



**A SURVEY OF ELECTRONIC-BASED DICTIONARY
USAGE OF ENGLISH MAJOR STUDENTS**

BY

MR. THOSSAPON POTHIPHOKSUMPHUN

**AN INDEPENDENT STUDY PAPER SUBMITTED IN PARTIAL
FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS IN CAREER ENGLISH FOR
INTERNATIONAL COMMUNICATION
LANGUAGE INSTITUTE
THAMMASAT UNIVERSITY
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ENTITLED

A SURVEY OF ELECTRONIC-BASED DICTIONARY USAGE OF ENGLISH
MAJOR STUDENTS

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ABSTRACT

The study investigated the main purposes of using a monolingual electronic dictionary (e-dictionary) among English major students and their attitudes towards monolingual e-dictionary usage.

100 undergraduate students at a public university in Bangkok completed an online self-administered questionnaire adapted from Yorsangrat (2012) and Asswachaipaisan (2014). The collected data was analyzed using descriptive statistics, namely mean, frequency, standard deviation, and percentage.

The results from the questionnaire showed that the top three main purposes of the e-dictionary usage were to find a word's meaning ($M = 4.78$, $SD = .53$), to find synonyms and antonyms of a word ($M = 3.97$, $SD = .87$), and to check spelling ($M = 3.90$, $SD = 1.10$).

In addition, the respondents strongly agreed that e-dictionaries could help them search for a target word more rapidly than paper-based dictionaries ($M = 4.77$, $SD = .66$), were easier to use ($M = 4.67$, $SD = .78$), and were a better aid for learning English than paper-based dictionaries ($M = 4.04$, $SD = .89$).

Keywords: monolingual dictionary, online dictionary, attitudes towards electronic dictionary, English major students

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Mr. Thossapon Pothiphoksumphun

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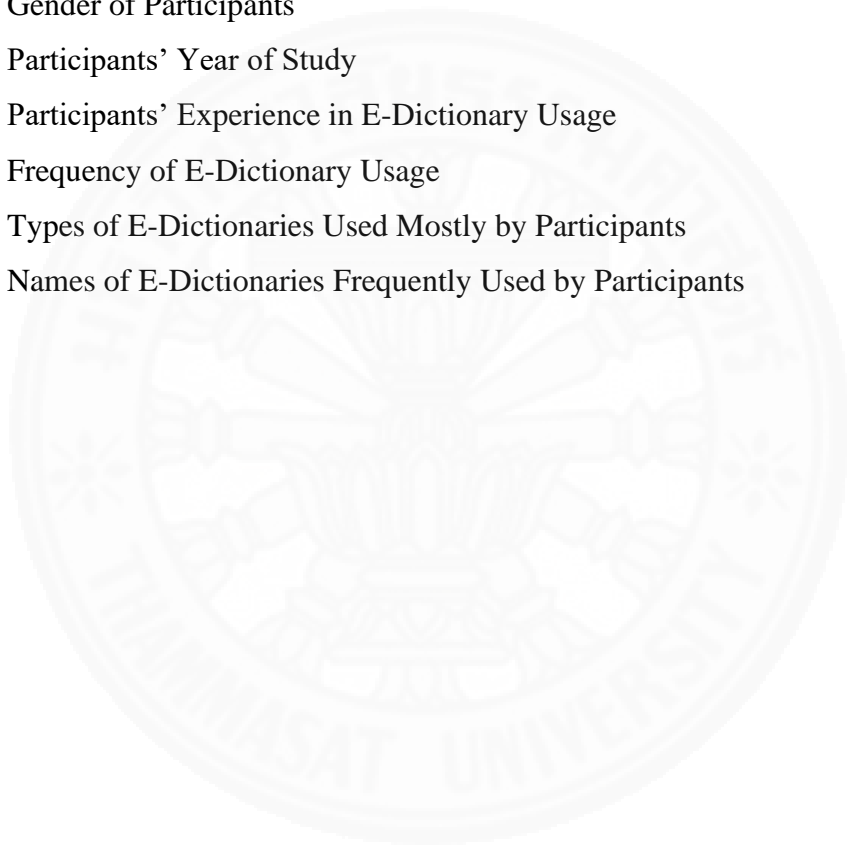
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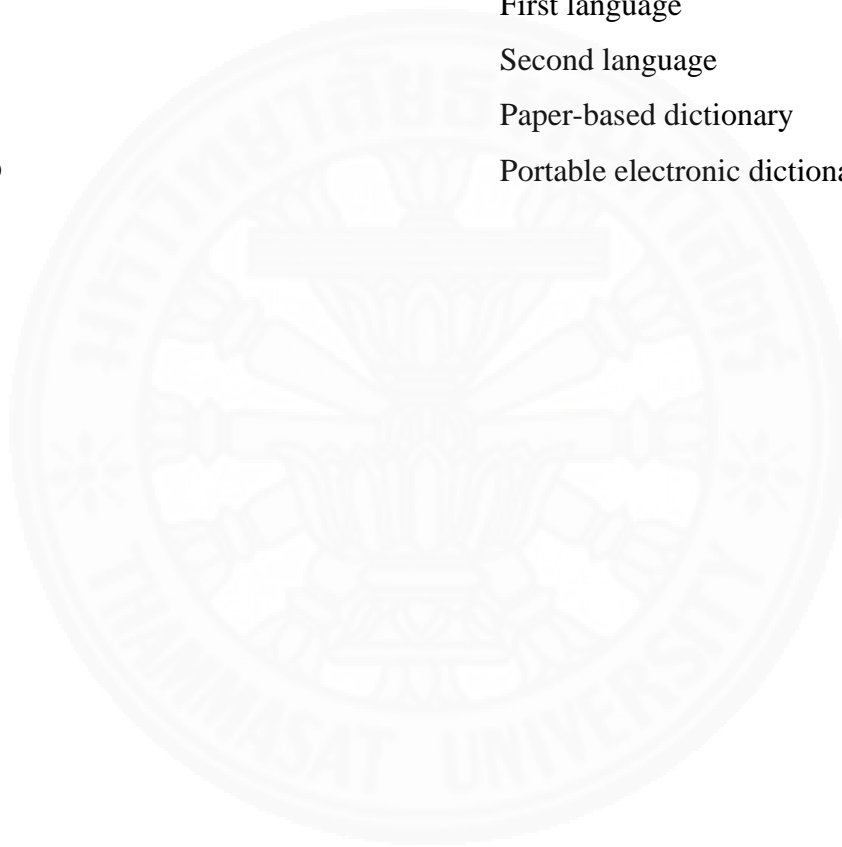
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LIST OF ABBREVIATIONS

Symbols/Abbreviations	Terms
CD-ROM	Compact disc read-only memory
E-device	Electronic device
E-dictionary	Electronic dictionary
EFL	English as a foreign language
L1	First language
L2	Second language
PD	Paper-based dictionary
PED	Portable electronic dictionary



CHAPTER 1

INTRODUCTION

1.1 Background and Rationale

Learning any second language (L2) usually requires much attention to its vocabulary as this is a gateway to mastering the four fundamental language skills, i.e. speaking, writing, reading, and listening. In 1972, Wilkin (cited in Lessard-Clouston, 2012, p. 1) once stated that “while without grammar very little can be conveyed, without vocabulary nothing can be conveyed”. This statement emphasizes the importance of vocabulary in language learning. As a dictionary is an indispensable source of information, enabling learners to access or enrich vocabulary knowledge (e.g. phonetics, pronunciation, grammatical usage, and example of the word in a sentence) which goes beyond merely looking up the semantic meaning of a target word, it is, therefore, a crucial and valuable source for language learners in learning vocabulary and acquiring language proficiency.

Without a doubt, the most well-known vocabulary strategy for dealing with unknown words for non-native speakers is dictionary usage (Wolter, 2015). This term refers to an action that is a search with an attempt to know something the actor is unsure about or does not know before regarding language usage (Wiegand, 1998 cited in Welker, 2010). The needs for study aids in an L2 class always exist, causing the dictionary to become an indispensable reference source. The trend of investigation in dictionary has inspected extensively until the present (Tomaszczyk, 1979; Baxter, 1980; Béjoint, 1981; Laufer & Hadar, 1997; Roongrattanakool, 2009; Sumritpol, 2009; Boonmoh, 2010b; Gainey, 2010; Yorsangrat, 2012; Al-Qudah & Al-Qudah, 2014; Asswachaipaisan, 2014; Ding, 2015; Alhaisoni, 2016; Alhatmi, 2019). This examination looks at various aspects, for example, translation task (Roongrattanakool, 2009), writing task (Gainey, 2010), reading task (e.g. Boonmoh, 2010b; Yorsangrat, 2012), and general dictionary usage (e.g. Asswachaipaisan, 2014; Alhaisoni, 2016).

Although several investigations into dictionary usage behavior among undergraduate students from Thai elite universities have been carried out, most of those studies (e.g. Roongrattanakool, 2009; Sumritpol, 2009; Gainey, 2010; Yorsangrat,

2012) might be considered obsolete because their research focused on portable electronic dictionaries (PEDs), the most preferred dictionary at the time but currently an out-of-date learning device. The new forms of electronic dictionaries (e-dictionary) such as online and offline applications on smartphones, tablet computers, and online dictionary available on various websites can make the use of dictionaries much easier and faster than PED. For example, Chotkarnchanawat, Liangpanit, and Wasuntarasophit (2017) found that the superior features of using an online dictionary which enabled them to outperform paper-based dictionaries (PDs) include user-friendliness, versatility, convenience, and richness in automatically updated contents.

The lack of literature on this issue is a major motive for the current investigation. Also, the trend in using new electronic devices (e-device) such as smartphones, tablets, and computers as an e-dictionary in an educational setting has gained more popularity, leaving bulky PDs and old-fashioned PEDs behind. This study, therefore, attempts to provide an up-to-date investigation of the purposes of word searches on new e-devices, along with attitudes towards e-dictionary usage of English major students who are regarded as advanced or competent English learners in Thailand to fill the research gap regarding new e-learning devices.

1.2 Research Questions

This study attempts to answer the following research questions:

- 1.2.1 What are the top three main purposes of using a monolingual electronic dictionary among English major students?
- 1.2.2. What are the attitudes of English major students towards monolingual electronic dictionary usage?

1.3 Research Objectives

The objectives of this study can be stated as follows:

- 1.3.1 To find out the top three main purposes of using a monolingual electronic dictionary among English major students
- 1.3.2 To explore the attitudes towards monolingual electronic dictionary usage among English major students

1.4 Significance of the Study

This study aims to find out the top three main purposes of using a monolingual e-dictionary among English major students, and the attitudes towards e-dictionary usage. The information from insiders, i.e. English major students, may be useful for instructors in various educational settings, as they can decide to choose proper material that will encourage dictionary usage matching the specific task in the classroom. Lexicographers may also benefit from this research by using the findings to enhance and compile more information on specific aspects, which learners had reported, for their database in order to better respond to language learners' requirements.

1.5 Definition of Terms

The definitions of the terms of this study are as follows:

- 1.) **Students** refer to 100 Thai undergraduate English major students who were freshmen, sophomores, juniors, and seniors in a special program at the Faculty of Humanities at a prestigious public university in Bangkok, Thailand in the academic year of 2019.
- 2.) **Electronic dictionary** refers to online/offline dictionaries available in the form of a mobile and/or tablet application, and available on the internet accessed from any web browser.
- 3.) **Monolingual dictionary** refers to an English-English dictionary.

1.6 Organization of the Study

This research is divided into five chapters as follows:

- Chapter I introduces the background and rationale of the study, research questions, research objectives, significance of the study, and definition of terms, as well as the organization of this study.
- Chapter II provides a review of the literature of previous related studies, which is subdivided into five sections.
- Chapter III discusses the study's participants, materials, procedures. It also introduces the research's data analysis.
- Chapter IV reveals the results of the current study.

- Chapter V provides the discussion, conclusion, limitations, and recommendations for further study.



CHAPTER 2

REVIEW OF LITERATURE

This chapter reviews the literature and research studies in relation to the dictionary usage of English as a Foreign Language (EFL) learners, and their attitudes towards dictionary usage. The content is separated into five parts as follows:

- 2.1 Dictionary usage
 - 2.1.1 Using a dictionary for receptive activities
 - 2.1.2 Using a dictionary for productive activities
 - 2.1.3 Using a dictionary for vocabulary learning
- 2.2 Problems when consulting a dictionary
- 2.3 Choices of dictionary in the digital age
- 2.4 Electronic dictionaries
 - 2.4.1 Portable electronic dictionaries
 - 2.4.2 Dictionary software on a compact disc
 - 2.4.3 Internet dictionaries
- 2.5 Previous related research

2.1 Dictionary Usage

Generally, before consulting any reference source, learners are encouraged to utilize their acquired word guessing strategies (e.g. guessing part of speech, analyzing word part, affix, or root) to guess the meaning of a word (Anderson, 1999 cited in Sumritpol, 2009). However, contextual clues sometimes do not sufficiently increase the understanding of an unfamiliar word's meaning. Furthermore, learners might overlook or forget some useful vocabulary learning strategies they had already been taught when they were young (Schmitt, 1997). Consequently, a dictionary is recognized as the last resort, which is especially favorable for learners who have bad sense in guessing words from the context (Nation, 2013). In addition, even EFL learners who are good at guessing may need to check whether their guess is right with the dictionary (Hulstijn & Atkins, 1998).

