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Thai EFL Learners' Use and Perceptions of Mobile Technologies for Writing

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ABSTRACT

Despite the fact that technologies are commonly implemented in language classrooms and widely incorporated by students in their language learning, research on English learners' actual practices of technologies, especially the use outside the classroom, has been mostly limited. The aim of this study was to explore undergraduate English language learners' independent use and perceptions of mobile technologies for their foreign language writing, a productive skill that requires linguistic expertise in various aspects. Data were collected through a questionnaire from 305 English learners who enrolled in various English for Specific Purpose courses in a public university in Thailand. The findings indicated that the participants used various mobile technologies that mainly concerned with linguistic aspects of writing such as online dictionaries, machine translations, and language checker applications to support their foreign language writing. Their primary purposes of using technologies were to achieve accuracy, confidence and efficiency in their writing. This study sheds light on how mobile technologies play a supportive role and offer pedagogical potential in language learners' lives beyond the borders of classrooms.

Keywords: M-learning, writing, technologies, foreign language, independent learning

Introduction

In recent decades, learner approaches to learning have changed dramatically due to the emergence of mobile devices. This learning trend, assisted by the use of portable devices and technologies, is referred to as mobile learning or m-learning (Kukulska-Hulme & Sheild, 2008). M-learning, learning through software applications, programmes, websites or resources that are accessible via electronic devices, has increasingly become an integral feature of language education and has been proven to enhance learners' cognitive capacity, motivation, engagement, learner autonomy and confidence (Kacetl & Klímová, 2019). Research has shown that teachers widely incorporate technological tools that are accessible through mobile devices to motivate and engage learners. However, access to mobile technologies is not limited to teachers. Learners too have mobile technologies at their disposal. They can easily access an endless amount of information, such as online learning materials, online tutorials or online classes. As for writing, mobile technologies can facilitate students in completing their writing tasks and assignments in a number of ways. For instance, learners can access online dictionaries to look for word meanings, translate sentences into the target language or search for information regarding writing topics. It seems that mobile technologies can become an assistant to second language learners when formal support from a teacher is not within reach, especially for a productive skill like writing which requires linguistic expertise in various aspects.

Despite the increasing interest and popularity of the mobile technologies in the teaching and learning of second language (L2), research of m-learning on writing skills has been scarcely explored (Al-Shehab, 2020; Al-Wasy & Mahdi, 2016; Zhang & Zou, 2021) and English language learners' own choice, actual practices and their thoughts of mobile technologies in support of their second language (L2) writing is largely unknown (Umamah & Cahyono, 2022). While teachers can be more meticulous in selecting technologies that are appropriate and useful for their language teaching, learners may be less adept in choosing what is suitable. This study recognised that finding out about learners' current practice and perceptions of mobile technologies will foster 'a culture of listening to learners' (Kukulska-Hulme, 2010, p. 11) so that teachers and educators can continue their role as facilitators in providing guidance both in and outside the classroom. Consequently, to explore learners' actual practice of the use of mobile technologies for writing purposes, the following questions were proposed:

1. What were the types of mobile technologies undergraduate, English as a Foreign Language (EFL) learners in English for Specific Purpose (ESP) courses used to facilitate their L2 writing?

2. What were the undergraduate EFL learners' perceptions of mobile technologies used as supplementary support for their L2 writing?

Literature review

Mobile Learning

Mobile learning (m-learning) is described as the use of mobile devices, such as mobile phones, tablets, laptops, or personal digital assistant (PDA), to support learning without the constraints of time and place (Crompton, 2013; Kukulska-Hulme & Shield, 2008; Sharples et al., 2007). Research has shown that educators and learners embrace m-learning for a number of reasons. First and foremost, m-learning creates greater mobility in terms of space (workplace, home, places of leisure), areas of life (work, self-improvement, leisure), and time (day, night, weekends) as learners can learn anytime and anywhere via handheld devices (Sharples et al., 2007). The second advantage of mobile learning is its ubiquity as it is prevalent and available when needed (Peng et al., 2009). Learners can customise learning with mobile learning in their own environments, address their learning needs or interests, and revise as many times as they need (Kacetl & Klímová, 2019). In addition, mobile learning also creates opportunities for learners to learn collaboratively by interacting with each other or with the teacher regardless of time and location. (Kukulska-Hulme & Shield, 2008). The communicative features of mobile devices enable learners to coordinate tasks by sharing files, materials, data, exporting audio or video files, and discussing topics even when they are in different locations.

A review of mobile learning research from 2015 to 2019 reveals that mobile learning demonstrates tremendous potential for language education and is perceived positively by both teachers and learners (Kacetl & Klímová, 2019). Even though the trend is on the rise, studies of mobile learning to enhance writing in international and Thai contexts appear under-reported in the literature (Al-Wasy & Mahdi, 2016; Chuenchaichon, 2015; Zhang & Zou, 2021).

