"Please Let me Use Google Translate": Thai EFL Students' Behavior and Attitudes toward Google Translate Use in English Writing

Wichuta Chompurach[1]

[1] Faculty of Liberal Arts and Management Science, Kasetsart University Chalermphrakiat Sakon Nakhon Province Campus, Sakon Nakhon, Thailand

Correspondence: Wichuta Chompurach, Faculty of Liberal Arts and Management Science, Kasetsart University Chalermphrakiat Sakon Nakhon Province Campus, Sakon Nakhon, 47000, Thailand.

Abstract

The present study aims to investigate how Thai EFL university students use Google Translate (GT) in English writing, how they post-edit (PE) its outputs, and how they view GT use in English writing. The participants were 15 third-year non-English major students from three universities in Thailand. The data collection tools were an interview and two writing assignments. After the data analysis, the findings revealed the students' behavior of GT use and their output PE as well as their attitudes toward GT use in English writing. The results reported the students always used GT in completing writing tasks at both sentence and paragraph levels, and most students did PE the outputs before applying them. However, a few students used the outputs with no PE because they trusted in GT more than they did in themselves. Regarding the PE level, the students intended to address lexical and syntax errors, so their correcting covered the light level. The results also revealed mixed messages in their attitudes toward GT use in English writing. Most students viewed GT as a helpful, reliable assistant enhancing their writing quality, but some raw GT outputs of phrases, idioms, long sentences, and paragraphs were found incomprehensible. Also, the students acquired some bad habits from using GT. However, most students disagreed with not being allowed to use GT in English writing. The study recommended language teachers to provide Thai EFL students adequate instructions for the effective use of GT and its output PE.

Keywords: Google Translate, EFL learners, attitudes, behavior, English writing, Machine Translation

1. Introduction

In the age of technological progress, new technologies have been used in enhancing the teaching and learning of languages both inside and outside the classroom. Some examples include online board games, language learning applications, podcasts, YouTube, TED Talks, online machine translations, etc. One of these learning materials online machine translations (OMT) including Google Translate (GT) has been increasingly popular and used not only in English as a Foreign Language (EFL) classrooms but also in general translations. Also, it has currently become one of the most common tools (Sheppard, 2011).

Machine translation (MT) has been established and developed for several decades; however, Groves and Mundt (2015) claimed that MT was still *"far from perfect"* (p. 113). Yates (2006) similarly added that *"computer cannot translate as well as trained professionals"* (p. 481). Nonetheless, MT including GT has been widely used and very popular. In other words, it could be said that users still use this translation tool for various purposes although the quality of translated outputs is generally poor or *"below the average"* (Van Rensburg, Snyman, & Lotz, 2012, p. 511). Therefore, MT applications should not be used by language learners. It should be used as a tool to help Internet users understand the web page information from a foreign source (Williams, 2006). Moreover, its raw outputs should be post-edited before using for learning purposes (Van Rensburg et al., 2012).

In an educational context, there have been several studies reporting that GT has been used in language learning by EFL learners (Alhaisoni & Alhaysony, 2017; Bahri & Mahadi, 2016; Chandra & Yuyun, 2018; Kate-Phan & Sripetpun, 2016). These studies show that GT is used for several purposes including finding word definitions, reading, and writing. Nevertheless, the EFL students' use of GT and their output post-editing (PE) when completing writing assignments have been less explored, especially in the Thai context. Moreover, Thai EFL students' attitudes toward GT use in English writing have still been less known.

1.1 Statement of the Problem

The present study aims to investigate how Thai EFL university students in the northeastern region of Thailand use GT in English writing and how they post-edit its outputs. It also aims to explore their attitudes toward GT use in English writing. The finding could provide some pedagogical evidence for EFL teachers to gain a better insight into their students' GT use, the output PE performance, and their views on GT use in English writing. Therefore, the two following questions have been set:

1) How do Thai EFL university students use Google Translate in English writing?

2) What do Thai EFL university students think of using Google Translate in English writing?

2. Literature Review

2.1 Definitions and Background

Some scholars have defined what MT is in their studies. For example, Alawneh and Sembok (2011) define MT as *"the process that utilizes computer software to translate text from one natural language to another"* (p. 343). Also, MT is defined by Precup-Stiegelbauer (2013) as *"a translation produced by advanced technology, without the intervention of human translators"* (p. 1768). In terms of OMT, Johnson (2012) defines a translation website as an application that allows users to translate words, phrases, or sentences easily and quickly from English into other various languages.

The MT applications have been continuously developed for decades and have received the attention from scholars and computational linguists. The history, background, development, and evolution of OMT has been studied by Gaspari and Hutchins (2007). According to their paper, the MT have been available on the Internet (restricted to France) since the late 1980s. The Systran Centre was the first company to provide OMT service translating texts from French to English, German to English, and English to French (Gachot, 1989 as cited in Gaspari & Hutchins, 2007). It was reported by Ryan (1987) in Gaspari and Hutchins' study that their online software has been used by up to 4.5 million users in France. For more than three decades, there have been several websites providing the OMT which can be easily accessed, used free of charge, and visited by users from all over the world, such as Babel Fish, Bing Translator, Google Translate, Linguee, Yahoo Translation, etc. Among these ones, GT is the most popular and easy for anyone to use (Precup-Stiegelbauer, 2013).

2.2 Google Translate in Educational Settings

GT is one of the most popular machine translations. With GT, users can translate from only a single word to the whole various types of files (Sheppard, 2011). Moreover, GT users can translate parts or whole websites, webpages, e-mail messages, YouTube video captions, instant messages, chats, etc. from one language into several target languages (Johnson, 2012). Therefore, GT has gained more and more users because of the variety of translation services offered.

