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Exploring Thai EFL Learners' Attitudes Toward the Use of Mobile Applications for Language Learning

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Abstract

Mobile applications in smartphones have been used pervasively for various purposes, including language learning enhancement. Therefore, this study attempted to examine Thai EFL (English as a foreign language) learners' attitudes toward their use of mobile applications for language learning and to investigate significant differences regarding their attitudes in terms of their language proficiency levels. This study also sought to explore the extent to which mobile applications were used to support language learning. To determine the attitudes, a total of 175 first-year university students were asked to complete the questionnaire adapted from the Mobile Learning Perception Scale (MLPS) proposed by Uzunboylu and Özdamlı (2011). The obtained data was analyzed using descriptive and inferential statistics. Based on the findings, students showed overall positive attitudes toward the use of mobile applications to support their language learning. The findings also revealed there were no statistically significant differences between students' attitudes according to their language proficiency levels.

	Additionally, it was found that most students regularly practice their listening skill with mobile applications, and Facebook is the most favourite online learning source. Guidance from instructors on how to use applications effectively and properly should be provided, following the fact that students positively accept mobile applications as learning tools.

1. INTRODUCTION

The escalating scale of smartphone ownership during the last ten years has clearly demonstrated the significance of mobile devices to people in many societies. In Thailand, around 28 million people are reportedly using smartphones (Statista Research Development, n.d.). Thais also spend the longest time (4.2 hours) on their mobile devices on a daily basis compared to the populations in other Southeast Asia countries, as reported by Google and Temasek (Khidhir, 2019). The reason behind the pervasive use of mobile devices is that mobile applications operate like computer software and are capable of effectively managing and facilitating routine activities (Quinn, 2011). In terms of language learning, numerous mobile applications are available for learners to download to practice their target languages following their needs to improve linguistic areas, such as pronunciation and vocabulary (Rosell-Aguilar, 2009). In this way, learners' autonomy is naturally promoted with their preferred language learning applications installed on their smartphones. These mobile applications also offer learners the opportunity to direct their learning without worrying about time and place (Chen, 2013; Hockly, 2013). Consequently, this has completely changed conventional teaching and learning which often limits knowledge acquisition within the boundaries of the classroom.

In addition, mobile applications and Internet connectivity considered as part of mobile technologies offer an extra dimension of learning by leading learners to unexplored ideas and knowledge when interacting with other users on social networking sites such as Facebook and Twitter accessed through smartphones and tablets (Pegrum, 2014). Several studies also reported successful learning outcomes when online communities on social media platforms were created to enhance interaction and communication between teachers and EFL learners (e.g., Borau et al., 2009; Low & Warawudhi, 2016; Suthiwartnarueput &

Wasanasomsithi, 2012). Kukulska-Hulme (2009) also highlighted the importance that both instructors and learners have to collaborate with each other to exploit mobile technologies for the benefits of teaching and learning. With the aforementioned growing influence of mobile technologies on learning, today's learners have inevitably found themselves accustomed to using mobile devices to support and develop their target languages (Hsu, 2013; Kukulska-Hulme & Shield, 2008; Rosell-Aguilar, 2009).

However, following the fact that smartphone use has become essential to the learning process, the role of the teacher could possibly be jeopardized if the awareness of the potential of mobile applications is ignored in classroom settings (Godwin-Jones, 2017). Despite possible concerns, there have been few empirical investigations into Thai EFL students' attitudes toward the use of mobile applications in their learning except for the general use of smartphones for language learning. Consequently, this current study intends to contribute to this emerging field of research by exploring attitudes of Thai EFL students regarding the use of mobile applications for their language learning with the following research questions:

1.To what extent do Thai EFL learners use mobile applications for language learning?

2.What are Thai EFL learners' attitudes towards the use of mobile applications for language learning?

3.Do Thai EFL learners' attitudes towards the use of mobile applications for language learning differ according to their language proficiency levels?

2. LITERATURE REVIEW

2.1 Significance of Mobile Assisted Language Learning (MALL)

Mobile Assisted Language Learning (MALL) is primarily concerned with how learners use mobile devices such as tablets and smartphones to support individual language learning styles (Miangah & Nezarat, 2012). With the MALL approach, learners are essentially encouraged to go beyond the classroom or conventional learning to pursue their preferred learning strategies, regardless of time and place with portable sizes of

mobile devices with mobile technologies (Hockly, 2013; Kim & Kwon, 2012; Kukulska-Hulme & Shield, 2008; Miangah & Nezarat, 2012; Silva et al., 2019). In effect, learners are able to extensively practice and develop their targeted language abilities such as listening, reading and vocabulary without depending solely on learning resources at school. For example, in an informal learning situation, they may want to enhance their language skills by watching videos concerned with language teaching on an online video-sharing platform such as YouTube. They can even learn languages on other mobile applications by themselves (Godwin-Jones, 2017).

