

The Influence of Using Mobile Applications for Second Language Learning on Chinese Undergraduates

Zhang Wanting¹, XU Zhilong^{2,*}

Ningbo University of Technology, Ningbo City Zhejiang, 315211, China

International Exchange College of Ningbo University of Technology, Ningbo 315211, China

**Corresponding author: XU Zhilong*

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Abstract: With the development of technology of mobiles, Mobile devices have many practical abilities including Internet access, voice-messaging and video-recording. All of these abilities make different aspects of second language learning possible, including listening, speaking, reading and vocabulary learning. The wide use of smartphones and other portable devices provides a new way of language learning. However, the influence of using mobile apps for second language learning remains unclear. This study aims to investigate the influence of using mobile apps for second language learning according to Chinese undergraduates of English. First, it examines the pedagogical features of five representative ESL learning apps according to the analytical framework of MALL. Then it identifies learners' experience and current situation of using mobile apps for English learning and investigated learners' evaluation of using those apps. Finally, the strengths and weaknesses of using mobile apps for English learning from learners' perspective are analysed. The two research tools of this study are questionnaire and interview. The result finds that using mobile apps for English learning has positive influence on Chinese undergraduates.

1. Introduction

Mobile technologies are becoming more and more advanced. The whole world is going mobile. Exploiting the abundance of mobile technologies for the educational use arouses considerable interest of many people. It drives both hardware and software of mobile devices to innovate and evolve rapidly (Abdul Aziz, 2018). They have many advanced features, which bring users a great convenience and make Mobile-assisted Language Learning possible (Godwin-Jones, 2011). Mobile devices and applications become more powerful and versatile. Unsurprisingly, more and more people are attracted to use mobile applications for language learning.

However, it remains unclear what the exact influence of mobile learning is and how learners and teachers think about using mobile apps for language learning. The primary aim of this study is to better understand the influence of using mobile applications for second language learning on

Chinese undergraduates. The specific aims of this study are to identify the pedagogical features of mobile apps, realize learners' current situation of using mobile apps for second language learning and their evaluation of that. Hence, teachers and learners can make use of mobile apps and develop their language skills.

2. Theoretical Background and Previous Studies on Mobile Learning and Mobile-Assisted Language Learning

2.1 Mobile Learning and Mobile-Assisted Language Learning

Mobile learning, Mobilelearn or M-learning, is a subcategory of E-learning (Chinnery, 2006). Mobile learning is the learning with the wireless and portable device (Naismith, Sharples, Vavoula, & Lonsdale, 2004). It refers to the technologies that hold the capacity for language learning, such as personal digital assistants (PDAs), mobile phones, MP3 players, DVD player, portable radios and e-dictionaries (Zhao, 2005 in Chinnery, 2006). Mobile-assisted language learning (MALL) is a burgeoning subdivision of mobile learning (Chinnery, 2006). It has existed for about two decades (Burston, 2014). It is learning language with mobile devices, for example, mobile phones.

Researches (Steel, 2012; Lai & Zhang, 2018; Nami, 2020) showed that learners took the favourable attitudes toward mobile learning. Pilara, Jorgeb and Cristinac (2013: 1190) stated that the Learning Skills Development Agency (LSDA) provided games and educational materials on portable devices to 250 young people from Sweden, Great Britain and Italy aged from 16 to 24. It was showed that 80% of the participants thought mobile apps improved their reading and spelling skills. Similarly, Nami (2020: 89) provided some insights into learners' perceptions on the benefits of using mobile apps for second language learning. It was found that many students considered that using mobile apps has a positive influence on their vocabulary acquisition.

Although the past few years have witnessed the development of researches about using mobile apps for language learning, there are still some gaps in the previous research. Firstly, many researches (Chen, 2016; Kin and Kwon, 2012; Pilara, Jorgeb, & Cristinac, 2013) about language-learning mobile apps focus on evaluating mobile apps themselves, but not the influence on app users. Few studies explore learners' perspectives on mobile learning (Steel, 2012). What is more, the researches on learners' perspective of using mobile apps for English learning are mainly at the early stage. Secondly, as Kin and Kwon (2012: 49) claim, most ESL learning apps are targeted at children, especially speaking apps. Therefore, this study aims to investigate and contribute some new information to bridge the gaps.