Due to these benefits, it was revealed by some research that GT has been used widely not only by Internet users (Kumar, Barbier, Abbasi, & Liu, 2011) but also by language learners. In the academic contexts, GT has been popularly and widely used among language learners for decades as the following findings illustrated. Sheppard (2011) conducted a study to explore why GT has been used and to compare GT with professional language services. The researcher noted that GT has become a common tool nowadays and claimed that GT has some attractions: (1) it took a shorter time to translate than looking up vocabulary words from a dictionary, (2) the cost was cheaper than hiring professional translators, and (3) it could help users understand the other languages. However, he claimed that using GT was *"a risky business"* (p. 566) despite its outputs have been improved. This is similar to the findings of Garcia and Pena's study (2011) which revealed that MT i.e., GT was used by language learners as a tool in language learning. This was because MT could help beginning learners to communicate more and write better with less effort. However, while the learners could write more in a target language with MT use, they also became lazier.

As the previous studies reported GT popularity among language learners, many scholars have paid attention to its quality.

2.3 Google Translate's Quality

Due to the wide use of GT, its quality issues have attracted several scholars' interests and have been studied. The results reported mixed messages. In other words, some research studies reported that the quality of translated work was somewhat poor and far from publishable quality; therefore, it should not be used in language learning while the others showed the advantages of GT in doing assignments or tasks.

The research study of Van Rensburg et al. (2012) was conducted to investigate the quality of GT in translation from English into Afrikaans and from Afrikaans into English. In so doing, the researchers compared the translated work from six different text types including articles, class notes, minutes, an official letter, an examination paper, and slides made with Microsoft PowerPoint. These text types were translated by three different entities including (1) Google Translate; (2) translation student; and (3) professional translator. The finding showed GT products received 33.8 out of 100, the translation student's products got 72.2 out of 100, and the products from the professional translator scored 96.6 out of 100. The researchers also mentioned that in revision, the products from GT would require the most input from users. If any users expect to use GT products as official documents or to publish GT products, revisions have to be made.

In the same way, Precup-Stiegelbauer's study found that raw GT products could not be used for academic purposes. In 2013, the researcher conducted a study to explore how MT can or cannot create problems for language learners, general users, and business users in Romania. The results showed that GT can create some problems since a computer cannot recognize some word functions. So, outputs from GT should not be trusted and were not useful without human intervention. As a result, the translated result should not be applied for academic purposes or language learning. This was because GT outputs were described as being *"far from being accurate"* (p. 1776). Precup-Stiegelbauer's study (2013) was corroborated by Groves and Mundt (2015)'s research study which found that the quality of GT outputs was *"far from able to produce error-free text"* (p. 112). Their study also revealed both strengths and weaknesses of GT. On the one hand, GT's analyzed work was found that it lacked translation accuracy and contained some errors especially word choices, sentence structures, and missing words. Therefore, this could lead to a reader's misunderstanding and incomprehension. On the other hand, the finding revealed that the software could do well on some areas i.e., spelling accuracy and uses of pronouns, prepositions, and articles.

While some previous research results sounded mostly negative, the study of Bahri and Mahadi's (2016) found that GT could be used as a supplementary tool. In their study, the researchers examined a case study of international students' use of GT as an additional tool, and the study site was Universiti Sains Malasia. In the case study, there were 16 international students from various fields and backgrounds enrolling in the LKM 100 Bahasa Malaysia course, and they were asked to fill out questionnaires. The results revealed that most participants viewed GT as an effective supplement tool for learning vocabulary words, writing, and reading. Also, using GT in doing classroom activities and assignments encouraged the students to learn independently. However, the results reported the students slightly disagreed with using GT for learning grammatical points.

These studies shed light on the quality of GT outputs. In any case, word choice and sentence structure were incorrect and ineffective because the application could not recognize the language functions. However, those studies also showed GT could provide learners accurate spelling of words and correct use of pronouns, prepositions, and articles (Groves & Mundt, 2015) and could be used as a supplementary tool in learning, especially in reading and writing (Bahri & Mahadi, 2016). Therefore, some scholars have paid attention to how and why language learners used GT in language learning.

2.4 Students' Attitudes toward GT and their Behavior of GT Use in Language Learning

In the past decade, many scholars have paid attention to students' attitudes toward GT and its quality as well as their behavior with regards to GT use. This is due to GT's wide use for educational purposes. In 2016, Kate-Phan and Sripetpun investigated Thai English major students' attitudes, behavior, and problems in using GT. Their participants were 123 students who were in their 2nd and 4th year. To gather the data, the researchers employed a questionnaire. The results revealed 100 percent of the participants used GT in looking up the meaning of words rather than sentences or entire texts. However, the findings reported three main problems and their recommended solutions. First of all, there were problems in rendering texts at a paragraph level, so the students separated the texts into short sentences before using GT. Other ways to resolve these problems were consulting an online dictionary or another online machine translation, stopping using GT, and asking others to help them. The second problem was concerning cultural differences, grammatical points, and language structures. The participants dealt with these issues by searching for information via Google Search and reordering the GT's raw outputs. The third problem was about vocabulary words. This meant GT rendered texts word for word or incorrectly and skipped some points of the input texts. Therefore, to solves these problems, the participants checked, edited, or added some parts to the output by themselves.

One year later, Alhaisoni and Alhaysony (2017) have conducted a study to discover Saudi EFL university students' attitudes toward the use of GT. There were 92 students majoring in English in their study. In data collection, the researchers used a questionnaire. After the analysis, the researchers found several issues

concerning the students' use of GT and their attitudes toward the use of GT and its quality. In terms of the students' use of GT, the findings showed that a majority (96.2%) used GT in almost all the subjects, and the three most frequent purposes were finding the meaning of technical words, writing assignments, and reading. In terms of their views, the participants had very positive attitudes toward GT. This was because GT use was free and easy; moreover, it could translate or render text (both sentences and paragraphs) quickly. Also, the students thought that the GT's translation was better than their own; it was also helpful in vocabulary learning. This was because GT could somewhat effectively render individual words. However, the students revealed that GT was not able to render a whole paragraph or an entire text correctly; therefore, they had to consult the dictionary or ask their teachers or peers to confirm it. The other drawback the students pointed out was how GT had some negative impacts on their learning habits because it reduced their attempts to read and writing. The findings also reported that the students wanted their teachers to provide them a training or strategies for effectively using.