Schofield (1982) has differentiated dictionary usage into two objectives: for comprehension, and production. Later, Nation (2013) added another objective—

dictionary usage for learning. Comprehension deals with decoding unknown words or slightly known words to interpret or confirm the real meaning in that particular context. This objective often involves receptive tasks related to reading, listening, and translation of the second language (L2) into the first language (L1). Meanwhile, encoding words in production often deals with writing, speaking, and translation of L1 into L2. Lastly, using a dictionary in learning involves selecting unknown words or partially known words to learn further information such as part of speech or collocation.

To understand what it means to know a word, the definition of word knowledge needs to be clarified. Word knowledge refers to how well a learner knows the information of a word. Armbruster, Lehr, and Osborn (2001) divide degrees of word knowledge into three levels: unknown, acquainted, and established. The first level (i.e., an unknown level) means that the word is totally new to the learner. They neither recognize nor understand the meaning(s) or linguistic features of the target word. As for the second one (i.e., an acquainted level), the learner is somewhat familiar with the target word. They can remember, and partially identify or utilize, some linguistic features of the word. The third, namely an established level, refers to when a learner can immediately recognize a word's meaning and be able to utilize its linguistic features correctly. In addition, Thornbury (2002) listed several prominent characteristics that were considered as a "known word" or "established word" to the learner. As illustrated below, the learner must:

- Be able to recognize the word in spoken and written forms
- Know the different meanings of the word
- Be able to identify the word's part of speech
- Be able to pronounce the word properly
- Know the word's collocations
- Be able to use the word correctly within a sentence in an appropriate grammatical form (word usage)
- Know the frequency of the word

If the learner cannot accomplish most of these, this would mean that the learner partially knows or is merely acquainted with some aspects of the word.

2.1.1 Using a Dictionary for Receptive Activities

Getting information about meaning has always been the main purpose of dictionary usage in receptive tasks such as listening, reading, and translation from L2 into L1 as shown in many studies (e.g. Boonmoh, 2010b; Asswachaipaisan, 2014). Other useful aspects about vocabulary provided by the dictionary, such as grammatical usage, spelling, synonyms, and antonyms, seem to mostly concern the production or learning. Generally speaking, a user searches for the meaning of unknown words they need to comprehend or to affirm the correct meaning or their guess on the meaning of slightly known words while doing these receptive activities on the dictionary (Nation, 2013).

In general, dictionary usage mostly occurs during reading activities. However, it may take place in listening tasks as well. A survey conducted by Asswachaipaisan (2014), for example, showed that most of her respondents frequently consulted an online dictionary when listening to music or news in English.

Schofield (1999) commented that dictionary usage in listening activity may occur in two means: Firstly, the user jots down unfamiliar words, and looked them up later. Secondly, the user stops concentrating on listening to ongoing speech while looking up words at the same time, then starts listening attentively again after finishing the look-up process.

In addition, Schofield (pp. 13-14) proposes steps that would be normally taken whenever encountering unknown and/or slightly known words regarding receptive tasks as follows:

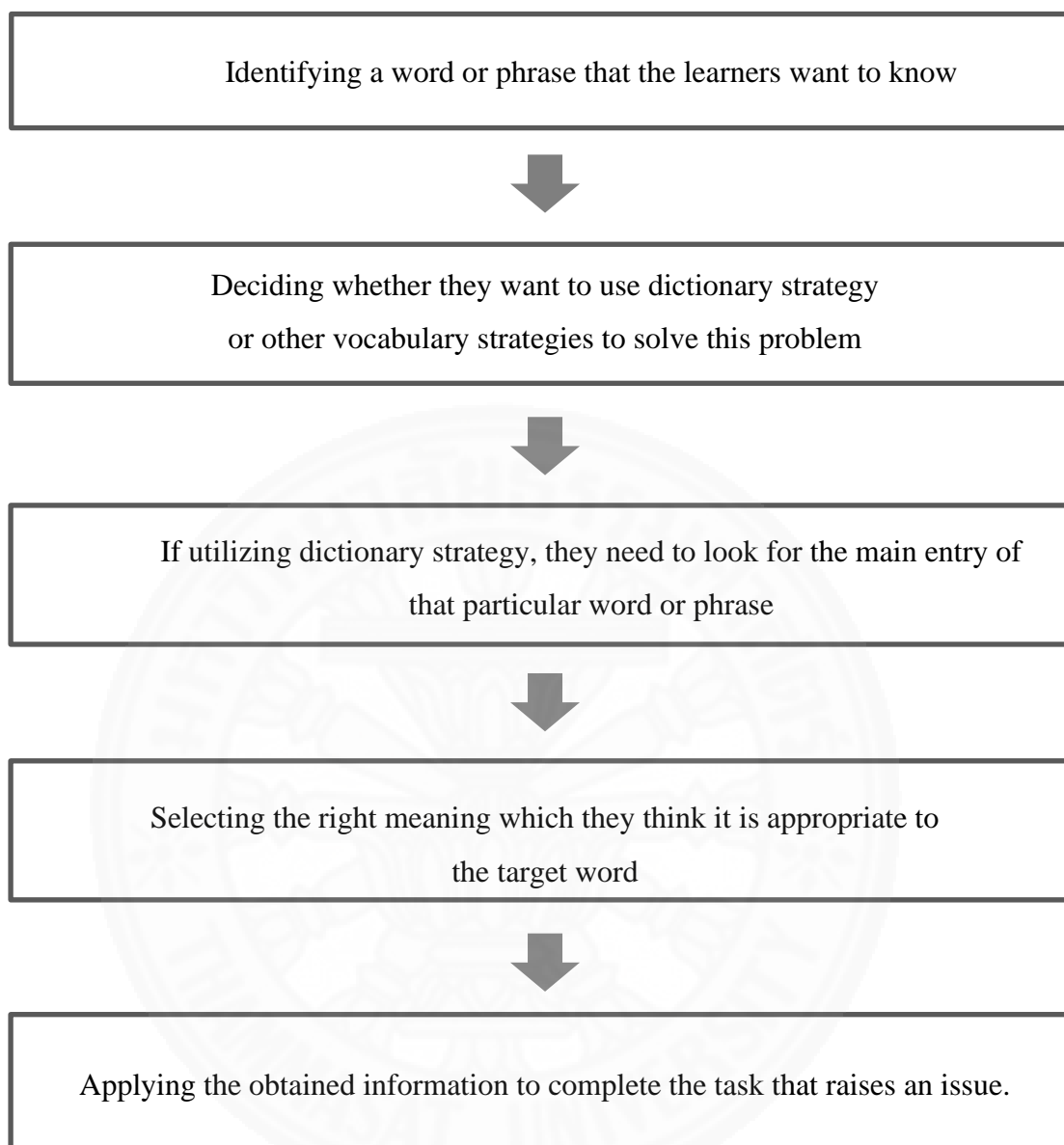


Figure 2.1 Process of Dictionary Use in Receptive Activities by Schofield (1999, pp. 13-14).

In summary, after locating a word or phrase that the learner wants to know, the learner can choose whether they want to consult a dictionary, employ other vocabulary strategies available at that time or even skip that word. For instance, if listening to a native speaker, the learner can ask for help directly rather than using the dictionary. Hence, in many cases, dictionary usage is not the only way to solve problems regarding language use.

2.1.2 Using a Dictionary for Productive Activities

As previously mentioned, other useful information about vocabulary, such as grammatical usage, spelling, pronunciation, synonyms, and antonyms, is likely to be obtained in activities relating to productive tasks such as writing, speaking, or even translation from L1 to L2. Learners might seek out unfamiliar words in order to write, speak, or translate by finding an appropriate word form to convey messages to a receiver.

Generally, dictionary usage for speaking is rarely employed relative to writing or translation. As can be seen in the Ramos's study (2005), only one per cent out of a total of 98 participants reported using a dictionary in speaking tasks, making this aspect rank the lowest. In contrast, dictionary consultation for translation received the highest score at 44.9%.

Although other aspects of information regarding vocabulary can be obtained with these activities, understanding the meaning of the target word is still the priority. Chotkarnchanawat et al. (2017), who conducted a study of online dictionary usage for writing a thesis, found that participants mostly used an online dictionary for finding definition ($M = 4.73$). However, the average mean of other aspects, which were grammatical usage, word choice, spelling, synonyms and antonyms, and collocations, followed closely as reported by the participants with means of $M = 4.36$, $M = 4.36$, $M = 4.32$, $M = 4.14$, respectively.

2.1.3 Using a Dictionary for Vocabulary Learning

Dictionary usage can help learners enrich their vocabulary bank and reap the benefit from this process for better production in the future. Nation (2013) argues that activities involving vocabulary learning normally occur when a learner selects unknown or slightly known words with the aim to acquire further information. The learner might also look for information on grammatical usage, part of speech, pronunciation, and spelling. This process can contribute to a better performance in production and reception regarding language use and language acquisition. A study of e-dictionary usage regarding pronunciation task conducted by Metruk (2017), for example, showed that respondents used an e-dictionary fairly often to practice how to

pronounce target words properly, leading these practitioners to improve their pronunciation.

Generally, users' demands vary in accordance with tasks (Nesi, 2013), in line with the statement of Svensen (1993 cited in Alhaisoni, 2016, p. 36) that "the types of linguistic information needed in the dictionary are of course determined by the types of linguistic activity". For example, a translator must know the meaning of every word in the context. Consequently, they are dependent on a dictionary for meanings, word of choice and other relevant aspects such as collocations; meanwhile, a reader browsing through or quickly looking the content for enjoyment might only read for the theme of a story and overlook numerous words they are not familiar with. And a speaker looking for the correct word stress would only search for pronunciation and spelling, ignoring other features in the dictionary.

Aside from the aforementioned findings, there is another interesting point worth looking at. According to previous related studies (Marello, 1987, and Hartman, 1999 cited in Nesi, 2013), advanced students utilized dictionaries mostly for productive activities i.e. writing, in contrast to less proficient students who utilized the dictionaries mostly for receptive tasks like reading. Hulstijn and Atkins (1998) contend that this might occur because advanced learners are more self-reliant when experiencing easy-to-guess unknown words, resulting in the use of other vocabulary strategies. Béjoint (1981) notes that his advanced users more often consulted a monolingual dictionary for written activities than oral ones. Therefore, the purposes of word searches when resorting to the dictionary might vary depending on a given task, along with learners' L2 proficiency level. Fan (2000) states that the more proficient a language user is, the more varied the usage of a dictionary.

In conclusion, knowing the reasons for dictionary usage could help the researcher anticipate the patterns of information participants are inclined to report in the questionnaire. For example, if respondents reported that they consulted a dictionary frequently in reading tasks, their marks would go mainly for the meaning. On the other hand, other aspects of information would tend to be reported if participants consulted a dictionary for productive tasks as suggested by the literature.

2.2 Problems When Consulting a Dictionary

Many studies (e.g. Baxter, 1980; Roongrattanakool, 2009; Yorsangrat, 2012; Hamouda, 2013; Abbasi, Ahmad & Mohammed, 2019) have determined that one of the major obstacles in using a monolingual dictionary was the complexity of definitions, in line with the statement of Nesi and Meara (1994 as cited in Laufer & Kimmel, 1997). Since searchers did not understand the definition, they were forced to consult a bilingual dictionary instead. This might be due to the proficiency level of the dictionary users. Hayati argues that unsuccessful attempts in consulting a monolingual dictionary led users to turn to a bilingual dictionary (Hayati, 2005). Other problems were difficulty in understanding phonetic symbols (Yorsangrat, 2012; Abbasi et al., 2019), and not finding the sought-after words. The latter often occurred to users who went to the wrong place in the headword list or entry, leading to misunderstanding (Schofield, 1997; Bogaards, 1998). The above-mentioned problems may contribute to language learners' negative attitudes toward using a monolingual dictionary.