2.2 Learning Theories about Mobile Learning

Although there are no direct and widely accepted learning theories of mobile learning, the theories of second language learning that underpin the use of mobile application should never be ignored. There are mainly three theories of language learning proposed by researchers (Chen, 2016; Keskin and Metcalf, 2011; Naismith et al, 2004), namely Behaviourist learning theory, Constructivist learning theory and Krashen's affective filter hypothesis. These theories are theoretical rationales for evaluating mobile applications and their influence.

2.2.1 Behaviourist Learning Theory.

Behaviourist learning theory is the primary theory underpinning Mobile App-assisted Language Learning. According to behaviourist, learning occurs and is facilitated through the proper reinforcement of an association between a particular stimulus and a response. In mobile learning,

the association happens when learners access to learning materials and is reinforced after they receive appropriate feedback and practice (Naismith et al., 2004). The stimulus could be problems which are presented or knowledge which is delivered on mobile apps. As Keskin and Metcalf (2011) claimed, ‘drill and feedback’ is one of the most popular activities in MALL. This activity is an efficient way to form and enhance the association.

2.2.2 Constructivist Learning Theory

Constructivist learning theory believes that learners actively construct new concepts and ideas on the basis of previous or current knowledge (Bruner, 1966). In the constructivist theory, learning is an active process. It emphasizes that learners are active constructors of knowledge and they should discover principles for themselves. Problems and challenges will stimulate learning.

Mobile apps provide language learners with learning context and supporting tools. It is up to learners to control them for constructing new knowledge (Kim and Kwon, 2012). They are not the passive recipients of information. When learners use mobile apps to learn language, they can actively develop their own knowledge (Naismith et al., 2004).

2.2.3 Krashen’s Affective Filter Hypothesis

Chen (2016) takes Krashen’s affective filter hypothesis as a significant basis for evaluating the efficiency of MALL. Krashen’s affective filter hypothesis is a theory about the influence of emotion on language learning (Krashen, 1982). According to this theory, language learners may be distracted by emotional factors when they are learning. Krashen states that learners’ low motivation, self-esteem and anxiety impedes language acquisition (Krashen, 1982). Some mobile apps are designed to arouse users’ interest and meet their psychological needs when they are learning (Chen, 2016). Thus, mobile applications reflect Krashen’s affective filter hypothesis to some extent.

3. Methodology

The participants in this study are 30 Chinese university undergraduates who are aged from 18 to 23. Importantly, they learn English as a second/foreign language and have different majors.

At the first stage, questionnaire was chosen as the main research tool. 40 questionnaires were sent to participants who are undergraduates. The questionnaires were online so that the process of collecting data was very quick and time-saving. At the second stage, the features of mobile apps were identified and the validity of using them to learn ESL was discussed. According to the result of questionnaire, the popularity of ESL mobile apps is showed vividly. The top 5 popular apps were identified for further evaluation. These 5 representative apps were categorized into types depending on their focuses. At the third stage, to get more detailed and in-depth information from app users, 3 representative Chinese undergraduates and 2 TESOL teachers were interviewed. Interview is the second research tool as a qualitative method in this study. The interview was arranged via Skype. And the interview was personal so that their information and ideas could be kept confidential. The final stage is analysis of all data and coming into conclusion. After receiving the result of questionnaires, there are totally 30 valid questionnaires that can be counted. The descriptive statistical results are represented as follows.

4. Results and Discussion

4.1 The Top 5 Popular Esl Learning Apps and Their Pedagogical Features

To find out the most popular ESL learning app among Chinese undergraduates, the third question

in questionnaire was designed with multiple choices. According to the result of this question, the popularity of Top 5 popular ESL mobile apps among Chinese English learners is shown vividly in the table 3. As we can see from it, all popular apps are concerning about vocabulary and speaking.