Writing in Second Language

Within the field of second or foreign language learning, writing is considered to be a cognitively challenging skill for L2 learners (Lee, 2020). It is a complex process that does not only require the ability to communicate

information, ideas and thoughts but also the linguistic ability to use appropriate forms and functions of L2. In most universities, writing is integrated with other skills of English and it is important for university students as they are normally required to engage in academic written work such as essays, reports, lecture notes, research studies, and projects. More importantly, due to its productive nature, students are often asked to produce written work as part of their assessment and, as such, writing skills can be an indicator of students' success. In order to achieve linguistic accuracy and cohesiveness of expressions and ideas, students are required to demonstrate both higher-level skills in generating and planning ideas and lower-level skills such as spelling and word choice (Richards & Renandya, 2002).

Writing is perceived as complicated both in first (L1) and second language due to the details and skills required in the writing process. However, L2 writers may need extra time and effort in completing a composition due to a number of linguistic interferences (Shi, 2012). For instance, because of lexical and syntactic differences in terms of word formation, word choice or sentence patterns between languages, L2 writers cannot always draw on their L1 and translate words or sentences directly into the target language (Pongkasamepongon, 2018; Tsai, 2020). In addition, writing conventions vary across different languages so a proficient writer in one language may struggle in another. For example, English writing normally starts with a topic statement followed by supporting details whereas writing in Chinese begins with the conditions of composition (how, why, when an essay is being written) (Stapleton, 2002). Native Chinese writers may face some difficulties to adapt to unfamiliar patterns on how to present ideas, narrate thoughts and organise information in the English language.

Given the importance and the challenges of L2 writing, it is not surprising that language teachers and learners alike seek assistance from available mobile technologies to facilitate their teaching and learning of L2 writing both in and out of the classroom.

Studies of Mobile Technologies Used in L2 Writing

Because of its great potential in facilitating learning, the literature is replete with studies that examine the usefulness of mobile technologies in second language writing. Giannetti (2016), for example, found reduction of syntactic and semantic errors when 7th grade multinational students incorporated Google Translate as an authorised classroom resource in their Spanish composition class. The students were able to search for new vocabulary and produce compositions with greater length with the help of the software. Despite that, the researcher cautioned that training on the use of Google Translate may be necessary for both teachers and students so that

they can strategically use the translator and not accept all Google Translate output as valid.

Lee (2019) also delved into the effectiveness of machine translation (MT) with 34 English-majored students in a Korean university. However, instead of having students post edit the translation output from MT as in most studies, the students in this study were asked to perform their own translation and used MT to translate their Korean text to English before editing their final text by comparing the two versions. The results showed an increase in the total scores and a significant decrease in the number of lexical and grammatical errors in the students' final versions. The students found MT to be helpful in providing more accurate, contextualised words or expressions and highlighting possible problems in sentence structure and grammar. Despite that, the students were also aware that MT was not without its flaws as it sometimes generated ungrammatical sentences, awkward literal translation, inaccurate writing styles and incorrect translation of words with elusive or double meanings. The study suggested that MT can be an effective supplementary tool in L2 writing but its strengths and weaknesses should be made apparent to students.

Similar limitations of machine translation were also raised in Niño's (2020) study in which thirty-seven learners of different languages were asked to assess the usefulness of OMT output in written and oral production in reading, writing and listening tasks. Although the students perceived OMT as helpful at the comprehension level but found that it had limitations at the production level where there were certain inaccuracies at the sentence level and in cultural items, idioms and colloquialisms in the output.

The role of mobile learning for collaborative writing was also examined in various studies. Zhang and Zou (2021) conducted a systematic review of 34 studies on technologies in collaborative writing from 2009 to 2019. They found that Wiki, a writing programme that allows multiple users to edit the content, Google Doc and offline word processor were the top three resources that were studied in the area of collaborative writing. These studies found that apart from facilitating writing and helping students reflect on their work, digital technologies for collaborative writing also encourage interactions, make learning enjoyable, and boost motivation and confidence. The study concluded that for technologies to be effective, efforts have to come from both developers and learners. Developers need to create technologies that are easy to use while learners must put effort into the planning and reflecting, and be co-responsible for collaborative tasks. The study emphasised the teachers' role in selecting easy-to-use technologies and guiding or training learners on technologies before implementation.

The integration of technologies in the aforementioned studies has demonstrated positive effects on L2 writing. Similar results were also found

in studies such as in Awada (2016), Han and Shin (2017), Lee and Kim (2013), and Tsai (2020), which further emphasis the potential of mobile technologies in the development of writing skills. However, the use of mobile learning in many existing studies tends to be instructor-initiated, meaning that the integration of mobile technologies was selected by and mostly under the control or supervision of the teacher to varying degrees (Kukulska-Hulme & Shield, 2008). A further investigation into existing literature indicates that studies on learners' independent use of mobile learning as supplementary tools for L2 writing is still largely unknown. Those studies that observe learner-driven practice with mobile technologies largely identify the general use of mobile technologies or one particular tool with no focus on particular skills. Steel and Levy (2013), for instance, conducted a large-scale study to survey 587 foreign language students' use of technologies in and out-of-class. The study found that students used several discipline-specific technologies and online dictionaries and web-based translators both in and outside of class.

