the purpose, a survey was conducted in UMT to gather data about the smartphone applications use and their views towards the effectiveness and satisfactions of using them in learning Mandarin.

MALL (Mobile-Assisted Language Learning) in learning Mandarin: The speed evolution of ICT has produced a wide range of mobile technologies. These wireless technology innovations have received a great deal of attention in the field of education. When ICT are developing, mobile-learning (m-Learning) follow soon which extend learning opportunities and reshaping learning styles. Mobile-learning is primarily delivered over the wireless network and learners can receive material anywhere and anytime through technology (Turkle, 2011). It also be defined as electronic learning (Guy, 2009) which combines strategies, practices, tools, applications and resources (Brown, 2008). Numerous studies have been reported on the use of mobile phones in developing language skills in the last few decades (Cui and Bull, 2005; Chanprasert and Han, 2013). In this study, the focus is on the use of mobile-learning in supporting the teaching of Mandarin as a Foreign language.

According to the most recent data from the US Census Bureau, the number of people who speak Chinese (including all varieties of Chinese) in the US ranks second among those who speak a language other than English which answers why there are a large number of Foreign students interested in learning Chinese language. Furthermore, the number of smartphones in use world-wide surpassed 1 billion in 2012 and is expected to double in the next 3 years. In order to cater this increments, Liu and Raiha (2008) postulated that an easy-to-use Chinese text entry is needed to support the high penetration of mobile phones and SMS among Chinese users and they have successfully designed 2 new solutions for Chinese pinyin text entry with a rotator as an input device. On the other hand, Al-Mekhlafi *et al.* (2009) initiated Context-Aware Mobile Chinese Language Learning (CAMCLL) for Foreign students as a service guide when the students are out of school for their real world Mandarin practice. CAMCLL guides the students by informing them through their mobile phones, suitable sentences based on the four contexts (time, location, activity and learner's level). This approach has enhanced the Chinese language learning efficiency among the Foreign students. Earlier, Chan (2003) has discussed the usefulness of 4 software programs that often relate particularly and specifically to English-speaking American learners of modern Chinese. Advancement of ICT and mobile technology has introduced a large number of programs or mobile applications in learning a Foreign language. Mobile-learning games help to enrich their vocabulary and improve their knowledge of Chinese characters. Tian *et al.* (2010) adds that mobile-learning games can play an important role in the Chinese literacy acquisition process.

Meanwhile, Wong *et al.* (2010) focused on learner-created content. They discussed the potential of transforming language learning into a real learning process. A number of students who were assigned to take photos in real-life were then asked to construct sentences with the prepositions or idioms given using mobile devices. The result showed that the students were active in the classroom or online discussion for their semantic constructions. In short, mobile devices have changed Foreign language instructional methods and learning strategies (Abdous *et al.*, 2009). Furthermore, Bergman (2012) stressed that language learning using mobile devices leaves positive impact on student's test scores as well as their behaviour. Most of the researcher who study m-Learning agree that mobile technology has given a large effect in education, especially in learning Foreign languages (Tian *et al.*, 2010; Niu *et al.*, 2014; Chang *et al.*, 2010).

MATERIALS AND METHODS

This study utilized a quantitative research method adapted questionnaire (Chen, 2013) which comprised of 25 questions is use to collect data. The first part of the survey was designed to find out the type of smartphone usage for learning Mandarin while the second part was concerned with the participant's perceptions about the effectiveness and satisfaction of using smartphones for Mandarin language learning. The 79 undergraduates Mandarin language course students from UMT were selected using convenience sampling technique because they were accessible to the researcher (Hoboken *et al.*, 2013). Participants were 67 females and 12 males from 2 courses: communicative Mandarin (3 credit hours, 20 students) and Mandarin 1 (2 credit hours, 59 students). A pilot study was carried out on members of the relevant population who were 30 Mandarin students from a nearby university. The reliability (Cronbach's alpha) calculated by SPSS Version 16 was 0.917 which has fulfilled the standard of reliability (Chen, 2013). The questionnaires were then distributed to all the Mandarin students (n = 79)

in UMT at the 10th week of learning. Earlier, all participants werej asked to download some Mandarin learning applications using their smartphones, so that they can use them in the class or outside the classroom.