A year later, Chandra and Yuyun (2018) conducted a study to investigate how eight English major students used GT in essay writing by employing an interview and a writing task. In data collection, how the students used GT in completing the assignment was recorded by a screen-recording program. The results reported that the students used GT in three main aspects: word-level vocabulary, spelling, and grammars, respectively. Moreover, the findings revealed that all participants mostly used GT in word-level because they believed that GT cannot render longer sentences and grammar correctly. However, some of them used GT at a sentence level by finding suitable input words, and some also used GT in consulting grammatical points. In terms of the students' perception of GT, they viewed GT as a supplementary tool in language learning.

More recently, to better understand language leaners' perceptions of GT use, Bin Dahmash (2020) employed both individual and focus group interviewing. The participants in this study were 12 female students studying at King Said University. The findings revealed the students' use of GT and their personal histories with GT. For their use of GT, the learners' use could be categorized into 4 groups: 1) writing use, 2) in-class use, 3) everyday use, and 4) as a language resource. For the learners' personal histories, a majority of the participants first used GT on webpages for translation, and the main feature of GT that the leaners used via their smartphones was translating texts in photos. Moreover, in their views, GT was one of the most essential apps, and it was seen as a free English teacher or a tool to help them in a crisis.

The previous studies showed that EFL learners frequently used GT in English learning especially when writing, and they believed that GT could translate better than themselves. Therefore, GT was a helpful tool for language learners. Moreover, those studies reported that the students found some raw GT outputs unreliable, especially in rendering long sentences and paragraphs. Therefore, how to increase GT's output quality has been taken into consideration. One of the ways to cope with this issue which is noted by some scholars e.g., Van Rensburg et al. (2012) is PE.

2.5 Post-Editing and Its Levels

According to the previous research, the MT's raw outputs were quite poor especially at sentence and paragraph levels. One effective way to improve the quality reported is post-editing. PE is the way human translators correct errors of MT pieces of work or output (Senez, 1998). In terms of its purposes, post-editing is *"to improve productivity and reduce translation costs"* (Scarton, Forcada, Espla-Gimis, & Specia, 2019).

For PE level categories, several scholars (Densmer, 2014; Hu & Cadwell, 2016; TAUS, 2016) have categorized the levels of PE into two levels Light PE and Full PE and defined each one as follows:

1) Light post-editing is minimal PE or rapid PE. In the process, a MT user focuses on making the MT output understandable, comprehensible, or able to convey meaning. So, lexical and syntax errors have to be addressed. The correction includes correcting obviously incorrect spelling and grammatical errors, rewriting fuzzy sentences, deleting redundant words, and editing MT mistakes.

2) Full post-editing is defined as the way that post-editors edit MT work to the level of human translators' quality. In other words, the quality should not be different from human translation (Densmer, 2014; TAUS, 2016). At this level, the post-editor has to cover all light PE steps with other more detailed activities including correcting less obvious errors, consistent and appropriate styles, editing offensive, inappropriate contents, and correct formatting.

Hu & Cadwell (2016) mentioned that this mentioned category is the most popular. Not only has the PE level category been popularly used in academic contexts, but it has been used by online translation services i.e., EuroTranslate.rs, LGOTranslations.com, MantanMT.com, and so on.

According to Figure 1, the mentioned websites provide these two options of PE – "light PE" and "full PE" for their customers to choose. The diagram demonstrates which areas the light PE and the full PE cover. Also, the diagram shows how close to human quality the raw translation will be after PE.
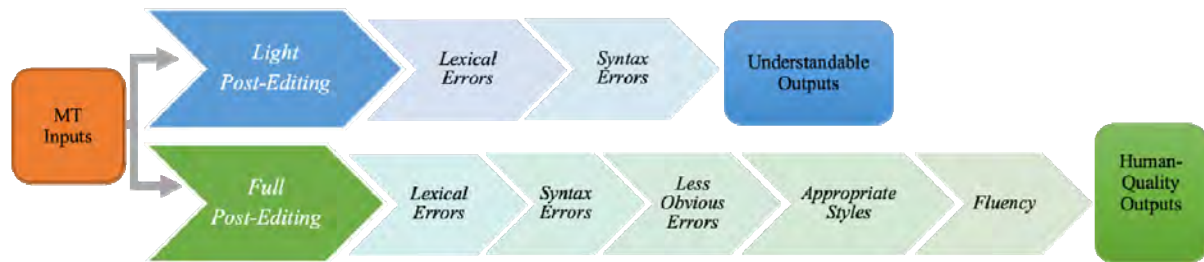

Figure 1. Levels of the Post-Editing

A review of literature sheds light on GT's use in language learning (Bin Dahmash, 2020; Garcia & Pena, 2011; Sheppard, 2011), its use and quality (Bahri & Mahadi, 2016; Groves & Mundt, 2015; Precup-Stiegelbauer, 2013; Van Rensburg et al., 2012), and language learners' attitudes toward GT use and quality (Alhaisoni & Alhaysony, 2017; Bahri & Mahadi, 2016). However, the language students' behavior in terms of GT use in English writing and their PE of GT outputs are still unknown or less studied, especially in Thai context. Moreover, in terms of the language learners' attitudes toward GT use and toward its quality in English writing, previous research studies (Alhaisoni & Alhaysony, 2017; Bahri & Mahadi, 2016; Kate-Phan & Sripetpun, 2016) have mostly been done by employing a quantitative research approach - a questionnaire or an online survey. However, to deeper understand ones' attitudes and to describe or to explain a social phenomenon, a qualitative approach using an in-depth interview should be employed (Flick, 2007).

3. Research Methodology

In this study, the researcher adopted qualitative research methods which were a semi-structured interview and document analysis. To do so, the researcher could focus on studying or investigating the unique phenomena or situations (Creswell, 1994; Merriam, 2009; Silverman, 2006). With the interview, the researcher can deeply understand the particular context, ones' perceptions, and their historical experience (Wolfer, 2007). Therefore, the researcher could attain better insight into the students' attitudes toward GT performances and their behavior in terms of GT use and PE. For written assignments, the researcher employed document analysis as "a complement to other research methods" (Bowen, 2009, p. 29) which could provide detailed explanation of a single phenomenon to a qualitative case study (Stake, 1995; Yin, 1994 as cited in Bowen, 2009). With this, the researcher could discover insights into examples of writing parts of areas the students used GT to render.

