

## University Students' Diverse Perspectives on Google Translate: Enhancing EFL Writing Skills or Hindering Progress?

Amal A.S. Metwally<sup>1,\*</sup>, Najat A. Busabaa<sup>2</sup> & Hanan A.N. Mohammed<sup>3</sup>

(Type: Full Article). Received: 23<sup>rd</sup> Dec. 2024, Accepted: 2<sup>nd</sup> Mar. 2025, Published: 1<sup>st</sup> Oct. 2025, DOI: 10.35552/0247.39.10.2450

**Abstract: Objective:** The present study examines the impact of Google Translate (GT) on pre-intermediate English as a foreign language (EFL) students' writing skills in a university setting. It aims to assess how GT influences students' writing proficiency, accuracy, and perception of language learning. **Method:** A descriptive qualitative research design was employed to provide an in-depth analysis of GT's role in EFL writing. The study involved 59 female pre-intermediate university students, selected randomly, including 7 individual interviewees and 52 focus group participants. Data were collected through semi-structured interviews, focus group discussions, and analysis of students' writing samples. A thematic approach was used to analyze qualitative data, while content analysis was applied to students' writing samples to evaluate accuracy, structure, and fluency. To ensure the consistency and objectivity of data interpretation, inter-rater reliability was employed in the evaluation of students' writing samples and qualitative responses. **Results:** The findings indicate that 56% of students (33 participants) used GT regularly, primarily to translate from their first language (L1) into English, improve vocabulary, and refine grammar and sentence structure. Students who used GT produced longer and more syntactically accurate texts compared to those who did not. However, opinions on GT varied: while over half of the participants highlighted its advantages, 44% (26 participants) expressed concerns about over-reliance on GT, potential grammatical inaccuracies, and the lack of authentic language learning. Additionally, some students emphasized the importance of trial and error in developing writing skills. The study also found that excessive reliance on GT may hinder autonomous learning and critical thinking, raising concerns about its long-term impact on language development. **Conclusion:** Based on these findings, the study recommends that language educators should integrate GT into their instructional strategies with clear pedagogical guidelines to maximize benefits and minimize over-dependence. It also highlights the need for structured training on GT's effective use to support students' language development. Research Gap & Implications: Despite the increasing use of GT in EFL contexts, research has yet to fully explore students' cognitive and emotional responses, ethical concerns, and its impact on long-term language acquisition.

**Keywords:** EFL Writing, Google Translate GT, technology-assisted language learning, university students' perceptions, writing accuracy, language autonomy.

### وجهات نظر الطلاب الجامعيين المتباينة حول استخدام ترجمة جوجل: هل هي وسيلة لتعزيز مهارات الكتابة باللغة الإنجليزية أم عائق يحول دون تطورها؟

أمل عبد الستار متولي<sup>1,\*</sup>، ونجاة أحمد بوسبعة<sup>2</sup>، وحنان عبد الله ناجي محمد<sup>3</sup>

تاريخ التسليم: (2024/12/23)، تاريخ القبول: (2025/3/2)، تاريخ النشر: (2025/10/1)

**المخلص: الهدف:** تستكشف هذه الدراسة تأثير استخدام ترجمة جوجل على مهارة الكتابة باللغة الإنجليزية كلفة أجنبية. وتهدف إلى تقييم كيفية تأثير ترجمة جوجل على مهارات الكتابة لدى الطالبات في المستوى ما قبل المتوسط في بيئة جامعية. **المنهج:** لتحقيق هذا الهدف، تم استخدام تحليل وصفي نوعي لتحقيق الفهم الشامل لأسئلة البحث. استخدم الباحثون مزيجاً من طرق جمع البيانات النوعية مثل المقابلات، والمناقشات الجماعية، وتحليل نماذج من كتابات الطلاب للإجابة بشكل شامل على أسئلتهم البحثية. **النتائج:** أظهرت النتائج أن ترجمة جوجل تساعد طلاب اللغة الثانية في تحسين القواعد والمفردات وتركيب الجمل. كما أشارت النتائج إلى أن الطلاب الذين لم يستخدموا الأداة كتبوا عدداً أقل من الجمل، وكانت نصوصهم أقل دقة مقارنةً بأولئك الذين استخدموها. وتباينت آراء الطلاب حول استخدامهم لهذه الأداة، حيث أشار أكثر من نصف المشاركين إلى مزاياها، بينما لم يتفق بعضهم مع هذه الآراء وأعربوا عن رغبتهم في تحسين مهارات الكتابة لديهم من خلال المحاولة والخطأ. بالإضافة إلى ذلك، أظهرت الدراسة الحالية أن الاعتماد المفرط على الأداة قد يعيق تطور اللغة. **الخلاصة:** ولهذا السبب، توصي الدراسة بأن يدمج معلمو اللغة استخدام تقنيات الترجمة مثل ترجمة جوجل في استراتيجياتهم التعليمية بطريقة مدروسة، مع تقديم إرشادات واضحة حول كيفية استخدامها.

