





SECONDARY SCHOOL TEACHERS' PERCEPTIONS OF MOBILE TECHNOLOGY ADOPTION IN ENGLISH AS A FOREIGN LANGUAGE LEARNING: TRENDS AND PRACTICES

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ABSTRACT

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A review of literature on mobile technology in EFL learning environment has indicated the growth, trends and practices of smartphones and mobile apps adoption both in classroom and outside classroom settings. However, little has been known on how EFL teachers perceived such trends and current practices and how they plan for future teaching. This study attempted to explore teachers' responses to trends and practices of mobile technology adoption and their future teaching plan. To this end, a qualitative design was adopted with two consecutive research procedures: a systematic review on the selected trends and practices analysis studies on mobile technology for language learning practices and a survey through a semi-structured interview. Five EFL teachers (three females and two males) from secondary school level were interviewed using six open-ended questions. Findings of the study revealed that teachers perceived positively towards the trends and practices of mobile technology in and outside language learning classroom. Teachers perceived motivation as a main driver to incorporate mobile technology. Some of motivations frequently cited in the interviews with the sampled teachers revealed the current trends and practices of blended learning practices among Indonesian teachers, including the perceived benefits of mobile technology adoptions and the effect of mobile technology on teaching and learning practices and students' characteristics. Three challenges were identified when technology was incorporated for learning namely infrastructure related issues, teacher technological knowledge and education policy.

Contribution/Originality: The current study provides trends and practices of mobile technology use in Indonesian EFL learning classroom. More importantly, the study sheds lights regarding the challenges that the Indonesian EFL teachers encountered when incorporating the language learning technology in the classroom.

1. INTRODUCTION

The advanced mobile technologies have provided great opportunities for English as a foreign language (EFL) teachers and learners to access teaching and learning resources without being constrained by time and place (Duman et al., 2015; Hwang & Fu, 2019). The term mobile learning, also known as mobile computing, is used to describe computer devices with a mobility feature, such as software, hardware, and communications (Hameed, 2003). Forehand et al. (2017) perceive mobile technology as any portable device with computing capability, such as smartphones, tablets, e-reader and netbooks. With the current technology, several authors such as Crompton (2013) and Khlaif (2018) suggested technology as any portable and flexible electronic devices that enabled users to play

multimedia tools, and access to the internet in order to make social connection as well as interaction with others. To this end, the technological devices not only provided sufficient amount of storages for their logs, files, documents and information, but also developed networking capabilities via internet (Islamoglu et al., 2021).

The earlier reviews on mobile technology trends and practices in EFL learning practices have presented profound roles of mobile technology in promoting effective EFL learning both in and outside classrooms. A few studies (e.g. Abdous et al., 2009; Shadiev et al., 2017) have suggested that mobile learning technology currently is playing a key role in reshaping learning and classroom instruction by improving learning materials, activities and interactions. For example, according to Churchill et al. (2015) the utilization of mobile learning technology provided various tools and media for teachers and instructors of the class, students, as well as various educational opportunities. Such electronic devices were available that operated on learning applications, record audios, documented videos, submitted and received email messages, as well as created classroom materials .

When it comes to outside classroom, there are portable devices that are beneficial due to their flexibility and effectiveness for learning anywhere at anytime. Therefore, when these digital devices are added and incorporated into learning at educational institutions, they help extend the learning experience. For instance, they provide the opportunity of formal learning (inside schools) informal learning (outside classroom) to learn, socialize, collaborate, and share ideas at the same time and place by allowing mobility of learning (Elsafi, 2018).

There is a dearth of research and relevant studies about how teachers perceive mobile technologies for language classroom instructions and to what extent current trends and practices can help them plan future teaching. The current study aimed to explore teachers' responses to the trends and practices of mobile technology adoption and their future teaching plan. To this end, a qualitative research design was adopted with two consecutive research procedures: a systematic review on the selected trends and practices analysis studies on mobile technology for EFL learning practices and a semi-structured interview. Three research questions were developed, and they included:

1. What were the trends and practices of teachers' adoption of mobile technology in and outside EFL learning classroom?
2. How did teachers respond to the trends and practices of mobile technology adoption in EFL classroom?
3. How did teachers' awareness of the trends and practices of mobile technology adoption in EFL classroom influence their future teaching practice?

