A Comparison of the Performance of Google Translate in 2018 and 2023

การเปรียบเทียบประสิทธิภาพการแปลของโปรแกรม Google Translate ระหว่างปี ค.ศ.2018 และค.ศ.2023

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Abstract

Google Translate has evolved into an indispensable tool for Thai readers seeking to comprehend English texts. While it may not be flawless, it offers remarkable features that facilitate readers in grasping the overall meaning. Furthermore, its continuous annual progress necessitates ongoing studies. Therefore, this article sets out to compare Google Translate's machine translation errors in two online news articles retrieved from both 2018 and 2023, from an English-to-Thai perspective. One example from beginner-level reading comprehension materials was also included in the analysis. These texts underwent meticulous qualitative and quantitative analyses to identify errors introduced by Google Translate. The findings of this study unveiled the inevitability of errors in Google Translate's translations. These errors predominantly fell into three major categories: lexical, syntactic, and discourse. Notably, Google Translate exhibited a penchant for making lexical errors in the translated texts in both 2018 and 2023. The frequency of errors in Google Translate was 87% in 2018 and decreased to 39% in 2023. From the total errors, Google Translate made lexical errors in 2018 for 55%, syntactic errors for 30%, and discourse errors for 20%. In contrast, the error rate improved in 2023: lexical errors decreased to 25%, syntactical errors to 10%, and discourse errors to 10%, indicating advancements over the past half-decade. Despite the prevalence of errors, this study

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aims to provide explanations and practical implications to enhance future use. While Google Translate's errors may occasionally hinder a reader's comprehension, the software still holds the potential to offer a general understanding of a text. Recognizing the reliance on translation tools and understanding the types of errors are critical steps for readers to employ these tools more effectively.

Keywords: Google Translate, Translation, Lexical errors, Syntactic errors, Discourse errors

บทคัดย่อ

Google Translate ได้พัฒนามาเป็นเครื่องมือสำหรับผู้อ่านที่ต้องการทำความเข้าใจภาษาอังกฤษ การแปลของตัวเครื่องมือแม้ไม่ได้สมบูรณ์นักแต่มีคุณสมบัติที่เป็นประโยชน์ที่ช่วยให้ผู้อ่านเข้าใจความหมายโดย ภาพรวมได้ นอกจากนี้เครื่องมือยังได้รับการพัฒนาและยังมีการศึกษาเพื่อพัฒนาระบบอย่างต่อเนื่อง บทความ วิจัยนี้มีวัตถุประสงค์ เพื่อเปรียบเทียบข้อผิดพลาดในการแปลด้วยเครื่องของ Google Translate ในบทความ ข่าวออนไลน์ สองบทความซึ่งนำมาจากหนังสือพิมพ์ในปี 2018 และ 2023 และบทอ่านระดับเริ่มต้น 1 บทความ ที่แปลจากภาษาอังกฤษเป็นภาษาไทย การวิเคราะห์ข้อมูลใช้วิธีการเชิงคุณภาพและเชิงปริมาณเพื่อ ระบุข้อผิดพลาดที่เกิดจากการแปลของ Google Translate ผลจากการศึกษาครั้งนี้ชี้ให้เห็นข้อผิดพลาดในการ แปลของระบบการแปล Google Translate โดยแบ่งออกได้เป็นสามประเภทหลักได้แก่ คำศัพท์ วากยสัมพันธ์ และวาทกรรม ในข้อความที่แปลทั้งในปี 2018 และ 2023 โดย ในปี 2018 ความถี่ของข้อผิดพลาดทั้งหมด คือ 87% และลดลงเป็น 39% ในปี 2023 จากข้อผิดพลาดทั้งหมด Google Translate มีข้อผิดพลาดด้านคำศัพท์ ในปี 2018 คิดเป็น 55% ข้อผิดพลาดทางวากยสัมพันธ์ 30% และข้อผิดพลาดในด้านวาทกรรม 20% ในปี 2023 ได้มีการปรับปรุงอัตราข้อผิดพลาด โดยข้อผิดพลาดด้านคำศัพท์ลดลงเหลือ 25% ข้อผิดพลาดทาง วากยสัมพันธ์เหลือ 10% และข้อผิดพลาดวาทกรรมเหลือ 10% ซึ่งชี้ให้เห็นถึงผลการพัฒนาระบบในระหว่าง ช่วงครึ่งทศวรรษที่ผ่านมา แม้จะมีข้อผิดพลาดเกิดขึ้นในหลายจุด แต่การศึกษานี้มุ่งที่จะให้คำอธิบายและ แนวทางปฏิบัติเพื่อปรับปรุงการใช้งานในอนาคต แม้ว่าการแปลของ Google Translate จะทำให้ผู้อ่านเข้าใจ ยากในบางครั้ง แต่ระบบยังคงมีศักยภาพในสร้างความเข้าใจการอ่านโดยทั่วไป โดยเฉพาะในระดับเบื้องต้น ความเชื่อมั่นในระบบการแปล และการทำความเข้าใจประเภทของข้อผิดพลาดนับว่าเป็นสิ่งสำคัญสำหรับผู้อ่าน ในการใช้เครื่องมือเหล่านี้อย่างมีประสิทธิภาพมากขึ้น

คำสำคัญ: การแปลจากโปรแกรม Google Translate การแปล ขอผิดพลาดด้านคำศัพท์ ข้อผิดพลาดด้าน

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Introduction

It is undeniable that Google Translate (GT) plays a crucial role among Thai readers, especially for those who have little background in English. This is also true in education in the ESL classroom. Studies suggest that students find MT (machine translation) tools beneficial for their L2 (second language) writing, mainly due to their quick and convenient access. Students use these tools for various aspects of L2 writing, including vocabulary searches, grammar checking, and writing revisions. However, the concerns regarding the outputs are related to the accuracy, the effectiveness of MT for language learning, and academic integrity. In Thailand, according to Lyons (2016), a significant percentage (74.5%) of Thai students in Chiang Mai use their phones for Thai-English translation, with the majority (72.5%) preferring Google Translate. This indicates that Google Translate is the most popular choice for Thai readers, particularly those studying English texts or articles.

Benites et al. (2021) and Kok Wei (2021) also reported that a large proportion (over 90%) of language students, on average, use machine translation, with more than half of them utilizing it regularly (more than once a week). Despite the common occurrence of grammatical issues in machine translations, the question arises whether these issues hinder comprehension, as has long been believed. Nonetheless, Grace (1998) highlights that readers typically seek equivalence between their native language (L1) and the second language (L2) when reading translated texts. This suggests that despite encountering syntactical problems, readers can still achieve comprehension.

It is important to acknowledge that using Google Translate might not be appropriate for every circumstance. However, readers can employ it to enhance their reading comprehension or translate certain texts in their daily lives, such as news articles, emails, website information, novels, or short stories. Bavendiek (2022) found that imperfect machine translations can motivate language students to engage with literary works in terms of both form and meaning. By drawing upon their familiar language and culture to make comparisons with the target language, students can boost their confidence and develop a creative, inspired approach to engaging with literary texts. This suggests that machine translation can have positive effects on language learning outcomes.

The results of aforementioned various studies indicate that machine translation, particularly through Google Translate, plays a significant role in aiding language learning and

enhancing reading comprehension for Thai readers. Despite potential grammatical issues, readers can still understand the text and achieve their goals. However, it is essential to use machine translation judiciously and understand its limitations, particularly in formal academic contexts, to ensure academic integrity.

As the performance of machine translation is often questionable and limited, there is a need to investigate its limitations for more efficient usage. Google Translate, in particular, falls short in various aspects like vocabulary, grammar, and sentence structure, demonstrating an inability to match advanced translators. Despite the time-consuming process of becoming proficient in a language, some Thai readers resort to using Google Translate to at least grasp the basic meaning of texts. The motivation for this study was understanding how the translation rendering results may have evolved over a five-year period. Consequently, the primary goal of this paper is to analyze the comparative errors made by Google Translate in the years 2018 and 2023, aiming to assist Thai readers in understanding the translation process better and utilizing it effectively to enhance their comprehension and facilitate more efficient English language learning.

Over the past decade, machine translation has made significant progress. Lee's (2021) study examined the quality of machine translation (MT) outputs, specifically focusing on Google Translate's performance in translating from Korean to English. This evaluation was conducted by comparing the MT outputs with English-translated texts created by intermediate English as a foreign language student. The study not only assessed the translation quality but also analyzed the source text factors that contributed to this quality.

Interestingly, both sets of texts translated by the students and machine were found to be equally comprehensible. But in most of the aspects under investigation, the MT outputs demonstrated superior performance compared to the students' translations. The research revealed that the quality of MT outputs was influenced by two specific factors within the source texts: punctuation and sentence complexity. On the other hand, factors like lexical and grammatical accuracy, lexical diversity, and contextual understanding did not impact the quality of MT outputs. This research article also seeks to compare the quality of machine translation, specifically Google Translate, in the years 2018 and 2023. Focusing on translation tools like Google Translate is crucial to determine their efficiency, as this knowledge can be leveraged by Thai readers to identify its weaknesses and capitalize on its strengths, leading to improved reading comprehension and other language translation tasks.

Research Question

How well did Google Translate perform in 2018 in comparison to 2023?

Literature Review

1. Error Analysis

Error analysis is an essential approach for understanding the origins, types, causes, and consequences of linguistic mistakes (James, 1998). This academic discipline holds significant implications, particularly in fields like language acquisition and second language instruction (Corder, 1967). It serves as a valuable tool for educators to assess their teaching effectiveness and identify areas for improvement, as noted by Richards (1974). In recent years, error analysis has gained prominence in the field of Machine Translation (MT), with some studies focusing on creating taxonomies (Llitj´os et al., 2005; Vilar et al., 2006; Bojar, 2011) and others dedicated to error identification (Popovi´c & Ney, 2006). For instance, languages with unclear word boundaries, such as Thai, Japanese, and Chinese, face significant challenges in word segmentation (Modhiran et al., 2005). In the context of English-Thai translation, Chimsuk (2010) identified issues related to machine translation, including lexical and structural ambiguities, disparities in lexical and structural elements, and difficulties posed by multiword units like idioms and collocations. The error categorization developed by Elliott et al. (2004) underwent an iterative refinement process during the analysis of approximately 20,000 words of machine-translated output from French to English. This analysis encompassed output generated by four systems: Systran7, Reverso Promt8, Comprendium9, and SDL's online Free Translation10. Notably, this classification system differs slightly, as the annotations were based on aspects that a post-editor would need to address when revising the texts for publication-quality standards. Additionally, Costa et al. (2015) introduced an error taxonomy that served as a structured framework for classifying specific errors encountered in the translation process. They proposed a taxonomy that involved an analysis of errors within four machine translation (MT) systems. Their investigation included aspects like orthography, lexis, grammar, semantics, and discourse, with a particular focus on translating from English to European Portuguese. The results of their study revealed errors stemming from a failure to identify suitable alternatives. The framework devised by Costa et al. (2015) provided valuable insights into MT performance through error analysis. This feedback has the potential to assist

developers in enhancing the efficacy of translating health-related information, especially during critical periods like the COVID-19 pandemic.

2. Machine Translation

Nowadays, various software tools are utilized for teaching and learning English, including online dictionaries, applications, and online courses, offering great benefits to users due to their accessibility and convenience. Online dictionaries automatically translate vocabulary, applications facilitate learning new concepts, and online courses can be accessed from anywhere. Among these tools, Google Translate stands out as a free multilingual machine translation service developed by Google. Its capabilities include translating text, documents, and websites from one language to another, available through both a website interface and a mobile application. Google Translate employs a unique approach to translation, utilizing vast collections of phrases and words in target languages. This methodology ensures rapid translations compared to processes solely reliant on rules and form (Stymne, 2011).

Nevertheless, research in the field of machine translation remains limited, despite its significant role in the learning process. Thus, enhancing the study of machine translation could greatly benefit ESL classrooms. Google Translate (GT) is one of the most well-known machine translators, with over one billion users since its launch in 2006. Originally, GT operated as a statistical machine translation (SMT) service, but in November 2016, it transitioned to the Google Neural Machine Translation Engine (GNMT), enabling it to translate entire sentences at once instead of piece by piece. Presently, GT supports 133 languages at various proficiency levels, providing translations for 37 languages using photos, 32 languages through voice in conversation mode, and 27 languages via live video imagery in augmented reality mode. Moreover, it can now translate pictures and scan signboards (Schuster et al.,2016).

Recent studies have shown the effectiveness of GT's machine translation. In a study by Stapleton and Kim (2019), 12 teachers evaluated MT outputs and students' outputs (from Chinese to English) in terms of comprehensibility, vocabulary, and grammar, with the MT outputs achieving higher scores. GT has also improved in handling lexical problems thanks to its extensive databases, enabling it to translate less commonly used words, idioms, misspelled words, and colloquial language quite effectively (Ducar & Schocket, 2018). As a result, O'Brien, Simard, and Goulet (2018) recommended that L2 learners write in their native language first, use GT, and then edit the output to reduce cognitive load and maximize

efficiency. Overall, Google Translate has become an indispensable tool for language learners and teachers, offering substantial benefits in overcoming language barriers and enhancing language learning experiences.