**الكلمات المفتاحية:** الكتابة باللغة الإنجليزية كلفة أجنبية، ترجمة قول GT، تعلم اللغة المدعوم بالتكنولوجيا، تصورات طلاب الجامعات، أدوات الترجمة الرقمية، دقة الكتابة، تعلم اللغة الذاتي.

1 Translation Department, College of Languages and Translation, King Khalid University, Abha, Saudi Arabia. Orcid: 0000-0001-9067-3273

\* Corresponding author email: aamotwly@kku.edu.sa

2 English Department, Women's College, Hadhramout University, Yemen  
najatbusabaa@hu.edu.ye Orcid: 0000-0002-2937-4706

3 E-mail: hnaje@kku.edu.sa

1 قسم الترجمة، كلية اللغات والترجمة، جامعة الملك خالد، أبها، السعودية  
Orcid: 0000-0001-9067-3273

\* الباحث المراسل: aamotwly@kku.edu.sa

2 قسم اللغة الإنجليزية، كلية البنات، جامعة حضرموت، اليمن. najatbusabaa@hu.edu.ye  
Orcid: 0000-0002-2937-4706

3 البريد الإلكتروني: hnaje@kku.edu.sa

## Introduction

Technology has played a transformative role in English as a Foreign Language (EFL) instruction over the past three decades (Cancino & Panes, 2021). The integration of technology in EFL settings has led to innovative instructional strategies that enhance student performance and diversify teaching approaches. Adas and Abu Shmais (2011) explored this evolution by examining An-Najah National University students' perceptions of a Blended Learning (BL) environment that combined traditional methods with the Online Course Container (OCC), a tool for both synchronous and asynchronous communication. Their study, which involved 92 students, found that overall attitudes toward BL were positive in terms of process, ease of use, and content. Additionally, the findings highlighted students' familiarity with the internet and IT tools, reinforcing the role of technology in facilitating language learning. With rapid advancements in digital tools, students now have access to various online resources to aid their language learning, with one of the most prominent being Google Translate (GT). While GT offers a convenient way for learners to translate and refine their writing, its impact on language acquisition remains widely debated.

Technology has played a transformative role in English as a Foreign Language (EFL) instruction over the past three decades (Cancino & Panes, 2021). The integration of technology in EFL settings has led to innovative instructional strategies that enhance student performance and diversify teaching approaches. Adas and Abu Shmais (2011) explored this evolution by examining An-Najah National University students' perceptions of a Blended Learning (BL) environment that combined traditional methods with the Online Course Container (OCC), a tool for both

synchronous and asynchronous communication. Their study, which involved 92 students, found that overall attitudes toward BL were positive in terms of process, ease of use, and content. Additionally, the findings highlighted students' familiarity with the internet and IT tools, reinforcing the role of technology in facilitating language learning. With rapid advancements in digital tools, students now have access to various online resources to aid their language learning, with one of the most prominent being Google Translate (GT). While GT offers a convenient way for learners to translate and refine their writing, its impact on language acquisition remains widely debated.

Research suggests that online translation tools can be beneficial, provided that instructors understand their limitations and offer students appropriate guidance on their use (Cancino & Panes, 2021). Despite the widespread use of GT, research has yet to fully examine how learners at different proficiency levels engage with the tool and its impact on their writing development. This study addresses this gap by investigating the experiences and perceptions of pre-intermediate EFL students, exploring their motivations, perceived benefits and drawbacks, and the extent to which GT influences their writing quality.