The advantages of MALL have led researchers to place more emphasis on self-directed learning. Lai et al. (2016) investigated Hong Kong university students' and teachers' perceptions towards the use of mobile devices for directing their own learning outside the classroom. The findings revealed that both groups showed positive perceptions and accepted that mobile technologies were needed for independently continuing their language practice considering the limited time of their studies at the university. Trinder (2017) also sought to investigate Austrian university students' autonomous language learning and found that most of them often watched online movies or TV series to improve their pronunciation, listening and vocabulary. Similarly, in a study conducted by Yaman et al. (2015), it was revealed that Turkish students regularly used their smartphones to improve their vocabulary, listening and reading.

With the use of mobile devices as learning tools in the MALL approach, learners are encouraged to participate in collaborative learning by interacting with their classmates, which evidently has a positive impact on learning performance (Kukulska-Holme & Shield, 2008). For instance, Al-Shehri (2011) carried out a study which attempted to investigate to what extent an online English community affects participants' collaborative learning. Based on the findings, the level of students' motivation was significantly increased, and they enthusiastically participated in English language activities. Likewise, Grami (2012) investigated how learners improved their English writing ability with the use of mobile technologies that employs an online writing platform which supports peer review. The findings showed that peer review significantly improved critical thinking skills which is regarded as a vital writing ability.

Social networking applications on smartphones also lead learners to experience a kind of learning environment called 'situated learning' in which participation in social activities plays a crucial role in constructing

learners' knowledge, as defined by Lave and Wenger (1991). For example, learners are able to join and experience various kinds of online activities which appear interesting to them on online community platforms. In this way, they acquire authentic information through other users' arguments or comments related to problems or issues of their interest with the help of mobile technologies (Kukulska-Hulme et al., 2007). To illustrate how situated learning works in the context of MALL, a study carried out by Jin (2015) found that Korean EFL students significantly improved their language ability concerning intercultural competence through Facebook. This emphasizes how online international communities on Facebook assist learners in co-constructing their knowledge related to societies and cultures from different countries. In fact, language learners' exposure to people from various cultures is considered part of the learning process (Solé et al., 2010).

2.2 Challenges of MALL

Even though positive effects of applying MALL to teaching and learning have been noted in a review of the literature, it is recommended that learners should be aware of worrying signs of this learning approach as well. For instance, small-sized screens can cause troublesome reading for learners, including the limitations on data storage and the battery life of mobile devices (Miangah & Nezarat, 2012). Regarding financial aspects, students may have to pay for data services such as 3G/4G cellular networks provided by mobile operators. In classroom settings, some teachers may find themselves alienated or unfamiliar with the utilization of mobile technologies. This problem is elaborated by the study of Baek et al. (2017) in which Korean teachers showed low levels of agreement toward mobile devices used to support teaching and learning, even though they show a slightly better degree of acceptance of the fact that mobile technologies facilitate communication between students and teachers. Lai et al. (2016) also point out that some teachers expressed their concerns over the language content available online because it may appear overwhelmingly difficult for students of low language ability. This could possibly discourage them from using the language. Using online dictionaries despite prohibition during a test is another issue raised by Trinder (2017).

2.3 Mobile applications and their use for language Learning

As claimed by Godwin-Jones (2011), the popularity of using applications on smartphones for language learning came with the launch of the iPhone in 2007 when its web browsing application called Mobile Safari offered a full website content display on a small-sized screen just as what a personal computer did. The invention of mobile applications for English language learning in 2009 by the British Council also contributed to the emergence of an era in which learners practice their target languages on smartphones (Hockly, 2013). Nowadays, learning a language has become a regularity (Hsu, 2013). In general, smartphone users are required to download these applications available for online application markets such as the App Store and Google Play (Quinn, 2011). With respect to language learning resources, learners are able to choose from a vast majority of applications responding to their linguistic needs. According to Rosell-Aguilar (2017), mobile applications for language learning are mainly categorized into three types: 1) applications designed for language learning, 2) general applications able to be used for language learning, and 3) translation and dictionaries applications.

2.3.1 Application designed for language learning

Language learning applications are generally developed to support just one kind of language ability such as listening, grammar or vocabulary. This kind of application is also called a 'silent application' because it features easy-to-use instructions. For instance, the application lets users practice English pronunciation simply by touching on a word of their choice to listen to the pronunciation of the chosen word and allows them to practice accordingly. Users may even track their progress by recording their pronunciation. Most silent applications have been developed for vocabulary and listening practice (Steel, 2017). Another kind of application falling under this category is the one that aims to develop four language skills (listening, speaking, reading and writing) like Duolingo or Busuu. In addition, explanations of grammar points and a variety of exercises are provided, and users are given opportunities to practice speaking with each other or even with native speakers of the target languages to encourage their language use (Rosell-Aguilar, 2017). This kind of application also offers an adaptive learning method by pointing out the linguistic abilities learners

should improve after going through an initial language assessment (Hockly, 2015).