To address these research questions, a qualitative research design was adopted with two consecutive research procedures: a systematic review on the selected trends and practices analysis studies on mobile technology for EFL learning practices and a semi-structured interview with EFL teachers. The findings of the study are significant in shedding light on current trends and practices about using mobile technology in classroom instruction and how teachers have responded to these trends and practices.

2. LITERATURE REVIEW

In education settings, mobile technology is seen as a type of mobile learning that facilitates and helps students and teachers in EFL learning process (Bernacki et al., 2020). In this context, the adoption of mobile technology in language learning classrooms is often termed as mobile assisted language learning (MALL), referring to the use of mobile technology application (both hardware and software) to facilitate the acquisition process of linguistics knowledge and competences (Chinnery, 2006; Cho et al., 2018). The mobile technology for EFL learning purposes includes the use of tablet PC, personal digital assistance (PDA), iPod, smartphones, digital cameras, digital audio recorder, and digital games (Chinnery, 2006; Elaish et al., 2017; Hikmat & Mulyono, 2018; Kim & Kwon, 2012; Kukulska-Hulme & Shield, 2008). Godwin-Jones (2011) documented several mobile apps for language learning activities, including Lonely Planet, eStroke, Pleco, Anki, Quizlet, Conjugation Nation, Rosetta Stone, Hello-hello, Cloudbank, Google Translate, Talk to me and many others.

Additionally, in the present time, Learning Management System (LMS) and social media are also getting an upward trend where they are used to support language learning activities. For instance, a study [Tawalbeh \(2018\)](#) examined EFL teachers' perspectives of Blackboard in online learning management system (LMS) at an Arabian university. The study found that teachers had positive view about the integration of Blackboard features and its impact on EFL learning. Other study by [Zaim \(2021\)](#) investigated the use of LMS at an Indonesian vocational school during the COVID 19 pandemic. Using a survey design, the study examined the level of usability of LMS that was embedded in the school online learning website. The findings showed that LMS facilitated the teaching and learning of English as a foreign language at the school site, perceiving the LMS to be useful, easy to use for teaching and learning, and more importantly the LMS capability was satisfying.

In addition, mobile technologies in form of social media applications such as WhatsApp ([Mulyono et al., 2021](#); [Sarıtepeci et al., 2019](#); [Tragant et al., 2020](#)) Facebook ([Sirivedin et al., 2018](#)) Twitter ([Malik et al., 2019](#)) and many more were also found to positively enhance learning process. For example, they can be used to promote interaction between teacher and students as well as among students ([Tragant et al., 2020](#)). They were also found to significantly enhance students' English skills such as writing skill, and teachers' learning attributes ([Sirivedin et al., 2018](#)). Moreover, these social applications were observed to have the potential to improve students' learning capabilities, motivation, and to encourage them to participate in learning activities, since they have unique features and non-traditional teaching approach ([Malik et al., 2019](#)).

Literature has documented several trends analyses of mobile technology adoptions in language learning settings. For example, [Hwang and Tsai \(2011\)](#) review of selected articles published in six major SSCI journals has indicated a significant growth of research on mobile technology adoption for language learning during the time. In addition, [Godwin-Jones \(2011\)](#) had observed the rise of mobile apps to facilitate language learning and [Hwang and Fu \(2019\)](#) indicated the high rise occurs within higher education settings, secondary school and elementary schools respectively. For instance, [Chen et al. \(2019\)](#) observed the use of English vocabulary learning-assisted apps in elementary school setting to examine 46 Grade 5 students' self-regulated learning. Findings of the study revealed that pupils who were taught using the mobile application with the self-regulated learning mechanism gained better performance and motivation than those who only used the apps. In addition, a systematic review of the influence of mobile technologies between 2007 and 2019 by [Eutsler et al. \(2020\)](#) showed positive outcomes from the reviewed studies. The use of technology was shown to facilitate students' vocabulary achievement and improve their phonics, and phonemic awareness.