This study recognised the challenges in L2 writing and, more importantly, it realised that learning is not limited only to the presence of a teacher or in formal classroom settings. Learners also expand their learning outside the classroom with the assistance of modern technologies. In this study, the use of technologies in supporting their writing is considered as mediational tools in accordance with Vygotsky's (1978) notion that all human activities are mediated by the use of physical and psychological tools (Lantolf, 2000). It is the belief that a person or a group of people use psychological tools (e.g., language, signs) to facilitate their learning and use physical tools or artifacts (e.g., mobile technologies) to mediate their construction of knowledge. Consequently, this study explored the ways in which learners made use of mobile technologies as mediational tools in their L2 writing outside the classroom in the hope to help them take greater advantages of mobile technologies.

Methodology

Context and Participants

This study was conducted at a public university in Thailand which was the workplace of the researcher and hence provided a convenient environment in terms of proximity and cooperation from students. The university offers various undergraduate programmes in the disciplines of Social Sciences and Humanities, Science and Technology and Health Sciences.

The data were collected from undergraduate non-English-major students studying in various English for Specific Purposes (ESP) courses in

the first semester of the 2021 academic year. Each ESP course focuses on a particular subject or profession such as English for Political Science, English for Social Workers, English for Health Science, etc. Although writing is not usually the sole focus of these courses, teaching of writing is integrated with other skills and learners are normally asked to write a process paragraph, an article summary, a graph and chart description, or an opinion essay as a task or as a form of assessment in these courses.

Research Instrument

A questionnaire was developed to gain insight into the actual use and perceptions of how learners utilise mobile technologies for writing purposes. For the purpose of this study, mobile technologies refer to software applications, programmes, or resources that are accessible via electronic devices such as computers, laptops, tablets, mobile phones, etc., to support learning. The question items were informed by previous studies conducted by Al-Shehab (2020), Lee (2019), Niño (2020), Steel and Levy (2013) and Zhang and Zou (2021). The questionnaire comprised three main sections. The first section gathers the participants' demographic information such as age, gender, faculty, types of mobile devices used. The second section of the questionnaire seeks data regarding the participants' mobile technological use and their purposes of using technologies for English writing purposes. To identify types of technologies and their purposes of use, a list of 16 technologies and 13 purposes generated earlier from 60 the participants who were representative of the sample were offered along with an open-ended question for students to name any other technologies that were not on the list. The last section of the questionnaire asks the participants' perceptions regarding the usefulness of mobile technologies they used for writing purposes.

The consistency and suitability of question items and research objectives were checked by an assistant professor who holds a PhD in English language teaching. The questionnaire was originally designed in English and then translated into Thai to ensure that students fully understood all items. A university lecturer with assistant professorship in teaching English performed a back translation by translating the Thai-version questionnaire into English and no major discrepancies were found.

A pilot study was conducted with 30 non-participants whose characteristics were similar to the actual participants before data collection commenced. Participants in the pilot study found the questionnaire comprehensible and the number of questions appropriate.

Data Collection and Analysis

To collect the data, an invitation to participate in the study with a unique link to an online questionnaire was sent to the approximate population of 3000 undergraduate students who enrolled in an English for a Specific Purpose course during the 2021 academic year. Three hundred and five students returned the questionnaire, representing a response rate of 10.17% of the estimated population. Data from the close-ended questionnaires were calculated quantitatively to obtain frequencies and percentages. Responses from the open-ended questions in the questionnaire were analysed qualitatively by means of Gibson and Brown's (2009) approaches to thematic analysis by examining commonalities, distinctive features and relationship of the data.

Ethical approval for this study was obtained from the Human Research Ethics Committee of Thammasat University (Social Sciences) prior to the study. Informed consent was obtained from all subjects at the start of the study. All subjects were assured that their anonymity and confidentiality would be protected and that their participation was absolutely voluntary.

Results

Demographic Information

Among the 305 students who completed the questionnaire, 65.6% were females and 34.4% identified as male. The respondents' ages ranged from 18 to 28 years old with a majority (37.4%) being 20 years old. Slightly more than half of the participants (52.8%) were in their second year of university while 32.1% were juniors. Students in their fourth, first and fifth years made up the remaining 15.1% of the participants. Students from the Social Sciences and Humanities discipline were the majority of the sample (52.79%) while 38.36% of them were from the Science and Technology discipline. Only 8.85% of them came from the Health Sciences discipline.

When asked to rate their own English writing ability, only four participants stated that they were able to use English vocabulary and grammar at a high level and made no mistakes when writing. The majority (62%) of the students thought that they had mediocre writing ability while 29.9 % of them felt that they had weak or very weak writing competency. Their self-rated writing ability may be used to explain why 210 of the participants (74.2%) reported using technologies every time and almost every time they had to write in English for their course while 20.8% of students said they often used technologies. 4.6% sometimes sought help from technologies and only one student said they rarely used technologies for writing. Unsurprisingly, almost

93% of students reported using more than one device when writing in English while only 7.42% reported using either a smartphone, a tablet or a desktop computer. Smartphones, tablets and laptops were the top three devices used.