2.3.2 General applications used for language learning

General applications, such as Google Chrome (a kind of web browsing application), can be used to support language learning. To illustrate, learners can visit web sites providing translation services, grammar explanation and dictionaries of different languages through a web browser. The applications on the websites can automatically correct users' language use in their writing tasks (Rosell-Aguilar, 2017). Another general application used to develop language skills and competence is social networking applications such as Facebook and Twitter. These applications let users create a group page in which they can upload pictures and videos and share their comments and ideas, resulting in communication and learning enhancement among them. In addition, numerous Facebook pages have been created to teach English language abilities to interested users with videos or images containing vocabulary and descriptions related to language use.

2.3.3 Translation and Dictionary Applications

Translation and dictionary applications of multiple languages are generally available for learners to download and install on their mobile phones to support language learning. According to Steel (2012), translation and dictionary applications have become a necessity to students who study foreign languages. Because of the portability of mobile devices, they can use the applications to develop their vocabulary learning anywhere they want. As a result, students have more opportunities to familiarize themselves with the use of words every time they use dictionary and translation applications. However, controversial issues over the utilization of translation applications have been raised by teachers of foreign languages. Particularly, some errors can be seen when the applications translate the words without considering the context in the sentence, leading to misleading translation despite the fact that the machine translation has been extensively developed to produce correct output in translation as much as possible (Rosell-Aguilar, 2017).

2.4 The effects of using mobile applications on learners' language Learning and classroom communication enhancement

With the aforementioned capacities of mobile applications, several studies have investigated the effect of using mobile application on improving learners' language skills. Amer (2010) found that Idiomobile (a language learning application) significantly developed students' learning abilities in terms of English collocations and idioms through the teaching and exercises offered by the application. ECTAC, a flashcard application, was adopted by Basoglu and Akdemir (2010) in an attempt to find out if this application enhanced students' English vocabulary learning. The results showed that they expanded their vocabulary and enjoyed their learning sessions with the application. In terms of Turkish language learning with an application called Duolingo, Loewen et al. (2019) found that participants who used this application improved their language abilities and enjoyed adaptive and gamified features of its exercises.

In pedagogical settings, social networking applications such as Facebook and Twitter have also been used in several studies to examine how they enhance collaboration and communication between instructors and learners. For instance, a study carried out by Borau et al. (2009) aimed to investigate the effect of employing Twitter on students' English communicative and cultural competence by sending texts to their Twitter accounts for seven weeks. The results showed that students' language use in terms of communicative and cultural competence were significantly improved by receiving texts on a regular basis. Instagram is another popular application which allows users to share photos, videos and comments among them. Gonulal (2019) realized the potential of this social networking application and decided to examine Turkish EFL students' attitudes toward Instagram in terms of developing their English language learning. The results demonstrated that they showed positive attitudes because Instagram helped them learn more vocabulary by reading short descriptions of photos and videos sent by users from around the world.

Suthiwartnarueput and Wasanasomsithi (2012) also sought to examine how a Facebook group enhanced Thai EFL students' writing performance and grammar. The results showed that students significantly improved their writing and grammar through discussion with their teachers and had positive attitudes toward their participation in an online learning community on Facebook. Similarly, Low and Warawudhi (2016) found that Facebook can be used as an appropriate learning tool to improve Thai EFL university students' language abilities by sending quizzes and organizing activities related to English learning on a group page on

Facebook. This social media platform evidently enhanced communication and interaction between teachers and students as well.

Conclusively, mobile applications have been regularly used to support out-of-class and self-directed language learning (Gonulal, 2019; Lai et al., 2016; Trinder, 2017). They have also been utilized to develop and improve language abilities such as vocabulary learning (Amer, 2010; Basoglu & Akdemir, 2010; Loewen et al., 2019). Similarly, social networking applications are found to be effective and appropriate tools to enhance collaboration and communication between instructors and learners (Borau et al., 2009; Low & Warawudhi, 2016; Suthiwartnarueput & Wasanasomsithi, 2012). This reflects how important mobile applications are in terms of language skills development and how they can be seamlessly used to enhance the quality of learning and teaching.

2.5 Previous related studies

Following the literature review, language learning improvement, communication enhancement in the classroom and mobile application evaluation are three major aspects drawn from the use of mobile applications, and this corresponds to the criteria belonging to the Mobile Learning Perception Scale (MLPS) proposed by Uzunboylu and Özdamlı (2011). The MLPS consists of three main criteria as follows:

1) Mobile Technologies Fit (A-MTF) which intends to investigate the effectiveness of using of mobile technologies to improve teaching and learning;

2) Appropriateness of Branch (AB) which is concerned with the appropriateness of mobile technologies from the perspectives of learners;

3) Forms of M-learning Application & Tools' Sufficient Adequacy of Communication (FMA & TSAC) which is related to the use of mobile technologies to facilitate communication and collaboration between instructors and learners in classroom settings.