Table 3 the Popularity Of Mobile Apps

App Name	Category	Number	Percentage
Youdao Dictionary	Vocabulary, translation	27	90.0%
Baicizhan Vocabulary	Vocabulary	20	66.7%
Shanbei Vocabulary	Vocabulary	20	66.7%
English Dubbing Room	Speaking	17	56.7%
Speak English Fluently	Speaking	14	46.7%

To investigate the influence of using mobile apps for second language learning, the first step is to analyse the pedagogical features of ESL learning apps and evaluate their efficiency and validity. The selected apps are analysed according to the analytical framework of MALL. This study employs Kim and Kwon's (2012) analytical framework as the foundation of evaluation. Additionally, I have added and deleted some elements and criteria in their analytical framework for better fitting my research. The analytical framework of this study has four main aspects: goal, content, pedagogical method and feedback. Table 4 listed below shows a summary of the features of top 5 ESL learning apps. Generally, Baicizhan Vocabulary and Shanbei Vocabulary have all important pedagogical features, while YouDao Dictionary has least features among them.

Feedback is what I particularly added to the criteria of Kim and Kwon's (2012) analytical framework. Because it is important to explore whether an app provides feedback and allow learners to self-correct their responses (Chen, 2016). After examining the top 5 apps, 4 out of 5 apps provide feedback to learners. However, over half of participants take the negative attitude towards the feedback from mobile apps when they are interviewed. Participant B and C express that the feedback that ESL apps give is very limited. Usually, the feedback is very general which only contains 3 to 5 words. And sometimes the feedback is incorrect.

Table 4 Some Pedagogical Features of Esl Learning Apps

	YouDao Dictionary	Baicizhan Vocabulary	Shanbei Vocabulary	English Dubbing Room	Speak English Fluently
Making personal Goals	√	√	√	√	√
Providing different learning contents	√	√	√	√	√
Reviewing previous knowledge		√	√		
Giving presentation and Practice	√	√	√	√	√
Giving tests and quizzes		√	√		√
Providing feedback		√	√	√	√

4.2 Esl learners' Experiences of Using Mobile Apps for Language Learning

Using mobile apps for language learning is very popular among Chinese ESL learners. According to the result of this study, more than 90% of the participants have downloaded and used ESL learning apps. Undoubtedly, learning with mobile apps is a new trend among Chinese ESL undergraduates. Furthermore, it is found that over half of Chinese undergraduates currently have 1-3 ESL learning apps on their mobile devices in this study. Figure 1 demonstrates that 17

participants currently have 1- 3 apps and they are the biggest group.

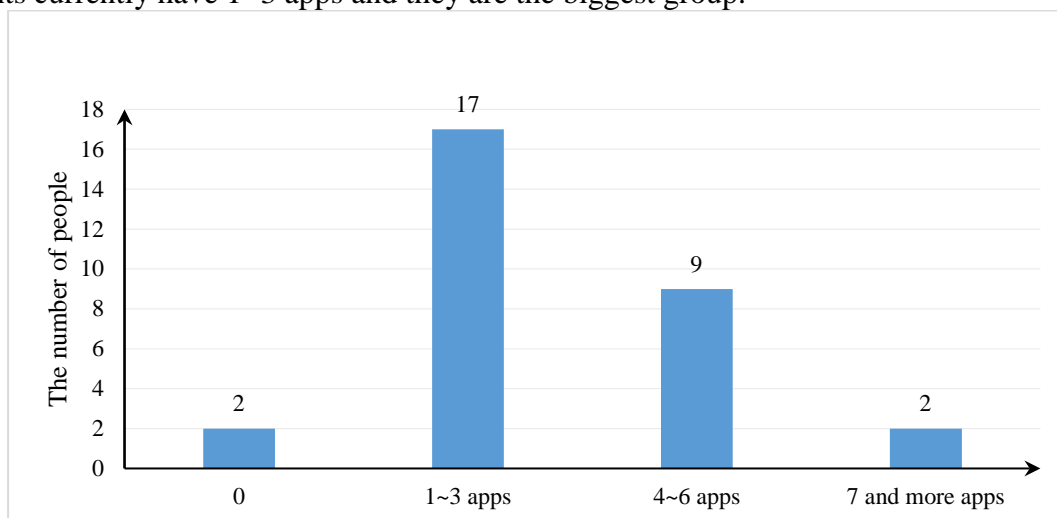


Fig.1 The Number of Esl Learning Apps That Chinese Undergraduates Currently Have

4.2.1 The Situation of Learners Using Esl Learning Apps

Learners' situation of using ESL learning apps is the objective evidence that reveals the influence of the apps on learners. The situation includes the time and the place that learners use ESL learning apps, the frequency of using the apps and how long learners can adhere to use a certain mobile app. Questions from 7 to 12 in the questionnaire are designed to gather that information and investigate learners' situation of using mobile apps for language learning.