Choices of Mobile Technologies

Out of 305 participants who responded to the questionnaire, 92.8% indicated that they enlisted the help of technologies when writing in English while those who did not require technological assistance with their L2 writing showed a response rate of 7.2%. These responses confirm the global trend of the increasing role of technologies in language learning as evident in the literature. All participants reported using a wide array of digital resources for their L2 writing as shown in Figure 1. Google Translate and Grammarly were two technologies that more than 50% of the participants used in their L2 writing. Google Translate, a free translation service that offers written, voice, image and other types of translations for over 100 languages, has proven to be an invaluable tool for language learning as it can provide translation in real-time or even offline. Google Translate received considerable popularity among the students in this study with 91.5% of them indicating that they used it to help with their English writing. Another popular technology among the students was Grammarly which was preferred by 52.7% of them. Grammarly is an application that uses artificial intelligence (AI) to detect writing errors such as grammatical and spelling mistakes or plagiarism in a user's writing. It also gives suggestions on writing clarity, concision, styles and vocabulary to improves writing. The students' preference for online machine translations and computer-mediated corrective feedback software such as Google Translate and Grammarly was unsurprising given the convenience, immediacy and efficiency they offer to language learners.

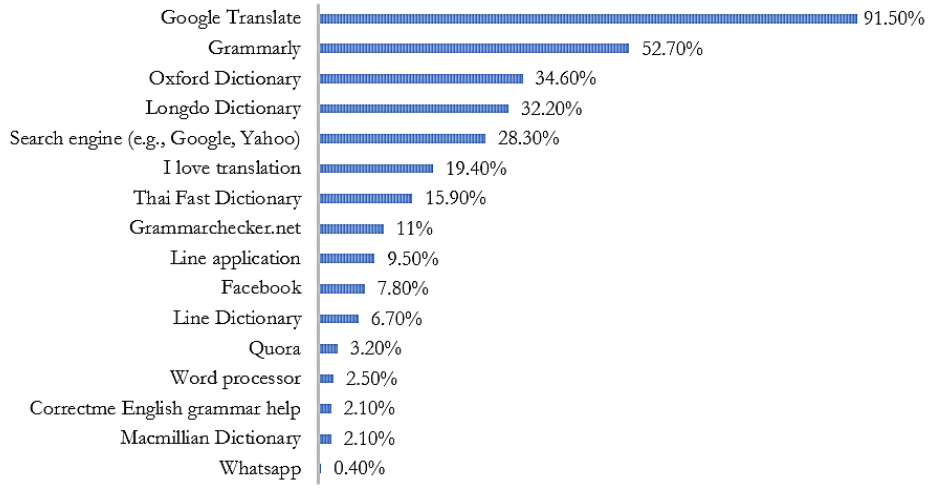
Apart from that, dictionary applications were used by less than 50% of the students. Students used both bilingual (e.g., Longdo Dictionary, Thai Fast Dictionary, Line Dictionary) and monolingual dictionaries (e.g., Oxford Dictionary, Macmillan Dictionary) to facilitate their writing. The Oxford Dictionary application was ranked third most used application by 34.6% of the students while Longdo Dictionary, an English-Thai online dictionary, received similar preference at 32.2%. Although there is a degree of diversity in students' choice of digital technology, the applications used tend to be predominantly information attainment services, such as online translation tools, rather than interactive services such as social media applications (Facebook, Line, WhatsApp, etc.) which received less than 10% of use.

Students were also asked to indicate other digital resources that were not listed in the questionnaire. It was found that online English news outlets both local (Bangkok Post, Nation News) and international (BBC, CNN,

ABC, ALJAZEERA) were sources that students took advantage of in order to increase their exposure to English vocabulary and sentence structures.