Another systematic review by [Elaish et al. \(2017\)](#) focused on 69 studies on the use of mobile technologies in English language learning. The samples were drawn from varied backgrounds, students in schools to university students. Based on the findings, it was shown that there was an upward interest of implementing electronic devices in English learning and teaching practices. It was also observed that in most of the studies indicated that learning using mobile devices brought significant effect on participants' English language learning. A review by [Shadiev et al. \(2017\)](#) suggested three mobile technologies frequently used such as smartphones, mobile phones and Personal Device Assistants (PDAs) with learning activities occurring in classroom settings and particularly outside classroom contexts. These technologies were mainly adopted for both classroom and outside classrooms purposes. The study highlighted two profound issues concerning the technology adoption, including lack of focus on the application of newly learned knowledge by the students or the overlooking of recent developed intelligent technologies for language learning purposes. This review is in line with the study from [Khatoony and Nezhadmehr \(2020\)](#) which examined EFL teachers' challenges in implementing technology for their virtual teaching and learning practices during COVID-19 pandemic in Iran. Findings of the study showed that the study participants had positive perceptions about the use of mobile technology to facilitate virtual teaching and learning. Although, the findings identified several challenges when using the type of technology for virtual instruction practices, such as the absence of appropriate materials, the decline of students' attention and motivation in terms of virtual classes,

issues regarding teachers' time management and ineffectiveness of the instruction evaluation. The study also found that teachers had little institutional support from when carrying out the virtual teaching practices.

A review by [Elaish et al. \(2017\)](#) suggested the effectiveness of mobile technology adoption in speaking, writing, vocabulary as well as pronunciation learning. Additionally, other researches also proved the effectiveness of such devices on listening skills ([Albahiri & Alhaj, 2020](#)) and reading skills ([Chen. et al., 2021](#)). In [Albahiri and Alhaj \(2020\)](#) study, the observation was focused on YouTube as one of technologies assisted language learning platform. It was proved to be an important variable that improved Saudi EFL students' listening proficiency by stimulating their auditory and visual capabilities. For reading skills, [Chen. et al. \(2021\)](#) in their bibliometric and analytical study observed that technology was incorporated through e-books in language learning. Based on a total of 53 selected articles published from 2011 to 2021, their findings showed that approximately half of the studies observed concluded with positive results, and nearly half with mixed results. This suggested that e-books had a correlation on reading comprehension, teaching/learning strategies, and learning engagement. This study also showed that e-books provided the opportunity to learn other language abilities such as spelling, listening, speaking, writing, and vocabulary. Hence, teachers could use e-books in their language learning practices in order to improve such abilities for their students. Additionally, in terms of the implementation, it was observed that cell phones and PDAs were known to be the most popular mobile technology for vocabulary teaching from 2000 to 2012 ([Duman et al., 2015](#)).

3. METHOD

The present qualitative study aimed to examine the trends of mobile technology adopted in and outside EFL learning classroom and to explore how EFL teachers perceived about the trends and current practices and how they planned their future teaching. The study was conducted in two stages. A systematic review was carried out to address the first research question: what were the trends and practices of teachers' adoption of mobile technology in and outside language learning classroom? To this end, a meta-analysis study and review papers were selected and examined. To search for some relevant papers, certain search terms were used. In our search, we employed nested clauses such as "literature review of mobile technology in language learning classroom", "trends and practices of mobile technology in language learning classroom", "meta-analysis of mobile technology in language learning classroom". At the beginning of the search, a list of 30 articles meeting the search terms were compiled and screened with three criteria: 1) the articles published in Scopus and Web of Science indexed journal, 2) published between 2017 and 2019, and 3) the reviewed studies concerned with mobile technology adoption in language learning. After the screening process, four publications were selected for further review and were detailed. [Table 1](#) presents the selected papers that were reviewed in the current study:

Table 1. Selected publications for review.