Considered one of the reliable and valid criteria in terms of attitudes and perceptions measurement in the field of Mobile Assisted Language Learning (MALL), the Mobile Learning Perception Scale (MLPS) has so far been employed as a research instrument in several studies. Oz (2015) found that teachers and students had overall positive perceptions

of mobile technologies used to support language learning according to A-MTF, AB and FMA & TSAC. However, the findings of the study also demonstrated significant differences related to genders and academic performances in terms of their perceptions. Dehkordi and Taki (2018) also conducted a study to explore Iranian EFL students' perceptions toward Mobile Assisted Language Learning (MALL) implemented in their language learning. They found that students had positive attitudes regarding mobile technologies used for developing their language learning as determined by the MLPS.

Similarly, Abou Shosha et al. (2019) investigated the effect of using mobile devices to support learning in a study program of Egyptian nursing students and attempted to find out their attitudes toward the use of mobile learning. The findings revealed overall positive attitudes shown by nursing students after mobile learning had been implemented in their learning approach. However, Baek et al. (2017) examined Korean teachers' attitudes toward mobile learning used in their teaching. The findings showed that they had overall negative attitudes concerning mobile technology used in the classroom, even though female teachers showed a higher level of positive attitudes than male teachers. The study also revealed that secondary school teachers had a higher level of positive attitudes according to FMA & TSAC than elementary school teachers.

Regarding smartphones used to support EFL learners, a survey study carried out by Wechsumangkalo (2018) revealed that a majority of Thai EFL university students used their smartphones to improve their listening, reading and vocabulary. Similarly, in a study conducted by Ahn (2018), it was shown that the majority of Korean EFL university students often used dictionaries on their smartphones and spent time practicing their English on smartphones for less than 1 hour on a daily basis. Trinder (2017) also found that most Austrian EFL university students preferred using online dictionaries on their mobile devices.

3. MEDOTHOLOGY

3.1 Research design

This study was conducted in the form of a survey, with data being gathered via an online questionnaire (Google Forms) to obtain responses from

student participants, before using descriptive methods such as mean, standard deviation and one-way ANOVA to generate results and analyses.

3.2 Participants

Convenience sampling was employed to include 175 first-year university students consisting of 50 male students and 125 female students from the Faculty of Business Administration at a private university in Thailand. They took English foundation courses during the second semester of academic year 2019 and regularly used social networking applications such as LINE and Facebook on their smartphones to communicate with their instructors as well as classmates to download online learning materials both in and outside the classroom. They were also told to install a mobile application called EDO Mobile (EDO-M) which allows them to practice English language skills such as reading and listening on their smartphones outside the class. The language proficiency test held by the university also notified them about which language proficiency levels they had achieved, according to the Common European Framework of Reference for Languages (CEFR). The results showed that 108 out of 175 students were "basic users of language", classified as A1 and A2. 64 of them were considered "independent users" at B1 and B2 levels, and only 3 had attained the C1 level.

3.3 Research instrument

An online questionnaire used as a research instrument in this study was divided into three sections to elicit data from respondents. The first section of the questionnaire was concerned with general information, such as gender and language proficiency, while the second section asked respondents about their purpose of using applications for developing their language abilities. The third section was a five-point Likert scale questionnaire displaying the following degree of agreement: strongly agree, agree, undecided, disagree and strongly disagree. Under this section, 21 statements from the Mobile Learning Perception Scale (MLPS) proposed by Uzunboylu and Özdamlı (2011) were selected according to the following three criteria: Mobile Technologies Fit (A-MTF), Appropriateness of Branch (AB) and Forms of M-learning Application & Tools' Sufficient Adequacy of Communication (FMA & TSAC).

Since the statements in the MLPS were originally intended to investigate teachers' perceptions toward mobile learning, they had to be adapted to suit an objective of this research study, which is to examine students' attitudes toward the use of mobile applications for language learning. To confirm the validity of the questionnaire, the statements both in English and Thai versions were thoroughly checked by an expert in the field of English Language Teaching (ELT). A pilot study was carried out to ensure the reliability of the adapted statements in the questionnaire. 25 first-year university students voluntarily completed the questionnaire in the pilot study. Based on the results, calculated by Cronbach's alpha, the coefficient value was shown to be 0.993, assuring statistical reliability of the statements used in the questionnaire.

3.4 Data collection

In order to collect data from 175 student participants, an online questionnaire of a Thai version in the form of Google Forms was sent to their LINE (a social networking application) messaging groups on their smartphones at the end of each English foundation class. The data obtained from the questionnaire was then sent back to the researcher's Google email account to generate results to be used for statistical analysis.

3.5 Data analysis

Descriptive statistics such as means, standard deviation and percentage were employed to report and analyse data regarding participants' general experiences and attitudes related to the use of mobile applications. With regard to attitude measurement, the ranges of mean scores obtained from each statement in the questionnaire were statistically interpreted to demonstrate the following levels of agreement:

The highest level of agreement is signified with the mean scores ranging from 4.21 to 5.00.