Figure 1

Students' Choice of Mobile Technologies for Writing

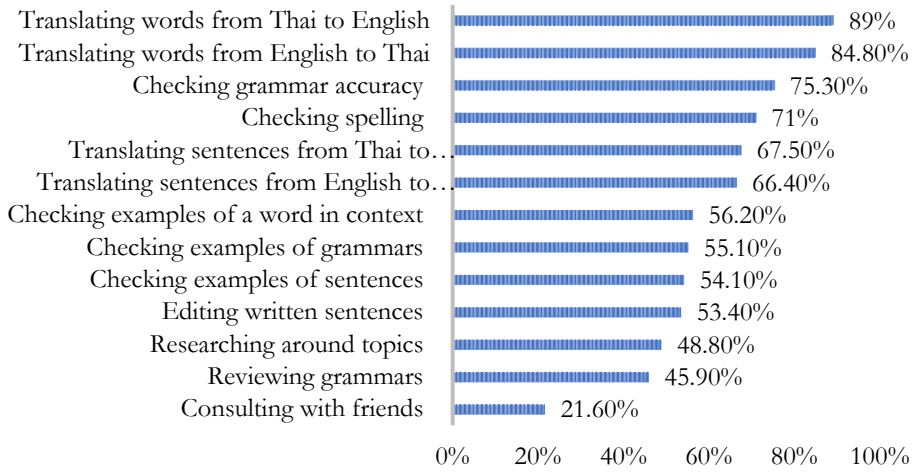


Purposes of Mobile Technology Use

Looking at the purposes for which the students used technological tools for their English writing, the purposes of using technologies in their L2 writing complements their choices of technologies which cluster around translation (Figure 2). The two most popular functions for using technologies for writing were translating words from Thai to English and English to Thai, receiving ratings of 89% and 84.8 % respectively. The third highest value was attributed to ensuring grammar accuracy which 75.3% of students quoted as one of their purposes of using technologies when writing in L2. Other high uptake purposes with more than 50% rating were placed around translating sentences, examining words and grammar in contexts and editing written product. The higher rate of translating and error-correction purposes could imply the students' concern or difficulties with vocabulary and grammatical knowledge. Notably, synchronous communication media (Line, Facebook, WhatsApp) which received only 21.6% rating play a very minor role in students' writing, implying that the surveyed participants rarely took advantage of social networking for their writing.

Figure 2

Students' Purposes in Using Mobile Technologies for Writing



Perceptions Regarding Mobile Technologies

Reasons for Using Mobile Technologies

The last part of the questionnaire investigated students' perceptions regarding their reasons for using technologies for L2 writing, the advantages and disadvantages of technologies and the role of teachers in their use of technologies. When examining students' perceptions, it appears that students adopted writing technologies for three main purposes: linguistic, affective and pragmatic. Their adoption of technologies predominantly pivoted on linguistic purposes as 56.54% of students indicated using technologies for accuracy, improvement in writing and better performance in their writing tasks. Ensuring accuracy was the major concern for students (32.51% out of 56.5%) as they indicated that they used technological tools to help check the accuracy of their own writing in terms of vocabulary, grammar, target language expression, sentence structure and spelling. Most students in this study rated themselves as being moderate in English so it was possible that they sometimes struggled to come up with the right words for the context, using the correct grammar, or sentence structures. Technologies could help them find suitable words for the context or the academic level of writing, detect ungrammatical sentences, and correct minor mistakes such as spelling. Their reasons for using technologies also corresponded to their choice of digital tools which leaned considerably on dictionaries or translation tools. Technologies helped them overcome language shortcomings when creating

written work for their academic courses. Their responses also suggested that they used writing-assistant technologies such as Grammarly or Correctme to check their finished product to ensure the accuracy.

The students' rationale for integrating technologies also relates to affective reasons. Seventy-six students (26.86%) admitted they were not confident with their finished product so they used technologies to help check their work. Limited confidence in vocabulary and grammatical knowledge were mentioned as the main concerns for students. The remainder of 16.60% of students considered the convenience that technologies offered as a pragmatic reason for use. For them, technologies shorten the time and require less cognitive effort to perform a writing task. Through technologies, searching for word meanings or grammatical explanations requires only a simple mouse click and a myriad of information instantly pops up on the screen. This is obviously far more convenient than making the laborious effort of flipping through a printed dictionary or textbook for information which can also be time-consuming. Furthermore, unlike support from teachers, technologies are always on stand-by mode, making them readily accessible whenever and wherever with no delay in providing assistance. Examples of students' views regarding their use of technologies are illustrated in Table 1 below.

Table 1

Examples of Students' Views Regarding Their Use of Mobile Technologies

Reasons	Percentage	Students' comments
Linguistic	56.54%	- To check the grammar and position and types of words that I have written. - To ensure that words and sentence structure are accurate and appropriate to what I was trying to convey. - Technologies are more accurate than consulting textbooks. - Because I was not confident of the accuracy in terms of spelling and grammar so I used technologies to help with my writing.
Affective	26.86%	- Technologies increase my confidence. If I ask my friends too often, I'm afraid they would get annoyed. - I was not sure if the sentences and grammar were correct. Thai and English sentence structure are different so I used technologies to help me. - Because I do not have a good foundation of English, my vocabulary knowledge is not enough to explain what I want to say. Technologies enhance my confidence that what I've written is correct.

Pragmatic	16.60%	- It's more convenient and quicker than using a printed dictionaries or textbooks. - It's convenient, approachable and you don't get told off when you ask questions. - It's convenient and there are different words and examples of sentences that are easy to understand. Sometimes I learned something new from using technologies as well.

Advantages of Mobile Technologies

Students were asked to write in their own words what they considered to be advantages of using technologies for writing purposes. In line with their reasons for incorporating writing technologies, students believed their selected technologies positively facilitated their English writing in three aspects: linguistic, affective and pragmatic.