GT was launched in 2006 as one of the most widely used machine translation services, supporting over 130 languages and catering to over 500 million daily users (Google. (n.d.). The increasing reliance on GT among students has prompted extensive research into its significance. Building on this, this study explores various aspects of GT's use in EFL contexts, including students' motivations for using it, its perceived advantages and limitations, and its impact on EFL writing quality. By examining these factors, the study aims to provide deeper insights into how GT

influences learners' writing processes and contributes to the development of their language skills.

In educational settings, its adoption has grown significantly, with studies indicating that EFL students use GT for writing tasks, often translating entire sentences or paragraphs (Cancino & Panes, 2021). While existing research highlights GT's role in helping students overcome vocabulary limitations and improve grammatical accuracy, it also raises concerns about its potential to hinder independent language development. Moreover, the lack of consensus in existing literature calls for further investigation into how students at different proficiency levels engage with GT in their writing. By addressing this gap, future studies can provide a more nuanced understanding of GT's impact on language acquisition and academic writing skills.

In this context, pre-intermediate students were chosen for this study, as they are at a critical stage of language development, transitioning from basic sentence construction to more complex expression. Unlike beginners who focus on vocabulary or advanced learners refining fluency, these students are still building grammatical accuracy, coherence, and writing fluency. Given that research suggests they frequently rely on translation tools to bridge linguistic gaps but may struggle with independent expression, examining their use of GT offers valuable insights into whether it facilitates linguistic growth or fosters dependency on automated translation.

### **Research questions**

To address these research gaps, this study investigates two key questions: (1) What are students' perceptions and attitudes toward using GT as a writing aid in EFL classes? (2) How does the use of GT influence students' language proficiency in EFL writing? These questions aim to uncover both the cognitive and

behavioral dimensions of GT use, assessing its impact on writing accuracy, fluency, and overall learning experiences.

To ensure conceptual clarity, key terms in the study are defined as follows: EFL writing skills refer to students' ability to produce coherent, accurate, and structured texts in English. Translation technology includes digital tools like GT and AI-powered services that convert text between languages. Language proficiency is a learner's ability to communicate effectively in a second language, measured by grammatical accuracy, lexical variety, coherence, and fluency.

Building on these definitions, this study explores how pre-intermediate EFL students interact with GT in their writing, addressing both its benefits and limitations. Specifically, it examines GT's impact on autonomy, accuracy, and long-term language development, providing insights into its role at this stage of learning.

### **Literature Review**

The following literature review offers a succinct summary of recent studies focusing on the role of GT in enhancing EFL writing skills. By examining the existing body of literature, this review aims to shed light on the potential benefits and limitations of utilizing GT as a tool for EFL learners, as well as to identify gaps in current knowledge that warrant further investigation.

Recently, there has been a growing interest in exploring the use of GT as a tool to facilitate EFL writing, particularly for beginners. Several recent studies have investigated the impact of GT on EFL writing proficiency, with a focus on how it can support language learners in developing their writing skills (Cancino & Panes, 2021; Fidinillah, 2022).

The growing reliance on GT in EFL writing has generated academic debate, with research highlighting both its benefits and drawbacks.

While many studies examine GT's impact on writing skills, much of the literature remains descriptive, lacking critical analysis of methodological rigor and theoretical grounding. Additionally, research often focuses on either linguistic accuracy or student perceptions, rather than integrating both for a comprehensive understanding. This review critically evaluates key studies, identifying their contributions, limitations, and gaps, underscoring the need for further research to establish the relevance of the present study.

### **Machine translation and EFL acquisition**

Machine translation (MT) tools like GT have been widely studied in EFL acquisition, with research highlighting both benefits and limitations. MT offers instant access to vocabulary, grammar, and sentence structures, aiding learners across proficiency levels (Ahmad et al., 2024). For instance, studies show MT improves vocabulary retention and reading comprehension, particularly for lower-proficiency learners (Abimbola, 2023). Similarly, Ahmad et al. (2024) found that university students view MT as a convenient tool for academic writing and translation, reinforcing its role in language learning.