3.1 Research Procedures

The researcher recruited the participants by sending letters of assistance attached with an informed consent form and a participant information sheet to the three prospective universities located in Sakon Nakhon and Nakhon Phanom, Thailand. Therefore, the future participants were informed about the present study, the objectives, the data collection tools, and their rights. After that, fifteen participants from six non-English major departments have agreed to voluntarily participate in the study.

Upon the voluntary agreement of the 15 participants, each one was individually interviewed in Thai. Moreover, for better insight and clearer pictures of the students' behavior of GT use, the participants were asked to do two English writing assignments. One was writing at a sentence level on the topic "My Hero"; the other one was to write a paragraph entitled "My Summer in 2020". Each participant could use GT in writing both assignments freely but had to underline those particular parts with a red pen. The quality of their submitted work would not be individually assessed or evaluated because this was not the determined objective of the present study.

3.2 Participants

In the present study, there were 15 non-English major students, five from King University, five from Queen University, and the other five from Prince University as illustrated in the Table 1. Both the students' names and their institutions were pseudonyms to protect their privacy and identities. All of them were 3rd year students aged between 20 to 25; the 3rd year students were purposely selected because they have enrolled and passed fundamental or general English courses. Five of them were male, the other 10 students were female.

3.3 Ethical Issues

Bearing in mind that considerations of ethics must be attainted, the researcher ensured that the proposed research study has been approved by the Institutional Review Board (IRB), and these following points were met: 1) all

potential participants were purely voluntary and free to withdraw at anytime; 2) the participants were adequately informed about the present study objectives and information; 3) the participants were required to sign the informed consent forms upon their agreement to take part in the study; 4) the participants' privacy, information, and identities including their names and institutions were preserved by using pseudonym names in data analysis and when reporting the findings; 5) the researcher asked the participants for permission to do audio recordings before the interviews.

Table 1. Demographic Information for the 15 participants

Name (Pseudonym)		Age	University (Pseudonym)	Gender	Year	Major
1.	Anne	22	King U.	Female	3	FST
2.	Celine	22	King U.	Female	3	FST
3.	Drew	21	King U.	Female	3	CD
4.	Erica	21	King U.	Female	3	CD
5.	Gary	21	King U.	Male	3	CD
6.	Amanda	21	Queen U.	Female	3	Chinese
7.	Bob	20	Queen U.	Male	3	Chinese
8.	Cody	22	Queen U.	Female	3	Chinese
9.	Diana	20	Queen U.	Female	3	Chinese
10.	Emily	25	Queen U.	Female	3	Chinese
11.	Ben	20	Prince U.	Male	3	MS
12.	Christ	20	Prince U.	Male	3	MS
13.	Dan	21	Prince U.	Male	3	MS
14.	Hilary	21	Prince U.	Female	3	HTM
15.	Irene	22	Prince U.	Female	3	Finance

Note. FST = Food Science and Technology, CD = Community Development, MS = Management Science, HTM = Hotel and Tourism Management.

3.4 Reliability and Validity of the Data Collection Tools

To improve instrumental reliability, the researcher has done pilot studies by adopting a test-retest reliability method with two students similar to the sample group.

To enhance the material validity, the researcher has done these followings. First, the interview questions were adapted from Niño (2009) and Giannetti (2016) and were translated into Thai. The questions were reviewed and corrected by a Thai language expert to ensure that the wording of each question was not ambiguous. After that, the researcher revised the questions following her comments. Second, bearing in mind "saturation is the key to excellent qualitative work" (Morse, 1995 as cited in Guest, Bunce, & Johnson, 2006, p. 60), the researcher attempted to reach or achieve data saturation. To do so, the researcher followed Guest, Bunce, and Johnson's (2006) review of seven studies presenting the recommended guidelines for determining appropriate sample sizes for phenomenological studies which should be around 5 – 25 participants.

3.5 Data Analysis

The data were derived mainly from the in-depth interviews with 15 Thai EFL students, and the interviews were around 12.23 – 23.47 minutes. After interviewing, the researcher did verbatim transcriptions and analyzed data by employing Strauss and Corbin's (1990) open and axial coding.

The other supplement tools, which were the written assignments, were also collected. The assignments were analyzed by employing document analysis. In so doing, the researcher could clearly see and understand how students use GT in writing at both sentence and paragraph levels. However, there were two out of 15 students who did not submit the assignments, so their work was not included in the database.

4. Results and Discussion

In this section, research results are presented and discussed in reference to the research questions.

4.1 How do Thai EFL University Students Use Google Translate in English Writing

From the analyzed data, the researcher found that all participants used GT in English writing not only at the sentence level but also at the paragraph level for various purposes. Moreover, the data revealed the patterns of

their GT use, the levels of their post-editing, and the reasons why the students kept and deleted some parts of raw GT outputs.

4.1.1 Thai EFL University Students' Use of GT in English Writing

In terms of how the students used GT when writing in English, the researcher found that all of the students in the present study used GT in English writing. The finding backed up the previous research (Alhaisoni & Alhaysony, 2017). In addition, more than a half of the students used GT to find the meaning of words when doing English writing assignments. It was similar to earlier studies (Alhaisoni & Alhaysony, 2017; Bahri & Mahadi, 2016; Chandra & Yuyun, 2018; Kate-Phan & Sripetpun, 2016). Additionally, the present study also revealed the four characteristics or types of words that were (1) technical terms; (2) difficult or advanced words; (3) unfamiliar words; (4) general words. Only did a few of them use GT in rendering their original input (Thai) from a word level to a paragraph level. This was because the students were not proficient in English as one student participant Gary shared in the following areas:

> "I am not good at English. When a teacher gives me a writing assignment about making some sentences, I usually type the sentence in Thai. Then I use GT to render it into English. I use it to do a writing assignment every single time. For writing longer sentences or paragraphs, I also use GT."