A high level of agreement is signified with the mean scores ranging from 3.41 to 4.20.

A moderate level of agreement, which is interpreted as being undecided in this study, is signified with the mean scores ranging from 2.61 to 3.40.

A low level of agreement is signified with the mean scores ranging from 1.81 to 2.60.

The lowest level of agreement is signified with the mean scores ranging from 1.00 to 1.80.

With respect to inferential statistics, ANOVA was used to determine the significant differences among the three groups of students of different language proficiency levels classified into basic users (A1+A2), independent users (B1+B2) and proficiency users (C1).

4. RESULTS AND DISCUSSION

4.1 RQ 1: 1. To what extent do Thai EFL learners use mobile applications for language learning?

Figure 1

Purpose of Using Mobile Applications for Language Learning among Thai University Students

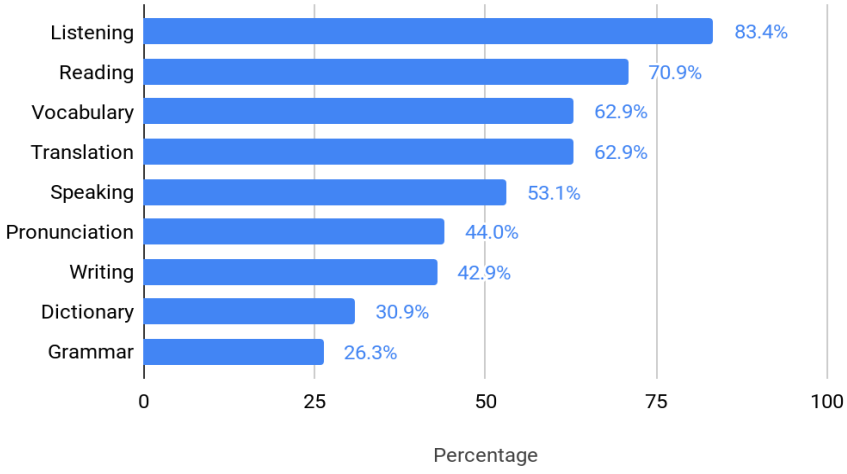


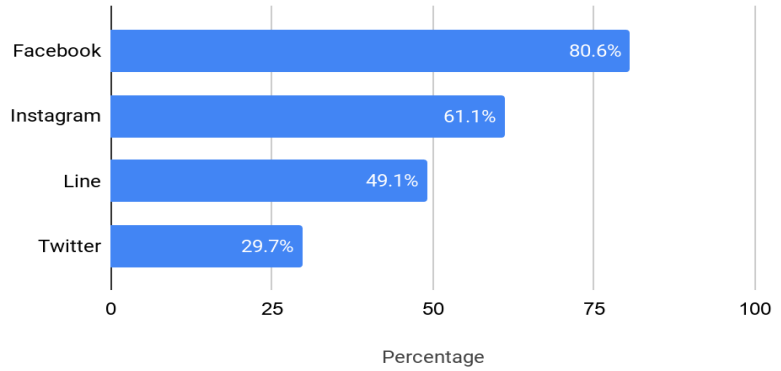
Figure 1 shows that the most frequent purpose (83.4%) of using mobile applications was to improve their listening skill, followed by reading at 70.9%. Vocabulary and translation obtained identical results at 62.9%. Speaking received approximately half of the responses (53.1%), while pronunciation (44%) and writing (42.9%) were close in terms of the number of responses. Almost one third of responses (30.9%) indicated dictionary applications. Grammar (26.3%) appears as the least favourite among the purposes.

The results of this present study are not in agreement with the previous studies (Ahn, 2018; Trinder, 2017; Wechsumangkalo, 2018) in which most university students regularly use dictionaries on their mobile devices. This may suggest a different style of autonomous learning among students of different countries. In addition, it could be possibly explained by the fact that students in this current study often enjoy themselves listening to a variety of media such as songs, videos, news or even their favourite celebrities' interviews on their mobile devices while at the same time practicing listening, pronunciation and vocabulary. The fact that most mobile applications are designed for practicing receptive skills (listening and reading) as claimed by Heil et al. (2016) may also contribute to the results.

Another possible explanation of why listening gains the highest percentage could be that all participants in this study were from a Faculty of Business Administration at which their English courses often required them to watch video links related to business presentations and practice English oral presentations accordingly. In other words, the language skills students intended to improve are in accordance with their educational purposes. Similarly, in the case of Austrian university students, Trinder (2017) found that those majoring in business read business news and magazines in English to keep them competent in the field of business and to assist them in learning new vocabulary used in their future career. What is also interesting about the above results is that both translation and vocabulary recorded the same percentage (62.9%). This may suggest that students usually use translation applications to find out the meaning of words to acquire new vocabulary instead of using dictionaries. This could lead to the loss of opportunities to learn more about word functions and examples of word usage in different contexts explained in dictionaries.