According to the research, only approximately 23% of the participants usually use mobile apps to learn English on a scheduled time. The rest of them use mobile apps anytime when they want to study or when they need help from apps. Studying with mobile apps is different from learning in the classroom. Learners do not have to set a specific time for language learning. In addition to no time limit, there is also no limit of place. Over half of participants study English with mobile apps at home or dormitory. Only few learners use mobile apps for English learning in the classroom and study zone. Interestingly, there are even some people use mobile learning apps on the go. Mobile apps have changed the traditional learning ways. Learners can use mobile apps for language learning anytime and anywhere. This is an important evidence to show the influence of using mobile apps on ESL learners.

When it comes to the time that learners spend on MALL, Figure 2 illustrates that how long learners use ESL learning apps every day. It can be seen from Figure 2, about 83.33% of the participants spend one hour and less on MALL every day. It reveals that mobile users prefer to learn English on mobile apps in a short time. They would like to accept fragmented language learning. After interviewing five participants, it is found that most users choose to learn with mobile apps when they have around half an hour leisure time. They would like to use mobile apps mainly because the courses in the apps take a short time. Participant D expresses that if she has two hours and more spare time, she would like to study with books because she regards ESL learning apps as study reference not full instruction and believes that the knowledge in books is more professional than mobile apps.

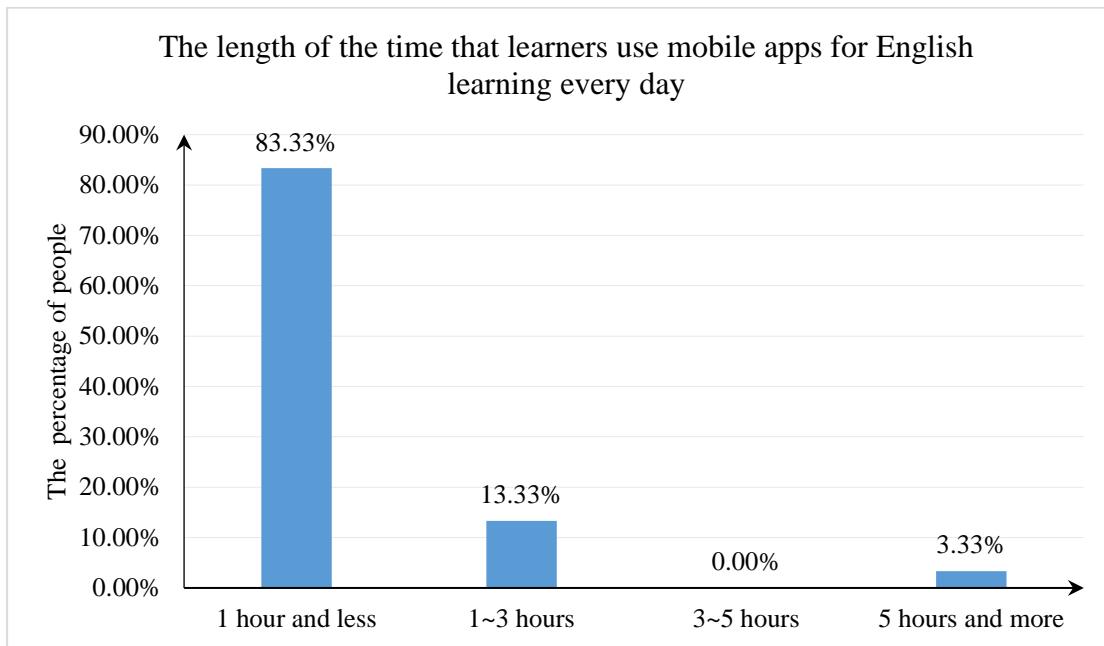


Fig.2 The Length of the Time That Learners Use Mobile Apps for English Learning Every Day