2.3 Choices of Dictionaries in the Digital Age

Thanks to the rise of the internet and digital devices, people living in the 21st century have become very dependent on them. This has changed the way people obtain all kinds of information, even the meanings of words. Investigations of e-dictionary usage have been increasing in recent years, since users' dictionary-using behaviors have radically transformed from being paper-oriented to digital-oriented.

Some investigations, both international (Lou & Li, 2012; Al-Qudah & Al-Qudah, 2014) and domestic (Sumritpol, 2009; Boonmoh, 2010b), have found that most of participants preferred a PED to a paper-based dictionary (PD). Applications on smartphones and tablet computers as well as sophisticated internet networks have made the use of a dictionary much easier and faster than their predecessors (i.e., PD and PED). They are also capable of offering smart search in those devices without prerequisite training in dictionary use, in contrast to PDs. Hence, almost all major PD publishers now have paper-based content available online in a paid or even free version. Therefore, there are more dictionaries available in the market for learners to use to satisfy their curiosity than ever before. As a result, online dictionaries and smartphone dictionaries have become more popularity than PED, as shown in many recent studies (e.g.

Yorsangrat, 2012; Asswachaipaisan, 2014; Alhaisoni, 2016). In the Yorsangrat (2012) study, the findings revealed that the most frequently used dictionary was an online dictionary, followed by monolingual PD and a bilingual PD respectively.

One of the reasons for the increasing popularity of the new forms of e-dictionaries is that the variety of information available typically exceeds that available in PEDs and PDs. For instance, there are more visual features, e.g. pronunciation videos and illustrations. In addition, users do not need to be trained in how to use them — one of the drawbacks of paper-based versions — because the desired results pop up after typing just a few letters of the word in a search bar and it helps to correct misspelling words. Also, learners of English language are inclined to use e-dictionaries rather than PDs when they need to find unknown words due to their speed and portability (Dashtestani, 2013). The numerous advantages of applications and online dictionaries make them preferable for language learners (Joseph & Uther, 2009).

In addition, several studies also revealed that learners nowadays not only count on one type of dictionary like in the past, but rather make use of several different types of dictionaries. According to Roongrattanakool (2009), the results of her work showed that most participants used a monolingual dictionary together with a bilingual dictionary. The majority of Ding's (2015) participants reported that almost all of the dictionaries they used were in the digital form, including dictionary applications. Also, they frequently used several reference types simultaneously. Wolter (2015) also found that most of his participants utilized a PD in conjunction with an online one. Nevertheless, similar to the study of Truong (2012), Wolter's participants heavily relied on online dictionaries because of their ease of use and portability.

2.4 Electronic Dictionaries

Dictionaries are classified using many criteria. Nesi (2008) divides dictionaries into two formats: paper-based dictionaries (PD) and electronic-based dictionaries (e-dictionary).

Nesi points out that e-dictionaries normally come in three types: a hand-held dictionary, dictionaries on a compact disc read-only memory (CD-ROM), and a dictionary available on the internet. As shown in Figure 2.2., Boonmoh (2010a, p. 59) also categorized e-dictionaries into three types: portable electronic dictionaries (PED)

as a subset of hand-held dictionaries, CD-ROM dictionaries, and internet dictionaries. Later, Rezaei & Davoudi (2016) argue that we could classify a mobile dictionary, a recent form of an e-dictionary, as a subset of hand-held dictionaries since a mobile phone is a portable device.

Nesi (2008) also elaborates on the main difference between paper-based and electronic-based dictionaries, which is their management of content storage. In addition, features and vocabulary items included in e-dictionaries normally exceed those in paper ones.

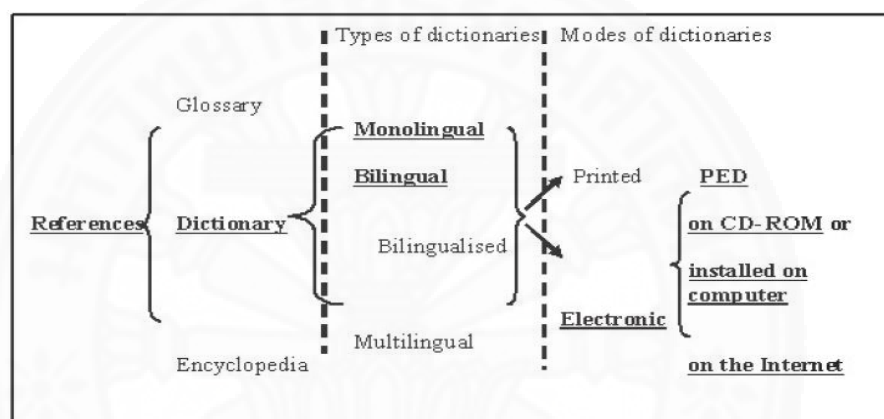


Figure 2.2 Lexicography and its Branch by Boonmoh (2010a, p. 59)

2.4.1 Portable Electronic Dictionaries

Portable electronic dictionaries (PED) are also known as hand-held electronic dictionaries (Lou & Li, 2012). PEDs were once very popular in educational settings, and widely used in Asia, especially in South East Asia and East Asia (Nesi, 2008; Boonmoh, 2010a; Chen, 2010). Midlane (2005) offered the opinion that this was due to the affordability and availability of the products in those regions.

Although PEDs are more expensive than PDs, they have numerous advantages over a traditional dictionary, with the primary one being portability. Of the nine interviewees in Sumritpol's (2009) study, for instance, a majority of participants mentioned that they decided to use a PED over a PD because of the convenience and portability, even though the quality of its content was far inferior. Another prominent advantage was speed. Looking up words in an e-dictionary takes much less time than in a print version as shown in Filer's (2017) study. He reported that participants who

had a PED only took 10 minutes 3 seconds to complete his pre-test. Meanwhile, students who used a PD finished the task at 12 minutes 25 seconds.

Although a PED has numerous advantages, there are also disadvantages as reported by users in many studies. The first one is a scarcity of information. Although it was more light-weight than a PD, its memory was limited: at that time, PED only stored high frequency words and only showed a couple of definitions of polysemous words as well as a few examples. It can be concluded that a PED was inferior to a PD with regard to the quality of its content (Chen, 2010).

The most recent developments in technology have led to the use of mobile phones for lexicographical purposes. E-dictionaries have also become available on mobile devices such as smartphones or tablet computers.

2.4.2 Dictionary Software on a Compact Disc Read-Only Memory

Nesi (2008) argues that a CD-ROM dictionary was preferred amongst language teachers to PED. In the view of Nesi, the main reason is that dictionaries on a disc could be produced cheaply and could be installed on as many computers as users wish. In contrast, a PED was costly and designed specifically for personal use. She added that a computer screen was large enough to enable several students and their teachers to view and discuss a dictionary entry together. Rizo-Rodriguez (2004 cited in Nesi, 2008) listed some prominent features of dictionaries on CD-ROM as follows:

- Advanced search functions with wildcards, filters, and Boolean operators, a term used to combine search terms or items, in order to broaden or narrow the results of a search. Typical Boolean operators are AND, OR, and NOT (Boonmoh, 2010a).
- Sound feature. Also, enables users to record and replay their own pronunciations as they wish
- Audio clips
- Illustrations
- Annotations
- Search history function allowing the users to review their previous searches
- Pedagogical extras such as word challenges or quizzes

These features helped make CD-ROM popular as learning supplies for educational settings. However, as new technology and the internet has become more sophisticated, dictionaries on CD-ROM are rarely used by language learners at present (Boonmoh, 2010a). Also, the practice of bundling a CD-ROM dictionary with other related products such as its print version — or alternatively being automatically built-in software on the computer — has been applied since the sales of CD-ROM dictionary began dropping. For example, Cambridge Advanced Learner's English Dictionary (Fourth Edition) had a CD-ROM dictionary as a premium add-on contained on the back cover. Nevertheless, the improved technology at present has also made it possible to subscribe or use a dictionary directly on publishers' websites, without the need to purchase a CD-ROM dictionary for installation. The popularity of CD-ROM dictionaries, therefore, continued to decline as time went by. Consequently, some lexicography publishers decided to discontinue CD-ROM dictionaries; for instance, the publisher of Oxford English Dictionary discontinued its CD-ROM product in 2017 as announced on its website.

2.4.3 Internet-Based Dictionaries

The expansion of internet dictionary resources is partially due to advancements in technology. Also, almost all major PD publishers now have a copy of paper-based content available online in a paid or even free version. The use of dictionaries on the internet, therefore, have become increasingly popular recently due to free access. An internet dictionary is a kind of e-dictionary which is provided through the internet network. It also offers additional aspects of vocabulary such as etymology, word trends, and word forms in other languages. Boonmoh (2010a) categorized internet dictionaries into three types: subscription, public domain, collaborative projects powered by contributing users. In the first type, subscription, users need to annually subscribe on their website in order to gain full access to the online content with the full functionality and quarterly updates. An example of a subscription dictionary on a website is the one offered by Oxford University Press. It provides subscribers with customized newsletters such as word of the day and updates directly to their email addresses daily. Second, a public domain dictionary normally offers a free version of its content with

slightly less access than a subscription on its website. An example of free version website, Collins Dictionary, was offered by Harper Collins Publishers.

The primary disadvantage of using an online dictionary is excessive space for advertisement. Because the website is free of charge, they have to provide online banner advertisements in order to gain revenue to run the website.

The screenshot displays the Collins Dictionary interface for the word 'cat'. At the top, there is a navigation bar with 'cat', 'Caught', and 'Reading' buttons. A promotional banner offers '35% Off Your Next Purchase' with code 'WSGETCAUGHT35'. The main content area shows the definition of 'cat' as a countable noun, including pronunciation, word forms, and a list of related terms. A 'Quick Word Challenge' sidebar on the right asks 'Which version is correct?' with three options: 'palate or palette or pallet?'. A 'GoDaddy' advertisement is visible at the bottom.

Figure 2.3 Interface of Free Dictionary Website (Collins Dictionary, 2020)

2.5 Previous Related Research

Many studies have investigated dictionary usage by L2 learners. Several studies have employed the survey method (e.g. Sumritpol, 2009; Gainey, 2010; Yorsangrat, 2012; Al-Qudah & Al-Qudah, 2014; Asswachaipaisan, 2014). However, a mixed-method approach using a questionnaire together with semi-structured interviews, and/or observations was also utilized in some studies (e.g. Roongrattanakool, 2009; Alhaisoni, 2016). To shed light on what has already been investigated about dictionary usage, a review of recent studies is presented as follows:

A study of PED by Sumritpol (2009) aimed to explore which tasks related to the four English fundamental skills required the most dictionary consultation, as well as the most sought information. The study was conducted with 34 Thai undergraduate

students in an international program at a Thai public university. The findings from a 23-item questionnaire indicated that the translation task most required dictionary usage. Unsurprisingly, word meaning was the most sought information, followed by spelling.

Gainey's (2010) study investigated the dictionary usage behavior of 16 students enrolled in grammar and writing skills class using a survey. The findings revealed that meaning was the most frequently searched by respondents, followed by pronunciation, synonyms and antonyms, and spelling. The results also showed that the participants favored a monolingual dictionary over other kinds even though some participants were non-English major students.

Likewise, Yorsangrat's (2012) questionnaire surveyed the behaviors in using a dictionary, but with a larger number of students. A total of 85 first-year master's degree students was asked about their problems and purposes in dictionary use. The instrument for collecting the data was a five-point Likert-style rating scale questionnaire. The study revealed that the most frequently used dictionary was an online dictionary. Also, it revealed that the definition was the most frequently searched by respondents in terms of dictionary use, followed by different definitions of the target word, and synonyms/antonyms respectively. The least common objective for using a dictionary was to find word etymology. In addition, subjects reported that they used a dictionary when they were unable to guess the meaning in the context given.

Al-Qudah & Al-Qudah (2014) examined dictionary usage and possession in English major learners at four universities in Jordan. Copies of a questionnaire were distributed to 942 participants. The results showed that informants mainly used e-dictionaries, followed by bilingual PDs, and monolingual PDs. Spelling came in first place regarding the feature respondents searched for most often, while word etymology came in last place.

Asswachaipaisan (2014) conducted a survey of online dictionary use with Thai undergraduate students in an international program at a Thai public university. Her aims were twofold (1) to determine the type of language activities that required students to consult an online dictionary, (2) to gather information on what the most frequently looked up through the online medium. As suggested by the literature, dictionary usage occurs mostly in reading activities, which makes it surprising that her participants reported using an online dictionary to listen to music or news in the English medium.

These findings were in contrast with the other above-mentioned studies. Conversely, it is possible to employ a dictionary in a listening task as proposed by Schofield (1999). Maybe the user jotted down unfamiliar words while they were listening. For the most sought information, it was unsurprising that finding the meaning was reported to be the priority in dictionary usage followed by verifying the existence of a target word and examples of the target word in a sentence respectively.