Figure 2

Social Networking Applications Used for Language Learning

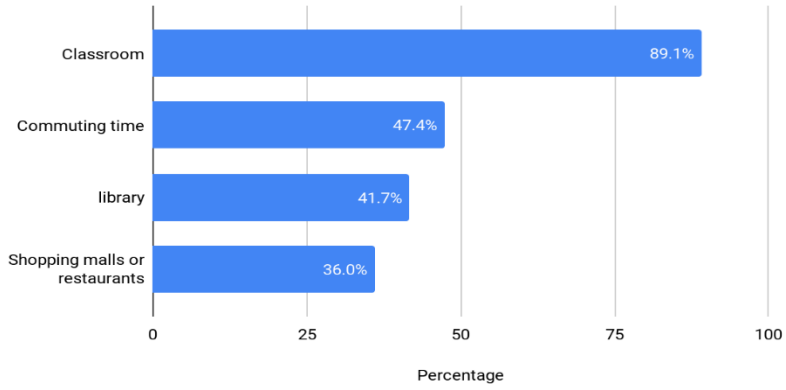


As can be seen in figure 2, Facebook had the highest in popularity with 80.6% of responses. More than half of them (61.1%) chose Instagram as their source for language learning. Third place belonged to LINE with 49.1%. A minority of responses (29.7%) credited Twitter for improving language skills. The result is in accordance with the fact as shown by Moore (2020) that half of Thai Internet users, equivalent to approximately 28 million people, use Facebook to interact with other users and inform themselves of news and all kinds of online media contents. Another reason contributing to the popularity of Facebook is that students are able to access English learning resources provided by numerous online communities and creators. Low and Warawudhi (2016) also revealed most Thai EFL university students in their study responded positively to the use of Facebook in terms of communication facilitation between them and teachers and continuous learning support outside the classroom. For Instagram, another popular social media application, it may not be used to teach English explicitly like Facebook, but it attracts students to learn English vocabulary through descriptions of beautiful and stunning pictures sent by people from around the world, as argued by Gonulal (2019).

From the data in Figure 3, students reported that they tend to use mobile applications the most in classrooms (89.1%). On their commute to places, approximately half of them (47.4%) use mobile applications for practicing their language skills while 41.7% of them prefer using them at

Figure 3

Places Where Students Use Mobile Applications for Language Learning

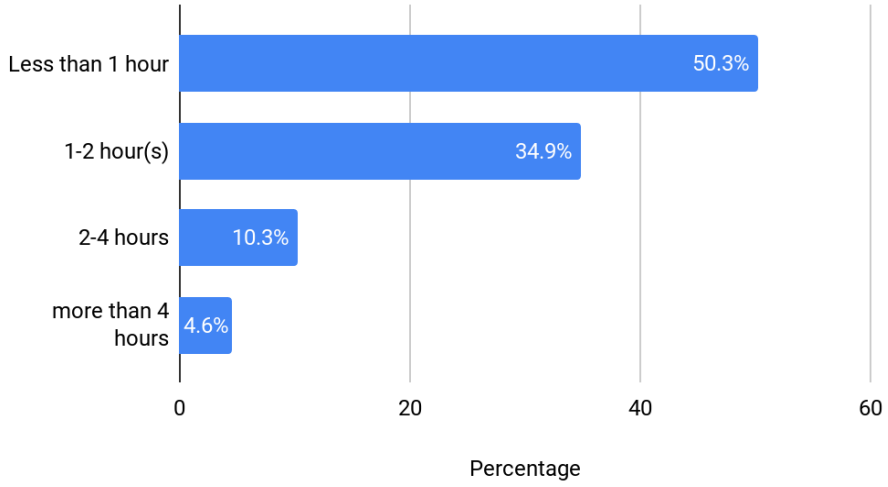


the library. Shopping malls and restaurants gained the smallest number (36%). The findings are not in accordance with the previous studies (Ahn, 2018; Rosell-Aguilar, 2016) in which the majority of students preferably use mobile applications to support their autonomous language learning outside the university. The findings of this present study may suggest students possibly use the applications to facilitate their learning in the class by using dictionary and translation applications or accessing online resources as part of their in-class assignments.

As shown in Figure 4, 50.3% of respondents reported that they spend less than one hour on mobile applications, and around one third of of them (35%) use applications for around 1-2 hours. The results are not in agreement with the study conducted by Ahn (2018) in which most EFL Korean university students spent their time on mobile applications for less than one hour on a daily basis. Following the results, multimedia applications such as songs and videos on the smartphones may draw students' attention away from their learning. Pop-up notifications from messaging applications are often found to be another source of distraction to them as well (Trinder, 2017).

Figure 4.