No	Reference	Review period (year)	Reviewed Publications (N)	Review focus
1	Shadiev et al. (2017)	2007 to 2016	37	Publication trend, research focus, technology used, methodology and current issues.
2	Cho et al. (2018)	2005 to 2017	20	Effect of adopting mobile technology on students learning achievement.
3	Elaish et al. (2017)	January 2010 to December 2015	69	Rate of publication, domain of research on mobile technology, purposes and assessment methods, language learning problems, mobile technology to address language learning problems.
4	Shadiev et al. (2020)	2009 to 2018	22	Pedagogical approaches, data collection, sites, authentic environment affordance, relevant issues in MALL.
5	Hwang and Fu (2019)	2007 to 2016	93	Methods of research, research issues, types of language and learner, and learning outcomes.

The second stage of the research addressed the research questions two and three: (2) How do teachers respond to the trends and practices of mobile technology adoption in foreign language classroom? And (3) How do teachers' awareness of the trends and practices of mobile technology adoption in foreign language classroom influence their future teaching practice? To these ends, a semi-structured interview was carried out to follow up the findings from the meta-analysis. Five English as a foreign language (EFL) teachers from secondary school levels participated in the study. There were three females and two males aged between 30 and 50 years old. They had more than 5 year-teaching experiences and were familiar with computer technology (e.g. word processing, office application), mobile phones, social media, and blogging. Table 2 presents teachers' demography.

Table 2. Teachers' demography.

No	Teacher initial	Gender	Age	Teaching experiences (Year)	Teaching site (Province)
1	Teacher A	Female	33	6	Jakarta
2	Teacher M	Female	43	18	West Java
3	Teacher I	Male	33	5	North Sumatera
4	Teacher F	Female	44	16	East Nusa Tenggara
5	Teacher E	Male	49	21	Riau

Six semi-structured interview questions were developed using Davies (1999) Technology Acceptance Model (TAM) framework. TAM is perceived as an acceptance framework of technology use. Particularly, TAM was employed to explain and predict people' acceptance from using technology (Davies, 1999). Jin (2014) indicates several externals that predict the relationships between the variable of perceived ease of use (PE), perceived of usefulness (PU) and other external variables, such as behavioral intention, self-efficacy, subjective norms and facilitating conditions. Table 3 presents the TAM constructs, their description and the interview questions:

Table 3. Description of TAM constructs for the interview questions.

No	TAM Constructs	Description	Interview questions
1	Perceived usefulness	"the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989).	<ul style="list-style-type: none"> How do you see the trends and practices of mobile technology adoption for language learning both in and outside classroom? How do you see the effectiveness of such adoption?
2	Perceived of ease of use	"the degree to which a person believes that using a particular system would be free of effort." This follows from the definition of "ease": "freedom from difficulty or great effort." (Davis, 1989).	<ul style="list-style-type: none"> Do you think it is easy to adopt and operate mobile technology for language learning purposes? How do you explain it?
3	Behavioral intention	Teachers' intention to use mobile technology for language teaching and learning activities.	<ul style="list-style-type: none"> Do you use mobile technology for language learning instructions? Please, explain! How do you plan it?
4	External variables		
	<ul style="list-style-type: none"> Self-efficacy 	<ul style="list-style-type: none"> Teachers' self-assessment about their ability to operate mobile technology. 	<ul style="list-style-type: none"> What conditions that may facilitate your adoption of mobile technology for language learning instruction?
	<ul style="list-style-type: none"> Subjective norm 	<ul style="list-style-type: none"> Organisation and social pressure that are given to an individual to adopt mobile technology. 	
	<ul style="list-style-type: none"> Facilitating conditions 	<ul style="list-style-type: none"> Teachers' perception of the available resources that support their adoption of mobile technology for language learning. 	