Previous studies employing mixed methods with a questionnaire and semi-structured interviews, and/or observation are discussed as follows:

Roongrattanakool (2009) conducted a study on dictionary use and problems in a translation class with third-year English majors at Naresuan University. The study employed a mixed method — a questionnaire and interviews — and the results showed the most frequently used dictionary was a monolingual dictionary. The type of dictionary used most was PED followed by a PD and an online one on the internet respectively. Meaning was the primary reason for dictionary usage, followed by word equivalents, and synonyms/antonyms respectively.

Alhaisoni (2016) conducted research about Saudi EFL learners' and instructors' dictionary preferences and use at a university in Saudi Arabia. The sample consisted of 3,993 non-English major learners registered in an intensive English subject and 99 professional instructors. A questionnaire was employed to collect data from the informants along with semi-structured interviews. The findings showed that learners favored bilingual dictionaries over a bilingualized dictionary and monolingual dictionary respectively. In addition, they were likely to make extensive use of online dictionaries including mobile dictionary apps and Google Translate rather than PDs because of convenience. The students reported that meaning, spelling, Arabic equivalents of the word, and pronunciation were the most searched information in the dictionary respectively. Students paid very little attention to other aspects of the dictionary such as parts of speech, synonyms and antonyms, and origin of the word.

Many previous studies on dictionary usage (e.g. Barnhart, 1962 cited in Welker, 2013; Quirk, 1973; Béjoint, 1981) have consistently found meaning ranking in first place for search activities, followed closely by spelling. Gainey (2010) found that both looking for the meaning and spelling were 100 per cent followed by synonyms and antonyms, examples and pronunciation respectively. Similarly, Alhaisoni's (2016)

study showed that meaning, spelling, Arabic equivalents of the word, and pronunciation were reported as the most searched information in the dictionary respectively. These findings support the findings of various previous studies (Bogaards, 1998; Sumritpol, 2009; Yorsangrat, 2012; Wolter, 2015; Alhatmi, 2019) that meaning and spelling were the major two reasons for learners' consulting in dictionaries, even though there are also many features in dictionaries that help improve skills. Apart from meaning and spelling, it is difficult to rank the remaining types of information. Nevertheless, one thing that might be safe to say is that word origin, known as etymology, was reported as the least frequent reason for search activities in several studies (Béjoint, 1981; Yorsangrat, 2012; Al-Qudah & Al-Qudah, 2014; Alhaisoni, 2016).

Another group of previous related studies looked at attitudes toward dictionary usage in activities regarding language usage. To shed light on what has already been investigated, a review of the recent studies is presented as follows:

The study of dictionary usage by EFL students by Hamouda (2013) was conducted with 124 first-year English major students in Saudi Arabia by a mixed method, namely a questionnaire and interviews. It showed that a majority of participants had positive attitudes towards usage of an e-dictionary. They agreed that its speed (79.8%), followed by its portability (68.5%) and clearer definitions (61.2%), were the major reasons for their preferences for e-dictionaries. Surprisingly, the availability of voiced pronunciation was reported as the lowest rank at the percentage of 24.2 even though they reported using this function from an e-dictionary, a capability that PDs do not possess.

Barham (2017) investigated e-dictionary usage in an L2 classroom. In order to gain more detailed insights, this study was carried out by the qualitative method with an in-depth focus group. All of subjects stated that they had positive attitudes towards mobile dictionaries in learning vocabulary. They also reported the reasons they favored this kind of dictionary, which were ease of use and the ability to quickly find the information they want.

Chotkarnchanawat et al. (2017) conducted an attitude survey towards the use of online dictionaries regarding writing activity with Thai graduate students majoring in English at a public university. The instrument for collecting data was an adapted questionnaire based on five previous related Thai studies including one from

Asswachaipaisan (2014). The findings showed that most of participants' attitudes were fairly optimistic because of the prominent characteristics such as user-friendliness, versatility, convenience, and richness in terms of automatically updated contents. In addition, the researcher found that participants mostly used an online dictionary for finding definitions or meanings, especially for technical words. However, the average mean of other aspects, which were grammatical usage, word choice, spelling, synonyms and antonyms, and collocations, followed closely as reported by their participants, with means of $M = 4.36$, $M = 4.36$, $M = 4.32$, $M = 4.14$, respectively.

Filer (2017) investigated the usage of two types of dictionaries by making a comparison between PDs and PEDs. His aim also was to reveal users' attitudes towards them. This study was conducted with eight English major sophomores at a private university in Japan. The results from the dictionary test indicated that PED enabled participants to look up a target word more rapidly than its counterpart (i.e., a PD). The subjects finished the task in 10 minutes 3 seconds, which was quicker than using a PD (12 minutes 25 seconds). The subjects also mentioned other advantages of PED, which were speed, pronunciation with an audio feature, and its portability.

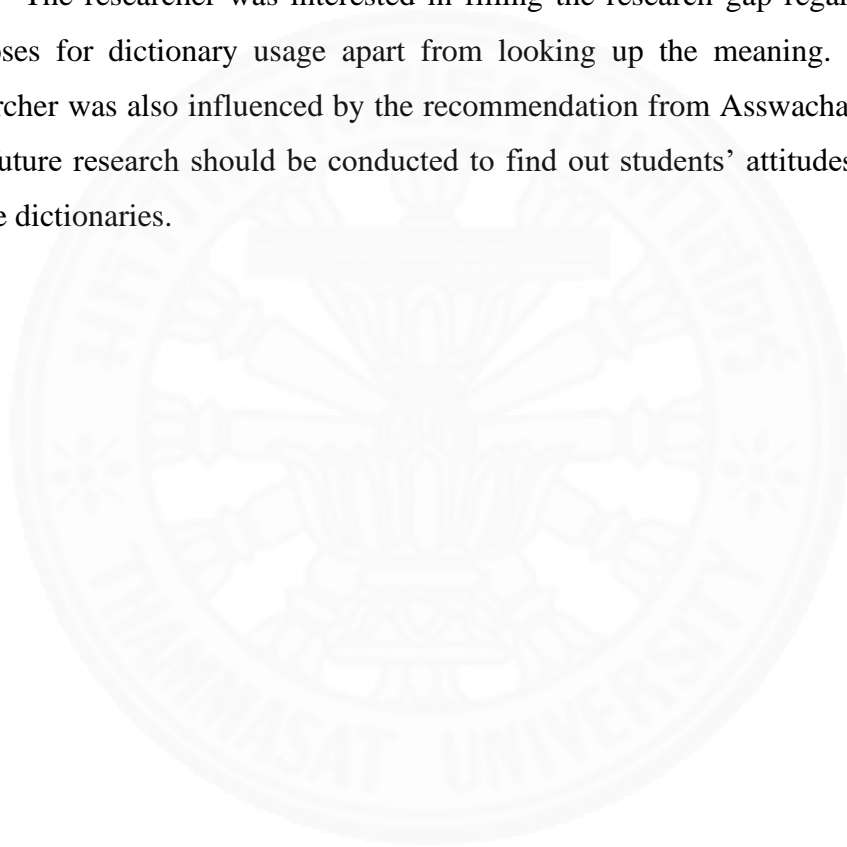
In summary, most of above-mentioned studies involved investigations with advanced and/or sophisticated language learners, whether they were majoring in English or international programs. The studies were specifically conducted with participants from countries within the expanding circle¹ such as Saudi Arabia, Japan, and Jordan. Thailand is also included in that circle. It was found that most of tasks that required dictionary consultation were related to production, which were translation and writing. Also, participants in most all the above-mentioned studies used e-dictionaries instead of PDs. For the information they looked up in dictionaries, it was found that meaning was ranked first. Apart from meaning, these studies also showed different results for the aims of dictionary consultation, including finding synonyms and

¹ An expanding circle refers to countries in which English is learned as a school subject and used for a medium of international communication with foreigners. The idea of separating English usage into three circles, i.e. an inner, outer, and expanding circle was conceived by Kachru (1985 cited in Melchers, Shaw, & Sundkvist, 2019). The inner circle refers to countries where English is the first language, while outer circle refers to countries in which English plays a significant role in many fields such as law or governance.

antonyms, and spellings. Nevertheless, word etymology was reported as the least frequent reason for search activities in several findings.

With regard to the attitudes toward e-dictionary usage, the above-mentioned studies indicated that most participants had positive attitudes towards usage of e-dictionaries, both PEDs and mobile dictionaries. They all agreed that the speed and portability were the most salient features of e-dictionaries, which convinced them to consult them when they needed a dictionary.

The researcher was interested in filling the research gap regarding the main purposes for dictionary usage apart from looking up the meaning. Moreover, the researcher was also influenced by the recommendation from Asswachaipaisan (2014) that future research should be conducted to find out students' attitudes toward using online dictionaries.



CHAPTER 3

RESEARCH METHODOLOGY

This chapter provides an overview of the methodology in this study. The content is separated into four parts as follows:

- 3.1 Participants
- 3.2 Materials
- 3.3 Procedure
 - 3.3.1 Pilot study
 - 3.3.2 Data collection
- 3.4 Data analysis

3.1 Participants

The total population of this study was 350 undergraduate students. They were English major (special program) at the Faculty of Humanities at a public university in Bangkok, Thailand. Convenience sampling, one of the non-probability sampling methods, was employed for data collection. Out of the 100 Google forms distributed to the target group, only 80 respondents replied, accounting for 80% of the total sample group. However, among 80 respondents, eleven respondents mentioned that they had never used an electronic dictionary (e-dictionary) before. Therefore, the data from those non-users was not calculated in the results as they were forced to submit the form after responding to question 3 (see Appendix B).

The main reasons for choosing the English major students as the target group were the fact that compared to non-English major students, this group of students was expected to rely more on a monolingual dictionary because the four-year curriculum was comprised of English skill-related subjects including writing, speaking, listening, and reading. In addition, in an attempt to get information on the various purposes of word searches, English major students who were regarded as advanced language learners were selected since they were familiar with the monolingual dictionary; as Fan (2000) suggested, the higher the proficiency level of a user, the more varied the usage of a dictionary. Lastly, faculty members, who were gatekeepers, at the selected university had been encouraging English major students to possess and make use of

their own dictionaries both in and out of the class by giving every student a paper-based monolingual dictionary, namely Cambridge Advanced Learner's English Dictionary (Fourth Edition), for free rather than a bilingual one.

3.2 Materials

An online self-administered questionnaire survey adapted from Yorsangrat (2012) and Asswachaipaisan (2014) was employed as the research instrument. Due to time constraints, the research did not include interviews or observations.

The 26-question questionnaire was divided into three parts: (1) participant's personal information, (2) statements regarding participant's monolingual e-dictionary usage, and (3) statements regarding participant's attitudes towards monolingual e-dictionary usage. The questionnaire included a combination of close- and open-ended questions. Close-ended questions were comprised of items where respondents were provided multiple choices and ranking questions where the respondents were requested to arrange the selected items in order (Saunders, Lewis & Thornhill, 2016). Meanwhile, the open-ended questions allowed the participant to reveal their thoughts in the blank spaces provided. All of questionnaire items were written in English only.

As previously mentioned, the questionnaire was administered and carried out via the online survey platform using Google Forms. Before responding to the questionnaire, each participant was required to type their name in a consent form on the first page to verify their agreement to participate in this study. All personal information from the respondents in the questionnaire was kept confidential. Also, none of the data which could identify them appears in the study.

The questionnaire is described in detail as follows:

Part I: Participant's personal information

The first part was about personal information or demographical information. It provided some factual questions to elicit certain facts regarding the participants such as student's demographic characteristics including gender and year of study in the program. The other four questions enquired about participant's experience in e-dictionary usage such as the frequency of use, and the types and names of the e-dictionary they frequently used while at university. The close-ended multiple-choice questions were in the form of checkboxes and ranking questions which required each

respondent to rank the given choices. There were six items (Questions 1 – 6) in this part.

Part II: Statements regarding participant's monolingual e-dictionary usage

To rate how frequently the participant used monolingual e-dictionaries with a series of given statements, a five-point Likert-style rating scale was employed in the second part of the questionnaire. A sub-question, along with blank spaces, was also provided at the end of the section for suggesting other purposes respondents might want to add.

There were 15 items (Questions 7 – 21), adapted from Yorsangrat (2012) and Asswachaipaisan (2014). The description of the five-point Likert-style rating scale is presented as follows:

- (1) = Never
- (2) = Rarely
- (3) = Sometimes
- (4) = Often
- (5) = Always

Part III: Statements regarding participant's attitudes towards e-dictionaries

In this part, a five-point Likert-style rating scale was employed as well for questions concerning attitudes towards e-dictionary usage, but with different indicators. Blank spaces were also provided at the end of the section for suggesting other advantages respondents might want to add.