Moreover, the findings showed that a few students of the present study used GT for helping them about English grammatical structures. These findings did not corroborate the finding of Bahri and Mahadi (2016) which revealed that the students disagreed with using GT for learning grammatical points. However, the student from the present study described that GT's raw output was grammatically correct. According to Dan,

> "I know only basic grammars. I will use GT for those grammar points I do not quite understand. [...] For those longer sentences that connect to each other, I use GT because it is reliable. I can make only a shorter sentence by myself. For writing longer sentences, I am not very confident to do it, so I have to use GT instead."

According to the analysis of their writing assignments at both sentence and paragraph levels, the students also used GT to render words, phrases, clauses, predicates, and sentences as illustrated in Table 2.

Table 2. Types of Writing Inputs Rendered with GT by Thai EFL University Students

Writing Task	Writing Inputs Rendered with GT	Examples
Sentence Level	Noun	*band*
	Gerund	*giving*
	Verb	*help*
	Adjective	*gentle, political, smart, rich*
	Conjunction	*because*
	Phrase	*a hardworking woman*
	Clause	*[…] everyone can be a hero*
	Sentence	*My hero can help me when I am in trouble.*
		My hero must not be selfish.
	Predicate	*taught me to read English*
Paragraph Level	Noun	*nationality, sunscreen, neighbors*
	Gerund	*gardening*
	Verb	*survive, prey, solve*
	Adjective	*convenient, delicious*
	Adverb	*immediately, seriously*
	Gerund	*writing, studying*
	Conjunction	*because*
	Phrase	*nothing interesting, raw fish, learning new things*
	Clause	*When the summer break comes*
		who is allergic to sweat from hot
	Sentence	*My career is painter.*
		After selling all the items, I came to wash the dish.
	Predicate	*would like introduce myself*

Note. The examples were from students' assignments without error correction

The Table 2 shows that in their behavior of GT use in English writing, the students applied GT in rendering words, at both sentence and paragraph levels which backed up the previous research (Alhaisoni & Alhaysony, 2017; Bahri & Mahadi, 2016; Chandra & Yuyun, 2018; Kate-Phan & Sripetpun, 2016). Those words included nouns, verbs, adjectives, conjunctions, and so on. Moreover, the Table 2 also illustrates the students' use of GT in rendering phrases, clauses, predicates, and sentences at both levels.

4.1.2 Thai EFL University Students' Patterns of GT Use and Post-Editing (PE)

From the analyzed data, the results reported several patterns of GT use behavior in English writing which could be separated into two phases. The first one was before using GT; the second was during using GT and output PE. Before rendering their original input at a sentence level with GT, a few students had done the preparation steps. To do so, Hilary had to make the original inputs suitable or understandable before using GT. This supported Chandra and Yuyun's finding (2018). Hilary expressed,

> *"Before rendering Thai sentences into English, I will write them in a quite formal style. This is because after rendering with GT, I will receive usable or better raw outputs which are not that incomprehensible. If not, they might be a word-for-word translation which does not make sense."*

For the other preparation step before using GT, Drew shared in the interview that she started with looking up some vocabulary words because she really focused on vocabulary correctness.

> *"Before using GT, I will look up words I want to use in my writing. Then I write them in Thai; this is because I really focus on words. After receiving raw outputs of both short and longer sentences, I will check the vocabulary first. If it is not fine, I will edit it."* (Drew)

At the paragraph level, five out of 15 students had done the preparation step. This meant they divided or cut the whole original paragraph into short sentences before rendering them by using GT. They put only a single Thai sentence to GT which could be rendered into one English sentence. This was similar to the finding of Kate-Phan and Sripetpun's study (2016). In terms of their objective, the students believed that GT could render the shorter sentences better than it could do with the longer ones or paragraphs, so the raw outputs from GT could be more understandable.

In terms of the second phase, the behavior of GT use in writing English sentences and paragraphs was analyzed. The results revealed six patterns of Thai EFL university students' GT use and their post-editing as illustrated in Figure 2. According to Figure 2, the analysis showed these six patterns that the students performed when using GT and post-editing raw outputs in English writing at both the sentence and paragraph levels. In pattern 1, there were a few students who used the raw outputs in their writing assignments without post-editing. However, more than a half of the students in the present study post-edited the outputs before using them as in patterns 2-6. For their PE behavior, the students reviewed the outputs and post-edited the raw outputs following using one of these five different methods: (1) using GT to render the outputs back into Thai to check if it could be understandable; (2) searching for examples of those outputs or explanations of English grammars of via Google Search; (3) asking their teachers or friends who specialized in English; (4) post-editing by themselves; and (5) applying more than one tool. Additionally, the results revealed two reasons why the students had to post-edit the GT outputs. First of all, the students were not sure whether the meanings and sentence structures of the outputs were correct. The other one was that some students trusted themselves more than they did in GT; therefore, they wanted to post-edit any parts or areas they felt they were proficient in.
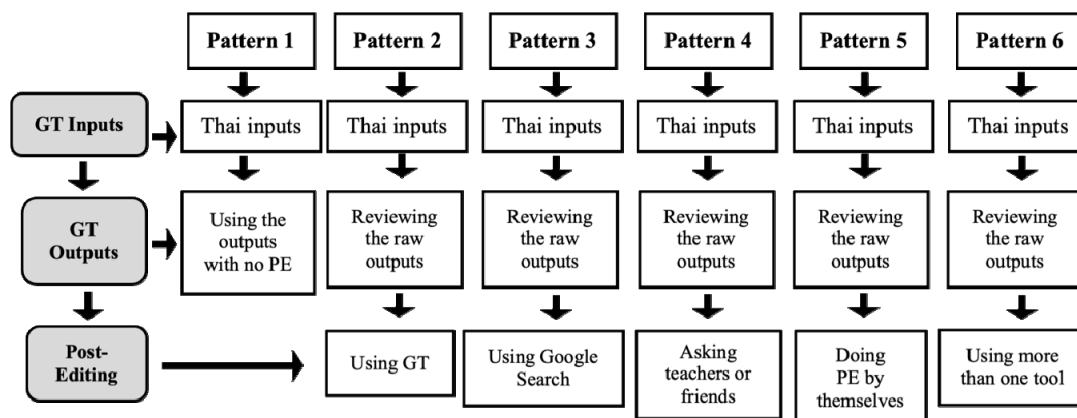

Figure 2. Six Patterns of Thai EFL University Students' Use of GT in English Writing

4.1.3 Thai EFL University Students' Levels of PE

As mentioned earlier, PE could improve GT output quality to be understandable and be able to convey the expected messages. From the analyzed data, the researcher found that after the students used GT in English writing, most of them did PE. In terms of the PE level, according to Densmer (2014), Hu and Cadwell (2016), and TAUS (2016), the students similarly did light PE at both sentence and paragraph levels as illustrated in Table 3. Table 3 illustrates the output areas expected to be addressed by Thai EFL students according to their PE experience. The results showed their purposes of PE covered the light level which means the students intended to address or correct these errors including lexical and syntax errors. Moreover, the results revealed the objectives of the students' PE which were reducing and correcting grammatical errors, reordering sentence structures, and checking word use in terms of word choices and meanings.