The predominant advantage concerns linguistic benefits with 88.34 % of students noting that technologies helped them write more effectively and efficiently. Technologies can provide students with correct and authentic examples of words and grammar in contexts or more sophisticated sentences allowing them to constantly revise and correct their writing to achieve a more articulate end-product. The instantaneous nature of feedback given by grammar detection applications also highlights their mistakes, enabling them to notice errors and realise the correct forms. One student compared the help from technologies to "*having a tutor by my side*." According to Vygotsky's sociocultural theory, this emphasises the role of technologies as educational assistants to mediate construction of knowledge in the context where teachers' guidance or help is not available.

A further 6.01% of students stated that using technologies for L2 writing inspired confidence in their work. Several technological resources have been shown to be able to assist students in identifying linguistic errors of their written work. Students felt more confident in their work after it was checked before formal submission. If they had it right by themselves, they felt more confident of their own ability. If there were mistakes, they were also assured that errors were corrected before submission to the teacher. As one student put it: "*Technologies increase my confidence in writing and I learn when my mistakes are highlighted. I remember when I make mistakes and be more careful next time*."

The remaining 5.65% of students saw that digital tools lent further support in providing quick and convenient access to linguistic assistance and information. Commenting on this, one informant said that: "*The advantage of technologies is that it reduces the time in searching for information*' while another student added: '*Technologies save time in learning how to write correctly, translate and check the grammar for immediate use.*"

Disadvantages of Mobile Technologies

Although the benefits are evident, employing writing-related technologies is not without drawbacks. While a small number of students (5.65%) felt that there were not any disadvantages of using technologies in their academic writing, the remaining majority of students (94.35%) acknowledged notable limitations. One main shortcoming is from students themselves. Almost half (49.44%) of the students felt that using technologies for writing tasks may lead to them losing touch with the real process and purpose of education because of the ease and convenience technologies provide. Even though students could take the advantage of technologies to serve the immediate purpose of completing writing tasks, many acknowledged that they did not get to think about their tasks and they missed the opportunity to learn the complexity involved in writing, such as choosing vocabulary in the context, and recognising lexical, grammatical and structural errors.

Apart from this, almost 30 % of students quoted the potential of over-reliance on technologies as their concern of incorporating technologies with their L2 writing. Many fear that they may form a habit of making little effort to apply their existing knowledge or not being careful with typos, punctuation or sentence constructions because they know that technologies can easily assist them with all this. This is probably why 7.49% of students said that technological devices created shortcuts that can adversely affect their confidence to write in the absence of technologies such as during assessments or exams. This is shown by one student who said that, "*It's like being so spoiled for help all the time that you can't help yourself and always have to search for something.*" Another student said that it was like "*looping the loop*" of looking up the meaning of a word, not remembering it and then looking up the word again.

Ineffectiveness of tools is another shortcoming of technologies mentioned by 13.48% of the students. Although the students relied heavily on translation tools, they were aware that these tools could not always provide completely accurate translation. As one student commented: "*It's not always accurate. You have to check with many applications or websites."* The students observed that, at times, these tools were unable to detect and accurately translate idiomatic expressions, figurative language, contextual and cultural words or expressions. They cautioned that examining the accuracy and quality of the output of these machines may be required.

Teacher Guidance on Technology Use

When asked about teacher involvement with their technology use outside the classroom, the majority of students (57.6 %) reported never

receiving any recommendations from teachers of which technologies or how to use them. 42.4% of them did receive some teacher advice. Examples of teacher advice were suggestions for using other functions other than meanings from bilingual dictionaries, cautions of using Google Translate, guidance for using language review functions (grammar check, thesaurus and spell check) in Microsoft Word or suggestions about what can be learned from English news websites.

When asked whether students would like guidance of using technologies for writing from their teachers, an overwhelming 90.81% said that they would appreciate teachers' recommendations. They thought that teachers could use their expertise to suggest reliable technologies for them. One student stated that, "*I would love recommendations on technologies for translation and sentence structure. I would have more confidence if they are recommended by teachers.*" And another commented, "*What teachers recommend must be better than what students find by themselves.*"

Discussion

In the modern era, technology has become a fundamental element in people's lives and it has also naturally proliferated to education. Nowadays, second and foreign language learners can benefit from a wide array of digital resources in the form of learning materials, language-related software programmes, and applications to support their formal and informal learning. The first research questions of this study examined the types of digital technologies EFL students used to facilitate their L2 writing. It was found that the students used a wide range of technologies such as online dictionaries, search engines, grammar and spelling checkers, online writing labs and English news websites as writing support resources. The main tools used in the current study were language translations and writing checkers that helped them increase their vocabulary richness and grammar accuracy as well as fixing their writing errors. This finding echoes that of Steel and Levy (2013) who also found that online language translators and online dictionaries gained immense popularity inside and outside of class among learners of various languages in Australia. The conclusion may be drawn that the pattern and purposes of technology usage of this group of students indicated that they were noticeably more concerned with linguistics aspects rather than content when completing their writing tasks. This accords with earlier observations that writing in L2 tends to be further complicated by issues of proficiency in the target language (Shi, 2012; Tsai, 2020). More importantly, students were able to autonomously select technological resources - perceived as physical tools or artifacts in Vygotsky's sociocultural perspective - to accommodate their needs in the absence of teacher assistance. This study highlights the role