There were 14 items (Questions 22 – 26) in total. The description of the five-point Likert-style rating scale is presented as follows:

- (1) = Strongly disagree
- (2) = Disagree
- (3) = Neutral
- (4) = Agree
- (5) = Strongly agree.

3.3 Procedure

The research procedure is divided into two sub-headings: pilot test and data collection.

3.3.1 Pilot Test

Saunders et al. (2016) suggests that a pilot test be conducted before the process of data collection in order to increase comprehensibility, along with the validity and reliability of the actual questionnaire. In order to maximize those values as much as feasible, three steps were taken during the pilot test as follows:

- Pilot testing with the research's population
- Questionnaire's grammatical corrections by a native speaker
- Revision of the questionnaire based on comments and suggestions from an advisor

In this study, the researcher conducted a pilot test with six respondents through Google Forms to improve the content reliability of the questionnaire along with its readability. All the participants of the pilot test were among the population of the study; therefore, they were excluded from the main study. When asked about participants' comments about the pilot test, they reported that the test was easy to understand, and such an interesting topic. However, a majority of them used a pseudonym to agree with the consent form. Later on, 29 rating items of the questionnaire, together with those responses from six respondents, were analyzed to find the Cronbach's alpha value. The results showed that the score of Cronbach's alpha was .953, implying that all the tested items in this questionnaire were sufficiently reliable to allow for collection of data from the study's sample.

Reliability Statistics	
Cronbach's Alpha	N of Items
.953	29

Figure 3.1 Cronbach's Alpha (Source: SPSS)

The next process of revision was that the researcher asked an English native speaker to correct the grammatical structure of sentences in the questionnaire before publishing the live version. Later on, one of the comments was that the first part, personal information, should be divided into two subsections in order to allow participants who responded that they had never used e-dictionary to submit the form once having finished question 3.

Lastly, the questionnaire was revised by changing the instructions and adjusting unclear statements to improve the readability based on comments from the native speaker, and under the close supervision and guidance of an advisor, before launching the revised test.

3.3.2 Data Collection

The period of questionnaire distribution and collection occurred during April 2020, starting from the 4th of April until 13th of April. The revised survey created in Google Forms was distributed to the participants via a link. In the data collection procedure, a total of 100 participants who were English major students (special program) at the Faculty of Humanities at a public university in Bangkok, Thailand in the second semester of the academic year 2019, were asked to do a questionnaire survey (see Section 3.1).

After initial intending to collect the data onsite, the COVID-19 crisis prevented the researcher from reaching the participants. Consequently, the questionnaire distribution was carried out with the cooperation and assistance of each class president from year 1 to year 4 by sharing the link with their groups through Line application, a popular freeware app for instant communications on smartphones in Thailand. The survey took approximately five to ten minutes to finish all the items. All questions were compulsory with the exception of sub-questions asking for further comments at the end of the second and third part, which were optional. Prior to completing the survey, each participant was required to type their name in a consent form at the first page to verify their agreement to participate this study. After the form submission, the researcher would receive a notification from the system via e-mail showing that each participant had completed the survey.

3.4 Data Analysis

The collected data from all copies of the questionnaire was analyzed by the spreadsheet program Microsoft Excel 2013. Descriptive statistics such as mean, frequency, standard deviation, and percentage were calculated and interpreted to answer the research questions.

Microsoft Excel 2013 was used to analyze data derived from the first part of the questionnaire, personal information, which was in the form of descriptive statistics including frequency and percentage.

For the second part, data was also analyzed using Microsoft Excel 2013, with the aim to present the findings in the form of descriptive statistics consisting of mean and standard deviation. In this part, a range of mean scores was employed to interpret the calculated mean scores. The interpretation of mean score ranges from the five-point Likert-style rating scale (Fisher, 1958 as cited in Ruengpraprapan, 1996) is presented below:

Frequency of the usage		Mean Score
Always	=	4.21-5.00
Often	=	3.41-4.20
Sometimes	=	2.61-3.40
Rarely	=	1.81-2.60
Never	=	1.00-1.80

In the last part, the range of mean scores was employed to interpret the calculated mean scores calculated as well, but with different indicators as shown below:

Frequency of the usage		Mean Score
Strongly agree	=	4.21-5.00
Agree	=	3.41-4.20
Neutral	=	2.61-3.40
Disagree	=	1.81-2.60
Strongly disagree	=	1.00-1.80

Thematic content analysis was also used to analyze the participants' open-ended sub-questions as it is one of the most frequently used techniques for qualitative data. Categorizing, labeling, and summarizing themes from raw data in open-ended questions were carried out in this process.

CHAPTER 4

RESULTS

This chapter provides the results of the study in detail based on data obtained from 80 respondents during the data collection period. To answer the research questions below, the data was analyzed by Microsoft Excel 2013 using descriptive statistics (i.e. mean, percentage, frequency, and standard deviation). The findings are presented as follows:

4.1 General Information

4.2 Research Question 1: What are the top three main purposes of using a monolingual electronic dictionary among English major students?

4.3 Research Question 2: What are the attitudes of English major students towards monolingual electronic dictionary usage?

4.1 General Information

The personal information of respondents from the part I of the questionnaire is presented in Figure 4.1 to Figure 4.6. Descriptive statistics, which are frequency and percentage, are also illustrated in the figures. The information is divided into two subsections with six topics as follows:

1) Gender, year of study, experience with electronic dictionary (e-dictionary) usage

2) Frequency of e-dictionary usage, type of monolingual e-dictionary used most by participants, and three e-dictionaries that respondents frequently use respectively.

Meanwhile, Table 1 shows tasks relating to language skills that require participants to use an e-dictionary. Means as well as standard deviations were employed to interpret the raw data for this table.

To continue participating in the survey, participants must have used an e-dictionary (in question 3, Participants' Experience in E-Dictionary Usage, as shown in Figure 4.3); otherwise, they would be asked to submit the form after responding to this question.

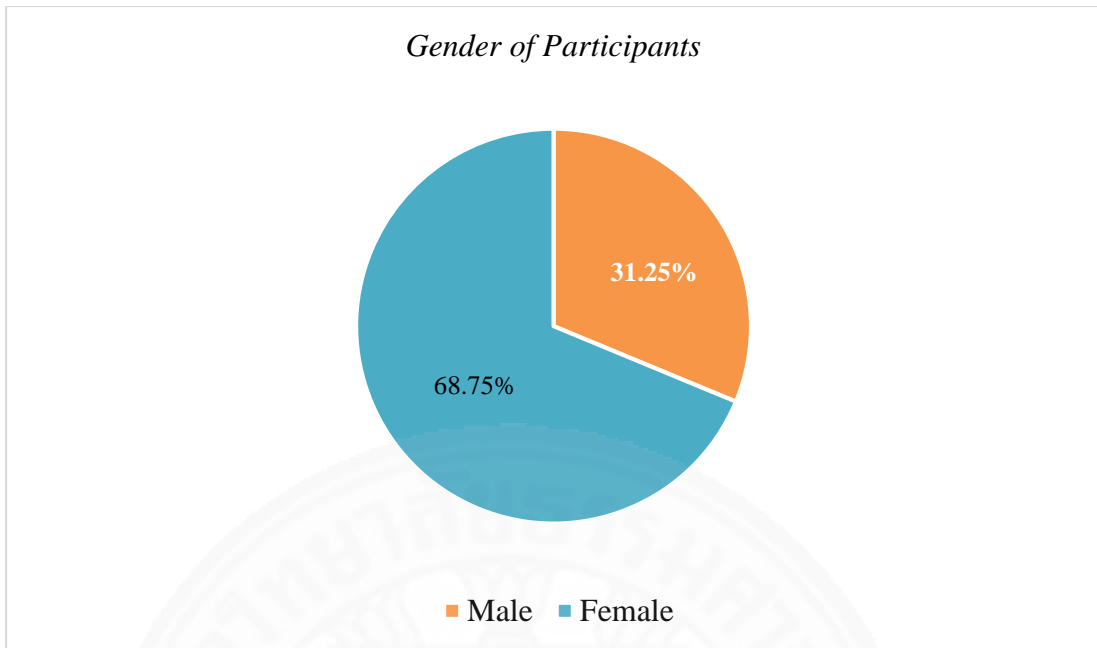


Figure 4.1 Gender of Participants

Figure 4.1 provides the number of participants regarding gender. As can be seen from the figure above, male respondents were greatly outnumbered by female ones.

Fifty-five females accounted for 68.75% of all the respondents. Meanwhile, there were only 25 males, constituting 31.25% of all the respondents.

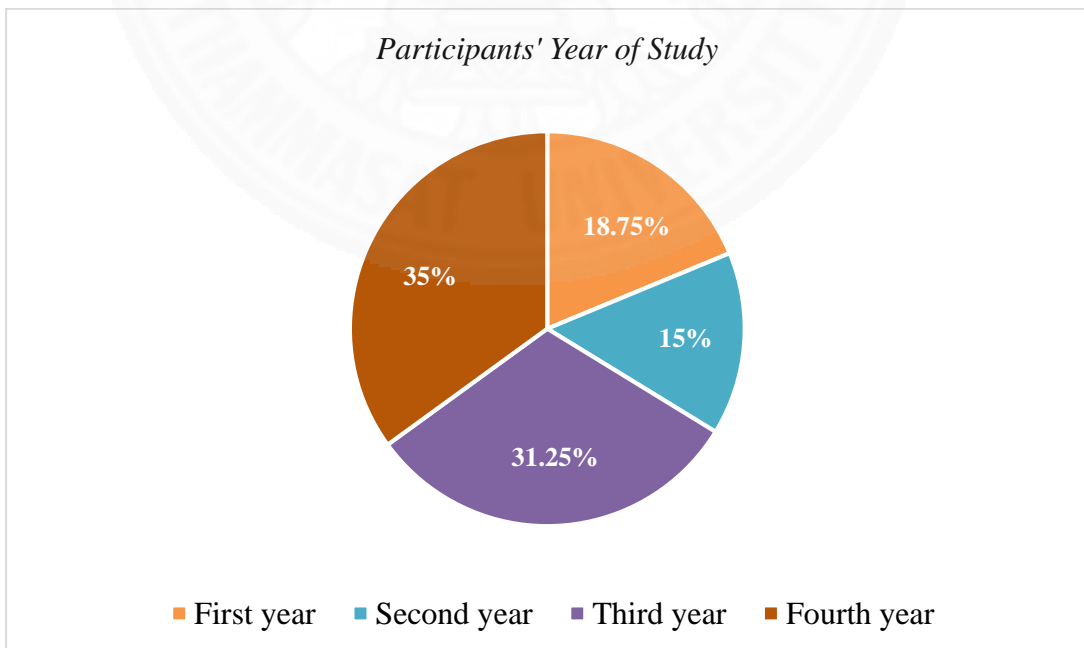


Figure 4.2 Participants' Year of Study

Regarding the year of study, the findings as seen in Figure 4.2 indicate that 28 respondents (35%) were in the fourth year, followed by the third year with 25 participants (31.25%). The last was the second year, with 12 participants (15%).

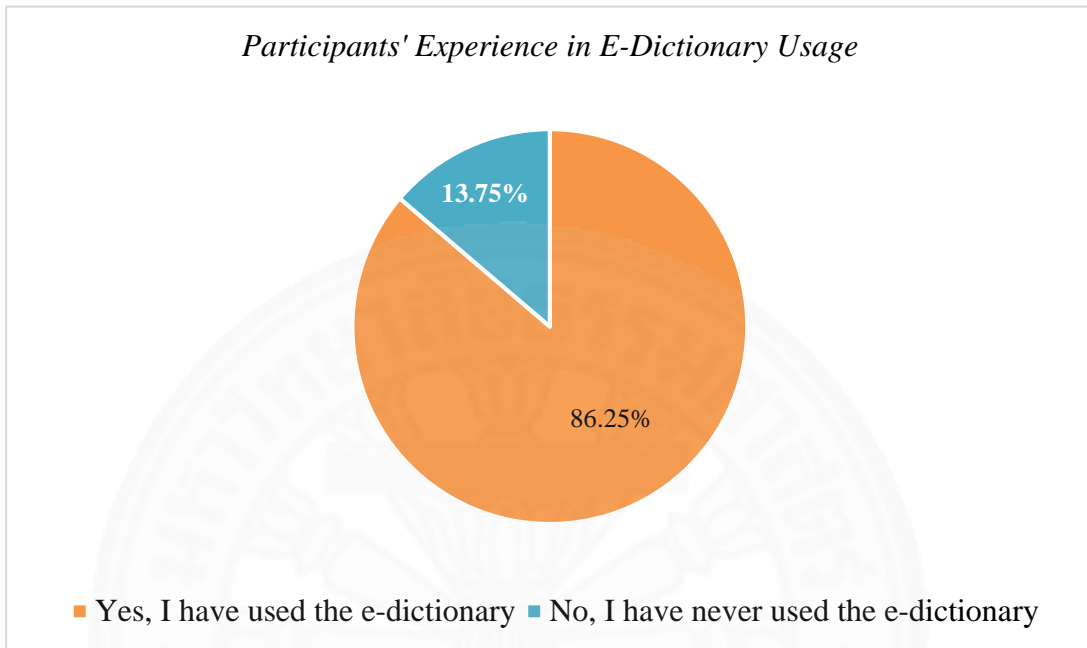


Figure 4.3 Participants' Experience in E-Dictionary Usage

Figure 4.3 shows the percentage of all responses from question 3 on whether participants had an experience using an e-dictionary.