To investigate how much time that learners spend on MALL, the frequency of learners using mobile apps is also an important part to research. The result shows that 30% participants ‘occasionally’ use mobile apps for English learning, while another two groups of participants use mobile apps ‘always’ and ‘sometimes’ with 26.67% respectively. The percentage of participants who ‘never’ use mobile apps turns out to be lowest with 3.33%. It is hard to come to the conclusion about how often the majority of participants use English-learning apps because the percentages of the top three groups are quite similar. Thus, every participant is given the corresponding score according to the frequency of him or her using English-learning apps. It is shown in the Table 4 that ‘Always’ is rated at four on a scale of zero to four. People who never use English-learning apps are given zero point.

The average score of this group is 2.3. It can best represent the entire set of scores. It means that, on average, the participants ‘sometimes’ use mobile apps for English learning. In addition to mean, variability is important to measure because it reflects how scores differ from one another. The standard deviation of this group is 1.24. It represents the average amount of variability in a group of scores.

Table 4 the Frequency Of Learners Using Mobile Apps for English Learning

	Always	Usually	Sometimes	Occasionally	Never	Average score
Score	4	3	2	1	0	2.3
Number of participants	8	4	8	9	1	
Percentage of participants	26.67%	13.33%	26.67%	30.00%	3.33%	

Besides, the result of questionnaire shows that it is for less than three months that over half of participants can adhere to use a certain mobile app for English learning. Participants who use a certain mobile app for less than a month and 1 to 3 months account for 26.67% respectively (Figure 3). However, the percentage of people who can adhere to use a certain mobile app for 3 to 6 months

dramatically decreases to 13.33%. As time goes on, less and less people can adhere to use a mobile app. Surprisingly, the percentage of participants who use a mobile app over a year greatly increases to 26.67%. The data distribution shows polarization. Most people use a certain app for less than three months or over a year. This phenomenon is interesting and hard to explain. Hence, an interview is made to know the reasons why people use a mobile app in a short term or a very long term.

Participant B, D and E express that the duration they adhere to use a certain app mainly depends on whether the app can meet their needs. Every time they download a new app it need time to find whether this new app can meet their needs. This process usually takes about 1 month. If they find this app are not the app they want, they would uninstall that app. What is more, according to participant A and C, they cannot adhere to use a certain app mainly for two reasons. One the one hand, when they use an app for a period, that app usually does not have further attraction to them. They get tired of learning English with that app and look for something new. On the other hand, they have no sufficient perseverance to use mobile apps for English learning in a long term. These three reasons can explain why the data distributes in the way that Figure 3 shows.