RESULTS AND DISCUSSION

Smartphone Applications (SA) usage in UMT: All the participants owned smartphones and used them to learn Mandarin. All the participants were asked to list down the smartphone applications downloaded which has facilitated them in learning Mandarin. The responses were overwhelming since the students used more than two applications to improve their proficiency. Some of the most common Mandarin applications are Pleco, ENG Dictionary, Hello Chinese, Chinese, Talking Chinese (Fig. 1). These applications were free and they came together with the audio function. There were 2 types of applications; firstly, Dictionary Based (DBA) in Fig. 1 and secondly, Teaching and Learning Applications (TLA) in Fig. 2 which produce more Mandarin sentences. The TLA has audio function, pictures, songs and games. Figure 1 shows that there are 18 types of DBA used by the participants and the most applications downloaded by the students are Pleco Chinese Dictionary (42%), followed by Chinese English Dictionary Bravolol Limited (34%). The respondents enjoyed Pleco and Bravolol dictionary because they are free and easy to download. Most the participants agreed that Pleco is the best DBA, since there are many given sentences to explain each word and the words are coloured. Besides, pronunciations of words are provided for the participants to listen and practice.

Figure 2 shows 42 kinds of TLA smartphone applications have downloaded by the participants. Most of the participants are having TLA of ChineseSkill (32%), Survival Kit (28%) and Hello Chinese (20%) since, they are easy to download and they provide many attractive and interesting activities in learning Mandarin. In short, there are numerous Mandarin smartphone applications which are free and charged. Most if not all the applications will help the students to get the meaning of the Mandarin words, phrases and sentences. They can listen and practice the correct word pronunciations anytime and anywhere they want. Either, they are in the class or outside the classroom. The respondents have successfully installed and used more than two

Smartphone Applications (SA)		SA		SA	
Pleco	42% (33)	Google	4% (3)	Chinse	1% (1)
Eng…	34% (27)	eKamus	4% (3)	English	1% (1)
Eng…	9% (7)	English…	3% (2)	Chines	1% (1)
CHINESE …	4% (3)	Kamus…	4% (3)	A	1% (1)
Chinese	3% (2)	Hanp…	4% (3)	En…	1% (1)
…	4% (3)	Chinesi	1% (1)	Malay	1% (1)

Fig. 1: Dictionary Based Smartphone Applications (DBA)

SA	(%)	SA	(%)	SA	(%)	SA	(%)
 Chin…	32% (25)	 Man…	1% (1)	 Ma...	3% (2)	 Learn...	6% (5)
 Surv…	28% (22)	 Lear…	3% (2)	 Piny…	3% (2)	 Learn...	1% (1)
 Hell…	20% (16)	 100	1% (1)	 Chi..	1% (1)	 Chin..	10% (8)
 Tone	5% (4)	 Nu..	1% (1)	 Me..	4% (3)	 Laoshi	16% (13)
 Chi..	14% (11)	 Trai..	1% (1)	 Lea..	3% (2)	 Talkin..	1% (1)
 Words	11% (9)	 Pinyin	4% (3)	 Listen	3% (2)	 CN Phr…	3% (2)
 Pinyin	11% (9)	 Chi…	4% (3)	 Speak	1% (1)	 Pin Pin	1% (1)
 Chine..	3% (2)	 Easy. .	1% (1)	 Chi…	3% (2)	 Talk…	1% (1)
 ...	3% (2)	 Chn …	1% (1)	 Hell…	1%(1)	 Writer	4% (3)
 Chin...	1% (1)	 Easy...	3% (2)	 Chi…	1% (1)	 Chine…	3% (2)
 Chi…	1% (1)	 Stro…	5% (4)				

Fig. 2: Teaching and Learning Smartphone Applications (TLA)

smartphone applications which including DBA and TLA in their smartphones. They were not able to express their preferences on which applications either DBA or TLA were more helpful since the applications have different functions in improving their Mandarin proficiency.

View on smartphone applications activities of usage: Figure 3 explains the different usages of smartphones reported by the students. The majority of the undergraduates used smartphone to look up for new Mandarin words (67.1%), since the convenience of m-Learning helped them to personalise their earning activities. Meanwhile, 17% of the students use smartphone to surf related information about Mandarin and some (15%) use them to communicate with others using Mandarin. However, only 1% of students used

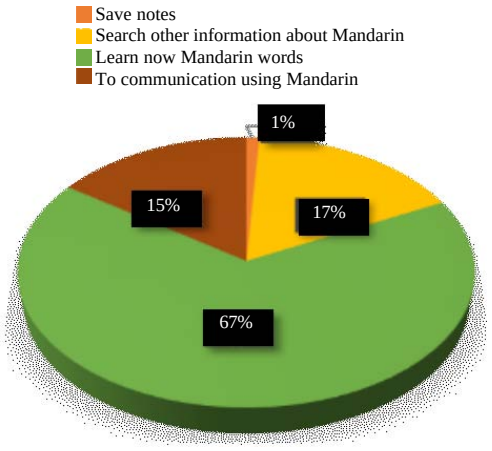

Fig. 3: Result related to the activities of using smartphone (%)