3. Limitations of Machine Translation

One of the problems of machine translation is the language structure, such as tense, structure, and word choice. Fem (2011) highlighted problems with translation efficiency, particularly in complex and ambiguous contexts and grammar. This issue tends to occur when translating multiple sentences consecutively. In a study by Balk et al. (2012), machine translation accuracy was investigated for eight languages translated into English: Chinese, French, German, Italian, Japanese, Korean, Portuguese, and Spanish. The program showed fair translation results for German and Portuguese, but faced challenges when translating from Eastern languages, especially with Chinese, which proved incompatible with the original version. Balk et al. (2013) conducted comparative research and found that Google Translate has the potential to reduce language prejudice, but it still carries the risk of errors. The problem with GT is not limited to translating from other languages into English; errors have also been identified when translating from English to other languages.

The studies by Correa (2014) and Goulet et al. (2017) suggest that translations between languages with different syntax may lead to more syntactical errors. Shadiev et al. (2019) conducted a recent study that confirmed the impact of language pair similarities or differences on translation intelligibility and accuracy. Despite its limitations in cultural translation, we can still learn from and adapt machine translation. White & Heidrich (2013) observed that machine translation produced more flawed outputs when dealing with texts containing polysemous lexical items, pragmatic information, and requiring a high level of cultural understanding. Similarly, Park (2017) and Kim (2019) pointed out that lengthy and complex sentences, as well as culture-specific expressions, can lead to inadequate translations by machine translation. One reason for this is that words may have various contextual meanings, leading to ambiguous translations (Hutchins, 2003).

Google Translate can also produce inaccurate or incomprehensible sentences, along with word choice errors. Additionally, inconsistencies in grammar and vocabulary levels, with more advanced words appearing in poorly structured sentences, can undermine the authenticity of

the texts and impact the overall perception of MT's quality. This is because language is subjective and cannot be unequivocally defined as right or wrong.

Nonetheless, a study by Bowker & Ciro (2019) revealed that the quality of machine translation (MT) output was not notably affected by the accuracy, vocabulary diversity, or level of Korean contextual information in source texts. This outcome can be attributed to MT's ability to leverage extensive corpus data to match words and expressions from source texts with suitable English equivalents in the given context. Despite the effectiveness of MT software, it still cannot replace the skill of a professional translator. This raises the question of why machines cannot match human abilities in translation. Unlike older MT systems that struggled with mistakes like typos and ended up keeping those mistakes in the translation, Google Neural Machine Translation (GNMT) does not merely fix words; instead, learns from a constantly growing collection of texts and can translate words that are not employed very often, as well as phrases and casual language. The accuracy of machine translation relies on GNMT's methods to reduce ambiguity and interpret words directly. GNMT uses advanced deep learning to translate entire sentences at once, making the translation results more accurate. It is also trained by means of using examples of translated sentences and documents, sourced from the public web (Caswell & Liang, 2020). This was a huge turning point in Machine Translation (MT). However, errors still persist with this approach, making it challenging in practical terms.

Machine translation also falls short in capturing behaviorally nuanced language, including emotional expressions, classroom activity demonstrations, humorous tales, unfriendly moods, anger, and friendly expressions. On top of that, machine translation cannot fully grasp the nuances of intentional and unintentional communication, including the objectives of concealing or implying information and the associated mood. Intercultural communication and language are complex and lack a structured format, as culture can be conveyed in various contexts and transmitted from different sources. Despite calculations in mathematical theory and the speed of processing, a computer is incapable of achieving 100% accurate translation due to the complexities of linguistics. Matching a large number of words and phrases from each language in the system proves to be very difficult. Even if linguists attempt to improve the method of translation, they may not find an appropriate solution for exact accuracy, since correctness can be subjective and challenging to quantify with numbers.

Although machine translation can produce accurate translations, errors can still be found in every single line of the text, especially in high-value literature translations. Previous studies

(Abraham, 2009; Fredholm, 2015; White & Heidrich, 2013) have shown that MT is prone to inaccuracies and may generate lexical and grammatical errors. Despite advancements in artificial intelligence and machine learning that have led to improvements in MT's quality and accuracy, concerns about its ethics, overdependence, and reliability persist, as pointed out by Briggs (2018). Therefore, it is recognized that despite these advancements, MT is not flawless and has its limitations.

In Thailand, Vidhayasai et al. (2015) investigated Google Translate by analyzing a budget airline's official website to translate its official and legal documents. They specifically concentrated on the translation of the "Terms and Conditions" section due to its significant influence on both the airline itself and its passengers. The outcomes of the study indicate the occurrence of errors across three primary dimensions: lexical, syntactical, and discursive. These errors inevitably lead to a lack of intelligibility. This suggests that human translation is needed to maintain the standard of translation and leads to questions about whether machine translation is truly cost-effective when considering the expenses of software maintenance and human improvements. While machine translation assists in speeding up the translation process, it is expected to be more efficient and accurate than human translation in the near future.

4. Translation Theories

Nida (1991) stated that the goal of translation is to transmit meaning from one language to another while maintaining the form of the original text. What we transmit is not the language itself, but rather its meaning to the receiver. The most crucial parts of translation are the message, the implied meaning, and how it is transmitted as a language naturally (Seleskovitch & Lederer, 1989). From Newmark's (1988) perspective, human translation occurs at two levels: semantic equivalence and communicative equivalence.

Semantic translation, centered around the source language, leverages techniques such as literal translation and faithful translation. In contrast, communicative translation operates from the perspective of the target language and employs free translation techniques. Semantic translation prioritizes the original form and the author's intent, focusing less on the context and expression within the target language. On the other hand, communicative translation emphasizes conveying information effectively in the target language rather than mimicking the original text.

Typically, communicative translation yields a context that is smooth, natural, and clear. In contrast, semantic translation often presents a more intricate context, potentially challenging in pronunciation due to its foreign accent (Newmark, 2001). Communicative translators enjoy greater creative freedom, enabling them to modify or refine the original context. In contrast, semantic translation adheres rigorously to rules, resulting in a relatively lower degree of flexibility. Practically, many translators tend to adopt the communicative translation approach. However, when both the specific language used by the author and the expression of content are equally significant, the semantic translation approach is more appropriate. Lively novel metaphors are best suited for semantic translation. Conversely, for translating commonly used language, the communicative translation method is the more suitable choice. Communicative translation endeavors to elicit a reader response closely aligned with the effect the original text has on its readers.

In contrast, free translation does not strictly adhere to the original text's structure or meaning. The translator has more flexibility to reorganize, expand, or condense the text, along with adjusting the words and grammar. This approach is suitable when maintaining the structure of the original text is not necessary. Free translation is often employed in various forms of media for entertainment purposes. The translator reads the entire paragraph, comprehends its content, main idea, and the writer's intentions, and then conveys them in their own style. This type of translation is commonly used in novels, short stories, and radio and TV scripts.

It is essential for translators to be proficient in both types of translation to adjust sentences appropriately. A translation is not considered perfect if the text is translated incorrectly. For instance, novel translations may utilize idioms to convey figurative language, whereas legal or medical translations may require technical terms or a concise writing style without extravagance. Simple sentences and related ideas that correspond to the original text are employed, with a crucial requirement for the translation to be logical in its own language, matching the original text's level of logic. However, Google Translate tends to follow the first type of literal translation, word-by-word, in an attempt to retain the structure of the original text. On the contrary, it is challenging for GT to achieve the second type of free translation, as this requires understanding mood, tone, and complex cultural implications for translating literature, figurative language, or novels.

Research Methodology

The methodology employed in this study is a mixed-method approach, incorporating both qualitative and quantitative methods. Firstly, the qualitative method was used to address the research question: "How well did Google Translate perform in 2018 in comparison to 2023?" To achieve this, data was gathered from articles published in the Bangkok Post, online newspapers, and online passages, translated by Google Translate in the years of 2018 and 2023.

These articles were selected because they reflect language commonly used in general news publications. The data collected from these sources included opinions and general facts presented by the authors. In this qualitative research, a comprehensive analysis was undertaken on the content translated from English to Thai by Google Translate across various articles. The aim was to discern discrepancies between the translations produced in 2018 and those from 2023. This investigation was prompted by the likelihood that Google Translate has undergone significant system changes over the past five years.

Secondly, the quantitative research method was employed. Quantitative methods involve research techniques used to gather information that can be measured and expressed in numerical form (Nunan, 2001). In this study, the frequency of errors in the translated content retrieved from Google Translate in the years 2018 and 2023 was counted and analyzed using quantitative analysis techniques. By combining both qualitative and quantitative methods, this study aims to provide a comprehensive and in-depth analysis of the errors found in Google Translate's translations of news articles from English to Thai, while also quantifying the frequency of these errors over the specified time periods.

Procedures

The research was conducted following the procedures outlined below:

Compilation of online articles at a basic level and news articles: English news articles were gathered from the official news websites of the Bangkok Post and organized into Word documents.

Pairing English and Thai texts: To facilitate the analysis, the English news articles were paired with their corresponding Thai translations. This pairing allowed for a direct comparison of the translations.

Identification of translation errors: During the analysis process, crucial examples of translation errors were identified. These examples were used to illustrate and demonstrate the types of errors found in Google Translate's translations.

Frequency count and percentage calculation: The frequency of the identified errors was then counted to determine how often each type of error occurred. Based on the frequency count, the percentage of each error type was calculated to provide a quantitative understanding of the prevalence of errors in the translations.

By following these procedures, the research aimed to gain insights into the common errors made by Google Translate when translating articles from English to Thai. The combination of qualitative analysis through error identification and quantitative analysis through frequency count and percentage calculation allowed for a comprehensive evaluation of the translation quality.

Data Collection

The research data was sourced from three articles: two from the Bangkok Post, titled "Students to get sex education" and another titled "Ministry downplays Zika fears," which published in year 2016, along with an example from beginner-level reading comprehension materials, titled "My favourite Place" from website "Grammar Bank".

The Google Translate rendering results for all instances were initially documented in my own unpublished research report and published research paper in 2018 (Kumnoed, 2018a; Kumnoed, 2018b) (See in appendix). These articles contained various sentence structures, including simple, compound, and complex sentences. In this qualitative study, the news articles were subjected to an in-depth analysis, primarily because of their diverse sentence structures, often featuring sentences that represent general language usage, which might pose challenges for readers with a limited proficiency in Thai.

Recent advancements in Google Translate, particularly its "Web crawl" methodology, have significantly impacted its translation capabilities. "Web crawl" refers to the automated process of searching and gathering information from the internet. These improvements have made it possible to effectively use vast amounts of data collected from the web, even if the data is not perfect. These techniques involve enhancing the translation model and implementing more intelligent training methods, improving error handling in data, and adopting an advanced

multilingual learning approach known as M4 modeling (Caswell & Liang, 2020). The GNMT method, which is better at translation than older approaches, has also evolved. It can be likened to a sensitive tool that requires high-quality data for optimal performance. Consequently, the data collection process for training the GNMT model has been overhauled, with a sharper focus on obtaining accurate information rather than sheer volume (Caswell & Liang, 2020).

Therefore, when comparing translations produced by Google Translate over the span of five years to the original source text, it is highly likely that there have been significant changes attributable to the evolution of the GT system. This research seeks to quantify the extent of these changes in Google Translate over the past five years.

Data Analysis

The data were carefully analyzed to identify errors, and the analysis was conducted sequentially following the order of the text. Each individual sentence was thoroughly examined to observe how and where errors occurred, specifically focusing on lexical, syntactic, and discourse errors. Subsequently, each type of error was categorized according to an error taxonomy adapted from Costa et al. (2015) and Vidhayasai et al. (2015). The error taxonomy served as a framework to classify and understand the specific types of errors encountered during the translation process. A taxonomy was introduced by Costa et al. (2015). They conducted a comprehensive analysis to examine MT errors in four MT systems: Google Translate, Systran, and two in-house MT systems. Their analysis covered orthography, lexis, grammar, semantics, and discourse, with a particular focus on the challenges of English to European Portuguese translation. The study revealed recurrent errors arising from wrong choices and an inability to find suitable alternatives. To sum up, the framework introduced by Costa et al. (2015) provides a way to offer valuable feedback on the performance of the two studied systems through error analysis.

On the contrary, quantitative methods were utilized for data analysis. Descriptive analysis was employed to uncover general data patterns and assess the statistical significance of translation results between 2018 and 2023. Subsequently, we conducted a frequency analysis to quantify the occurrence of identified errors. This allowed us to determine the frequency of each error type. Based on these frequency counts, we calculated the percentage representation of each error type, providing a quantitative insight into the prevalence of errors in the translations.