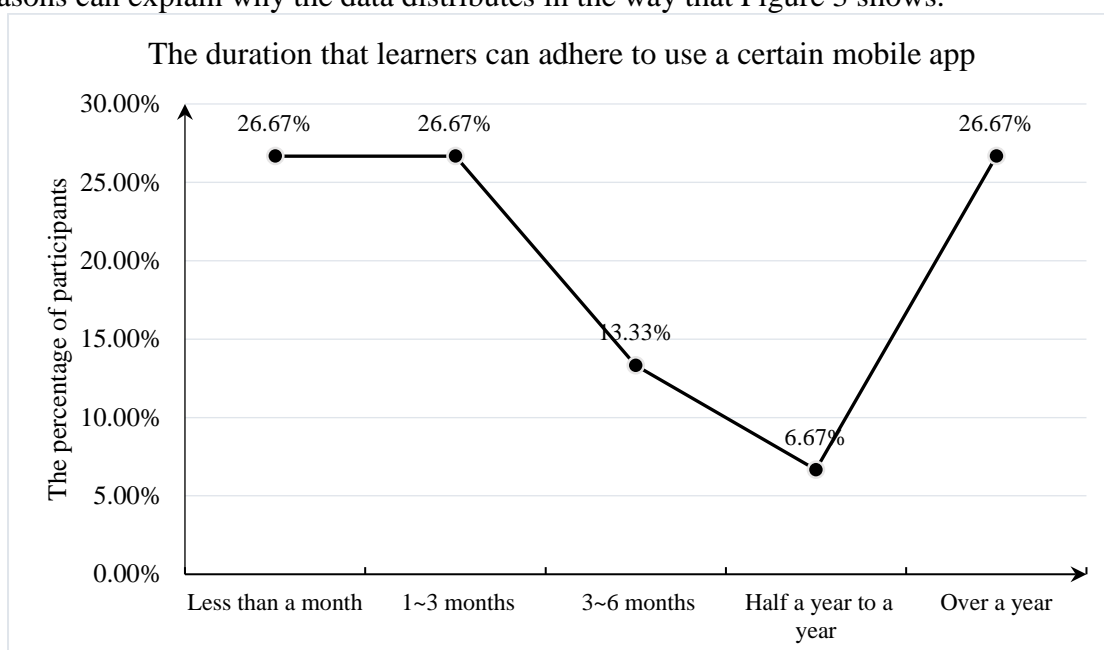


Fig.3 The Duration That Learners Can Adhere to Use a Certain Mobile App

4.2.2 Learners' Evaluation of Using Mobile Apps for Language Learning

The evaluation from app users is the direct evidence to present the influence of using mobile apps for English learning on Chinese learners. In the questionnaire, 30 participants are given three statements about the feeling of using mobile apps for English learning. These three statements are: a) I feel it is efficient to learn English on mobile apps; b) I feel using mobile apps for English learning improves my language skills; c) I feel motivated and interested to learn English by using mobile applications. Participants rank these statements on a scale of 1 to 4 (1=strongly disagree, 2= disagree, 3=agree, 4= strongly agree). The result of the questionnaire is listed in the table 5.

Generally, participants hold an optimistic attitude towards the efficiency of MALL. As it can be seen from Table 5, more than half of participants rank 3 points for each statement. 56.67% of the participants 'agree' that it is efficient to learn English on mobile apps. 70% of the participants 'agree' that MALL does improve their language skills. 66.67% of the participants 'agree' that it is motivating and interesting to learn English by using mobile apps. Furthermore, the average score of

three statements is very close to 3 points, which stand for ‘agree’. Hence, most Chinese undergraduates think using mobile apps for English learning has positive influence on them.

Table 5 Ranking Statements About the Feeling of Using Mobile Apps for English Learning.

Score	Statement A	Statement B	Statement C
1	0 (0.00%)	0 (0.00%)	0 (0.00%)
2	8 (26.67%)	6 (20.00%)	7 (23.33%)
3	17 (56.67%)	21 (70.00%)	20 (66.67%)
4	5 (16.67%)	3 (10.00%)	3 (10.00%)
Average score	2.90	2.90	2.86
Standard deviation	0.65	0.54	0.56

Generally, most participants claim that it is efficient to learn English on mobile apps. However, the result in the table 6 indicates that half of individuals ‘sometimes’ distract when they use mobile apps for language learning. As shown in the table, the frequency of distraction is ranked on a scale of 0 to 4 and the average score is 2.1. So the average frequency is ‘sometimes’. According to the formula of standard deviation, the result is 0.83. There is no denying that the frequency of learners distracting from MALL is quite high. In the interview, participant A, B and C express that they are more possible to distract from English learning on mobile apps than in the classroom. There are mainly three reasons that are pointed out by them. Firstly, many undergraduates have mobile games and other types of apps installed on their smartphones. Smartphones are not only learning devices but also game machines and communication tools for them. It is hard to resist the temptation of playing games and having fun with other apps which are within reach. Secondly, the pop-up notification is another factor that distracts learners from English learning. Participant A said, “when the pop-up notification and advertisement appear, I always want to look at the detailed information about it. After I click the notification bottom, it is hard for me to go back to learning.” Even if learners do not click the notification bottom, the pop-up notification still disturbs learners when they are studying. Thirdly, mobile-assisted language learning is very personal. This means that mobile learning is lack of supervision. There is no supervision from teachers and peer pressure to push users to learn English. Distraction is more possible to happen without supervision.