However, concerns remain about students' over-reliance on MT, which may hinder their ability to internalize grammatical rules and develop independent writing skills. Research by Ivenz & Polakova (2024) found that while higher-proficiency learners used MT selectively to refine their writing and correct mistakes, lower-proficiency learners often relied on direct translations without critically evaluating their accuracy. This aligns with Almusharraf and Bailey (2023), who caution that excessive use of MT can reduce cognitive engagement, leading to passive learning behaviors and weakening long-term language retention.

Further concerns about the cognitive impact of MT reliance have been raised by Abimbola (2023) and Organ (2022). Their studies suggest that while MT can serve as a powerful support tool, unmoderated use may lead to cognitive overload and weaken students' ability to recall and apply grammatical structures independently. Organ (2022) specifically examined UK school students preparing for standardized exams and found that those who relied heavily on GT struggled with accuracy when asked to write without MT assistance, reinforcing the need for active engagement in language learning rather than passive translation.

Moreover, the use of MT tools in academic writing raises ethical concerns, particularly regarding cross-language plagiarism (i.e. translating content and presenting it as original work). Dinneen (2022) highlights that while such text may pass plagiarism detection, it does not reflect students' true linguistic abilities. The lack of explicit policies on translation tool use further complicates the issue, as many students do not recognize it as academic misconduct. For this reason, clearer guidelines and ethical training are needed to ensure responsible use while preserving academic integrity.

Despite these challenges, structured use of MT can mitigate its drawbacks while maximizing its benefits. Knowles (2022) introduced the ADAPT strategy, which encourages students to revise assignments, critically assess MT outputs, and incorporate MT into discussions rather than relying on it as a primary learning method. Similarly, Putri et al. (2024) demonstrated that integrating AI-assisted learning with interactive classroom discussions significantly improved students' speaking proficiency, highlighting the potential of MT when combined with guided instruction.

A key distinction among these studies is how MT use varies across learning contexts. While

Abimbola (2023) and Ahmad et al. (2024) emphasize MT's role in vocabulary acquisition and comprehension, Almusharraf & Bailey (2023) and Organ (2022) stress its limitations in developing independent writing skills. Meanwhile, research by Knowles (2022) and Putri et al. (2024) suggests that structured instructional approaches can harness MT's benefits while reducing over-reliance. These findings indicate that MT, when used strategically, can serve as a powerful tool for EFL learning and acquisition, but it must be accompanied by critical thinking, active engagement, and structured pedagogical support to ensure sustainable language development.

### **Studies on the use of GT in EFL writing**

The reliance on MT tools by language learners in EFL contexts has become a common practice. These resources offer obstacles for educators, even though they can be useful in overcoming language hurdles and supporting writing (Naghdipour, 2023).

Several studies highlight GT's benefits in EFL writing, particularly in vocabulary, grammar, and fluency. Cancino & Panes (2021) found that high school students using GT with instructional guidance produced more accurate and complex texts. Similarly, Kol et al. (2018) reported that university students in English for Academic Purposes (EAP) courses wrote longer, more lexically diverse texts when using GT. In a school setting, Rowe (2022) explored GT's role in biliterate composition, highlighting its potential to help students integrate bilingual content effectively. Similarly, Naghdipour (2023) highlighted that many teachers have observed their students frequently relying on translation technology to complete graded written assignments. The study suggested that instructors should emphasize the importance of autonomous language learning and critical thinking in the

classroom while also guiding when and how to use MT tools effectively. Likewise, Knowles (2022) explored the integration of GT into online Spanish courses for beginners and intermediate learners. The study suggested that teachers can help students use GT more thoughtfully by implementing the ADAPT strategy; a framework introduced in the study that consists of five key steps: revising assignments, discussing GT, using GT as an assessment tool, promoting academic integrity, and teaching students how to use it responsibly.

Remarkably, Cancino & Panes (2021) analyzed high school students' writing with the use of GT by applying a linguistic approach. In this study, sixty-one high school EFL students were randomly divided into three groups: one using GT without instruction, one using GT with instruction, and one without access to GT. The results indicated that the two groups with access to GT achieved higher ratings in both accuracy and syntactic complexity. In another study, Chompurach (2021) examined how Thai EFL university students use GT and their perceptions of its role in English writing. The results indicated that students relied on GT to complete writing assignments at both the sentence and paragraph levels, with some students placing greater trust in GT than in their abilities. Similarly, Stapleton (2021) analyzed two sets of primary school student scripts: one written in the student's native Chinese language and the other in English. GT was used to translate the Chinese scripts into English, and the translated texts were then compared with the students' English-language writings. The findings revealed that, in certain cases, the GT-generated English translations demonstrated significantly stronger language quality than the students' original English composition. This outcome aligns with previous research suggesting that GT can contribute to improving writing skills in a second language. In another study, Organ (2022) investigated UK school