Figure 1: *Error Taxonomy; Adapted from Costa et al., (2015) and Vidhayasai et al. (2015)*
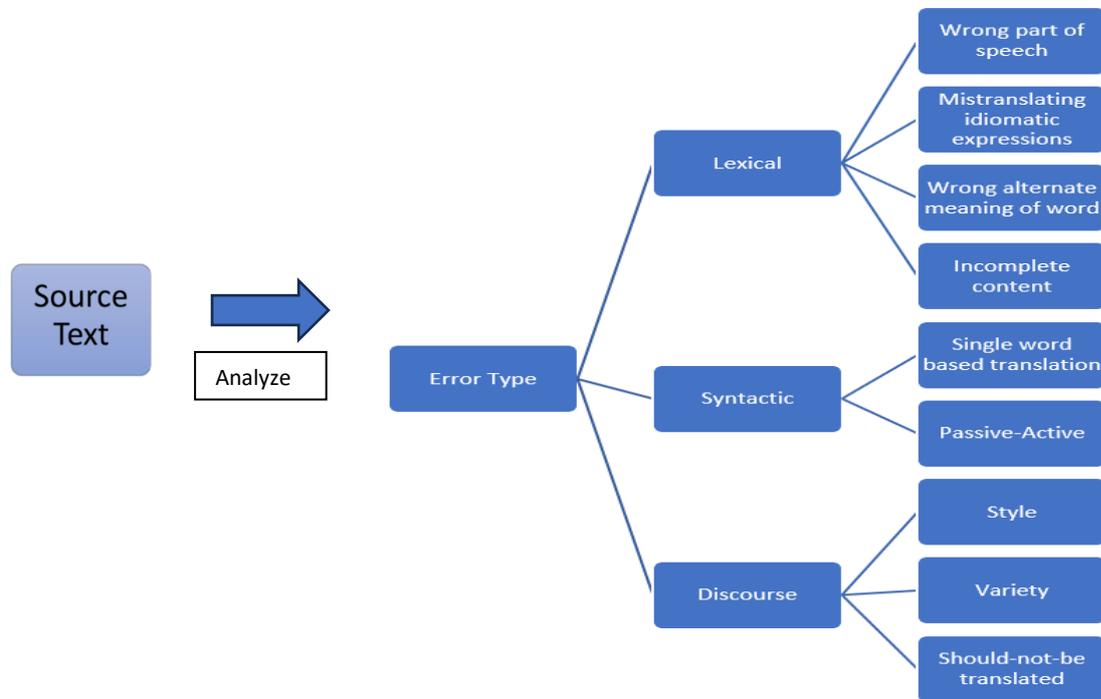
Error Taxonomy

According to the taxonomy provided above, the first category of error is lexical translation errors, which occur at the level of individual words and can be discerned by their distinct characteristics. These errors may affect the specific meaning of a word but do not necessarily render the entire phrase or sentence incomprehensible. To elaborate, the following subtypes of lexical translation errors were identified. Firstly, an incorrect alternate meaning of a word appears when a word with multiple meanings is translated using an inappropriate definition. Similarly, an incorrect part of speech translation involves using an incorrect grammatical form, such as rendering an adjective as a noun. Moreover, the misinterpretation of idiomatic expressions occurs when translating through a word-by-word pattern without taking the word's idiomatic meaning into account. Finally, the error of omitting words involves avoiding the translation of certain words or phrases, leading to incomplete content translation (Vidhayasai et al., 2015).

Example: He said the programme will educate teachers and executives about the rights of pregnant and <u>parenting students</u> and their educational opportunities.

GT translation: เขากล่าวว่าโปรแกรมนี้จะให้ความรู้แก่ครูและผู้บริหารเกี่ยวกับสิทธิของนักเรียนที่ตั้งครรภ์ และ<u>ผู้ปกครอง</u> และโอกาสทางการศึกษาของพวกเขา (khǎw klàːw wâː proː krɛːm níː tɕàʔ hâj khwaːm rúː kɛ̀ː khruː lɛ́ʔ phûː bɔː ríʔ hǎːn kìːaw kàp sìt thí khoŋ nák riːan thîː tâŋ khan lɛ́ʔ phûː pkòk krɔːŋ lɛ́ʔ ʔoː kàːt thaːŋ kaːn sùk sàː khoŋ phûːak khǎw).

Secondly, we have syntactic translation errors. A syntactic error occurs when a phrase or sentence exhibits structural issues, rendering it grammatically incorrect in the target language. These errors result in grammatical discrepancies that affect the structure and meaning of the target text. While these errors may impact the interpretation of a specific phrase or segment, they often allow for the overall meaning of the sentence to be inferred or guessed. Syntactic translation errors can be further categorized as follows: Single word-based translation: This type of error entails a word-for-word translation without considering the context, leading to syntactical disarray. Passive to active transformation: this error involves using a passive sentence structure when an active one is more suitable, especially within a Thai linguistic context: Ambiguity in passive voice translation: Errors in this category pertain to the ambiguous translation of sentences in the passive voice, which can obscure the intended meaning.

Example: <u>The woman is believed</u> to have contracted the virus from someone who had recently travelled overseas.

GT translation: <u>ผู้หญิงเชื่อว่า</u>ได้ติดต่อไวรัสจากคนที่พึ่งจะเดินทางไปต่างประเทศ (phûː jǐŋ tɕhɯ̂ːa wâː dâj tìt tɔ̀ː waj rát tɕàːk khon thîː phɯ̂ŋ dɤːn thaːŋ paj tàːŋ pràʔ thêːt).

Finally, at the discourse level, we delve into choices concerning how ideas are expressed, which may not necessarily constitute typical errors but do affect the overall quality of translation. Within this context, we address three specific situations: style, variety, and cases where translation may not be appropriate. Style errors manifest when there is a suboptimal stylistic choice of words during translation. For example, unnecessarily repeating a word when a synonym would have been more appropriate can be considered a style error. In such instances,

the translated phrase or sentence may become incoherent and perplexing to Thai readers due to a lack of stylistic cohesion. These errors undermine the overall comprehensibility of the text.

Example: Dr Opart's comment came after 22 new cases of Zika, including a pregnant woman, were reported in the Sathon district this week.

GT translation: ความเห็นของดร. โอพาร์ทมีขึ้นหลังจากมีรายงานผู้ติดเชื้อไวรัสซิการายใหม่ 22 ราย รวมทั้ง สตรีมีครรภ์ ในเขตสาทรในสัปดาห์ (khwa:m hěn khɔ̌:ŋ dɔ̀:k tɤ: Opart mî: khûn lǎŋ tɕà:k mî: ra:j ŋa:n phû: tìt tɕhɯ́:a waj rát síʔ kâ: ra:j màj naj kè:t sǎ: thɔ:n naj sàp da:).

Findings

Table 1: *Analysis of Google Translate Errors from English to Thai in Articles from 2018 and 2023*

Type of Error: Lexical

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
1. He said the programme will educate teachers and executives about the rights of pregnant and **parenting students** and their educational opportunities.	เขากล่าวว่าโครงการจะให้ความรู้แก่ครูและผู้บริหารเกี่ยวกับสิทธิของนักเรียนที่ตั้งครรภ์และ**การเลี้ยงดู**และโอกาสทางการศึกษาของพวกเขา (khǎw klà:w wâ: khro:ŋ ka:n tɕàʔ hâj khwa:m rú: kɛ̀: khru: lɛʔ phû: bɔ: rí hǎ:n kì:aw kàp sìt thíʔ khɔ̌:ŋ nák ri:an thî: tâŋ khan lɛʔ **ka:n lí:aŋ du**: lɛʔ ʔo:	เขากล่าวว่าโปรแกรมนี้จะให้ความรู้แก่ครูและผู้บริหารเกี่ยวกับสิทธิของนักเรียนที่ตั้งครรภ์และ**ผู้ปกครอง**และโอกาสทางการศึกษาของพวกเขา (khǎw klà:w wâ: pro: krɛ:m ní: tɕàʔ hâj khwa:m rú: kɛ̀: khru: lɛʔ phû: bɔ: ríʔ hǎ:n khoŋ nák ri:an thî: tâŋ khan lɛʔ **phû: pkòk krɔ:ŋ** lɛʔ	เขากล่าวว่าโปรแกรมนี้จะให้ความรู้แก่ครูและผู้บริหารเกี่ยวกับสิทธิของนักเรียนที่ตั้งครรภ์และ**พ่อแม่ในวัยเรียน**และโอกาสทางการศึกษาของพวกเขา (khǎw klà:w wâ: pro: krɛ:m ní: tɕàʔ hâj khwa:m rú: kɛ̀: khru: lɛʔ phû: bɔ: ríʔ hǎ:n kì:aw kàp sìt thí khoŋ nák ri:an thî: tâŋ khan lɛʔ **phɔ̂: mɛ̂: naj waj**

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
	kàːt thaːŋ kaːn sùk sǎː khɔ̌ːŋ phûːak khǎw). Type of error: Lexical Wrong type of part of speech: **Parenting students** is translated as "bring up" instead of students who are also parents or who have the responsibilities of being a parent.	ʔoː kàːt thaːŋ kaːn sùk sàː khoŋ phûːak khǎw). Type of error: Lexical Wrong type of part of speech: **Parenting students** is translated as "guardian" instead of students who have the responsibilities of being a parent.	**riːan** lɛ́ʔ ʔoː kàːt thaːŋ kaːn sùk sàː khoŋ phûːak khǎw).
2.**The move** follows the prevention and solution of the adolescent pregnancy problem act coming into force last month.	การย้ายดังกล่าวเป็นการป้องกันและแก้ไขปัญหาของปัญหาการตั้งครรภ์ในวัยรุ่นที่มีผลใช้บังคับเมื่อเดือนที่แล้ว (**kaːn jáːj** daŋ klàːw pen kaːn pɔ̂ːŋ kan lɛ́ʔ kɛ̂ː khǎj pan hàː khoŋ kaːn tâŋ khan naj waj rûn thîː miː phǒn tɕháj baŋ kháp mûːa dɯːan thîː lɛ́ːw).	**ความเคลื่อนไหว**ดังกล่าวเป็นไปตามพระราชบัญญัติการป้องกันและแก้ไขปัญหาการตั้งครรภ์ในวัยรุ่นที่มีผลบังคับใช้เมื่อเดือนที่แล้ว (**khwaːm khlɯ̂ːan wǎj** daŋ klàːw pen paj taːm phráʔ râːt tɕháʔ ban ját kaːn	**การเคลื่อนไหว**ดังกล่าวเป็นไปตามพระราชบัญญัติการป้องกันและแก้ไขปัญหาการตั้งครรภ์ในวัยรุ่นที่มีผลบังคับใช้เมื่อเดือนที่แล้ว (**kaːn khlɯ̂ːan wǎj** daŋ klàːw pen paj taːm phráʔ râːt tɕháʔ ban ját kaːn pɔ̂ːŋ kan lɛ́ʔ kɛ̂ː khǎj pan hàː kaːn tâŋ khan naj waj rûn thîː

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
	Type of error: Lexical Choosing the wrong definition of a word that has multiple meanings The move is translated as "to change position" instead of "to make progress."	pɔ̂ːŋ kan kaːn tâŋ khan naj waj rûn thîː miː phǒn tɕháj baŋ kháp mŵːa dɯːan thîː lɛ́ːw). Type of error: -	miː phǒn baŋ kháp tɕháj mŵːa dɯːan thîː lɛ́ːw).
3."Many teachers still perceive sex as a taboo subject and believe that teaching sexuality will lead young students **to engage** in more sex".	ครูหลายคนยังมองว่าเรื่องเพศเป็นเรื่องต้องห้าม และเชื่อว่าการสอนเรื่องเพศจะทำให้เด็กนักเรียนจะ**นำไปสู่การมีเพศสัมพันธ์**มากขึ้น (khruː lǎːj khon jaŋ mɔːŋ wâː rŵːaŋ phêːt pen rŵːaŋ tɔ̂ːŋ hâːm lɛ́ʔ tɕhŵːa wâː kaːn sɔ̌ːn rŵːaŋ phêːt tɕàʔ tham hâj dèk nák riːan **tɕàʔ nam paj sùː kaːn miː phêːt sǎm phan** mâːk khɯ̂n). Type of error: Lexical	ครูหลายคนยังมองว่าเรื่องเพศเป็นเรื่องต้องห้าม และเชื่อว่าการสอนเรื่องเพศจะทำให้เด็กนักเรียน**สนใจเรื่องเพศ**มากขึ้น (khruː lǎːj khon jaŋ mɔːŋ wâː rŵːaŋ phêːt pen rŵːaŋ tɔ̂ːŋ hâːm lɛ́ʔ tɕhŵːa wâː kaːn sɔ̌ːn rŵːaŋ phêːt tɕàʔ tham hâj dèk **sǒn tɕaj rŵːaŋ phêːt** mâːk khɯ̂n). Type of error: -	ครูหลายคนมียังเข้าใจว่าเรื่องเพศเป็นเรื่องต้องห้ามและเชื่อว่าการสอนเรื่องเพศทำให้เด็กนักเรียน**หมกมุ่นกับเรื่องเพศ**มากขึ้น (khruː lǎːj khon jaŋ khâw tɕaj wâː rŵːaŋ phêːt pen rŵːaŋ tɔ̂ːŋ hâːm lɛ́ʔ tɕhŵːa wâː kaːn sɔ̌ːn rŵːaŋ phêːt tham hâj dèk nák riːan **mòk mùn kàp rŵːaŋ phêːt** mâːk khɯ̂n).