The Length of Time Per Day Using Mobile Applications for Language Learning



4.2 RQ 2: What are Thai EFL learners' attitudes towards the use of mobile applications for language learning?

Table 1

Attitudes Regarding Aim-Mobile Technologies Fit (A-Mtf), Appropriateness of Brach (Ab) and Forms of M-Learning Application & Tools' Sufficient Adequacy of Communication (Fma And Tsac)

Aim-Mobile Technologies Fit (A-MTF)	Mean	SD	Level of agreement
1. Mobile applications remove the limitation of time and space in terms of learning.	3.98	.90	High
2. Mobile applications create effective learning-teaching environments.	3.84	.87	High

3. Mobile applications such as YouTube, Facebook and Line provide opportunities to use authentic language regardless of time and space.	3.89	.91	High
4. Utilization of mobile applications increases students' motivation towards language learning.	3.93	.69	High
5. Mobile applications increase the quality of lessons.	3.78	.80	High
6. An effective learning environment could be provided by sending lecture notes such as vocabulary and English video clips via Line, Facebook and Twitter.	3.80	.80	High
Total	**3.87**	**.82**	**High**

AB–Appropriateness of Branch	Mean	SD	Level of agreement
1. I use mobile applications to get motivated to participate in language learning activities.	3.90	.69	High
2. Mobile applications facilitate language learning and teaching.	4.02	.69	High
3. Mobile applications let me promptly access language learning materials that I need.	3.95	.70	High
4. English language learning contents in mobile applications such as Facebook, YouTube are reliable for students.	3.89	.74	High
5. Learning through mobile applications encourages students to converse with each other in English, which is necessary in language learning.	3.84	.75	High

6. Mobile applications are convenient to share some useful language learning techniques among your classmates.	3.94	.68	High
7. I would like to supplement my English language learning more with the use of mobile applications.	3.97	.71	High
8. LINE, Facebook and Twitter are effective communication mediums for discussions about language learning topics among students.	3.90	.70	High
Total	**3.93**	**.70**	**High**

Forms of M-learning Application & Tools' Sufficient Adequacy of Communication (FMA and TSAC)	Mean	SD	Level of agreement
1. Mobile applications should be used to support English language learning inside and outside the classroom.	3.94	.72	High
2.The use of mobile applications for language learning provides students an opportunity to experience real-world English communication.	3.91	.74	High
3.The use of mobile applications leads to a better English learning outcome such as scores in English subjects and higher levels of language proficiency.	3.94	.66	High
4.Teacher-student communication is enhanced by means of social networking mobile applications such as Line and Facebook.	3.98	.69	High
5. Sending course materials to students via mobile applications such as Line and Facebook is more effective than any other means.	3.88	.72	High

6. Student-student communication is facilitated by means of mobile applications such as Line and Facebook.	3.92	.72	High
7. The use of mobile applications such as Line, Facebook and YouTube facilitates access to instructional content of English language.	3.92	.74	High
Total	**3.93**	**.71**	**High**

The results as shown in Table 1 reveal that students had positive attitudes toward the use of mobile applications for supporting and developing their language learning across all three criteria (A-MTF, AB and FMA &TSAC). These results also agree with the previous studies (Abou Shosha et al., 2019; Dehkordi & Taki, 2018; Oz, 2015). The findings could imply that students surveyed in this study fully recognised the benefits of using mobile applications to improve their learning and communication. To explain further, Prensky (2001) pointed out that learners nowadays are a generation who have continuously familiarised themselves with all kinds of technologies since their birth. As a result, they view technologies as part of their lives. Another interesting point is that the highest mean score (*M*=3.98) belongs to item 1 which has the statement saying, "mobile applications remove the limitation of time and space" in the criterion A-MTF. This result is in line with the study carried out by Oz (2015) in which the highest mean score also went to the same statement concerning this concept of mobile learning. The result explains the fact that students instinctively know the main characteristic of mobile learning, which is to let them access learning resources regardless of time and place.

Based on the findings, it was further revealed that students positively believe that applications on mobile phones provide opportunities for them to experience how authentic English is spoken in real situations because an abundant English source of news, interviews and live events can be accessed on social media platforms such as Facebook and YouTube. In a study conducted by Lai et al. (2016), it was also found that mobile applications are positively perceived by Hong Kong university students as learning tools, allowing them to learn how native speakers use their language. Regarding the Appropriateness of Branch

(AB) associated with how suitable mobile applications are utilized to support learning, the positive results may reflect the fact that students in this study are regularly required to download supplementary teaching materials from online resources or watch videos on social media sites such as Facebook or YouTube sent by their teachers in order to support their learning. As argued by Godwin-Jones (2017), instructors realize the potential of mobile applications in the context of present-day classrooms and accordingly feel the need to send teaching materials such as images or videos via Facebook or Twitter to enhance learners' learning abilities.