Table 6 the Frequency Of Learners Distracting from Mall

	Always	Usually	Sometimes	Occasionally	Never	Average score
Score	4	3	2	1	0	2.1
Number of participants	1	8	15	5	1	
Percentage of participants	3.33%	26.67%	50.00%	16.67%	3.33%	

When it comes to the statement B, 70% participants agree that using mobile apps for English learning improves their language skills. People who agree with the statement B are more than people who agree with another two statements. Language skills include listening skill, speaking skill, reading skill and writing skill. It is important to know that in which of following skills using mobile apps is most helpful for, listening skill, speaking skill, reading skill or writing skill.

In the questionnaire, participants are asked to choose the aspect of language that they think

MALL is most helpful for. The result is presented in Figure 4. Figure 4 depicts that two thirds participants think MALL is most helpful for vocabulary learning. Interestingly, no one think MALL is most helpful for reading skill or writing skill. There are mainly two reasons pointed out by participants in the interview. On the one hand, it is not convenient to learn reading and writing on mobile apps. The screen of mobile phones is small, whereas the reading material and writing content are too long to be shown in one page on mobile phones. Thus, it is not reader-friendly for learners to practice reading and writing skill on mobile apps. On the other hand, reading and writing usually take more time than vocabulary learning and speaking learning. Learners would like to use mobile apps for English learning for a short time but not a long time because they feel easier to distract from learning with time goes by.

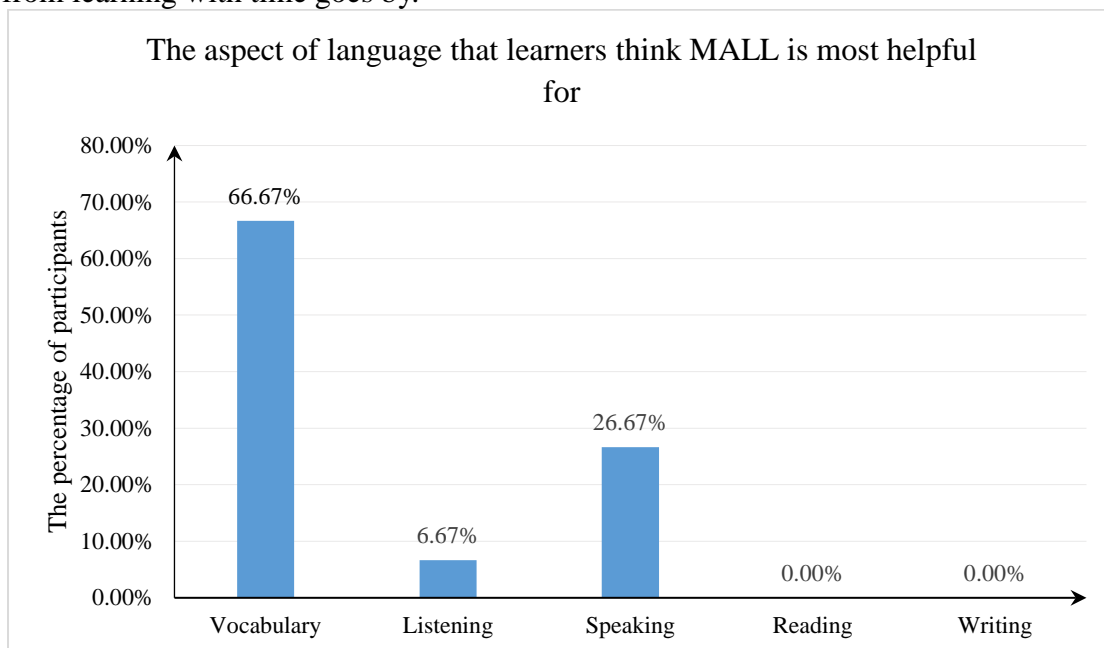


Fig.4 The Aspect of Language That Learners Think Mall is Most Helpful for

Finally, the result of ranking the statement C shows that approximately three quarters of participants feel motivated and interested to learn English on mobile apps. Furthermore, providing diverse ways of learning, good operation interface and abundant learning material are three most important factors that arouse learners' interest.