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
	Non-equivalence between source (English) and target language (Thai); wrong alternate meaning of a word; choosing the wrong definition of a word that has multiple meanings.		
4. The Public Health Ministry has **played down** fears of a Zika virus outbreak in Thailand, saying the disease is already common in the country.	กระทรวงสาธารณสุขได้**ให้ความสำคัญ**กับการระบาดของโรค Zika ในประเทศไทยกล่าวว่าโรคดังกล่าวเป็นเรื่องปกติในประเทศแล้ว (kràʔ su:aŋ sǎ: tha: rá ná sùk dâj **hâj khwa:m sǎm khan** kàp ka:n ráʔ bà:t khɔ̌:ŋ rô:k síʔ kâ: naj pràʔ thê:t thaj klà:w wâ: rô:k daŋ klà:w pen rɯ̂:aŋ pà kà tìʔ naj pràʔ thê:t lɛ́:w). Type of error: Lexical Mistranslating idiomatic expressions	กระทรวงสาธารณสุขได้**แสดงความกลัว**ต่อการระบาดของไวรัสซิกาในประเทศไทย โดยกล่าวว่าโรคนี้พบได้ทั่วไปในประเทศแล้ว (kràʔ su:aŋ sǎ: tha: rá ná sùk dâj **sà dɛ:ŋ khwa:m klu:a** tɔ̀: ka:n ráʔ bà:t khɔ̌:ŋ waj rát síʔ ka: naj pràʔ thê:t thaj do:j klà:w wâ: rô:k ní: phóp dâj thû:a paj naj pràʔ thê:t lɛ́:w).	กระทรวงสาธารณสุข**ไม่กังวลกับ**การระบาดของไวรัสซิก้าในไทยมากนัก โดยกล่าวว่าโรคนี้ได้กลายเป็นเรื่องธรรมดาในประเทศ (kràʔ su:aŋ sǎ: tha: rá ná sùk **mâj kaŋ won** kàp ka:n ráʔ bà:t khɔ̌:ŋ waj rát síʔ kâ: naj thaj mâ:k nák do:j klà:w wâ: rô:k ní: dâj kla:j pen rɯ̂:aŋ tham da: naj pràʔ thê:t).

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
		Type of error: Lexical and mistranslating idiomatic expressions	
5. Opart Karnkawinpong, deputy director-general of the Disease Control Department, insisted Sunday the mosquito-borne Zika virus has **become widespread** since the infection was first recorded in Thailand in 2012.	Opart Karnkawinpong รองอธิบดีกรมควบคุมโรค ยืนยันว่าเมื่อวันอาทิตย์ที่ผ่านมาไวรัส **Zika ของยุง**ได้**แพร่ระบาด**อย่างรวดเร็วนับตั้งแต่มีการติดเชื้อครั้งแรกในประเทศไทยในปี พ. ศ. 2555 (rɔ:ŋ ʔà thíp bɔ: di: krom khû:ap khum rô:k jɯ:n jan wâ: mɯ̂:a wan ʔa: thít thî: phà:n ma: waj rát **síʔ kâ: khɔ̌:ŋ juŋ** dâj **phrê: ráʔ bà:t** ʔà jâːŋ rû:at rew náp tâŋ tè: mi: ka:n tìt tɕhɯ́:ak ráŋ rɛ̂:k naj pràʔ thê:t thaj naj pi: phɔ: sɔ̌: sɔ̌:ŋ phan hâ: rɔ́:j hâ: sìp hâ:).	นายโอภาต การกวินพงศ์ รองอธิบดีกรมควบคุมโรค ยืนยันเมื่อวันอาทิตย์ว่า ไวรัสซิกาที่มียุงเป็นพาหะได้**แพร่หลาย**นับตั้งแต่มีการบันทึกการติดเชื้อครั้งแรกในประเทศไทยในปี 2555 (na:j ʔo: phâ:t ka:n kwin phoŋ rɔ:ŋ ʔà thíp bɔ: di: krom khû:ap khum rô:k jɯ:n jan mɯ̂:a wan ʔa: thít wâ: waj rát síʔ ka: thî: mi: juŋ pen pha: hàʔ dâj **phrê: lǎ:j** náp tâŋ tè: mi: ka:n ban thɯ́k ka:n tìt tɕhɯ́:a kráŋ rɛ̂:k naj pràʔ thê:t	นายแพทย์โอภาส การย์กวินพงศ์ รองอธิบดีกรมควบคุมโรค ยืนยันเมื่อวันอาทิตย์ว่า ไวรัสซิกาที่มียุงเป็นพาหะ**ได้แพร่ระบาดเป็นวงกว้าง**นับตั้งแต่มีการบันทึกรายงานการติดเชื้อครั้งแรกในประเทศไทยในปี 2555 (na:j phê:t ʔo: phâ:t ka:n kwin phoŋ rɔ:ŋ ʔà thíp bɔ: di: krom khû:ap khum rô:k jɯ:n jan mɯ̂:a wan ʔa: thít wâ: waj rát síʔ ka: thî: mi: juŋ pen pha: hàʔ **dâj phrê:ráʔ bà:t pen woŋ kwâ:ŋ** náp tâŋ tè: mi: ka:n ban thɯ́k ra:j ŋa:n

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
	Type of error: Lexical error Wrong alternate meaning of a word	thaj naj pi: sɔ̌:ŋ phan hâ: rɔ́:j hâ: sìp hâ:). Type of error: Lexical error Wrong alternate meaning of a word	ka:n tìt tɕhɯ́:a kráŋ rɛ̂:k naj prà? thê:t thaj naj pi: sɔ̌:ŋ phan hâ: rɔ́:j hâ: sìp hâ:).
6. **He asked** the public not to panic as Zika was not deadly or severely contagious.	เขาถามประชาชนว่าไม่ต้องตื่นตระหนกเพราะ Zika ไม่ได้เป็นโรคติดต่อร้ายแรงหรือรุนแรง (**khǎw thǎ:m** prà? tɕha: tɕhon wâ: mâj tɔ̂:ŋ tɯ̀:n trà? nòk phrɔ́? sí? ka: mâj dâj pen rô:k tìt tɔ̀: rá:j rɛ:ŋ rɯ̌: run rɛ:ŋ). Type of error: Lexical error Non-equivalence between source (English) and target language (Thai); wrong alternate meaning of a word by choosing the wrong definition of a	เขาขอให้ประชาชนอย่าตื่นตระหนกเนื่องจาก Zika ไม่เป็นอันตรายถึงชีวิตหรือเป็นโรคติดต่อร้ายแรง (**khǎw khɔ̌:** hâj prà? tɕha: tɕhon wâ: mâj tɔ̂:ŋ tɯ̀:n trà? nòk nɯ̂:aŋ tɕà:k sí? ka: mâj pen ?an tà ra:j thɯ̌ŋ tɕhi: wít rɯ̌: pen rô:k tìt tɔ̀: rá:j rɛ:ŋ). Type of error: -	เขาขอไม่ให้ประชาชนตื่นตระหนกเนื่องจากไข้ซิก้าไม่ใช่โรคติดต่อร้ายแรงที่มีอันตรายถึงแก่ชีวิต (khǎw khɔ̌: mâj hâj prà? tɕha: tɕhon tɯ̀:n trà? nòk nɯ̂:aŋ tɕà:k khâj sí? kâ: mâj tɕhâj rô:k tìt tɔ̀: rá:j rɛ:ŋ thî: mi: ?an tà ra:j thɯ̌ŋ tɕhi: wít).

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
	word that has multiple meanings		
7. Dr Opart said all pregnant women and their unborn babies **were being** closely **monitored** by 10 medical teams and public health officials. Of them, six have given birth to healthy babies.	Opart กล่าวว่าหญิงตั้งครรภ์และทารกในครรภ์ของพวกเขา**ได้รับการตรวจสอบ**อย่างใกล้ชิดโดยทีมแพทย์และเจ้าหน้าที่สาธารณสุข ของพวกเขาหกได้ให้กำเนิดทารกที่มีสุขภาพดี (Opart klà:w wâ: jǐŋ tâŋ khan lɛ́ʔ tha: rók naj khan khɔ̌:ŋ phû:ak khǎw **dâj ráp ka:n trù:at sɔ̀:p** jâ:ŋ klâj tɕhít do:j thi:m phɛ̂:t lɛ́ʔ tɕâw nâ: thî: sǎ: tha: rá ná sùk khɔ̌:ŋ phû:ak khǎw hòk dâj hâj kam nɤ̂:t tha: rók thî: mi: sùk khà phâ:p di:). Type of error: Lexical error Wrong alternate meaning of a word by choosing the wrong definition of a word that has multiple meanings.	นพ.โอพาร์ท กล่าวว่าหญิงมีครรภ์และทารกในครรภ์ทั้งหมด**ได้รับการดูแล**อย่างใกล้ชิดโดยทีมแพทย์และเจ้าหน้าที่สาธารณสุข ในจำนวนนี้หกคนได้ให้กำเนิดทารกที่แข็งแรง (na:j phɛ̂:t ʔo: phâ:t klà:w wâ: jǐŋ mî: khan lɛ́ʔ tha: rók naj khan tháŋ mòt **dâj ráp ka:n du: lɛ:** jâ:ŋ klâj tɕhít do:j thi:m phɛ̂:t lɛ́ʔ tɕâw nâ: thî: sǎ: tha: rá ná sùk naj tɕam nu:an ní: hòk khon dâj hâj kam nɤ̂:t tha: rók thî: khɛ̌ŋ rɛ:ŋ hòk khon dâj hâj kam nɤ̂:t tʰa: rók thî: khɛ̌ŋ rɛ:ŋ). Type of error: -	นายแพทย์โอภาสกล่าวว่าหญิงตั้งครรภ์และทารกในครรภ์นั้น**ได้รับการดูแล**อย่างใกล้ชิดจากทีมแพทย์และเจ้าหน้าที่สาธารณสุข และปัจจุบันมีคุณแม่ที่คลอดแล้วจำนวน 6 ราย พบว่าทารกมีสุขภาพแข็งแรงดี (na:j phɛ̂:t ʔo: phâ:t klà:w wâ: jǐŋ wâ: jǐŋ tâŋ khan lɛ́ʔ tha: rók naj khan nán **dâj ráp ka:n du: lɛ:** jâ:ŋ klâj tɕhít tɕà:k thi:m phɛ̂:t lɛ́ʔ tɕâw nâ: thî: sǎ: tha: rá ná sùk lɛ́ʔ pàt tɕù?ban mi: khun mɛ̂: thî: klɔ̂:t lɛ́:w tɕam nu:an hòk ra:j phóp wâ: tha: rók mi: sùk khà phâ:p khɛ̌ŋ rɛ:ŋ di:).