Table 3. Thai EFL University Students' PE Behavior and their PE level

Writing Task Types	PE Levels	Students' PE Behavior
Sentence Level	Light PE	'For those _redundant words_, I would delete them'.
	Light PE	'To post edit, I correct _the grammatical errors_ that I've learned'.
	Light PE	'I edit the outputs by myself. Google Search helps me a lot. I could use (the searched results) in _reordering sentences'_.
	Light PE	'First, I check the subject of the sentence, is it what I expected? Then I check the sentence's _grammar_, like _tenses, adjectives, and adverbs'_.
Paragraph Level	Light PE	'No matter how long or short the sentence is, I would first check the _vocabulary words'_.
	Light PE	'If I render whole Thai inputs, the _words_ of the outputs will not be accurate. I will check those words'.
	Light PE	'For a quite long (inputs), I have to _reorder the sentence structure_ and check whether _the word_ is correct'.
	Light PE	'I focused on checking _conjunctions_ because GT might separate inputs differently from what we expected'

4.1.4 Deleting and Keeping GT's Raw Outputs

In PE, the findings revealed issues about the students' deleting and keeping those raw GT outputs. For deleting some parts, the students have deleted them due to the following three reasons: (1) the GT outputs were incorrect or incomprehensible; (2) the outputs could not convey the expected messages; and (3) their teachers or friends advised them to cut those parts out. However, there were some students deciding not to delete any parts because they thought that GT was more reliable than themselves, deleting some parts would change the meaning of the sentence, and the output from the short sentence could be used after light PE.

4.2 What do Thai EFL University Students Think of Using Google Translate in English Writing

The results revealed mixed messages about what the students thought of GT use in English writing. In other words, the students had positive views with regards to GT in some ways; however, they also found out some drawbacks of it. Moreover, the findings also revealed their attitudes toward not being allowed to use GT in English writing by their teachers.

4.2.1 Thai EFL University Students' Positive Views on GT Use in English Writing

Although several previous research studies reported about the low quality of the GT outputs (Groves & Mundt, 2015; Precup-Stiegelbauer, 2013; Van Rensburg et al., 2012; Yates, 2006), GT has been used widely and viewed positively by some language learners including ones from the present study. The analyzed data reported that most students had positive views toward using GT in English writing due to these six reasons. First, GT was their writing assistant; this backed up the previous findings (Bahri & Mahadi, 2016; Chandra & Yuyun, 2018; Bin Dahmash, 2020). Moreover, the results revealed that the application, in the students' views, helped enhance their writing quality. This meant they could use GT to look up words, and they could obtain writing guidelines and grammatically correct outputs. Also, writing with GT use allowed them to gain more confidence, and they found that their writing work contained less errors. Ben and Drew, for example, expressed,

> "If I use GT in doing a writing assignment at both sentence and paragraph levels, the sentences will be more coherent and more correct. For vocabulary words, they will be better than those basic ones I've known."
> (Ben)

> *"Although the outputs aren't 100% accurate, it could be used as a guideline for writing. So, I could continue further writing."* (Drew)

Second, a majority of the students thought that doing English writing assignments with the help of GT outperformed when writing without it. This finding supported Alhaisoni and Alhaysony's study (2017). Also, the present study further revealed that in the students' views, vocabulary words, conjunctions, sentence structures, tenses, and word orders were better than their own writing without GT. Cody, for example, expressed,

> *"I think doing an English writing assignment with using GT is better in terms of sentence structures. If I mostly do it on my own, it will contain more that 80% incorrect errors in both sentence structures and vocabulary."*

Third, four students believed that GT was more advanced than themselves in terms of words and sentence structures, so they trusted in GT more. Therefore, they decided to use GT outputs instead of their own writing as Amanda, for example, said,

> *"I believe in GT more than myself. I rarely delete any parts of the outputs because I'm quite not confident in my English skill. I trust in GT more."*

The fourth reason was about wasting less time. This corroborated the earlier research (Alhaisoni & Alhaysony, 2017; Sheppard, 2011). More than a half of the students thought that GT allowed them to spend a shorter amount of time to finish their assignments when compared to using dictionary books. According to Amanda, *"it's faster than using a dictionary book. Moreover, I could not only know a meaning of that word but also its pronunciation"*. The fifth reason was that GT was easy and convenient to use. This finding was similar to Alhaisoni and Alhaysony's study (2017). In the students' views, the application could be used everywhere and every time, and it also met their needs more than a dictionary book did. Finally, four students from this study believed that clear, short sentences and vocabulary words rendered by GT were correct and reliable. This result agreed with the finding from Alhaisoni and Alhaysony's study (2017). According to the students' attitudes toward this point, the outputs of those short and clear sentences could convey their expected messages correctly; moreover, the sentence structurers were grammatically correct. Drew shared, *"I believed in GT for rendering those short sentences used in daily life, and I mostly use the outputs without post-editing."*

4.2.2 Thai EFL University Students' Negative Views on GT Use in English Writing

Even though there were six positive points the students found about GT use in English writing, the results reported that 11 out of 15 students found a few drawbacks in doing so which were (1) the unreliable raw outputs and (2) the bad habits from using GT. First, the students viewed that the raw GT outputs of rendering idioms and phrases, were incorrect and unreliable. Hilary shared,