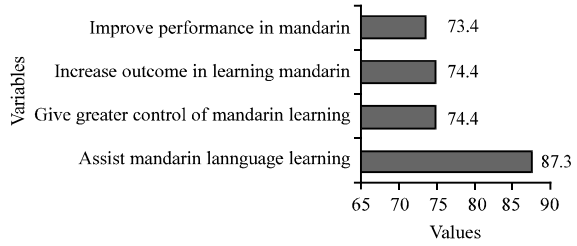

Fig. 4: Participant's view on the usefulness of smartphone applications (%)

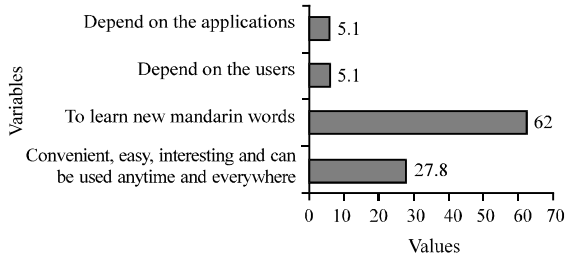

Fig. 5: Smartphone applications usage impact language performance (%)

smartphone for saving notes. Since, the students were introduced to the different Mandarin applications of smartphone earlier of the semester, the students were more confident since they were familiar with them. Furthermore, all of the students consented that smartphone was useful for Mandarin language learning because they were accessible and there are variety of ways to learn new Mandarin words.

Figure 4 shows all the participants consented that smartphone applications are useful for them in learning Mandarin. The reasons given in Fig. 5 are convenient, easy, interesting and can be used anytime and everywhere (27.8%), learning new Mandarin words (62%), depend on the users (5.1%) and depend on the applications (5.1%). All the participants were asked to download at least 2 types of Mandarin applications in the first class while the survey was distributed in the 10th week. This means all the participants have been using them and accounted their usefulness during their learning process. The result shows that smartphones aid students in learning Mandarin.

Attitude on smartphone in learning Mandarin: This study also attempted to assess undergraduate's attitudes towards smartphone and language learning. A useful way to approach the evaluation of MALL technology is to address its usability, effectiveness and satisfaction (Sharples, 2009). The indicators for Mandarin language performance are question 1 (assist Mandarin language learning), question 2 (give greater control of Mandarin learning), question 5 (increase outcome in learning Mandarin and question 6 (improve performance in mandarin). Figure 5 shows that 87.3% respondents agreed that smartphone helped them a lot and gave them greater control over their learning of Mandarin language (74.7%) since the smartphone's portability and accessibility have facilitated them in searching and receiving plenty of Mandarin learning material at their own pace. This shows that with the help of smartphones, the respondents are taking charge on their own learning and this can be a tool to promote autonomy, especially with issues of large class sizes or exam-oriented teaching. Additionally, the technology of smartphones enable the Mandarin applications to have the audio function, pictures and games which can increase learning engagement. All these features have eased them in their language learning, since 74.7% of respondents agreed that smartphone applications increased their learning outcomes as well as improved their Mandarin language performance (73.5%).

Since, the significant difference for language performance is $0.36>\alpha0.05$, therefore all the students consented that smartphone usage enhance their Mandarin performance based on language activities done using smartphone; any types of activities using smartphone will improve their learning outcomes.

Smartphone applications usage impact on task accomplishment: The indicators for Mandarin task accomplishment are question 3 and 7. Figure 6 shows students will be able to accomplish learning task more quickly (79.7%) and more learning task can be done (78.5%), since smartphones have supported their critical aspects in learning. The result showed that the significant

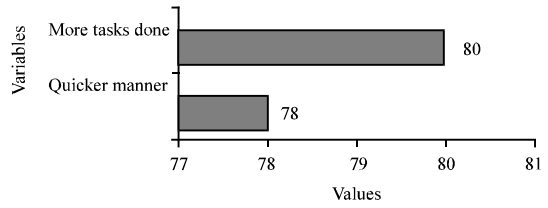

Fig. 6: Smartphone applications usage impact task accomplishment (%)

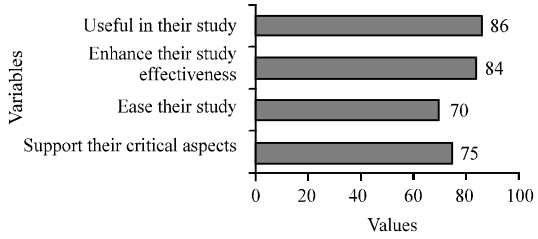

Fig. 7: Smartphone applications usage impact student's study (%)

difference for task accomplishment is 0.22 which indicated that smartphone usage has made students accomplish task easy and more quickly based on language activities done using smartphone. In sum, any types of activities using smartphone will help them in completing their learning tasks.