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
8. I really like the weather there because it **never gets cold**.	ผมชอบสภาพอากาศที่นั่นเพราะมัน**ไม่เคยได้รับเย็น** (phǒm tɕhɔ: sa phâ:p ʔa: kà:t thî: nân phrɔ́ʔ man mâj khɤ:j **dâj ráp jen**). Type of error: Lexical Mistranslating idiomatic expressions	ฉันชอบอากาศที่นั่นมากเพราะ**ไม่หนาวเลย** (tɕhǎn tɕhɔ̂:p ʔa: kà:t thî: nân mâ:k phrɔ́ʔ **mâj nǎ:w lɤ:j**). Type of error: -	ฉันชอบอากาศที่นั่นมากเพราะอากาศไม่เคยหนาวเลย (tɕhǎn tɕhɔ̂:p ʔa: kà:t thî: nân mâ:k phrɔ́ʔ ʔa: kà:t mâj khɤ:j nǎ:w lɤ:j).
9. The people are **very nice too**.	คนที่มี (1) **ความดี** (khon thî: mi: (1) **khwa:m di:**). (2) มากเกินไป ((2) mâ:k kɤ:n paj). (1) Type of error: Lexical Wrong part of speech (2) Type of error: Wrong alternate meaning of word	ผู้คนก็**ดี**มาก**เช่นกัน** (phû: khon **kɔ̂: di:** mâ:k **tɕhên kan**). Type of error: -	ผู้คนก็**ดี**มาก**เช่นกัน** (phû: khon **kɔ̂: di:** mâ:k **tɕhên kan**).
10. Mexico City is a very interesting place to **visit.**	เม็กซิโกซิตี้เป็นสถานที่น่าสนใจมากที่จะ**เยี่ยมชม**	เม็กซิโกซิตี้เป็นสถานที่ที่น่าสนใจมากในการ**เยี่ยมชม**	เม็กซิโกซิตี้เป็นสถานที่น่าสนใจในการไป**ท่องเที่ยว** (mék síʔ ko: síʔ tî: pen sà thǎ:n thî: nâ: sǒn

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
	(mék síʔ ko: síʔ tî: pen sà thǎ:n thî: nâ: sǒn tɕaj mâ:k thî: tɕàʔ **jî:am tɕhom**). Type of error: Lexical Word choice is too specific	(mék síʔ ko: síʔ tî: pen sà thǎ:n thî: thî: nâ: sǒn tɕaj mâ:k naj ka:n **jî:am tɕhom**). Type of error: Lexical Word choice is too specific	tɕaj naj ka:n **paj thɔ̂:ŋ thî:aw**).
11. It has **some great museums** and **lots of fascinating old buildings.**	มันมี (1) **พิพิธภัณฑ์ที่ดีบางอย่าง** และ (2) **จำนวนมากของอาคาร**เก่าแก่ที่น่าสนใจ (man mi: (1) **phíʔ phít thá phan thî: di: ba:ŋ jâ:ŋ** lέʔ (2) **tɕam nu:an mâ:k khɔ̌:ŋ ʔa: kha:n** kàw kὲ: thî: nâ: sǒn tɕaj). (1) Type of error: Lexical Wrong alternate meaning of word (2) Type of error: Syntactic Single-word based translation (word-for-word	มีพิพิธภัณฑ์ที่ยอดเยี่ยม และอาคารเก่าแก่ที่น่าสนใจมากมาย (mi: **phíʔ phít phan thî: jɔ̂:t jî:am** lέʔ ʔa: kha:n kὲ: thî: nâ: sǒn tɕaj mâ:k ma:j). Type of error: Lexical Mistranslating idiomatic expressions	มีพิพิธภัณฑ์ที่โอ่อ่าอยู่บ้าง และอาคารเก่าแก่ที่น่าสนใจมากมาย (mi: **phíʔ phít phan thî: ʔò: ʔà:** jû: bâ:ŋ lέʔ **ʔa: kha:n kàw kὲ: thî: nâ: sǒn tɕaj mâ:k ma:j**).

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
	translation without contextual consideration)		

Table 2: *Analysis of Google Translate Errors from English to Thai in Articles from 2018 and 2023*

Type of Error: Syntactic

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
1.With guidance from the Education Ministry, teachers and school administrators **will be given** lessons in sex education and an appropriate attitude towards sex education by specialists.	ด้วยคำแนะนำจากกระทรวงการศึกษาครูและผู้บริหารโรงเรียนจะ**ได้รับบทเรียน**เรื่องเพศศึกษาและทัศนคติที่เหมาะสมต่อการศึกษาเรื่องเพศโดยผู้เชี่ยวชาญ (dûaj kham nɛ́ʔ nam tɕà:k kràʔ su:aŋka:n sù:k sà: khru: lɛ́ʔ phû: bɔ: rí hǎ:n ro:ŋ ri:an tɕàʔ dâj ráp bòt ri:an rɯ̂:aŋ phê:t sùk sǎ: lɛ́ʔ thát sà ná khá tìʔ thî: mɔ̀ʔ sǒm tɔ̀: ka:n sù:k	ด้วยคำแนะนำจากกระทรวงศึกษาธิการ ครูและผู้บริหารโรงเรียนจะ**ได้รับบทเรียน**เรื่องเพศศึกษาและทัศนคติที่เหมาะสมต่อเพศศึกษาโดยผู้เชี่ยวชาญ (dûaj kham nɛ́ʔ nam tɕà:k kràʔ su:aŋka:n sùːk sà: khru: lɛ́ʔ phû: bɔ: rí hǎ:n ro:ŋ ri:an tɕàʔ **dâj ráp bòt** ri:an rɯ̂:aŋ phê:t sùk sǎ: lɛ́ʔ thát sà ná	จากการชี้แนะของกระทรวงศึกษาธิการจะมีผู้เชี่ยวชาญแนะนำคุณครูและผู้บริหาร**เกี่ยวกับบทเรียน**และการมีทัศนคติที่เหมาะสมในเรื่องเพศศึกษา (tɕà:k ka:n tɕhí: nɛ́ʔ khɔ̌:ŋ kràʔ su:aŋsùk sǎ: thíʔ ka:n tɕàʔ mi: phû: tɕhî:aw tɕha:n nɛ́ʔ nam khun khru: lɛ́ʔ phû: bɔ: rí hǎ:n **kì:aw kàp bòt ri:an** lɛ́ʔ ka:n mi: thát sà ná khá tìʔ thî: mɔ̀ʔ sǒm naj rɯ̂:aŋ phê:t sùk sǎ:).

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
	să: rûɯ:aŋ phê:t do:j phû: tɕhî:aw tɕha:n). Type of error: Syntactic The passive form affects the meaning of the lexical translation.	khá tì? thî: thî: mɔ̀? sŏm tɔ̀: phê:t sùk să: do:j phû: tɕhî:aw tɕha:n). Type of error: Syntactic The passive form affects the meaning of the lexical translation.	
2. We need to change their attitude to reduce the problems, said **education permanent secretary** Kamchorn Tatiyakawee	เราจำเป็นต้องเปลี่ยนทัศนคติเพื่อลดปัญหา กล่าวโดย **ถาวรเลขานุการ** Kamchorn Tatiyawawee (raw tɕam pen tô:ŋ plì:an thát sà ná khá tì? phɯ̂:a lót pan hă: klà:w do:j **thă: wɔ:n le: khă: nú? ka:n** Kamchorn Tatiyawawee). Type of error: Syntactic	เราต้องเปลี่ยนทัศนคติเพื่อลดปัญหา นายกำจร ตติยกวี **ปลัดกระทรวงศึกษาธิการ** กล่าว (raw tô:ŋ plì:an thát sà ná khá tì? phɯ̂:a lót pan hă: na:j kam tɕɔ:n tà tì já? kwi: **pà làt krà? su:aŋ sɯ̀k să: thí? ka:n** klà:w). Type of error: -	เราจำเป็นต้องเปลี่ยนทัศนคติเพื่อลดปัญหา นายกำจร ตติยกวี**ปลัดกระทรวงศึกษาธิการ** กล่าว (raw tɕam pen tô:ŋ plì:an thát sà ná khá tì? phɯ̂:a lót pan hă: na:j kam tɕɔ:n tà tì já? kwi: **pà làt krà? su:aŋ sɯ̀k să: thí? ka:n** klà:w).

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
	Single word-based translation: a word-for-word translation without any contextual consideration, causing syntactical disorder		
3. The woman **is believed** to have contracted the virus from someone who had recently travelled overseas.	**ผู้หญิงเชื่อว่า**ได้ติดต่อไวรัสจากคนที่เพิ่งเดินทางไปต่างประเทศ (**phû**: **jǐŋ tɕhɯ̂:a wâ**: dâj tìt tɔ̀: waj rát tɕà:k khon thî: phɤ̂:ŋ dɤ:n tha:ŋ paj tà:ŋ pràʔ thê:t). Type of error**:** Syntactic Passive - Active: Using passive structure when active structure is preferable	**เชื่อว่า**ผู้หญิงคนนี้ติดต่อไวรัสจากคนที่เพิ่งเดินทางไปต่างประเทศ (**tɕhɯ̂:a wâ**: phû: jǐŋ khon ní: tìt tɔ̀: waj rát tɕà:k khon thî: phɤ̂:ŋ dɤ:n tha:ŋ paj tà:ŋ pràʔ thê:t). Type of error: **-**	**เชื่อกันว่า**ผู้หญิงรายดังกล่าวติดเชื้อไวรัสจากผู้ที่เพิ่งเดินทางกลับจากต่างประเทศ (**tɕhɯ̂:a kan wâ**: phû: jǐŋ ra:j daŋ klà:w tìt tɕhɯ́:a waj rát tɕà:k phû: thî: phɤ̂:ŋ dɤ:n tha:ŋ klàp tɕà:k tà:ŋ pràʔ thê:t).
4. The food **is really good**.	อาหาร**เป็นสิ่งที่ดีจริง ๆ** (ʔa: hǎ:n **pen sìŋ thî**: **tɕiŋ tɕiŋ**). Type of error: Syntactic Single-word based translation	อาหาร**เป็นสิ่งที่ดีจริง ๆ** ((ʔa: hǎ:n **pen sìŋ thî**: **tɕiŋ tɕiŋ**). Type of error: Syntactic	อาหาร**อร่อยจริง ๆ** (ʔa: hǎ:n **ʔà rɔ̀:j tɕiŋ tɕiŋ**).

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b) (word-for-word translation)	Translation into Thai by GT (GNMT 2023) Single-word based translation (word-for-word translation)	Revised Thai Translation (Translated by the author)
5. If you are planning to visit Mexico, you **should definitely see** the Mayan temples near Merida.	หากคุณกำลังวางแผนที่จะไปเมกซิโก คุณ**แน่นอนควรจะเห็น**วัดของชาวมายันที่อยู่ใกล้ Merida (hà:k khun kam laŋ wa:ŋ phɛ̌:n thî: tɕàʔ paj mék síʔ ko: khun nɛ̂: nɔ:n khu:an tɕàʔ hɛ̌n wát khɔ̌:ŋ tɕha:w ma: jan thî: jû: klâj Merida). Type of error: Syntactic Single-word based translation It is a word-for-word translation without contextual consideration	หากคุณกำลังวางแผนที่จะไปเม็กซิโก คุณ**ควรเห็น**วัดของชาวมายันใกล้กับ Merida **อย่างแน่นอน** (hà:k khun kam laŋ wa:ŋ phɛ̌:n thî: tɕàʔ paj mék síʔ ko: khun khu:an hɛ̌n wát khɔ̌:ŋ tɕha:w ma: jan thî: jû: klâj kàp Merida jà:ŋ nɛ̂: nɔ:n). Type of error: -	ถ้าคุณวางแผนที่จะมาเที่ยวเม็กซิโกคุณ**ควรจะต้อง**ไปดูวัดชาวมายันที่อยู่ใกล้กับ Merida (thâ: khun wa:ŋ phɛ̌:n thî: tɕàʔ ma: thî:aw mék síʔ ko: khun khu:an tɕàʔ tô:ŋ paj du: wát tɕha:w ma: jan thî: jû: klâj kàp Merida).

Table 3: *Analysis of Google Translate Errors from English to Thai in Articles from 2018 and 2023*

Type of Error: Discourse

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
1.Ministry **downplays Zika** fears, says no need to panic	กระทรวง **downplays Zika** กลัว จำเป็นต้องตื่นตระหนก (**krà? su:aŋ downplays Zika klu:a tɕam pen tɔ̂:ŋ tɯ̀:n trà? nòk**). Type of error: Discourse Omission of words and mistranslation, making it difficult for Thai readers to understand	กระทรวง**ไม่แสดงความ**กลัว Zika กล่าวว่าไม่จำเป็นต้องตื่นตระหนก (krà? su:aŋ **mâj sà dɛ:ŋ kʰwa:m klu:a sí? kâ**: klà:w wâ: mâj tɕam pen tɔ̂:ŋ tɯ̀:n trà? nòk). Type of error: Discourse Style of word choice "Downplay" should be translated as "to try to make something seem less important than it really is"	กระทรวง**ลดระดับข้อกังวล**เรื่องโรคไข้ซิกา**โดย**กล่าวว่าไม่มีความจำเป็นที่ต้องตื่นตระหนก (krà? su:aŋ **lót rá? dàp khɔ̂: kaŋ won** rɯ̂:aŋ rô:k kʰâj sí? ka: **do:j** klà:w wâ: mâj mî: khwa:m tɕam pen thî: tɔ̂:ŋ tɯ̀:n trà? nòk).
2. Dr Opart's comment came after 22 new cases of Zika, including a pregnant woman,	ความเห็นของดร. Opart เกิดขึ้นหลังจากพบว่ามีผู้ป่วยใหม่จำนวน 22 ราย รวมทั้งสตรีมีครรภ์	ความเห็นของ ดร. โอพาร์ท มีขึ้นหลังจากมีรายงานผู้ติดเชื้อไวรัสซิการายใหม่	นายแพทย์โอภาสให้ความเห็นหลังจากมีรายงานตัวเลขผู้ป่วยใหม่จำนวน 22 ราย ในเขต