The interview was performed in Bahasa Indonesia and was audio-recorded. The use of the native Bahasa Indonesia language was used to allow teachers comprehend the interview questions and enable them to respond to the questions without having language constraints. The interview was analyzed using a thematic analysis. Prior to the analysis, the interview was transcribed verbatim and the interview script was read and reread to enable the researchers comprehend the responses from the participants. Then, the interview scripts were coded and themed. In the current study, the four TAM constructs were used as pre-determined themes in addition to the emerging themes (Campbell et al., 2013).

4. FINDINGS AND DISCUSSIONS

The present study attempted to examine the trends and practices of mobile technology adopted in and outside EFL learning classroom and to explore how EFL teachers perceived about the trends and current practices and how they plan for future teaching.

4.1. Trends and Practices of Mobile Technology Adoption for Language Learning

As discussed earlier, a systematic review was conducted to examine the trends and practices of mobile technology adoption for language learning. The findings from the review of five meta-analysis articles indicated that smartphones, mobile phones and PDAs (tablet computers) were shown as the most frequent mobile technology for language learning practices. In Indonesian EFL classroom learning settings, some mobile applications cited by the teacher participants included WhatsApp messenger, Edmodo, Google Classrooms, online quizzes and web browsers. Such technologies were common practices at post-secondary schools and were used both in and outside EFL classroom. Task-based learning and communicative language learning approaches were shown to be the most frequent teaching approaches that teachers adopted for the classroom instruction. Teachers believed that the approaches facilitated students' collaborative learning (Cho et al., 2018). The adoption of mobile technology for in and outside EFL classroom learning activities have indicated the application of such technology were used within formal and informal settings (Sánchez-Prieto et al., 2016; Sung et al., 2016).

In addition, the result of the systematic review showed that the adoption of mobile technology brought a moderate positive effect on students' language acquisition and their learning performances, particularly on the specific areas such as vocabulary, language arts, speaking, reading, writing and pronunciation. Beside the other potential use of technology to promote learning independence (Arista & Kuswanto, 2018), a review by Shadiev et al. (2020) suggested that mobile technology could create authentic learning environments. The creation of the authentic learning environment might be only possible if teachers were enabled to apply the instructor-centered approach.

4.2. EFL Teachers' Perception of the Trends and Practices of Mobile Technology Adoption for Language Learning

To address the research question two and three: (2) How do teachers respond to the trends and practices of mobile technology adoption in foreign language classroom? and (3) How does teachers' awareness of the trends and practices of mobile technology adoption in foreign language classroom influence their future teaching practice, a semi-structured interview was conducted to five EFL secondary school teachers. Three main themes emerged from the interview, including teachers' motivation for mobile technology adoption, teachers' perceived ease of use of the mobile technology and teachers' perceived challenges of mobile technology adoption.

4.2.1. Teacher Motivation to Adopt Mobile Technology for Language Learning Activities

All teachers interviewed confirmed motivation as a main driver for integrating mobile technology in EFL learning activities. Some of motivations frequently cited in the interviews with the teachers concerned about the current trends of blended learning practices among Indonesian teachers, perceived benefits of mobile technology

adoptions, the effect of mobile technology on teaching and learning practices and students' characteristics. Teacher M for example, mentioned that the mobile technology facilitated the blended learning approach practices. She also perceived the mobile technology could enhance students' learning of English as a foreign language.

Teachers perceived that the adoption of mobile technology offered many benefits, such as it helped teachers: 1) to achieve instructional objectives, 2) to create enjoyable learning environment, 3) to provide the students with the access to learning resources, 4) to promote critical thinking and most importantly, 5) it enabled students to learn in an informal setting. These perceived benefits from adopting the mobile technology for EFL learning activities were evident in literature. A review by Sung et al. (2016) for example, suggested that the integration of mobile technology for formal and informal language learning provides positive effect of students' learning performance. Moreover, some studies (e.g. Cavus & Uzunboylu, 2009; Heflin et al., 2017; Ismail et al., 2018) revealed the positive impact of utilizing mobile technology and apps on students' critical thinking.