Smartphone applications usage impact on student's learning process: Smartphone applications in Mandarin not only allow autonomy but they also help to scaffold their learning. In Fig. 7, all the participants discovered that smartphone applications could support their critical aspects (75%), ease their study (70%), enhance their study effectiveness (84%) and be useful in their study (86%) which showed in Fig. 8. The significant difference of task accomplishment (0.43) showed the participants consented that any activity done using smartphone has influenced their study in positive way and here is no significant difference between language performance, task accomplishment and student's study based on gender and courses taken.

All in all, participants of the study viewed that smartphones were easy, convenient and they can use them anywhere and anytime which is agreeable with Geddes (2004). The respondents agreed that smartphone applications helped them in completing their Mandarin tasks and enhanced their performance not only in Mandarin subjects but also other studies. Most of them found it was interesting and willing to use smartphone continuously in learning Mandarin. They wanted to know more about the usage of the applications and they were satisfied with the smartphone applications in enhancing their Mandarin language performance. These results suggest that smartphones are a potentially promising tool for MALL.

It is evident that smartphone applications has great potential for enhancing teaching and learning. In this survey, it comes as no surprise that the respondents did not need any introduction on how to use the smartphone applications. This echoes Prensky (2007) and Oblinger (2003) characterisations of the students which are 'digital native's and 'net generation'; students are technological friendly and digitally fluent. This findings relate closely to Turkle (2011) whereby the students found learning more interesting using smartphones. The paradigmatic development of the MALL has resulted plenty of smartphone applications appeared online for language learning which come with various modes and functions of multimedia such as sounds, videos, music or images for personal, perceptual and field-independent learning. This shows that the focus of MALL is gradually shifting from content-based to design-oriented studies (Kukulska and Shield, 2008).

Regarding the effectiveness, most of the undergraduates consented that smartphone usage has enhanced their language learning performance. However, learners need to be guided not only technologically but also pedagogically. This is because some students may have great knowledge in technology but they are lack of knowledge of problem solving in learning a Foreign language. From the student's views we realized that MALL has prominently transformed language teaching and learning and MALL has had a considerable effect on instruction in Foreign language teaching classroom. Mobile-assisted in teaching and learning Mandarin should be developed and practiced by the instructors in their language classes, especially Mandarin subject in UMT. This is because students enjoyed exploring and expressed their willingness to use these smartphone applications in future. Additionally, Levy and Keneddy (2005) found that MALL is applicable for an interactive learning environment, improves potential for distributed practice and relevant for encouraging classroom interactivity. Furthermore, the finding indicated that mobile devices have changed Foreign language instructional methods and learning strategies with today's students (Abdous *et al*., 2009). In order to create an effective and supportive teaching and learning environment by using the smartphone applications, the concept of didactic learning in MALL which proposed by Kukulska and Traxler (2005) can be applied whereby didactic learning can be understood as learning from mobile educational material including novel formats such

as e-Books and web caching. In the field of e-Learning, there were set of pedagogical approaches (Mayes and De, 2004; Mayes, 2004) can be referred by the instructors. Even though the student's attitude towards smartphone applications is positive, it is important for the instructor to manifest the learners a new technological affordances system (Yu *et al*., 2010). In regards to this, instructors need to guide the students to optimise the utilisation of the smartphone applications in learning Mandarin which include variety activity design, autonomous and collaborative learning in order to be combined with their cognitive underpinnings of language learning to enhance their competence. This study suggests that mobile advance technologies are new and need to be explored further especially with the Foreign language teaching context; especially smartphone applications as well as other mobile technologies should be further studied to better serve both Mandarin teachers and students.

CONCLUSION

In this study, students use smartphone applications in learning Mandarin. It can be concluded that smartphone applications are ideal learning tools to enhance learner autonomy and ubiquitous learning in and outside the classroom. The smartphone applications they have been using were carefully explored. It was clear that most of the students used them in finding new words, sentences in terms of their meaning and pronunciations from the large number of Mandarin smartphone applications. They enjoyed using the smartphone applications and they were fluent using them and this method of learning has improved their language performance. All in all, majority of the students were satisfied of using the smartphone as their Mandarin learning tools. Smartphone applications and the guidance from instructors will be another way of teaching Mandarin to the students who have grown up using these advanced technologies. Despite of the contributions of this study to MALL, the limitation of this study is the lacking of generalizability. This can be done by more action research on MALL which focuses on smartphone applications in learning Mandarin and the relationship between MALL in Mandarin and performance in terms of listening, speaking, reading and writing skills. Finally, it is important to understand the issue of smartphone applications in learning Mandarin and the student's attitude towards effectiveness and satisfactions of smartphone applications. First, it is for the teachers to adapt MALL activities, especially how smartphone applications enable teachers to reduce workload and innovate teaching practices. Besides, it can be an interesting tool for students because the teenagers in this mobile-technology era can perform ubiquitous learning easily. Last but not least, the Mandarin learners can practice their language after their Mandarin course anywhere anytime and at their own pace and convenience.

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