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
were reported in the Sathon district this week.	รายงานในเขตอำเภอสาทรในสัปดาห์นี้ (khwa:m hěn khɔ̌:ŋ dɔ̀:k tɤ: Opart kɤ̀:t khûɯn lǎŋ tɕà:k phóp wâ: mi: phû: pùaj màj tɕam nu:an jî: sìp sɔ̌:ŋ ra:j ru:am tháŋ sà tri: mî: khan). Type of error: Discourse Style of translating is awkward and difficult to understand	22 ราย รวมทั้งสตรีมีครรภ์ ในเขตสาทรในสัปดาห์นี้ (khwa:m hěn khɔ̌:ŋ dɔ̀:k tɤ: Ɂo: phâ:t mi: khûɯn lǎŋ tɕà:k mi: ra:j ŋa:n phû: tìt tɕhɯ́:a waj rát síɁ ka: ra:j màj jî: sìp sɔ̌:ŋ ra:j ru:am tháŋ sà tri: mî: khan naj khɛ̀:t sǎ: thɔ:n naj sàp da: ní:).	สาธรโดยหนึ่งในนั้นเป็นสตรีมีครรภ์ (na:j phɛ̂:t Ɂo: phâ:t hâj khwa:m hěn lǎŋ tɕà:k mi: ra:j ŋa:n tu:a lê:k phû: pùaj màj tɕam nu:an jî: sìp sɔ̌:ŋ ra:j naj khɛ̀:t sǎ: thɔ:n nùŋ naj nán pen sà tri: mî: khan).
3. They never laugh at my bad Spanish.	พวกเขาไม่เคยหัวเราะเยาะ**สเปนไม่ดี**ของฉัน (phû:ak khǎw mâj khɤ:j hǔ:a róɁ jóɁ **sà pe:n mâj dì**: khɔ̌:ŋ tɕhǎn). Type of error: Discourse Style of translating is awkward and difficult to understand	พวกเขาไม่เคยหัวเราะเยาะ**ภาษาสเปนที่ไม่ดี**ของฉัน (phû:ak khǎw mâj khɤ:j hǔ:a róɁ jóɁ **pha: sǎ: sà pe:n thî: mâj di**: khɔ̌:ŋ tɕhǎn). Type of error: Discourse	พวกเขาไม่เคยหัวเราะเยาะ**ภาษาสเปนที่แย่**ของฉัน (phû:ak khǎw mâj khɤ:j hǔ:a róɁ **pha: sǎ: sà pe:n thî: jɛ̂**: khɔ̌:ŋ tɕhǎn).

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
		Style of translating is awkward and difficult to understand	
4. The hotels are **too expensive to stay** but there are more affordable options.	โรงแรมมีราคาแพงมากเกินไป**ที่จะอยู่**แต่มีตัวเลือกราคาไม่แพงมาก (roːŋ rɛːm miː raː khaː phɛːŋ mâːk kɤːn paj **thîː tɕàʔ jûː** tɛ̀ː miː tuːa lɯ̂ːak raː khaː mâj phɛːŋ mâːk). Type of error: Discourse Style of translating is awkward	โรงแรมมีราคาแพงเกินไปที่**จะเข้าพัก** แต่มีตัวเลือกที่ถูกกว่า (roːŋ rɛːm miː raː khaː phɛːŋ kɤːn paj **thîː tɕàʔ khâw phák** tɛ̀ː miː tuːa lɯ̂ːak thîː thùːk kwàː). Type of error: -	โรงแรมราคาแพงเกินไปที่จะ**เข้าพัก**แต่ก็มีตัวเลือกที่ราคาถูกกว่า (roːŋ rɛːm miː raː khaː phɛːŋ kɤːn paj **thîː tɕàʔ khâw phák** tɛ̀ː kɔ̂ː miː tuːa lɯ̂ːak thîː thùːk kwàː).

Table 4: *Analysis of Google Translate Errors from English to Thai in Articles from 2018 and 2023*

Type of Error: No Errors Found

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
1.Teachers and school administrators **are gearing up** to launch a nationwide programme to better educate young students on sexual health as part of efforts to **bring down** the high number of teenage mothers.	ครูและผู้บริหารโรงเรียน**กำลังเตรียมที่จะเปิดตัว**โครงการทั่วประเทศเพื่อให้ความรู้แก่นักเรียนหญิงที่มีต่อสุขภาพทางเพศเป็นส่วนหนึ่งของความพยายามที่จะลดจำนวนของสตรีวัยรุ่น (khru: lɛ́ʔ phû: bɔ: rí hǎ:n ro:ŋ ri:an **kam laŋ tri:am thî: tɕàʔ pɤ̀:t tu:a** khro:ŋ ka:n thû:a pràʔ thê:t phɯ̂:a hâj khwa:m rú: kɛ̀: nák ri:an jǐŋ thî: mi: tɔ̀: sùk khà phâ:p tha:ŋ phê:t pen sù:an nɯ̀ŋ khɔ̌:ŋ khwa:m phá ja: ja:m thî: tɕàʔ lót tɕam	ครูและผู้บริหารโรงเรียน**กำลังเตรียมพร้อมที่จะเปิดตัว**โครงการทั่วประเทศเพื่อให้ความรู้แก่เด็กนักเรียนเกี่ยวกับสุขภาพทางเพศที่ดีขึ้นซึ่งเป็นส่วนหนึ่งของความพยายามในการลดจำนวนแม่วัยรุ่นที่มีจำนวนมากลง (khru: lɛ́ʔ phû: bɔ: rí hǎ:n ro:ŋ ri:an **kam laŋ tri:am phrɔ́:m hî: tɕàʔ pɤ̀:t tu:a** khro:ŋ ka:n thû:a pràʔ thê:t phɯ̂:a hâj khwa:m rú: kɛ̀: dèk nák ri:an kì:aw kàp sùk khà phâ:p tha:ŋ phê:t thî: di: khûɯn sɯ̂ŋ pen sù:an nɯ̀ŋ	คณะครูและผู้บริหารโรงเรียน**เตรียมความพร้อมในการริเริ่ม**โครงการในทั้งประเทศเพื่อให้ความรู้กับนักเรียนในวัยรุ่นเกี่ยวกับสุขภาวะทางเพศ โดยส่วนหนึ่งที่เป็นความพยายามในการลดจำนวนแม่วัยใส (khru: lɛ́ʔ phû: bɔ: rí hǎ:n ro:ŋ ri:an **tri:am khwa:m phrɔ́:m naj ka:n ríʔ rɤ̂:m** khro:ŋ ka:n naj tháŋ pràʔ thê:t phɯ̂:a hâj khwa:m rú: kàp nák ri:an naj waj rûn kì:aw kàp sùk pha: wáʔ tha:ŋ phê:t do:j sù:an nɯ̀ŋ thî: pen khwa:m phá

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
	nu:an khɔ̌:ŋ sà tri: waj rûn).

Type of error: - | khɔ̌:ŋ khwa:m phá ja: ja:m naj ka:n lót tɕam nu:an mɛ̂: waj rûn thî: mi: tɕam nu:an mâ:k loŋ).

Type of error: - | ja: ja:m naj ka:n lót tɕam nu:an mɛ̂: waj sǎj). |
| 2. One of my favorite vacation places is Mexico. | หนึ่งในสถานที่พักผ่อนที่ชื่นชอบของฉันคือเม็กซิโก

(nɯ̀ŋ naj sà thǎ:n thî: phák phɔ̀:n thî: tɕhɯ̂:n tɕhɔ̂:p khɔ̌:ŋ tɕhǎn khɯ: mék síʔ ko:).
Type of error: - | หนึ่งในสถานที่พักผ่อนที่ฉันชื่นชอบคือเม็กซิโก
Type of error: -

(nɯ̀ŋ naj sà thǎ:n thî: phák phɔ̀:n thî: tɕhǎn tɕhɯ̂:n tɕhɔ̂:p khɯ: mék síʔ ko:). | หนึ่งในสถานที่พักร้อนสุดโปรดของฉันคือเม็กซิโก

(nɯ̀ŋ naj sà thǎ:n thî: phák rɔ́:n sùt prɔ̀:t khɔ̌:ŋ tɕhǎn khɯ: mék síʔ ko:). |
| 3. For example, you can stay at one of the beach resorts like Acapulco. | ตัวอย่างเช่นคุณสามารถเข้าพักที่แห่งหนึ่งในรีสอร์ทริมชายหาดเช่น Acapulco

(tu:a jâ:ŋ tɕhên khun sǎ: mâ:t khâw phák thî: hɛ̀ŋ nɯ̀ŋ naj ri: | ตัวอย่างเช่นคุณสามารถเข้าพักที่หนึ่งในรีสอร์ทริมชายหาด เช่น Acapulco

(tu:a jâ:ŋ tɕhên khun sǎ: mâ:t khâw phák nɯ̀ŋ naj ri: sɔ̀:t rim | ตัวอย่างเช่นคุณสามารถเข้าพักหนึ่งในรีสอร์ทริมหาด เช่น Acapulco

(tu:a jâ:ŋ tɕhên khun sǎ: mâ:t khâw phák nɯ̀ŋ naj ri: sɔ̀:t rim |

Original Text	Translation into Thai by GT (GNMT2018) (Kumnoed, 2018a & Kumnoed, 2018b)	Translation into Thai by GT (GNMT 2023)	Revised Thai Translation (Translated by the author)
	sɔ̀ːt rim tɕhaːj hàːt tɕhên Acapulco). Type of error: -	tɕhaːj hàːt tɕhên Acapulco). Type of error: -	tɕhaːj hàːt tɕhên Acapulco).

Table 5: *Comparison of Google Translate of Errors in the Selected Articles in 2018 Versus 2023 (Data from 23 of Studied Sentences)*

Errors in GT (Year)	Frequency of Errors	Frequency of Errors (Percentage)
2018	20	87%
2023	9	39%

In 2018, Google Translate exhibited an error rate of 87% when translating English news articles and general articles at a basic level into Thai. However, in 2023, there was a significant improvement, with the error rate dropping to 39%.

Table 6: *Comparison of Google Translate of Errors in 20 Sentences from Selected Articles in 2018 versus 2023 (Data from 20 sentences with errors)*

Type of Error	Frequency		Frequency (Percentage)	
	2018	**2023**	**2018**	**2023**
Lexical	11	5	55%	25%
Syntactic	6	2	30%	10%
Discourse	4	2	20%	10%

When categorizing the types of errors, Google Translate made the most frequent lexical errors in 2018, accounting for 55% of all identified errors. In contrast, the lexical error rate saw a substantial improvement in 2023, decreasing to 25%. Conversely, discourse errors represented the lowest proportion of errors, constituting only 20% of the total errors in 2018. This percentage further decreased to 10% in 2023, indicating an enhancement in this aspect of

translation quality. The total frequency of errors in 2018 was bigger than the sum of errors (20) because one sentences had two errors.

Discussion

When comparing the two years, it becomes evident that Google Translate has undergone significant advancements and rapid changes over the last half-decade. In 2018, a higher number of errors were identified in the translations compared to those in 2023. The results of this study revealed that most of Google Translate's errors in both 2018 and 2023 occurred at the lexical level, especially in 2018. These errors included mistranslations of idiomatic expressions and the selection of the wrong definitions for words with multiple meanings, although these errors were notably reduced in 2023. However, even when using Google Translate to translate news articles, readers can still obtain a basic understanding of the content. The overall meaning of the words can be inferred or guessed, and the main idea can be perceived as the translation often resembles that of an English-Thai dictionary. As Perfetti (1988) emphasized, understanding words at a basic level is crucial for reading comprehension, and unfamiliar vocabulary can hinder a positive reading experience. A literal translation allows readers to comprehend the main points and grasp the general meaning of the text, even with only a basic level of English proficiency.

Thai readers often use Google Translate as a dictionary due to its vast language database, and it primarily made lexical errors in the translated texts during both years. However, it cannot match the effectiveness of proficient human translators, since culture and emotions within language must be taken into consideration, and interpretations may vary based on the context. Based on the findings, while Google Translator generally performs well in various contexts, it faces challenges when translating individual phrasal verbs, as demonstrated by the inaccurate translations of phrases like "gear up" and "bring down" when translated without context. These issues persisted in both the 2018 and 2023 translations. In summary, Google Translate has undergone noticeable improvements over time and can offer a basic understanding of news articles to readers. Still, it's important to recognize its limitations, particularly when dealing with cultural nuances and phrasal verbs. These challenges with translating phrasal verbs without context persisted in both 2018 and 2023.

Example 1: Phrasal verb: gear up

GT translation 2018 and 2023: The gear is moving up "เกียร์ขึ้น" (kiːa khûn)

The correct translation: to prepare something for an activity or event

Source:

https://translate.google.co.th/?hl=th&sl=en&tl=th&text=gear%20up%0A&op=translate

Example 2: Phrasal verb: bring down

GT translation 2018 and 2023: bring something "นำลงมา" (nam loŋ maː).

The correct translation: to reduce something "ลดจำนวน" (lót tɕam nuːan).