With respect to FMA and TSAC, regarding how mobile applications improve communication and interaction between instructors and learners, Table 4 shows that students had positive attitudes toward all statements. Nonetheless, the results come as no surprise, considering the fact that students fully acknowledge the benefits of social networking applications such as Facebook and Line because they can send instant messages, videos, audio files and images to facilitate and enhance communication between themselves and teachers. Another factor which may contribute to the positive attitudes is that students might feel more relaxed and often ask questions of their teachers or classmates on Facebook (Suthiwartnarueput & Wasanasomsithi, 2012).

4.3 RQ 3: Do Thai EFL learners' attitudes toward the use of mobile applications for language learning differ according to their different language proficiency levels?

Table 2

Anova for Attitudes Towards the Use of Mobile Applications for Language Learning According to Three Groups Of CEFR Language Proficiency Levels: Basic Users (A1 And A2), Independent Users (B1 And B2) And Proficient Users (C1)

		Sum of Squares	df	Mean Square	F	Sig.
A-MTF	Between Groups	2.033	2	1.016		
	Within Groups	85.132	172	.495	2.053	.131*
	Total	87.164	174			
AB	Between Groups	.719	2	.360	.907	.406*

	Within Groups	68.206	172	.397		
	Total	68.926	174			
FMA	Between Groups	.566	2	.283		
&TSAC	Within Groups	73.184	172	.425	.665	**.516***
	Total	73.749	174			

** The significant difference is considered at p<0.05*

As can be seen in Table 2, a one-way ANOVA reveals that there is no significant difference found between basic users (A1 and A2), independent users (B1 and B2) and proficient users (C1) in all criteria which are A-MTF [*F (2, 172) = 2.053, p = 0.131*], AB [*F (2, 172) = 0.907, p = 0.406*], and FMA & TSAC [*F (2, 172) = 0.667, p = 0.516*]. The results could be explained by the fact that, according to Chen (2013), students nowadays find themselves comfortable with mobile technologies which effectively support their language learning because they have been surrounded with smartphone usage for the most part of their lives, leading to positive attitudes as shown by participant students in this study.

5. CONCLUSION AND PEDAGOGICAL IMPLICATIONS

The major objective of this study was to investigate Thai EFL learners' attitudes towards the use of mobile applications for language learning, the differences of their attitudes according to their language proficiency levels and the extent to which they used mobile applications for supporting and developing English language. With the questionnaire administered to 175 first-year university students, the findings showed that Thai EFL university students had positive attitudes toward the use of mobile applications in all aspects concerning how applications support and facilitate teaching, learning and communication between instructors and learners. Additionally, significant differences regarding their attitudes toward the use of mobile applications were not found between students of all language proficiency levels.

In summary, the use of mobile applications on smartphones is accepted as an integral part of the learning and teaching process by students and indicates the importance of self-directed language learning in and outside the classroom. However, to maximize the benefit offered by the mobility of applications, students may need to develop the habit of practicing language abilities with the applications where time is available. They may even use YouTube or social media platforms such as Facebook

and Twitter as a learning database by typing in the search bar to find solutions to their language problems or learning materials of their needs and interests.

Regarding pedagogical settings, the conventional perception that language learning only takes place in the classroom is out of date. As claimed by Kukulska-Hulme (2009), we are in an age where teachers and students have to collaborate with each other to exploit mobile technologies to enhance language abilities. To illustrate, this may start with using social networking applications to send learning materials, such as audio and video files, to help students better prepare for the lessons and to keep them more engaged in spending more time on practicing their English language use outside the classroom.

Teachers may even initiate more interaction with them by asking questions or starting a discussion related to what they have learnt in the class. In terms of the use of mobile applications to support language learning, teachers should provide suggestions on how to use applications properly and efficiently to promote self-directed learning to students (Lai et al., 2016; Steel, 2017). To this end, teachers may try to experience the use of those language learning applications by themselves before recommending them to students. The results also reveal that listening is the skill most participants want to improve with the use of mobile applications. To assist students in achieving their learning goal, teachers may find and send video clips found on video streaming applications like YouTube for listening practice in accordance with their proficiency levels.

Watkins and Wilkins (2011) suggest that students can also practice speaking and pronunciation simultaneously with video clips and be exposed to authentic use of language and cultural aspects. However, the fact that more than half of students surveyed in this present study (62.9%) regularly use applications for translation is a result which teachers need to pay attention to because there are frequent mistakes related to translation by those applications when it concerns meaning in the context of language use.

6. LIMITATIONS OF THE STUDY AND RECOMMENDATIONS FOR FURTHER STUDIES

This present study is limited by the absence of data triangulation by not including interviews, classroom observations, or open-ended questions in

the questionnaire. In addition, the sample population were all from a Faculty of Business Administration; the results may differ with students from other faculties. For future research, teachers could be part of the study as participants to provide a more comprehensive view regarding how mobile technologies should be employed to effectively support and improve their teaching. The differences between Thai EFL students of two different majors or faculties and the disadvantages regarding the utilization of mobile applications could be explored to offer new insights into the field of Mobile Assisted Language Learning (MALL).

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