students' attitudes toward using GT for L2 production and exam preparation. The results confirmed that the majority of respondents, particularly secondary school students, have increasingly relied on GT for GCSE exam preparation over the past decade. However, opinions on its use vary, and perspectives have evolved due to advancements in GT technology and modifications to UK examination standards.

### **Advantages of using GT in EFL writing**

Many studies have highlighted the advantages of using GT to enhance writing skills. Fidinillah (2022) discussed its usefulness for a diverse range of users. Similarly, Kol et al. (2018) examined GT's impact on EAP courses at different tertiary levels. Their study sought to determine whether GT influenced the volume and quality of student writing. The findings indicated that students produced significantly more text when using GT. Moreover, their vocabulary profiles improved, incorporating longer words and more complex sentence structures. Likewise, Al-Bataineh (2010) found that university students using internet-based tools significantly improved their writing skills and motivation compared to those using traditional methods, further emphasizing the effectiveness of integrating technology into writing instruction.

Similarly, Alrajhi (2022) highlighted that students generally hold positive perceptions of GT's impact on writing quality, grammatical accuracy, and lexical alternatives across various genres. In this study, the literacy levels and content richness of GT-generated texts (GTTs) in narrative, descriptive, expository, and persuasive were compared to those of EFL student-generated texts. The results indicated that GTTs demonstrated higher literacy levels and richer content in persuasive and expository writing, as well as a more refined style in the narrative and descriptive genres. Furthermore,

Lengari (2023) investigated how engineering students use GT to improve their writing skills. Using descriptive-qualitative analysis, the study found that students write more effectively when GT is integrated into their assignments. Despite acknowledging some limitations, the majority of participants believe that GT offers more benefits than drawbacks in improving their writing abilities. The study concluded that GT plays a beneficial role in student learning, supporting the perception that its positive effects outweigh potential disadvantages.

Significantly, in a study comparing GT to other AI-based writing tools, Kim & Han (2021) analyzed the use of Grammarly, GT, and Naver Papago among 153 engineering majors. The findings revealed that Grammarly was highly effective in identifying and correcting errors with minimal drawbacks, whereas GT and NP serve as valuable tools for language acquisition and structural learning. Further exploring the advantages of GT in writing tasks, Arfiana et al. (2022) demonstrated that students used GT not only to improve their writing skills but also as a source of motivation for learning. The study found that students who struggled with limited vocabulary relied on GT for quick translation, making them feel more comfortable and confident in writing. The results indicated a strong correlation between students' writing proficiency and their enthusiasm for learning in GT-assisted classes. Similarly, Chang et al. (2022) investigated the role of MT technologies in language instruction, yielding mixed results regarding writing complexity, accuracy, and fluency. The findings indicate that the experimental group significantly outperformed the control group in error correction but showed no significant difference in overall writing scores. Results on fluency, accuracy, and complexity were mixed: the control group excelled in fluency (except total word count), while the experimental group showed higher syntactic complexity and better

accuracy post-intervention. Overall, students responded positively to using GT, citing reduced anxiety, increased motivation, and manageable task complexity.

Moreover, Khairunisa and Fajaryani (2022) found that third-semester English education students relied on GT for grammar and vocabulary support in narrative essays. While GT promoted writing autonomy, it did not fully eliminate errors or significantly improve overall performance. However, it helped students write independently rather than relying on peers or instructors. Similarly, Bin Dahmash (2020) confirmed GT's widespread use among Saudi EFL learners for Arabic-English translation. The study recommended using GT as a dictionary as well as for spelling and pronunciation checks, reinforcing its role as a multifunctional tool that aids both comprehension and writing development.