Source:

https://translate.google.co.th/?hl=th&sl=en&tl=th&text=bring%20down%0A&op=translate

The phrasal verb mentioned above was translated incorrectly in both 2018 and 2023 when rendered without context. This study's findings highlight that Google Translate's most common errors occur at the lexical level, particularly when it is employed as a dictionary substitute without contextual information, especially for phrasal verbs and idiomatic expressions. Therefore, it is evident that GT is still considered reliable, particularly when translating in context, as this is one of the program's strengths. Bowker and Ciro (2019) emphasized that the program's performance is satisfactory when extensive corpus data are available to match words and expressions from the source texts with suitable English equivalents in the given context. However, one area where GT faces challenges is in translating phrasal verbs out of context. The meaning of phrasal verbs cannot always be translated literally, leading to potential misunderstandings, especially for learners who do not have English as their mother tongue. Coady and Huckin (1997) highlighted the complexities of phrasal verbs, making their meanings unpredictable and difficult to guess, particularly when they have multiple idiomatic interpretations. For learners, phrasal verbs can be obstacles to comprehension, and often they rely on the words surrounding the phrasal verb to infer its meaning.

In specific instances, GT demonstrated errors in lexical choice, which led to incorrect translations by choosing the wrong choice of the word that has many definitions. For example, in sentence number 10 from table 1, the word "ask" was translated as "ถาม" (thǎːm). or

"question," whereas the intended meaning was to request "ขอ" (khɔ̌ː). Such errors occur when GT selects the wrong choice of words during translation. However, these errors improve in the year 2023.

In another instance, Google Translate (GT) provided an incorrect translation that did not align with the context. For example, in the sentence "...teaching sexuality will lead young students to engage in more sex," GT rendered it as "การสอนเรื่องเพศจะทำให้เด็กนักเรียนจะนำไปสู่การมีเพศสัมพันธ์มากขึ้น," (kaːn sɔ̌ːn rɯ̂ːaŋ phêːt tɕà tham hâj dèk nák riːan tɕà nam paj sùː kaːn miː phêːt sǎm phan mâːk khɯ̂n). Which is an inaccurate translation. This issue highlights a lexical problem between the source language (English) and the target language (Thai) where there is a lack of equivalence, resulting in the selection of an incorrect definition for a word with multiple meanings. The primary challenge can be attributed to the varied meanings of the word "engage." When the word "engage" is input, its meaning can vary significantly, leading to translation errors. Despite these acknowledged challenges and occasional errors, Google Translate remains a valuable tool, particularly when used within a specific context. Nevertheless, users are encouraged to exercise caution and apply critical judgment when encountering potential translation discrepancies.

Translations of "engage"

หมั้น (mân) engage, betroth, espouse, affiance

ว่าจ้าง (wâː tɕâːŋ) employ, engage, commission, wage

จ้าง (tɕâːŋ) employ, engage, retain, line

ผูกมัด (phùːk mát) commit, obligate, engage, enslave, swaddle, oblige

รับจ้าง (ráp tɕâːŋ) engage

สัญญา (sǎn jaː) engage, affiance

เหมา (mǎw) charter, take for granted, rent, lease, presume, engage

มีธุระ (miː thúʔ ráʔ) engage

สู้รบ (sû: róp) engage, war

ข้องเกี่ยว (khɔ̂:ŋ kì:aw) associate, concern, relate, involve, engage

จองที่ (tɕɔ:ŋ thî:) make a reservation, reserve, book, engage

ประมือ (pràʔ mɯ:) begin battle with, fight hand to hand, engage, assail, attack

ผูกเวร (phù:k we:n) hold grudge against, seek revenge, bear a grudge, start a feud with, enter into a feud

Source: https://translate.google.com/#en/th/engage

The word "engage" exemplifies the challenge of multiple meanings that are context-dependent. Machine translation, like Google Translate, cannot be compared to human translation because it lacks the ability to discern the correct meaning based on context. Hutchins and Somers (1992) noted that the system struggles with handling *homography* (words with the same spelling but different meanings) and structural complexities, such as complex sentences, connectors, incomplete sentences, punctuation, phrases, and complex noun phrases.

In the translations conducted in 2018 and 2023, another noteworthy aspect is the handling of syntactic structures, particularly the active-passive form. Passive voice is commonly employed in English sentences and texts, constituting a fundamental element of the language. It is used when the agent performing the action is unknown or intentionally omitted, or when the focus is on describing an experiment or process. Unlike English, Thai does not involve the reordering of sentence elements to create passive constructions. For instance, consider the sentence "Rot Chon Suk / Car hit Suk A car hit Suk." When changed to passive form, it becomes "Suk thuuk rot chon (Suk <+Pass> car hit)" or "Suk was hit by the car" (Filbeck, 1973). Thus, the use of the passive form invariably impacts the meaning of lexical translation, which aligns with Vidhayasai et al.'s (2015) findings that Google Translate struggles to distinguish between passive and active sentences, often leading to inaccuracies in the target language (Thai).

In Thai, an active sentence structure is typically preferred when constructing a sentence. In contrast, in English, the passive form may be utilized when emphasizing the action itself and omitting the agent performing the action. This linguistic difference underscores the challenges

Google Translate faces when handling passive constructions in translation between these languages. It's worth noting that this problem was more prevalent in the translated text of 2018 compared to 2023. For instance, the sentence, "The woman is believed to have contracted the virus from someone who had recently traveled overseas," was initially translated as "ผู้หญิงเชื่อว่าได้ติดต่อไวรัสจากคนที่เพิ่งเดินทางไปต่างประเทศ" (phû: jǐŋ tɕhɯ̂:a wâ: dâj tìt tɔ̀: waj rát tɕà:k khon thî: phɤ̂:ŋ dɤ:n tha:ŋ paj tà:ŋ pràʔ thê:t). This constitutes a syntactic error involving passive-to-active transformation. However, in 2023, this error was rectified, and the sentence was translated correctly as "เชื่อว่าผู้หญิงคนนี้ติดต่อไวรัสจากคนที่เพิ่งเดินทางไปต่างประเทศ" (tɕhɯ̂:a wâ: phû: jǐŋ khon ní: tìt tɔ̀: waj rát tɕà:k khon thî: phɤ̂:ŋ dɤ:n tha:ŋ paj tà:ŋ pràʔ thê:t). The correction of the passive form significantly impacted the lexical translation, enhancing the overall accuracy of the translation.

The issue of discourse is also prone to being a challenge due to factors such as grammar, sentence structure, style, and variety. These elements occasionally led to sentence translations, especially in 2018, which posed challenges but were notably improved in 2023. This issue, as Fem (2011) pointed out, pertains to translation efficiency, particularly in complex and ambiguous contexts, as well as grammatical variations that allow for multiple interpretations. It remained unclear in both the translated texts from 2018 and 2019. For instance, in sentence number 7, "Ministry downplays Zika fears, says no need to panic," the type of error observed was at the discourse level, involving several mistranslations that made it difficult for Thai readers to understand in 2023. The translation improved to "กระทรวงไม่แสดงความกลัว Zika กล่าวว่าไม่จำเป็นต้องตื่นตระหนก" (kràʔ thɔ:n woŋ mâj sɛ̀:t ŋók wa:m klu:a Zika klà:w wâ: mâj tɕam pen tô:ŋ tɯ̀:n tràʔ nòk), which is more comprehensible. However, depending on the context and the author's intended implication, it can also be translated as "กระทรวงลดระดับข้อกังวลเรื่องไข้ซิก้า โดยกล่าวว่าไม่มีความจำเป็นที่ต้องตื่นตระหนก" (kràʔ tʰɔ:n woŋ lót ráʔ dàp khô: kaŋ won rɯ̂:aŋ khâj síʔ kâ: do:j klà:w wâ: mâj mî:k wa:m tɕam pen thî: tô:ŋ tɯ̀:n tràʔ nòk). In this context, "downplay" should be translated as "to try to make something seem less important than it really is." In the next example, number 20, "It has some great museums and lots of fascinating old buildings" was translated as "มันมีพิพิธภัณฑ์ที่ดีบางอย่างและจำนวนมากของอาคารเก่าแก่ที่น่าสนใจ" (man mi: phíʔ phít phan thî: di: ba:ŋ jâ:ŋ lɛ́ʔ tɕam nu:an mâ:k khɔ̌:ŋ ʔa: kha:n kàw kɛ̀: thî: nâ:

sŏn tɕaj). The error observed here is syntactic, involving single-word-based translation or a word-for-word translation.

Research by Clifford et al. (2013) raised concerns about the accuracy of MT, such as literal translation and lexical, syntactic, and discourse inaccuracies. The study thus concluded that MT was only somewhat useful or potentially not useful at all. However, with the advancements in Google's Neural Machine Translation (GNMT) since 2016, reports suggest that Google Translate's accuracy has seen significant improvement, achieving a higher level of fluency (Sun, 2017).

In the previous 2018 research of Kumnoed (2018a) involving Google Translate's translation of news articles, students demonstrated the ability to access lexical meanings and gain a basic-level understanding of the content. The comprehension level significantly increased after utilizing Google Translate, as indicated by a T-value of 7.765. The mean comprehension score before using Google Translate was 1.52, whereas after using it, the mean score rose to 3.52. The use of Google Translate also allowed students to comprehend the passages effectively (Kumnoed, 2018a). Over a five-year span, compared to the original source text, some changes were observed. However, Google Translate's limitations become evident in English-to-Thai translation, where it does not consistently function as a dictionary. Translating certain words as phrasal verbs necessitates context and complete sentences. Unlike other programs that rely on statistical information, Google Translate employs a GNMT (Google Neural Machine Translation) approach, enabling it to process sentences in various languages. This functionality allows Google Translate to produce translations that are more natural, moving away from strict literal translations. Furthermore, Google Translate's translation output is subject to continuous improvements and advancements in the future. Despite its progress and benefits, Google Translate still faces challenges in accurately capturing implications and nuances, areas where human translators often excel. As technology evolves, it is crucial to recognize the distinct roles of machine translation and human translation, each possessing its unique strengths and limitations.

Conclusion

The development of Google Translate (GT) systems has seen significant improvements. In 2018, the results of this study showed that Google Translate's error rate was 87%. However, by 2023, this error rate had notably decreased to 39%. Examining the types of errors, Google

Translate exhibited lexical errors in 2018, accounting for 48% of the entire texts. In comparison, the lexical error rate in 2023 improved considerably, dropping to 22%. The syntactic error rate was 26% in 2018 and fell to 9% in 2023. The lowest occurrence of errors was observed in discourse, representing 17% of the entire texts in 2018, and decreasing to 9% in 2023. The lexical aspect experienced significant improvement over the past decade, which underscores the crucial role of Google Translate in enhancing readers' comprehension through term lists, automatic translations, and sentence predictions.

Despite its usefulness, the current quality estimation systems of GT heavily rely on GNMT, which has shown improvement but may not consistently result in accurate translations. While some methods approach human quality and assist readers in grasping the main idea, errors persist, with nearly every line containing discrepancies, reflecting a somewhat robotic translation approach. Beyond translation errors, GT still falls short compared to expert translators due to various other issues in its output. However, by learning to identify and address these issues, readers can better understand and navigate the complexities of language using Google Translate. Recognizing GT's limitations and inaccuracies allows us to take steps toward resolving these challenges, ultimately facilitating more effective use of the tool in language learning and comprehension. In light of these findings, users of Google Translate should exercise caution when relying on the machine for critical translation needs.

This study has certain limitations. Since it focused on only one language pair, Thai and English, the results cannot be generalized to other language pairs. Furthermore, the evaluation of GT outputs was limited to three aspects: lexical, semantic, and discourse. Detailed analysis of grammatical errors was not conducted through error analysis, which is crucial for a systematic assessment of GT's grammatical accuracy and orthographic errors. In addition, the study had constraints in analyzing news and general articles, and the corpus was somewhat limited. Data collection was also restricted due to the ease of the articles selected.

Recommendations for Further Research

Recommendations for future research include conducting more extensive investigations into the usage of Google Translate on various types of formal and informal texts. Delving into the problems caused by mistranslations and their impact on Thai readers is essential for identifying effective preventive measures. Conducting separate studies that focus on conversational content and Google Translate errors is also advisable.