of technologies to fill the distance between 21st century learners' current ability and what they can do with the help of a more capable body, known as Zone Proximal Development (ZPD) (Vygotsky, 1978). To illustrate, tools like online dictionary applications mediate students in conducting a writing task by not only presenting them with meanings of unfamiliar words that are beyond their current knowledge but also by providing them with additional information, such as pronunciation, synonyms, antonyms, and contexts of use, which can be useful in scaffolding their production of knowledge and ultimately improving their output. This assistive aspect of technologies is considered useful to students independent learning outside the classroom when immediate access to teacher or peer support is not available.

The second research questions sought to identify student perceptions of the role of mobile technologies for writing purposes in terms of their reasons for using technologies, advantages and disadvantages of using technologies, and teacher guidance on technologies related to writing. The results showed that the primary reasons for students' selection and integration of technologies and their perceived advantages of technologies in their writing were in line with each other. They used technologies for and saw that technologies had the potential to enhance their accuracy, confidence, and efficiency. The ease of access to technological resources allows learners to improve the quality and accuracy of their writing largely by providing more authentic lexical or grammatical expressions and detecting erroneous weakness in their writing, which subsequently has a positive effect on students' confidence of their written output. In accordance with the present results, previous studies such as those of Giannetti (2016), Lee (2019) and Tsai (2020), also found a link between the use of machine translation and the decrease in lexical and grammatical errors in EFL writing.

Despite the advantages that digital tools offer, it is acknowledged that students' relationship with technologies can sometimes be bitter-sweet. The luxury of technological support may be a trade-off for opportunities to learn from the complexity of the writing process. With the spell check on Microsoft Word, word suggestion and prompt editing service on applications like Grammarly, learners may develop a habit of being less observant of their mistakes and eventually become less able or less confident in producing a piece of writing without the help of technologies. Such an undesirable effect of reduced effort corroborates the concern raised by 68 % of more than 2,000 middle and high school teachers in the U.S. in 2012 who expressed concern that digital tools may diminish the effort students put in their writing (Purcell et al., 2013).

Furthermore, it is recognised that some digital tools cannot always provide reliable language assistance when it comes to nuance meanings or long and complex structures. For example, it is known that transition

machines do not have the complexity to recognise specific cultural items, slang, idioms, or words with dual meanings. Learners who rely on technologies without checking may be led to inaccurate translations or illogical meanings. Such shortcomings of technologies are also evident in Niño's (2020) study which identified inaccuracies in machine translation output of learners of different languages. Consequently, even though students can, to a certain extent, autonomously take advantage of mobile learning to cater for their individual needs in the absence of a teacher, it does not mean that teachers are redundant in learners' independent interaction with their technologies. It is clear that harnessing the advantages of technological tools can also do students a disservice when judicious use is not emphasised. Conversations on how teachers can provide a supportive role without being present in students' use of technologies outside the classroom should become more common in the study of mobile technologies for learning.

Implications

The results from this study could be useful for future research that aims to understand technologies for language learning, especially in out-of-class contexts. A number of implications for practice arose from this study. First, this study constitutes an addition to a small number of studies on students' actual practices of technologies outside the classroom which has received less attention compared to a plethora of studies that explore teacher-initiated or teacher-selected technologies for language learning. In this study, the choice of technology use of EFL students among this group of participants does only not reveal the reality of learners' use of technologies but also reflects students' concerns regarding challenges in L2 writing. By looking at how students negotiate digital technologies as supplementary resources, teachers can learn both student-initiated language learning with technologies as well as their concerns regarding L2 writing so as to provide appropriate support specific to students' needs. Without learning what learners are doing, it would be impossible for teachers and educators to offer assistance to make learners' digital practice and language learning most effective.

Another implication derived from this study is that teachers matter in students' use of technologies even when students are not in the classroom. The findings of this study showed the possibility of students' unhealthy dependency on technologies and unreliability of certain technologies. As students become more reliant on technologies to think and analyse for them, they may fail to evaluate the quality or the output of the tools they are using. Teachers have an important role in raising these issues with students. First, teachers should always emphasise the real purposes of assignments or tasks

to remind students that the benefits from technologies should not be gained at the expense of learning important skills. Second, teachers should equip students with necessary skills to evaluate the quality of virtually inexhaustible technological resources to mitigate negative consequences and help students become insightful and responsible users of technologies.

Conclusion

This paper highlights the role of technologies that have become indispensable facilitators to learning outside the classroom. It showed that students used multiple technological resources to gain linguistic accuracy, confidence, and efficiency in their L2 writing when teacher support is unavailable. This study adds to the understanding of 'the changing landscape of technology-supported learning' (Kukulska-Hulme, 2009, p.157), which is rapidly changing as learners become more active in the fast-evolving phenomenon of technologies. Acknowledging learners' independent use of technologies can be a catalyst for further intervention so that teachers can continue their role as facilitator to provide appropriate support and assist learners in making informed choices and becoming responsible users of technologies.