Out of 80 participants, sixty-nine participants reported that they had used an e-dictionary, accounting for 86.25%, whereas 11 participants (13.75%) reported that they had never used an e-dictionary before. Therefore, the data from non-users was not be calculated for further questions as they were forced to submit the form after responding to this question.

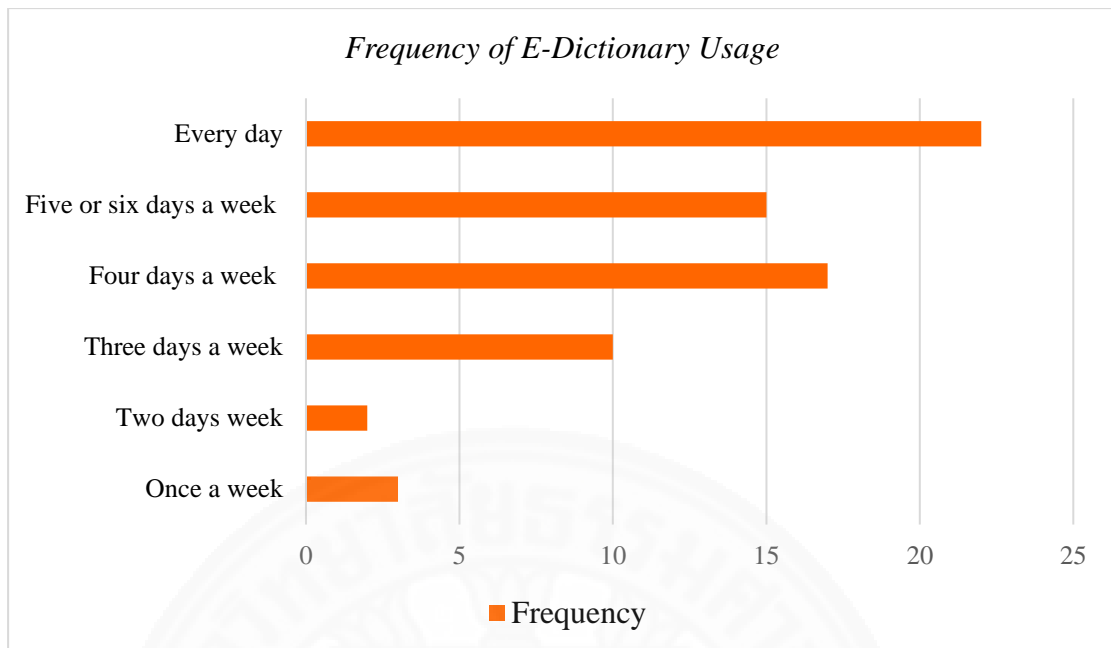


Figure 4.4 Frequency of E-Dictionary Usage

For question 4, a total of 69 of the remaining participants were asked how often they had used an e-dictionary per week. As seen above, Figure 4.4 shows the frequency of monolingual e-dictionary usage by respondents.

The results reveal that most of respondents (31.88%) used an e-dictionary every day. Also, seventeen participants (24.64%) reported using it four days a week.

The most surprising aspect of the data was that there were three participants (4.35%) who reported using an e-dictionary just once a week despite being English majors.

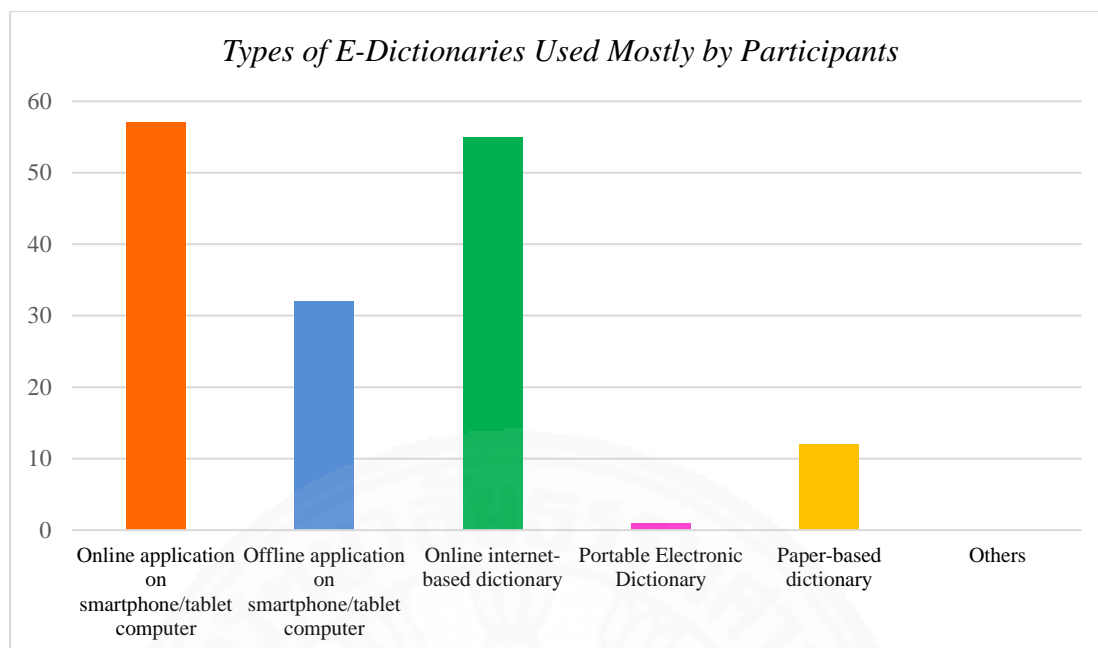


Figure 4.5 Types of E-Dictionaries Used Mostly by Participants

This question was in the form of checkboxes, so the participants were able to select more than one option. They were asked to record the type(s) of e-dictionary they had consulted. As shown in Figure 4.5, the findings reveal the frequencies of the types of e-dictionaries consulted by the English major participants.

The most frequently used type of e-dictionary was an online application on a smartphone/tablet computer, with a frequency of 57 participants (82.61%), followed closely by an online internet-based dictionary accessed via a smartphone, tablet computer or notebook computer, with a frequency of 55 participants (79.71%). However, usage of a portable electronic dictionary (PED) was reported by only one participant (1.45%), despite being classified as an e-dictionary.

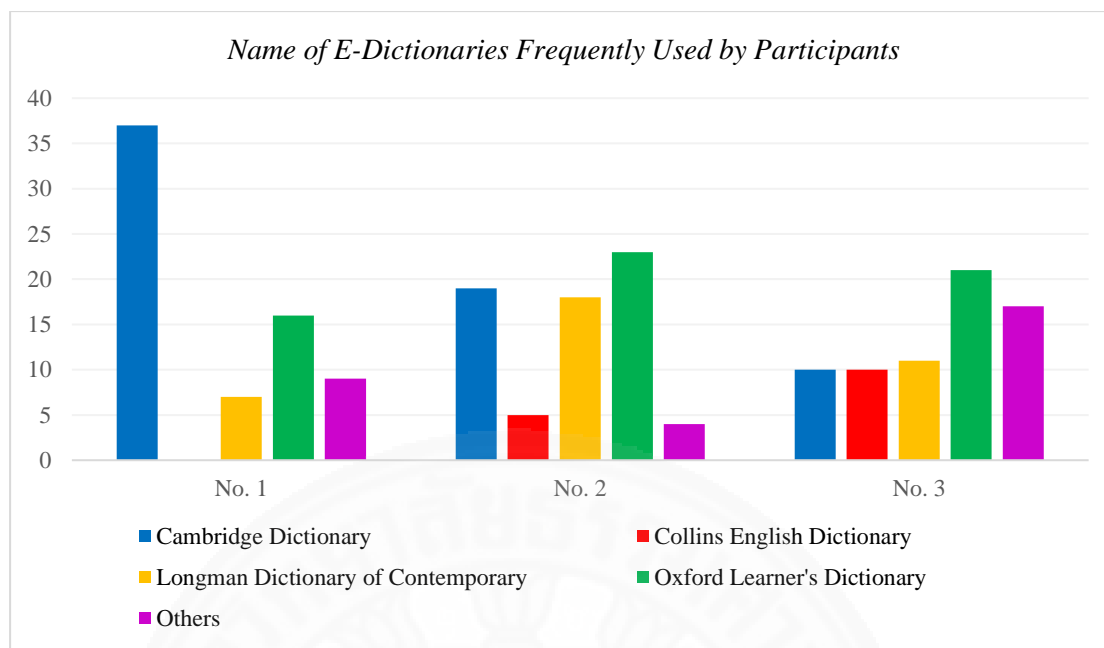


Figure 4.6 Names of E-Dictionaries Frequently Used by Participants

Apart from the type(s) of e-dictionaries they had consulted, the participants were also asked to give three names of e-dictionaries they used while at university by ranking them in order. It can be seen from Figure 4.6 that most of the respondents (53.62%) ranked Cambridge Dictionary as their first choice. Meanwhile, Oxford Learner's Dictionary had a percentage of 33.33 (23 respondents) sitting in second place. Interestingly, twenty-one students (30.44%) also mentioned Oxford Learner's Dictionary as their third choice.

Meanwhile, Collins English Dictionary got the lowest overall score as respondents ranked it as either No. 2 and No. 3 (7.25% and 14.49% respectively).

The following table shows the ranges employed to interpret the calculated mean scores:

Frequency of the usage		Mean Score
Always	=	4.21-5.00
Often	=	3.41-4.20
Sometimes	=	2.61-3.40
Rarely	=	1.81-2.60
Never	=	1.00-1.80

The mean scores, together with the standard deviation of the language skill tasks that required the use of e-dictionary, are provided in Table 1.

Table 1 Language Tasks Requiring the Use of an E-Dictionary

Language Skills	Mean	SD	Level of Frequency
7. Reading	3.80	1.02	Often
8. Writing	4.03	0.98	Often
9. Speaking	3	0.90	Sometimes
10. Listening	2.88	1.00	Sometimes
11. Translation	4.67	0.74	Always

The most remarkable result to emerge from the data was that participants used an e-dictionary mostly for translation tasks ($M = 4.67$, $SD = .74$), followed closely by writing tasks ($M = 4.03$, $SD = .98$). Both skills were classified as production activities. Meanwhile, using an e-dictionary while tackling tasks relating to listening skill, a comprehension activity, got the lowest mean score ($M = 2.88$, $SD = 1.00$).

4.2 Three Main Purposes of Using a Monolingual Electronic Dictionary Among English Major Students

To answer research question 1, the second part of the questionnaire was intended to find out the top three main purposes for using a monolingual e-dictionary among English major students. In order to determine the central tendency of the top three main purposes for e-dictionary usage, the scores from the rating questions (Questions 12 – 21) were interpreted.

In this part, the mean scores and standard deviations are presented in Table 2. Also, the ranges employed to interpret the calculated mean scores are as follows:

Frequency of the usage		Mean Score
Always	=	4.21-5.00
Often	=	3.41-4.20
Sometimes	=	2.61-3.40
Rarely	=	1.81-2.60
Never	=	1.00-1.80

Table 2 Purposes for Using an E-Dictionary

Purposes for Using an E-Dictionary	Mean	SD	Level of Frequency
12. I use an e-dictionary to find a meaning.	4.78	0.53	Always
13. I use an e-dictionary to check pronunciation.	3.74	0.94	Often
14. I use an e-dictionary to check a word's part of speech (e.g. noun, verb, adjective, adverb, etc.)	3.62	1.00	Often
15. I use an e-dictionary to find out an idiom (e.g. lone wolf, monkey business).	3.42	0.96	Often
16. I use an e-dictionary to find a collocation or phrasal verb of a target word (e.g. believe in, composed of, a bunch of flowers).	3.55	1.05	Often
17. I use an e-dictionary to study word etymology or word origins and history.	2.30	1.08	Rarely
18. I use the e-dictionary to find examples of the word in a sentence.	3.88	0.88	Often
19. I use an e-dictionary to find synonyms/antonyms of a word.	3.97	0.87	Often
20. I use an e-dictionary to check a spelling.	3.90	1.10	Often
21. I use an e-dictionary to check the degree of word frequency (from an extremely common word to a word that is rarely used).	2.88	1.21	Sometimes

The results concerning participants' purposes for using an e-dictionary as presented in Table 2 reveal that the participants used a monolingual e-dictionary to find the meaning of a word much more than for any reason, with the mean of 4.78 ($SD = .53$). The second most frequent purpose for using a monolingual e-dictionary was to find synonyms/antonyms of a word ($M = 3.97$, $SD = .87$). Coming in the third place was using a monolingual e-dictionary to check a spelling with the mean of 3.90 ($SD = 1.10$).