> *"GT's drawback is that it incorrectly renders the inputs of both sentences and words. Also, the outputs especially phrases and idioms shouldn't be used because they will not be what we expected to convey. For sentence rendering, it's fine, but for phrases and idioms, the application renders word-for-word. You know, the meaning of the idiom cannot be interpreted directly, is it?"*

Therefore, some students trusted in themselves more. Bob, for example, said,

> *"I rarely use GT to render phrases because I have studied English for a long time and already known some words. Mostly I use it for finding meanings of words. I trust in myself more."*

The raw outputs of longer sentences and paragraphs were also considered to be grammatically incorrect and unable to convey their messages correctly. According to Irene,

> *"The weakness of this application is that it cannot render long sentences accurately. Mostly, there are some errors in grammatical structures in the outputs. Meanings of words are accurate, but grammatical structures of the outputs are not. So, I must post-edit them. I should do a writing task on my own because I have ever used it to render a paragraph, and there were so many errors because of GT."*

The other drawback of using GT in English writing was that the students became less enthusiastic to improve, to learn, and to do any assignments by themselves. This supported the findings of Garcia and Pena's (2011). This was due to GT's convenience, easiness, and rapidity. Therefore, the five students in the present study found that they became lazier and less motivated to learn and improve themselves when using GT in doing writing assignments. Moreover, the students found that they did not learn anything by using GT. In the interview, Dan expressed,

> *"The application causes bad habits. It makes me less motivated to learn more. I just want to rely on it. It causes me bad habits – I don't want to learn more; I am lazy to remember things. Post-editing improves my*

work, but the application makes me worse. If I face the real situation that I have to write on my own, I won't be able to do it."

In sum, the students found that GT outputs in terms of idioms, phrases, long sentences, and paragraphs were incorrect and unreliable. Also, since GT helped the students to finish their work with less effort, some of whom realized that they became lazier and less motivated to learn.

4.2.3 Thai EFL University Students' Negative Views on not Being Allowed to Use GT

More than a half of the students in the present study had negative attitudes toward being ordered not to use GT in English writing. Moreover, a few of them admitted that they used GT although they were asked not to. For example, *"I keep using it but never let the teacher know this because I don't know many words,"* said Drew. Also, they viewed that not letting them use GT made them feel worried and affected the quality of their writing assignments. Amanda expressed, *"Oh! My! Please, teacher! Please let me use Google Translate because it helps me finish assignments. So, I will get some marks."* The other student is Hilary. She said,

> *"It's going to be hard! I don't even know how to start. I disagree with this. For students, it's hard. Some students won't be able to finish their work. They have to rely on the application for helping them just a little bit, like, to find some examples of how to order sentence structures."*

Moreover, the results revealed the need of instructions on how to use GT and do PE by two students. They suggested to involve training on the GT use and the output PE in class. Cody, for example, said,

> *"If there're some errors (in the outputs), we should be taught by teachers how to post-edit and spot errors. For my suggestion, teachers should give us some examples. Like, if we use this app, how will we notice errors and edit them? It's teaching how to use GT."*

Most students disagreed with the way their teachers did not let them use GT in English writing because it not only affected the students' feelings but, in their views, affected their writing quality. Moreover, providing training courses or adequate instructions to apply the application effectively and to do output PE was needed by Thai EFL students.

5. Conclusion and Pedagogical Implications

The present study has examined Thai EFL university students' behavior and attitudes toward GT use in English writing which have been less explored, especially in Thai context. Based on the findings gathered from the interview and the document analysis, the results have discovered the six patterns of Thai EFL learners' GT use, their PE behavior, and their views on GT use in English writing.

The findings concerning their GT use show that Thai EFL students always use GT in English writing at both sentence and paragraph levels. This is because GT is seen as their writing assistant in looking up words, providing writing guidelines and grammatically correct outputs, and finishing the assignments faster. Moreover, doing writing tasks with GT outperforms doing so on their own in terms of the writing quality. GT helps enhance the quality of vocabulary words, conjunctions, sentence structures, tenses, and word orders in their writing.

In terms of PE behavior, the findings show that the language learners' perception of their language ability affects their decision whether or not to do output PE. For those students who have done PE before applying the outputs, they believe in themselves more than they do in GT. In addition, they post edit the outputs by using GT, using Google Search, asking someone proficient in English, doing it themselves, or applying more than one tool. Their purpose of PE is to reduce lexical and syntax errors, so their PE covers the light level. However, a few students who use GT outputs with no PE view that GT outperforms them, so they do not make any changes.

For Thai EFL university students' attitudes toward GT use, on the one hand, GT is viewed as their helpful, reliable assistant enhancing the quality of their writing work and providing writing guidelines. On the other hand, their raw outputs of idiom, phrase, and paragraph rendering are found incomprehensible. However, most students disagreed with not being allowed to use GT in writing because it makes them feel worried and affects their work quality. Therefore, language teachers should provide them instructions on how to use GT and do output PE effectively.

In terms of the pedagogical implications, the findings provide a better insight for language teachers into Thai EFL university students' GT use and their attitudes toward using the application in English writing. Moreover, the results could be used as evidence for language teachers to design activities, lessons, and training courses on the effective use of GT and the GT output PE for EFL learners. In so doing, language learners could obtain how to maximize the use of GT effectively and realize how important PE is when using GT in language learning including English writing.

6. Recommendations

Although the present study offers findings that shed light on Thai EFL university students' behavior in terms of GT use and PE as well as their attitudes, the quality of the students' writing with GT use is not examined because it is out of the scope of the present study. Also, the size of participants was quite limited because it is a case study. For further research, the researcher recommends replicating the study by employing a mixed-method research study with a larger size of participants and a scope of the study based on the assessment of the students' writing with GT use.