Furthermore, the findings of the current study correspond with the value of mobile learning as found in the earlier study by Hsu et al. (2013), which examined students' reading activity through personalized mobile translation annotations. Using a quantitative method, 108 EFL secondary school students were selected to participate in the study. Two experimental classes, each consisting of 33 students, and 1 control class collecting 42 students participated in this study. The study found that the students who were assigned in the experiment group had more improvement in their reading comprehension ability. This was because the reading activity can be facilitated by personalized annotation.

With regards to students' characteristics, teachers considered that their students were millennials who were close to technology. Teacher M for instance, advised that her students were familiar to mobile technology and were able to adapt to using technology. Teacher M added her students' inquiry about technology remained high.

4.2.2. Perceived Ease of Use

The second theme emerged from the interview related to teachers' perception of the ease of use from the mobile technology. In the interview, teacher participants illustrated how they operated such a technology effortlessly. Teacher A mentioned that mobile technology was already used widely so there were a number of tutorials helping her to operate the technology. Similarly, teacher F confirmed that operating mobile technology was easy and the manual of mobile application in the technology was available online in the internet. The findings supported the earlier research by Yang and Wang (2019) who evaluated the technological acceptance of the machine translation adoption in language learning classroom. Their findings suggested that when using Machine Translator, student translators perceived more ease of use ($M = 3.52$) than usefulness ($M = 3.32$). It was also shown that the r value was significantly positive for all constructs. Except for Perceived Usefulness and Behavioral Intention, it was found to be the highest ($r = 0.53, p < 0.01$), while in contrast, the correlation between Motivation and Behavioral Intention was the lowest. In general, the study has indicated that the teachers' perceived ease of use and perceived usefulness had strong influence on motivation and behavioral intention.

4.2.3. Challenges in Adopting Mobile Technology for Language Teaching and Learning Practices

The analysis of teacher interviews has highlighted three challenges in adopting mobile technology for language teaching and learning practices, such as infrastructure issue, teacher technological knowledge and school policy. Teacher E reported that his efforts to integrate mobile technology for his EFL teaching and learning activities were constrained by weak hotspot signals, limiting his opportunity to access to the internet. Teacher F and E also raised similar concern saying that the access to the internet was limited in her teaching sites. The other issue related to lack of the infrastructure at the school concerned about mobile learning portals. Teacher I affirmed that his students had the access to the internet, yet, there was no online portals dedicated for mobile learning activities. Teacher interviews also highlighted the issue related to teachers' technological knowledge. Teacher E mentioned that many

of his colleagues had not yet incorporated mobile technology due to limited knowledge about the technology. These challenges were interesting but not surprising as a current study by Mulyono. (2016) has discussed such challenges comprehensively. In addition, a study by Inayati (2015) indicated a strong concern of the usage of mobile learning with social media, particularly on the aspects of high costs, practicality and technical issues. Such issues might be of the factors that hindered the integration of mobile technology in EFL learning classroom. Moreover, a study by Howlett (2019) found the role of school policy in promoting the use of mobile technology in English language learning. Situated in Thai secondary schools, Howlett (2019) suggested that the school policy allowed the students to bring their mobile technology devices had promoted the increase of students' self-efficacy of using mobile technology for learning.

5. CONCLUSION

The current study aimed to address three issues: the trends and practices of mobile technology adoption in and outside EFL learning classroom, teachers' responses toward the trends and current practices of mobile technology and teachers' future teaching practice. Teachers perceived motivation as a main driver to incorporate mobile technology. Some of motivations frequently cited in the interviews with the teachers concerned about the current trends of blended learning practices among Indonesian teachers, perceived benefits of mobile technology adoptions, the effect of mobile technology on teaching and learning practices and students' characteristics. Three challenges identified when incorporating technology included infrastructure issue, teacher technological knowledge and school policy. It is thus suggested for schools to support the adoption of mobile technology for language learning with a reliable infrastructure and education policy. The local government as well as school administrations should also provide teachers with sufficient technological training that may help teachers understand the characteristics of mobile technology for foreign language learning and adopt it in their instructional practices daily.

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