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Appendix

The Google Translate rendered results for three articles that appeared in both an unpublished research report and a published research paper in 2018 (Kumnoed, 2018a Kumnoed, 2018b):

Original Text	Translation into Thai by GT
1st Article *Students to get sex education* Teachers and school administrators are gearing up to launch a nationwide programme to better educate young students on sexual health as part of efforts to bring down the high number of teenage mothers. The move follows the Prevention and Solution of the Adolescent Pregnancy Problem Act coming into force last month. With guidance from the Education Ministry, teachers and school administrators will be given lessons in sex education and an appropriate attitude towards sex education by specialists. "Many teachers still perceive sex as a taboo subject and believe that teaching sexuality will lead young students to engage in more sex. We need to change their attitude to reduce the problems," said education permanent secretary Kamchorn Tatiyakawee. He said the programme will educate teachers and executives about the rights of pregnant and parenting students and their educational opportunities.	บทความที่ 1 (bòt khwa:m thî: nɯ̀ŋ) *นักเรียนจะได้รับการศึกษาเรื่องเพศ* *(nák ri:an tɕàʔ dâj ráp ka:n sùk să: rɯ̂:aŋ phê:t)* ครูและผู้บริหารโรงเรียนกำลังเตรียมที่จะเปิดตัวโครงการทั่วประเทศเพื่อให้ความรู้แก่นักเรียนหญิงที่มีต่อสุขภาพทางเพศเป็นส่วนหนึ่งของความพยายามที่จะลดจำนวนของสตรีวัยรุ่น (khru: lɛ́ʔ phû: bɔ: rí hǎ:n ro:ŋ ri:an kam laŋ tri:am thî: tɕàʔ pɤ̀:t tu:a khro:ŋ ka:n thû:a pràʔ thê:t phɯ̂:a hâj khwa:m rú: kɛ̀: nák ri:an jǐŋ thî: mi: tɔ̀: sùk khà phâ:p tha:ŋ phê:t pen sù:an nɯ̀ŋ khɔ̌:ŋ khwa:m pja: ja:m thî: tɕàʔ lót tɕam nu:an khɔ̌:ŋ sà tri: waj rûn) การย้ายดังกล่าวเป็นการป้องกันและแก้ไขปัญหาของปัญหาการตั้งครรภ์ในวัยรุ่นที่มีผลใช้บังคับเมื่อเดือนที่แล้ว (ka:n já:j daŋ klà:w pen ka:n pɔ̂:ŋ kan lɛ́ʔ kɛ̂: khǎj pan hà: khoŋ ka:n tâŋ khan naj waj rûn thî: mi: phǒn tɕháj baŋ kháp mɯ̂:a dɯ:an thî: lɛ́:w) ด้วยคำแนะนำจากกระทรวงการศึกษาครูและผู้บริหารโรงเรียนจะได้รับบทเรียนเรื่องเพศศึกษาและทัศนคติที่เหมาะสมต่อการศึกษาเรื่องเพศโดยผู้เชี่ยวชาญ (dûaj kham nɛ́ʔ nam tɕà:k kràʔ krà:ʔ su:aŋ ka:n sùk sà: khru: lɛ́ʔ phû: bɔ: rí hǎ:n ro:ŋ ri:an tɕàʔ dâj ráp bòt ri:an rɯ̂:aŋ phê:t sɯ̀k sǎ: lɛ́ʔ thát sà ná khá tìʔ thî: mɔ̀ʔ sǒm tɔ̀: ka:n sùk sǎ: rɯ̂:aŋ phê:t do:j phû: tɕhî:aw tɕha:n) "ครูหลายคนยังมองว่าเรื่องเพศเป็นเรื่องต้องห้ามและเชื่อว่าการสอนเรื่องเพศจะทำให้เด็กนักเรียนจะนำไปสู่การมีเพศสัมพันธ์มากขึ้นเราจำเป็นต้องเปลี่ยนทัศนคติเพื่อลด

ปัญหา" กล่าวโดยถาวรเลขานุการ Kamchorn Tatiyawawee

(khru: lǎ:j khon jaŋ mɔːŋ wâ: rûːaŋ phêːt pen rûːaŋ tôːŋ hâːm lɛ́ʔ tɕhûːa wâ: kaːn sɔ̌ːn rûːaŋ phêːt tɕàʔ tham hâj dèk nák riːan tɕàʔ nam paj sù: kaːn mi: phêːt sǎm phan mâːk khûːn raw tɕam pen tôːŋ plìːan thát sà ná khá tìʔ phûːa lót pan hǎ: klàːw doːj thǎ: wɔːn leː khǎː núʔ kaːn Kamchorn Tatiyawawee)

เขากล่าวว่าโครงการจะให้ความรู้แก่ครูและผู้บริหารเกี่ยวกับสิทธิของนักเรียนที่ตั้งครรภ์และการเลี้ยงดูและโอกาสทางการศึกษาของพวกเขา

(khǎw klàːw wâ: khroːŋ kaːn tɕàʔ hâj khwaːm rú: kɛ̀: khru: lɛ́ʔ phûː bɔ: rí hǎːn kìːaw kàp sìt thíʔ khɔ̌ːŋ nák riːan thî: tâŋ khan lɛ́ʔ kaːn líːaŋ du: lɛ́ʔ ʔoː kàːt thaːŋ kaːn sùk sǎ: khɔ̌ːŋ phûːak khǎw)

Original Text	Translation into Thai by GT
2nd Article *Ministry downplays Zika fears, says no need to panic* The Public Health Ministry has played down fears of a Zika virus outbreak in Thailand, saying the disease is already common in the country. Opart Karnkawinpong, deputy director-general of the Disease Control Department, insisted Sunday the mosquito-borne Zika virus has become widespread since the infection was first recorded in Thailand in 2012. He asked the public not to panic as Zika was not deadly or severely contagious. Dr Opart's comment came after 22 new cases of Zika, including a pregnant woman, were reported in Sathon district this week. The woman is believed to have contacted the virus from someone who had recently travelled overseas. Dr Opart said all pregnant women and their unborn babies were being closely monitored by medical teams and public health officials. Of them, six have given birth to healthy babies.	*บทความที่ 2 (bòt khwaːm thîːt sɔ̌ːŋ)* *กระทรวง downplays Zika กลัวจำเป็นต้องตื่นตระหนก* *(kràʔ suːaŋ downplays Zika kluːa tɕam pen tôːŋ tùːn tràʔ nòk)* กระทรวงสาธารณสุขได้ให้ความสำคัญกับการระบาดของโรค Zika ในประเทศไทยกล่าวว่าโรคดังกล่าว เป็นเรื่องปกติในประเทศแล้ว (kràʔ suːaŋ sǎː thaː rá ná sùk dâj hâj khwaːm sǎm khan kàp kaːn ráʔ bàːt khɔ̌ːŋ rôːk síʔ kâː naj pràʔ thêːt thaj klàːw wâ: rôːk daŋ klàːw pen rûːaŋ pà kà tìʔ naj pràʔ thêːt lɛ́ːw) ดร. Opart Karnkawinpong รองอธิบดีกรมควบคุมโรคยืนยันว่าเมื่อวันอาทิตย์ที่ผ่านมาไวรัส Zika ของยุงได้แพร่ระบาดอย่างรวดเร็วนับตั้งแต่มีการติดเชื้อครั้งแรกในประเทศไทยในปีพ. ศ. 2555 (dòːk tɤ: Opart rɔːŋ ʔà thíp bɔ: di: krom khûːap khum rôːk jɯːn jan wâ: mûːa wan ʔa: thít thî: phàːn ma: waj rát síʔ kâː khɔ̌ːŋ juŋ dâj phrɛ̂: ráʔ bàːt ʔà jâːŋ rûːat rew náp tâŋ tɛ̀: mi: kaːn tìt tɕhúːak ráŋ rɛ̂ːk naj pràʔ thêːt thaj naj pi: phɔ: sɔ̌: sɔ̌ːŋ phan hâ: rɔ́ːj hâ: sìp hâ:)

	เขาถามประชาชนว่าไม่ต้องตื่นตระหนกเพราะ Zika ไม่ได้เป็นโรคติดต่อร้ายแรงหรือรุนแรง
	(khǎw thǎːm pràʔ tɕhaː tɕhon wâː mâj tôːŋ tùːn tràʔ nòk phrɔ́ʔ síʔ kàː mâj dâj pen rôːk tìt tɔ̀ː ráːj rɛːŋ rǔː run rɛːŋ)
	ความเห็นของดร. Opart เกิดขึ้นหลังจากพบว่ามีผู้ป่วยใหม่จำนวน 22 รายรวมทั้งสตรีมีครรภ์รายงานในเขตอำเภอสาทรในสัปดาห์นี้
	(khwaːm hěn khɔ̌ːŋ dɔ̀ːk tɤː Opart kɤ̀ːt khɯ̂n lǎŋ tɕàːk phóp wâː miː phûː pùaj màj tɕam nuːan jîː sìp sɔ̌ːŋ raːj ruːam tháŋ sà triː mîː khan raːj ŋaːn naj kèːt ʔam phɤː sǎː thɔːn naj sàp daː níː)
	ผู้หญิงเชื่อว่าได้ติดต่อไวรัสจากคนที่เพิ่งเดินทางไปต่างประเทศ
	(phûː jǐŋ tɕhɯ̂ːa wâː dâj tìt tɔ̀ː waj rát tɕàːk khon thîː phɤ̂ːŋ dɤːn thaːŋ paj tàːŋ pràʔ thêːt)
	ดร. Opart กล่าวว่าหญิงตั้งครรภ์และทารกในครรภ์ของพวกเขาได้รับการตรวจสอบอย่างใกล้ชิดโดยทีมแพทย์และเจ้าหน้าที่สาธารณสุขของพวกเขาหกได้ให้กำเนิดทารกที่มีสุขภาพดี
	(dɔ̀ːk tɤː Opart klàːw wâː jǐŋ tâŋ khan lɛ́ʔ thaː rók naj khan khɔ̌ːŋ phûːak khǎw dâj ráp kaːn trùːat sɔ̀ːp jàːŋ klâj tɕhít doːj thiːm phêːt lɛ́ʔ tɕâw nâː thîː sǎː thaː rá náː sùk khɔ̌ːŋ phûːak khǎw hòk dâj hâj kam nɤ̂ːt thaː rók thîː miː sùk khà phâːp diː)

Original Text	**Translation into Thai by GT**
3rd *Reading for Beginner Level Passage* One of my favorite vacation places is Mexico. I really like the weather there because it never gets cold. The people are very nice too. They never laugh at my bad Spanish. The food is really good. Mexico City is a very interesting place to visit. It has some great museums and lots of fascinating old buildings. The hotels are too expensive to stay but there are more affordable options. For example, you can stay at one of the beach resorts like Acapulco. If you are planning to visit Mexico, you should definitely see the Mayan temples near Merida.	*บทความที่ 3 (bòt khwa:m thî:t să:m)* หนึ่งในสถานที่พักผ่อนที่ชื่นชอบของฉันคือเม็กซิโก (nùŋ naj sà thă:n thî: phák phɔ̀:n thî: tɕhɯ̂:n tɕhɔ̂:p khɔ̌:ŋ tɕhăn khɯɯ: mék síʔ ko:) ผมชอบสภาพอากาศที่นั่นเพราะมันไม่เคยได้รับเย็น (phŏm tɕhɔ: sa phâ:p ʔa: kà:t thî: nân phrɔ́ʔ man mâj khɤːj dâj ráp jen) คนเท่ามีความดีมากเกินไป (khon thâw mî: khwa:m di: mâ:k kɤ:n paj) พวกเขาไม่เคยหัวเราะเยาะไม่ดีของฉัน (phû:ak khăw mâj khɤːj hŭːa rɔ́ʔ jɔ́ʔ mâj di: khɔ̌:ŋ tɕhăn) อาหารเป็นสิ่งที่ดีจริง ๆ (ʔa: hă:n pen sìŋ thî: dì:t tɕiŋ tɕiŋ) เม็กซิโกซิตี้เป็นสถานที่ที่น่าสนใจมากที่จะเยี่ยมชม มันมีพิพิธภัณฑ์ที่ดีบางอย่างและจำนวนมากของอาคารเก่าแก่ที่น่าสนใจ (mék síʔ ko: síʔ tî: pen sà thă:n thî: thî: nâ: sŏn tɕaj mâ:k thî: tɕàʔ jî:am tɕhom man mi: phíʔ phít thá phan thî: di: ba:ŋ jâ:ŋ lɛ́ʔ tɕam nu:an mâ:k khɔ̌:ŋ ʔa: kha:n kàw kè: thî: nâ: sŏn tɕaj) โรงแรมที่มีราคาแพงเกินไปที่จะอยู่แต่มีตัวเลือกราคาไม่แพงมาก (ro:ŋ rɛ:m thî: mi: ra: kha: phɛ:ŋ kɤ:n paj thî: tɕàʔ jû: tɛ̀: mi: tu:a lɯ̂:ak ra: kha: mâj phɛ:ŋ mâ:k) ตัวอย่างเช่นคุณสามารถเข้าพักที่หนึ่งในรีสอร์ทริมชายหาด เช่น Acapulco (tu:a jâ:ŋ tɕhên khun să: mâ:t khaw phák thî: nùŋ naj ri: sɔ̀:t rim tɕha:j hà:t tɕhên Acapulco) หากคุณกำลังวางแผนที่จะไปเม็กซิโกคุณแน่นอนควรจะเห็นวัดของชาวมายันที่อยู่ใกล้ Merida (hà:k khun kam laŋ wa:ŋ phɛ̌:n thî: tɕàʔ paj mék síʔ ko: khun nɛ̂:n ʔon khu:an tɕàʔ hĕn wát khɔ̌:ŋ tɕha:w ma: jan thî: jû: klâj Merida)