Acknowledgement

References

Alawneh M. F., & Sembok, T. M. (2011, September 27-29). Rule-Based and Example-Based Machine Translation from English to Arabic. *2011 Sixth International Conference on Bio-Inspired Computing: Theories and Applications*, 343-347. https://doi.org/10.1109/BIC-TA.2011.76

Alhaisoni, E., & Alhaysony, M. (2017). An Investigation of Saudi EFL University Students' Attitudes towards the Use of Google Translate. *International Journal of English Language Education, 5*(1), 72-82. https://doi.org/10.5296/ijele.v5i1.10696

Bahri, H., & Mahadi, T. S. (2016). Google Translate as a Supplementary Tool for Learning Malay: A Case Study at Universiti Sains Malaysia. *Advances in Language and Literary Studies, 7*, 161-167. https://doi.org/10.7575/aiac.alls.v.7n.3p.161

Bin Dahmash, N. (2020). 'I Can't Live Without Google Translate': A Close Look at the Use of Google Translate App by Second Language Learners in Saudi Arabia. *Arab World English Journal (AWEJ), 11*(3), 226-240. https://doi.org/10.24093/awej/vol11no3.14

Bowen, G. A. (2009). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal, 9*, 27-40. https://doi.org/10.3316/QRJ0902027

Chandra, S., & Yuyun, I. (2018). The Use of Google Translate in EFL Essay Writing. *LLT Journal: A Journal on Language and Language Teaching, 21*, 228-238. https://doi.org/10.24071/llt.2018.210212

Creswell, J. W. (1994). *Research Design Qualitative and Quantitative Approaches.* Thousand Oaks, CA: Sage.

Densmer, L. (2014). *Light and Full MT Post-Editing Explained.* Retrieved from https://info.moravia.com/blog/bid/353532/Light-and-Full-MT-Post-Editing-Explained

Flick, U. (2007). *Designing qualitative research.* London, SAGE Publications Ltd. https://doi.org/10.4135/9781849208826

Garcia, I., & Pena, M. I. (2011). Machine translation-assisted language learning: writing for beginners. *Computer Assisted Language Learning, 24*(5), 471-487. https://doi.org/10.1080/09588221.2011.582687

Gaspari, F., & Hutchins, J. (2007). Online and Free! Ten Years of Online Machine Translation: Origins, Developments, Current Use and Future Prospects. *Proceedings of MT Summit XI, Copenhagen, Denmark*, 199-206.

Giannetti, T. R. (2016). *Google Translate as a Resource for Writing* (Master's thesis). St. John Fisher College, NY, United States.

Groves, M., & Mundt, K. (2015). Friend or foe? Google translate in language for academic purposes. *English for Specific Purposes, 37*, 112-121. https://doi.org/10.1016/j.esp.2014.09.001

Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. *Field Methods, 18*(1), 59-82. https://doi.org/10.1177/1525822X05279903

Hu, K., & Cadwell, P. (2016). A Comparative Study of Post-editing Guidelines. *Baltic J. Modern Computing, 4*(2), 346-353.

Johnson, G. (2012). Google Translate http://translate.google.com/. *Technical Services Quarterly, 29*(2), 65, https://doi.org/10.1080/07317131.2012.650971

Kate - Phan, K., & Sripetpun, W. (2016). *Attitudes, behaviors and problems of English major students in using "Google Translate"* (Master's thesis). Prince of Songkla University, Songkla, Thailand. Retrieved from https://www.tci-thaijo.org/index.php/journal-la/article/view/61858

Kumar, S., Barbier, G., Abbasi, M., & Liu, H. (2011). TweetTracker: An Analysis Tool for Humanitarian and Disaster Relief. *Proceedings of the International AAAI Conference on Web and Social Media, 5*(1), 661-662. Retrieved from https://ojs.aaai.org/index.php/ICWSM/article/view/14079

Merriam, S. B. (2009). *Qualitative research A guide to design and implementation.* San Francisco, CA: Jossey-Bass.

Niño, A. (2009). Machine translation in foreign language learning: language learners' and tutors' perceptions of its advantages and disadvantages. *ReCALL, 21*(2), 241-258. https://doi.org/10.1017/S0958344009000172

Precup-Stiegelbauer, L. R. (2013). Automatic translations versus human translations in nowadays world. *Procedia - Social and Behavioral Sciences, 70*, 1768-1777. https://doi.org/10.1016/j.sbspro.2013.01.252

Scarton, S., Forcada, M. L., Esplà-Gomis, M., & Specia. (2019). Estimating post-editing effort: a study on human judgements, task-based and reference-based metrics of MT quality. *Proceedings of IWSLT 2019* (Hong Kong, Nov. 2-3, 2019). https://doi.org/10.5281/zenodo.3525003

Senez, D. (1998). The Machine Translation Help Desk and the Post-Editing Service. *Proceedings of Aslib conference.* Retrieved from https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.477.4105&rep=rep1&type=pdf

Sheppard, F. (2011). Medical writing in English: The problem with Google Translate. *La Presse Médicale, 40*(6), 565-566. https://doi.org/10.1016/j.lpm.2011.02.024

Silverman, D. (2006). *Interpreting Qualitative Data: Methods for Analyzing Talk, Text and Interaction.* London: Sage Publications Ltd.

Strauss, A., & Corbin, J. M. (1990). *Basics of qualitative research: Grounded theory procedures and techniques.* Thousand Oaks, CA: Sage.

TAUS. (2010). *Machine translation post-editing guidelines.* Retrieved from https://evaluation.taus.net/resources/guidelines/post-editing/machine-translation-post-editing-guidelines

Van Rensburg, A., Snyman, C., & Lotz, S. (2012). Applying Google Translate in a higher education environment: Translation products assessed. *Southern African Linguistics and Applied Language Studies, 30*(4), 511-524. https://doi.org/10.2989/16073614.2012.750824

Williams, L. (2006). Web-Based Machine Translation as a Tool for Promoting Electronic Literacy and Language Awareness. *Foreign Language Annals, 39*, 565-578. https://doi.org/10.1111/j.1944-9720.2006.tb02276.x

Wolfer, L. (2007). *Real Research Conducting and Evaluating Research in the Social Sciences.* New Jersey: Pearson Education Inc.

Yates, S. (2006). Scaling the tower of Babel Fish: An analysis of the machine translation of legal information. *Law Library Journal, 98*(3), 481-500. Retrieved from https://heinonline.org/HOL/LandingPage?handle=hein.journals/llj98&div=41&id=&page=