Limitations and further research

While this study deepened our understanding of students' interaction with technologies for writing outside the classroom, there were a number of limitations. First, collected data were largely quantitative and relied on self-reported data. Future research may benefit from collecting the data from other qualitative methods, such as observations or interviews, which would expand the complexity of students' use and perceptions regarding technological tools and add more details to the study. Another limitation is the limited number of participants, making generalisation of the results impossible. A larger sample may enhance the diversity of the types and purposes of digital resources used. In addition, it would be of interest to replicate this study with different groups or different levels of students. The patterns of technological resources used may vary according to specific needs or academic disciplines. For example, students with higher proficiency may use fewer language-enhanced tools. Finally, it is noted that the majority of mobile technologies preferred by the students in this study are available free of charge. This could be a factor that affects students' choice of using certain technologies. Further studies should be undertaken to explore factors that determine students' selection of mobile technologies in order to better

understand how students take control of their language learning with the help of technologies.

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Appendix

Questionnaire

This questionnaire aims to gather information on the use of mobile applications in support of English writing and the perceived benefits and satisfaction by English as Foreign Language learners.

The word 'technology' in this questionnaire refers to software applications, programmes, or resources that are accessible via electronic devices, such as computers, laptops, tablets, mobile phones, etc., to support English writing.

Section 1: Demographic information

1. Gender: ◯ Female ◯ Male
2. Age: _____
3. Faculty: _____
4. Year of study: ◯ 1 ◯ 2 ◯ 3 ◯ 4
5. Which English for Specific Purpose course are you taking this academic year (2021)? _____
6. How would you rate your English writing ability?
   - ◯ Excellent (Able to use vocabulary and grammar appropriately, make no writing errors)
   - ◯ Good (Able to use vocabulary and grammar appropriately, make few writing errors)
   - ◯ Mediocre (Use vocabulary and grammar inappropriately sometimes, make some writing errors)
   - ◯ Poor (Always use vocabulary and grammar inappropriately, make several writing errors)
   - ◯ Very poor (Unable to use proper vocabulary and grammar, make a lot of writing errors)

Section 2: Mobile technology use

7. When doing a English writing task or assignment, do you use technologies to help you with writing assignments?
   ◯ Yes ◯ No

8. Which device(s) do you use when writing in English? Please tick all that apply.
   - ◯ Smartphones
   - ◯ Portable PDAs
   - ◯ iPads
   - ◯ Galaxy Tab
   - ◯ Desktops
   - ◯ Laptops

◯ Others (please specify) _____

9. Which of the following do you use to support your English writing? Please tick all that apply.

◯ Google Translate
◯ Ilovetranslation.com
◯ Longdo Dictionary
◯ Line Dictionary
◯ Thai Fast Dictionary
◯ Oxford Dictionary
◯ Macmillan Dictionary
◯ Grammarly
◯ Grammarchecker.net
◯ CorrectMe Grammar Help
◯ Search engine (e.g. Google, Yahoo)
◯ Quora
◯ Line
◯ Facebook
◯ WhatsApp
◯ Word Processor

10. For what purposes do you use technologies to support your English writing? Tick all that apply.

◯ Translating a word from Thai to English
◯ Translating a word from English to Thai
◯ Translating a sentence from Thai to English
◯ Translating a sentence from English to Thai
◯ Checking spelling
◯ Looking up examples of word usage
◯ Looking up examples of sentences
◯ Looking up examples of grammar usage
◯ Revising grammar
◯ Checking the correctness of sentences that you have written
◯ Searching information of writing topics
◯ Revising sentences that you have written
◯ Consulting with friends
◯ Others (please specify) _____

11. If you use other technologies that are not listed in Question 9, please specify the technologies that you use and your purpose for using them.

_____

12. How often do you use technologies to help you with English writing?

◯	Always	(100%)
◯	Almost always	(80%)
◯	Often	(60%)
◯	Sometimes	(40%)
◯	Almost never	(20% or lower)

Section 3: Perceptions of technology use

13. What are the reason you use technologies when writing in English?

_____

14. What are the advantages of using technologies when writing in English?

_____

15. What are the disadvantages of using technologies when writing in English?

_____

16. Have you ever encountered problems when using technologies for English writing? (For example, an application gives incorrect translation of long sentences.) If yes, please specify.

_____

17. Have your instructors ever recommended any technologies for English writing?

◯ Yes ◯ No

18. If you answered yes in Question 17, please specify the technologies that your instructors recommended and whether they offered recommendations on how to use the technologies.

_____

19. Would you like your instructors to recommend technologies for English writing?

◯ Yes ◯ No

If yes, why?

_____

20. If you have further comments regarding the use of technologies for English writing, please specify below.

_____

This is the end of questionnaire.

Thank you for your cooperation.