On the other hand, participants reported that they rarely used an e-dictionary to study word etymology or word origins and history, with the mean of 2.30 ($SD = 1.08$), which was the lowest rank in this table.

4.3 Attitudes of English Major Students towards Monolingual Electronic Dictionary Usage

To answer research question 2, 'What are the attitudes of English major students towards monolingual e-dictionary usage?', the information from the third part of the questionnaire was analyzed. In order to determine the central tendency of their attitudes towards e-dictionary usage, the scores from the rating questions (Questions 22 – 26) were interpreted.

As can be seen in Table 3, descriptive statistics including mean scores and standard deviations, were employed as in part two, but with different indicators. The descriptions of the mean score range is defined below.

Frequency of the usage		Mean Score
Strongly agree	=	4.21-5.00
Agree	=	3.41-4.20
Neutral	=	2.61-3.40
Disagree	=	1.81-2.60
Strongly disagree	=	1.00-1.80

Table 3 Attitudes towards E-Dictionary Usage

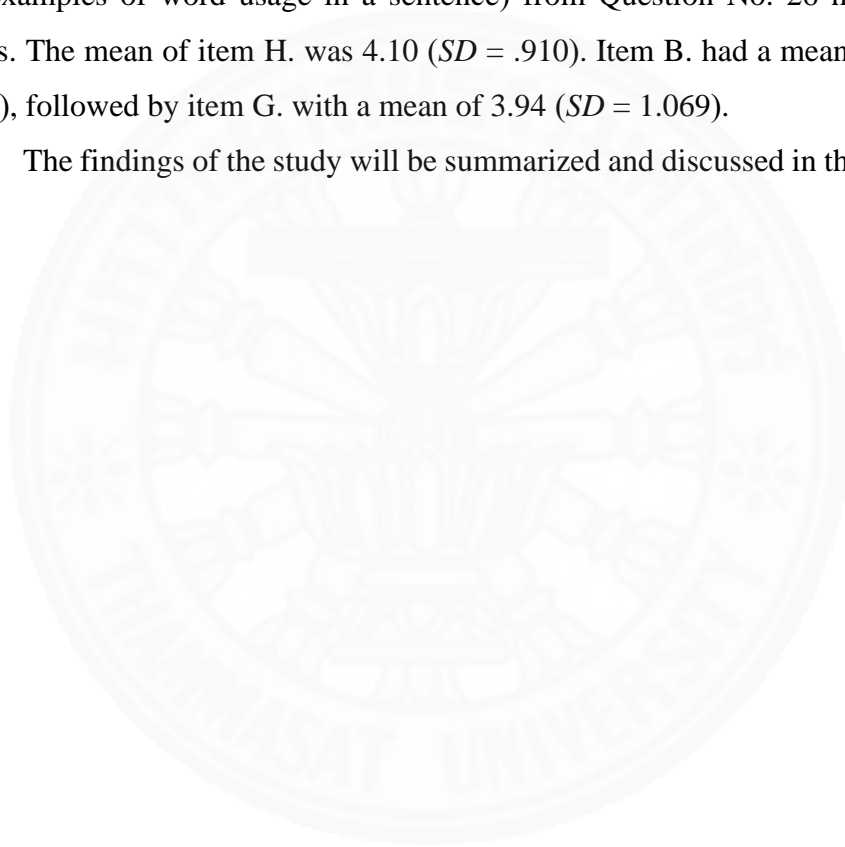
Attitudes towards E-Dictionary Usage	Mean	SD	Level of Frequency
22. E-dictionaries are easier to use than paper-based ones.	4.67	0.78	Strongly agree
23. E-dictionaries are a better aid for learning English than paper-based ones.	4.04	0.89	Agree
24. E-dictionaries have clearer definitions of words than paper-based ones.	3.46	0.94	Agree
25. E-dictionaries can help me search for a target word quicker than paper-based ones.	4.77	0.66	Strongly agree
26. E-dictionaries provide more detailed information about vocabulary than paper-based ones in the following aspects:			
a. Meaning	3.49	1.10	Agree
b. Pronunciation	4.07	1.03	Agree
c. Part of speech	3.62	0.95	Agree
d. Idioms	3.70	1.08	Agree
e. Phrasal verbs or collocations	3.65	0.93	Agree
f. Word etymology	3.42	0.97	Agree
g. Examples of the word usage in a sentence	3.94	1.06	Agree
h. Synonyms/antonyms	4.10	0.91	Agree
i. Spellings	3.59	1.03	Agree
j. Degree of word frequency	3.71	0.90	Agree
Total	3.73	1.00	Agree

The results concerning participants' attitudes towards e-dictionary usage as presented in Table 3 reveal that it was quicker to use e-dictionaries to search for a target word than paper-based ones, with the mean of 4.77 ($SD = .66$), which was the highest degree of agreement, followed by the statement indicating that e-dictionaries were easier to use than paper-based ones ($M = 4.67$, $SD = .78$).

Despite coming in last place in this table, the respondents still agreed with the statement saying that e-dictionaries have clearer definitions of words than paper-based ones, with the mean of 3.46 ($SD = .94$).

For question 26, there were 10 items concerning participants' attitudes towards e-dictionary usage in terms of detailed information about vocabulary. The following aspects of e-dictionaries provide more detailed information about vocabulary than paper-based ones. It shows that items H. (synonyms/antonyms), B. (Pronunciation), and G. (Examples of word usage in a sentence) from Question No. 26 had the highest means. The mean of item H. was 4.10 ($SD = .910$). Item B. had a mean of 4.07 ($SD = 1.034$), followed by item G. with a mean of 3.94 ($SD = 1.069$).

The findings of the study will be summarized and discussed in the next chapter.



CHAPTER 5

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

The content in this chapter is divided into four parts as follows:

5.1 Summary of the study

5.2 Summary of findings

5.3 Discussions and conclusion

5.4 Recommendations for further research.

5.1 Summary of the Study

This research study was conducted to find out the top three main purposes of using monolingual electronic dictionaries (e-dictionary) among English major students, and to explore their attitudes towards monolingual e-dictionary usage. The participants of the study were 100 first to fourth year English major students (special program) in the Faculty of Humanities at a Thai public university in Bangkok in the academic year of 2019. All of them were Thai native speakers.

An online self-administered questionnaire adapted from Yorsangrat (2012) and Asswachaipaisan (2014) was employed as the research instrument. The questionnaire was divided into three parts, consisting of 26 items. The first part, participant's personal information, was aimed at exploring participants' behaviors regarding usage of monolingual e-dictionaries such as frequency and which type(s) they had used while at university. In the second part, statements regarding participant's monolingual e-dictionary usage were aimed at exploring the top three main purposes of e-dictionary usage among English major students. Lastly, in the third part, statements regarding participant's attitudes towards e-dictionary usage aimed to explore the attitudes towards the e-dictionary usage among English major students. All of questionnaire items were written in English only.

The three steps taken to improve the content reliability of the questionnaire and also its readability were as follows: (1) pilot testing with the research's population (2) grammatical corrections by a native speaker (3) revision of the questionnaire based on comments and suggestions from the advisor.

In the data collection procedure, a total of 100 participants were asked to do a revised version of questionnaire survey created in Google Forms. Out of the 100 Google forms distributed to the target group, only 80 respondents replied, accounting for 80% of the total sample group.

The collected data from all copies of the questionnaire was analyzed using Microsoft Excel 2013. Descriptive statistics, namely mean, frequency, standard deviation, and percentage, were calculated and interpreted to answer the research questions.

5.2 Summary of the Findings

The results of the study can be reviewed as follows:

5.2.1 General Information of Participants

Out of the 100 forms distributed to the target group, the returned questionnaire numbered only 80, equating to an 80% response rate. Regarding the gender of participants, male respondents (31.25%) were outnumbered by females (68.75%). The majority were the fourth-year students (35%) followed by those in the third year (31.25%).

With reference to question 3, which was utilized to filter out the non e-dictionary users, 69 respondents (86.25%) reported that they had used an e-dictionary, while 11 participants mentioned that they had never used an e-dictionary. Therefore, only data from those 69 respondents were further explored. Most of the 69 remaining participants (31.88%) reported using e-dictionaries every day. Surprisingly, only three participants (4.35%) reported using an e-dictionary once a week, despite majoring in English. Further exploration also showed that online applications on smartphones/tablet computer (82.61%) were the most frequently used type of e-dictionary. In particular, Cambridge Dictionary was the first choice in this sample group, with a percentage of 53.62%. Among the five language skill tasks, productive tasks most frequently required participants to use an e-dictionary. The majority of respondents cited translation, with the highest average mean of 4.67 ($SD = 1.02$), followed by reading ($M = 3.80$, $SD = 1.02$). Meanwhile, speaking only had an average mean of 3 ($SD = .90$).

5.2.2 Participants' Top Three Purposes of Monolingual Electronic Dictionary Usage

Overall, the participants used a monolingual e-dictionary mainly to find word meanings ($M = 4.78$, $SD = .53$). The second purpose was to find synonyms/antonyms of a word ($M = 3.97$, $SD = .87$). The last purpose was using an e-dictionary to check a spelling ($M = 3.90$, $SD = 1.10$). On the other hand, using an e-dictionary to study word etymology or word origins had the lowest ranking with respect to the purposes for e-dictionary usage ($M = 2.30$, $SD = 1.08$).

5.2.3 Participants' Attitudes towards Monolingual Electronic Dictionary Usage

The overall results indicate that participants strongly agreed with the item stating that using an e-dictionary could help search for a target word more rapidly than using a paper paper-based one, with the highest mean score of 4.77 ($SD = .66$), followed by the item stating that an e-dictionary was easier to use than a paper-based one ($M = 4.67$, $SD = .78$). Despite being in last place in this table, it also appeared that respondents agreed with the statement saying that an e-dictionary has clearer definitions than paper-based ones, with the mean of 3.46 ($SD = .94$).

With regard to question 26, participants were asked to rate 10 items concerning participants' attitudes towards e-dictionary usage in terms of detailed information about vocabulary. The findings show that the following aspects of e-dictionary provide more detailed information on words than paper-based ones. Items H. (Synonym/antonym), B. (Pronunciation), and G. (Examples of the word usage in a sentence) were mentioned by respondents as the top three aspects that had the highest means among the others. The mean of item H. was 4.10 ($SD = .91$). Item B. had a mean of 4.07 ($SD = 1.03$), followed by item G. with the mean of 3.94 ($SD = 1.06$).

5.3 Discussion and Conclusion

In this section, the discussion and conclusion are presented to answer the two research questions:

5.3.1 Research Question 1: What are the top three main purposes of using a monolingual electronic dictionary among English major students?

In the present study, the overall results indicate that participants mainly used a monolingual e-dictionary to find word meanings. The aforementioned results confirm those in the studies of Roongrattanakool (2009), Sumritpol (2009), Gainey (2010), Al-Qudah & Al-Qudah (2014), Asswachaipaisan (2014), Hamouda (2014), Alhaisoni (2016), which found that English as a Foreign Language students (EFL), both non-English or English majors, mainly focused on using an e-dictionary to find word meanings. The results in the present study also echo the results of Yorsangrat's study (2012), which indicated that finding meanings was the most common purpose when using an e-dictionary, especially when participants were unable to guess the meaning of a word based on the context.

This study found that a majority of participants used the e-dictionary mostly for translation tasks (see Section 4.1), which might be because a translator should know the meaning of every word in context in order to fully understand what they would like to translate in the target language. They are thus likely to be very dependent on a dictionary for finding word meanings.

Next, the second most common purpose of using a monolingual e-dictionary among English major students following the use of an e-dictionary for a word meaning was to find synonyms/antonyms of a word. Although the results in the present study differ slightly from those of Roongrattanakool (2009), Gainey (2010), Al-Qudah & Al-Qudah (2014) in terms of rank, it can be concluded that students often looked up synonyms/antonyms of a target word when using a dictionary, with the degree of the mean score range indicated as "often".