4.3 Advantages and Disadvantages of Using Mobile Apps for Second Language Learning

Many researchers (Chinnery, 2006; Kim & Kwon, 2012; Lai & Zhang, 2018) have discussed the strengths and weaknesses of using mobile apps for second language learning. Nonetheless, there are few arguments about strengths and weaknesses of MALL for Chinese undergraduates.

According to the research, approximately 97% participants hold the view that using mobile apps provides an opportunity to learn language anytime and anywhere. It is the most widely shared view about the advantages of using mobile apps for English learning among Chinese undergraduates. Learners find it very flexible using mobile apps for English learning because they can access to learning materials anytime and anywhere. It brings great convenience to learners.

Secondly, half participants think mobile apps have the advantage to give them the ability to share learning materials and experience. Most mobile apps offer collaborative learning opportunities to learners. They can make social interaction with other learners online. It can develop a sense of community of learners and engage learners in participating in collaborative learning activities (Kim

& Kwon, 2012). Successful learners also can share their own experience and good learning material in apps. In the interview, many participants said they gained very useful learning advice through communicating with successful learners.

Thirdly, mobile learning is learner-centred. It offers personal learning opportunities to learners. The learning themes and topics can change according to learners' interests and commitment (Lai & Zhang, 2018). The learning plan is designed according to learners' level of English proficiency. Learners can set their personal goals and develop a sense of individuality and independence. Through mobile learning, they could enjoy a certain amount of freedom and reduce their anxiety.

Although there are various advantages that MALL has, there are some disadvantages could not be overlooked. The very first and biggest concern among Chinese undergraduates is the potential distraction caused by using mobile apps. According to the research, 70% of the participants state that they can easily be distracted when they use mobile apps for English learning. Easy to distract has become the biggest barrier to mobile learning.

Moreover, physical health concern is the second disadvantage of MALL. Over one third participants think using mobile apps may cause diminution of vision. After the research, it is found that the frequency of learners using mobile apps for English learning is not low. If learners stare at the screen of phones for a long time, it will be detrimental to their eyes.

What is more, the current technologies of mobile devices are limited. For example, there are execution problems in mobile apps. Arús-Hita, Rodríguez-Arancón and Calle-Martínez (2013) have an interesting finding that more than one third of the apps downloaded by them had technical problems and sometimes could not work. Although this is not relevant to pedagogical issue, the possible barrier to learning cannot be ignored. The poorly designed mobile devices may adversely affect usability.

Last but not least, the learning content and feedback of mobile apps are not professional. Some participants even doubt the reliability of learning material because it sometimes contradicts what teachers say. In the terms of feedback, although Keskin and Metcalf (2011) claimed that it is one of the most popular activities in MALL, it seems not to be valued. Feedback usually is very general and only contains several words. For instance, Speak English Fluently highlights the words that learners speak wrongly, but fails to give them further instructions on how to correct words. Consequently, learners may become frustrated and demotivated after failing many times and still cannot have the correct pronunciation (Chen, 2016). However, González (2012) hold a positive view about this issue. He believed that this problem could be addressed with the technological development.

Overall, there are various advantages and disadvantages about using mobile apps for English learning. Mobile learning is good at arousing learners' interests and making use of spare time. However, the feedback from apps is limited and the credibility of learning material is questioned. Easy to distract is the biggest concern among Chinese undergraduates.

5. Conclusion

Overall, after study, it is found that over half of participants believe that using mobile apps for English learning is efficient and it improves their language skills, particularly for vocabulary learning. Moreover, most participants state that using mobile apps has both merits and shortcomings for English learning. This study makes some contributions to the field of MALL. First, this study fills the gap in the previous researches. Second, the analytical framework in this study provides a starting point for further analysis and evaluation of ESL learning apps. It also could be applied for evaluating other language learning apps. Third, it could help educators to better make use of mobile apps for language teaching. This study has some limitations due to time limit and the total word

count limitation. The investigated sample could be bigger.

For future study, applying MALL in the classroom need further research. Because using mobile apps for English learning mainly occurs outside the classroom. The scenario in the classroom may be different.

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