A possible explanation for this might be that when engaging in productive tasks, especially translation, participants have to consider the appropriate choice of word and try to pick the right word to convey messages that fit in the context in their target language.

On the other hand, the results of the current study do not support some of the previous research. In fact, contrary to previous studies (Hamouda, 2013; Al-Homoud, 2017), the researcher found that using an e-dictionary to find synonyms/antonyms of a word was the second most common purpose among English major students. In

Hamouda's study, he discovered that only a small number of his respondents reported using an e-dictionary to search for synonyms/antonyms of the word. Meanwhile, synonyms/antonyms were among the least reported purposes in Al-Homoud's study, with a low frequency. He commented that this might be due to his participants' low level of language proficiency as they were non-English major students. Also, the findings from the current study are inconsistent with the study of Alhaisoni (2016), in which found synonyms/antonyms were reported as the second least common purpose of dictionary consultation.

Lastly, the third most common purpose of using a monolingual e-dictionary among English major students was to check a spelling. The results in the present study are similar to Al-Homoud's study (2017), which found that most participants rated "looking up a word spelling" as the third most common reason for dictionary consultation.

Despite the fact that there was some inconsistency in the studies of Roongrattanakool (2009), Sumritpol (2009), Al-Qudah & Al-Qudah (2014), Asswachaipaisan's (2014), Alhaisoni (2016) in terms of rank, based on the survey of 69 respondents majoring in English, most of the students often checked word spellings in their e-dictionaries, as the degree of mean score range obtained was indicated as "Often", the same level as the second most common purpose.

To sum up, English major students reported using a wide range of information contained in the e-dictionary with high frequencies as expected. Even though the findings from this study show that the top three purposes did not exactly match with many of the previous studies mentioned in the literature in terms of rank, the average mean of each item was very close. In addition, the findings lend support to the work of the assertion of Svensen (1993 cited in Alhaisoni, 2016) that "the types of linguistic information needed in the dictionary are of course determined by the types of linguistic activity (p. 36)." To clarify, users' demands for information needed from the dictionary depend on the tasks they are doing at that time; specific tasks, therefore, could influence the needs for information from a reference book. Those three aspects, which are meaning, synonyms/antonyms, and spellings, are the main purposes when engaging in productive tasks such as translation. However, considering the small sample size, caution must be applied, as the findings might not be generalizable to other populations.

5.3.2. Research Question 2: What are the attitudes of English major students towards monolingual electronic dictionary usage?

The data showed that participants who were active users of e-dictionaries strongly agreed they could look up target words quicker with an e-dictionary compared to a paper-based dictionary, suggesting that this might be a major factor for their preference for an e-dictionary. It is highly likely that advanced language learners who are English majors had positive attitudes towards e-dictionaries because of their speed, as this had the highest level of mean score range ($M = 4.77$). In the present study, these results affirm the findings in Filer's investigation (2017), which showed that it takes much less time to look up a word in a portable electronic dictionary (PED), a type of e-dictionary, than the print version. Moreover, the findings from Barham's (2017) study concerning attitudes towards the use of a mobile dictionary also showed that students highlighted the aspect of speed.

With regard to ease of use, the results from current study are similar to the study of Barham (2017), which determined that e-dictionaries were easier to use than paper-based ones. The results are also consistent with the research of Hamouda (2013), Chotkarnchanawat et al. (2017), which found that an online internet-based dictionary, a type of e-dictionary, was very user-friendly for language learning.

In addition, another striking advantage over paper-based dictionary pointed out by active users was the detailed information contained in an e-dictionary. This result is in line with the findings of Hamouda's (2013), and Chotkarnchanawat et al.'s investigation (2017), which discovered that this kind of dictionary was rich in useful information.

For question 26, participants were asked to rate 10 items concerning participants' attitudes towards e-dictionary usage in terms of detailed information about vocabulary. The findings show that the following aspects of an e-dictionary provided more detailed information on words than paper-based ones. Items H. (synonyms/antonyms), B. (pronunciation), and G. (examples of word usage in a sentence) were mentioned by respondents as the top three aspects that had the highest means. This could be that, in general, features and further information about vocabulary included in an e-dictionary exceed the ones contained in a paper-based dictionary. For

example, an e-dictionary has a sound feature or audio clips to help learners better understand the way to pronounce a word correctly, whereas a paper-based dictionary only contains a description in text form on how to pronounce it. For the example of the word usage in a sentence and synonyms/antonyms, this might be due to the fact that an e-dictionary does not have a limited number of pages like a paper-based dictionary does.

In conclusion, the findings on participants' attitudes towards the use of an e-dictionary show that factors such as speed and ease of use were the primary advantages. As previously mentioned in the discussion of research question 1, this study did not include a large enough sample group to allow for generalization of the results to other English major students in Thailand

5.4 Limitations

The limitations of this study are detailed below:

5.4.1 It should be noted that this study was concerned with English major students only. Also, the university used in the research is among the best in Thailand. Therefore, the results of this study cannot be generalized to other groups of English major students in other universities in Thailand.

5.4.2 Another limitation was that few of the respondents provided further suggestions in the sub-questions at the end of part II and III, although one participant responded to an open-ended question in part III, he gave a brief answer, simply stating "no". Therefore, thematic content analysis could not be employed as expected.

5.5 Recommendations for Further Research

Based on the findings, limitations and conclusion of this study, it is recommended that the future research should be undertaken as follows:

1. Because the current study was conducted with a relatively small sample size, further research should be conducted with a larger sample size in order to increase the generalizability of the findings.

2. As previously mentioned, the current study was conducted with English major students from only one university; further studies, therefore, should be conducted in other contexts such as with English major students from other universities. Also,

future studies may be conducted with other groups who are not majoring in English but considered advanced language learners so as to confirm the results of the present study.

3. This study employed convenience sampling for data collection. Stratified sampling should be employed in further research to compare participants between strata. This sampling method is recommended because the researcher, for example, may notice differences between junior and senior students' purposes for dictionary consultation.

4. Further research on the use of e-dictionaries should be conducted using mixed methods. For example, both a questionnaire and interviews (e.g. semi-structured or focus group interviews) are recommended. Therefore, the researcher may ask some potential participants during the data collection to voluntarily agree to participate in a follow-up interview with the aim of gaining more in-depth insight into e-dictionary usage.

5. Since the researcher did not collect the data onsite due to the COVID-19 crisis, the researcher could not address the issue of respondents neglecting to provide their thoughts to the open-ended questions. If possible, the importance of providing answers to open-ended questions should be reiterated prior to the dissemination of the questionnaire.

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The image features a large, faint watermark of the Thammasat University seal in the background. The seal is circular and contains the university's name in Thai script at the top and 'THAMMASAT UNIVERSITY' in English at the bottom. In the center of the seal is a traditional Thai emblem, a Chakrasimukh, which is a multi-armed figure holding various symbolic objects.

APPENDICES

APPENDIX A

CONSENT FORM FOR RESEARCH PARTICIPANT

I who have signed here below agree to participate in this research **conducted by Mr. Thossapon Pothiphoksumphun**, Master's degree in Career English for International Communication (CEIC) program at Language Institute, Thammasat University.

I have **read or been informed** about the rationale and the objectives of the project, what I will be engaged with in detail, and I **clearly understand** the project.

I willingly **agree** to participate in the survey by responding to the questionnaire. I understand that completing the questionnaire will take approximately five to ten minutes of my time. All personal information I have informed in the questionnaire **will be kept confidential**. Also, any of my data which could be able to identify me will not appear in the report.

I have **the right** to withdraw from this research protocol at any time, without the need to give any reason. This withdrawal **will not have any negative impact upon me**.

Please type your ***FIRST NAME*** in the box below to indicate your agreement to participate in this study. (Be noted that your name will be kept confidential and will not appear in any part of the project)

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APPENDIX B

QUESTIONNAIRE

The purposes of the questionnaire are to find out the top three main purposes of using a monolingual electronic dictionary (e-dictionary) among English major students and to explore their attitudes towards monolingual e-dictionary usage. Your answer and personal information will be kept confidential and used exclusively for academic purposes.

The questionnaire consists of three parts as follows:

Part I: Participant's personal information (6 items)

Part II: Statements regarding participant's monolingual e-dictionary usage (15 items)

Part III: Statements regarding participant's attitudes towards monolingual e-dictionary usage (5 items)

Part I: Personal Information

Directions: Kindly click on a check box that matches your answer. Also, please fill in the blank if necessary.

1. What is your gender?

- Male Female

2. What year are you in?

- Year 1 Year 2 Year 3 Year 4

3. Have you ever used the e-dictionary?

- Yes, I have used the e-dictionary.
 No, I have never used the e-dictionary.

4. Frequency of e-dictionary usage:

- Once a week
 Two days a week
 Three days a week
 Four days a week
 Five or six days a week
 Everyday

5. What type of monolingual e-dictionary (English-English) have you used mostly while studying at university? (You can tick more than one item.)

- Online application on smartphone/tablet computer
- Offline application on smartphone/tablet computer
- Online internet-based dictionary (whether accessing via smartphone, tablet computer or notebook computer)
- Portable Electronic Dictionary (e.g. TalkingDict™, CyberDict™)
- Paper-based dictionary
- Others. _____

6. Which three e-dictionaries do you frequently use? (Rank 1-3)

	Cambridge Dictionary	Collins English Dictionary	Longman Dictionary	Oxford Learner's Dictionary	Others
No. 1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No. 2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
No. 3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part II: Monolingual e-dictionary usage

Directions: Kindly click on a check box that matches your answer. Descriptions of scores are as follows:

- 1 = Never
2 = Rarely
3 = Sometimes
4 = Often
5 = Always

Item No.	Statement	Degree of Frequency				
		Never	Rarely	Sometimes	Often	Always
		1	2	3	4	5
Language Tasks Requiring the Use of an E-Dictionary:						
7.	Reading					
8.	Writing					

Item No.	Statement	Degree of Frequency				
		Never	Rarely	Sometimes	Often	Always
		1	2	3	4	5
9.	Speaking					
10.	Listening					
11.	Translation					
Purposes for Using an E-Dictionary:						
12.	I use an e-dictionary to find a meaning.					
13.	I use an e-dictionary to check pronunciation.					
14.	I use an e-dictionary to check a word's part of speech (e.g. noun, verb, adjective, adverb, etc.)					
15.	I use an e-dictionary to find out an idiom (e.g. lone wolf, monkey business).					
16.	I use an e-dictionary to find a collocation or phrasal verb of a target word. (e.g. believe in, composed of, a bunch of flowers).					
17.	I use an e-dictionary to study word etymology or word origins and history.					
18.	I use an e-dictionary to find examples of the word in a sentence.					
19.	I use an e-dictionary to find synonyms/antonyms of a word.					
20.	I use an e-dictionary to check a spelling					

Item No.	Statement	Degree of Frequency				
		Never	Rarely	Sometimes	Often	Always
		1	2	3	4	5
21.	I use an e-dictionary to check the degree of word frequency (from an extremely common word to a word that is rarely used).					

Other purposes (If so, please specify)

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Part III: The attitudes toward e-dictionary usage

Directions: Kindly click on a check box that matches your answer. Descriptions of scores are as follows:

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly agree

Item No.	Statement	Degree of Frequency				
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	4	5
Attitudes toward e-dictionary usage:						
22.	E-dictionaries are easier to use than paper-based one.					
23.	E-dictionaries are better aid for learning English than paper-based one.					

Item No.	Statement	Degree of Frequency				
		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
		1	2	3	4	5
24.	E-dictionaries have clearer definitions of a word than paper-based one.					
25.	E-dictionaries can help me search for a target word quicker than paper-based ones.					
26.	E-dictionary provides more detailed information of vocabulary than paper-based one in the following aspects:					
	a. Meaning					
	b. Pronunciation					
	c. Part of speech					
	d. Idiom					
	e. Phrasal verbs or collocations					
	f. Word etymology					
	g. Examples of the word usage in a sentence					
	h. Synonyms/antonyms					
	i. Spellings					
	j. Degree of word frequency					

Apart from the above-mentioned statements, do you have any suggestion for the distinct advantages of e-dictionary over paper-based dictionary?

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- End of the questionnaire-
Thank you for your time

BIOGRAPHY

Name	Mr. Thossapon Pothiphoksumphun
Date of Birth	November 28, 1994
Educational Attainment	2017: Bachelor of Art (English)
Work Experiences	2019 – present: Marketing Administrator, SGS (Thailand) Ltd. 2017: Email Management Officer, Bumrungrad International