### **Disadvantages of using GT in EFL writing**

Many studies have also explored the disadvantages of using technology including GT in language learning, particularly, in the development of EFL writing skills. Kim & Han (2021) suggested that excessive reliance on AI-based tools can hinder students' ability to learn English independently and develop strong writing skills. Their study recommended structured instruction to ensure AI tools are used effectively, particularly for students with varying levels of English proficiency. Similarly, Chompurach (2021) found that most students view GT as a useful tool for improving writing. Additionally, regular GT use led some students to develop undesirable writing habits, yet the majority disagreed with the idea that GT should be completely banned in English writing.

Further emphasizing the limitations of GT, Ilmi (2019) examined morphological errors in the GT translations from Indonesian to Arabic. The findings suggest that GT often broadens

meaning rather than maintaining precise translations, suggesting that more morphological explanations are needed for accurate output in the target language. Stapleton and Kin (2019) further argued that automatic translation “eliminate[s] the motivation for L2 learners to learn to write in a target language” (p. 18), as modern GT advancements allow students to produce error-free sentences with minimal effort. This raises concerns about passive learning, where students rely on GT rather than actively engaging with the target language.

In summary, existing research presents GT as both an asset and a potential hindrance in EFL writing. While studies emphasize its benefits in vocabulary expansion, grammatical accuracy, and motivation (Kol et al., 2018; Alrajhi, 2022; Lengari, 2023), others highlight its role in improving fluency and fostering autonomy (Kim & Han, 2021; Arfiana et al., 2022). However, concerns about syntactic complexity and over-reliance remain (Chang et al., 2022; Khairunisa & Fajaryani, 2022), especially in Arabic-English translation (Bin Dahmash, 2020). Also, excessive GT use may promote passive learning and reduced engagement with language structures (Ilmi, 2019; Stapleton & Kin, 2019).

Despite this growing interest in exploring the advantages and disadvantages of GT in educational contexts, a significant gap remains in the literature regarding students' perspectives. Most existing research focuses on GT's impact on language learning outcomes at a broad level, rather than looking deeply into how students personally perceive and experience its benefits and limitations. This gap includes a limited understanding of students' cognitive and emotional responses, as well as their approach to ethical concerns in academic writing. This study explores their interactions, decision-making in writing tasks, and long-term language development, providing insights

to help educators integrate technology effectively while fostering independent writing skills.

### **Underpinning Framework**

This study is underpinned by Krashen's Input Hypothesis (Krashen, 1982) and Vygotsky's Sociocultural Theory (Vygotsky, 1978), both of which provide a strong foundation for understanding how students engage with GT in EFL learning.

Krashen's Input Hypothesis asserts that language acquisition occurs when learners are exposed to comprehensible input ( $i+1$ )—language that is slightly beyond their current level but still understandable with context (Krashen, 1982). The Monitor Hypothesis, another component of his theory, suggests that conscious learning primarily serves as a monitor for language output rather than directly facilitating acquisition. This framework is particularly relevant to the use of GT and other machine translation tools in academic settings. Studies have shown that students often rely on GT to complete writing tasks, sometimes trusting it more than their language abilities (Chompurach, 2021). Krashen's theory helps explain this phenomenon, as GT serves as an external source of comprehensible input, allowing students to engage with more complex structures than they might produce independently. Furthermore, Cancino and Panes (2021) found that students using GT produced more accurate and syntactically complex writing, supporting Krashen's Input Hypothesis, which emphasizes the role of comprehensible input in language acquisition. Similarly, Stapleton (2021) observed that GT-generated texts often displayed more sophisticated language than students' original writing, reinforcing the idea that exposure to advanced structures aids linguistic development.

Vygotsky's Sociocultural Theory (1978) underscores the importance of social interaction and scaffolding in language learning, suggesting that tools like GT can serve as mediating aids within the Zone of Proximal Development (ZPD). When integrated into structured learning environments, GT can support cognitive and linguistic development, as seen in Knowles' (2022) ADAPT strategy, which promotes responsible GT use through revision, discussion, and assessment. Additionally, Vygotsky's emphasis on peer collaboration and instructor feedback suggests that GT should not replace active learning but complement it through guided activities such as peer reviews and collaborative writing exercises, ensuring that students engage critically with language rather than passively relying on machine translation.

Grounded in Krashen's Input Hypothesis and Vygotsky's Sociocultural Theory, this study frames language learning as a balance between structured input and active engagement. While comprehensible input can enhance accuracy and complexity, its effectiveness relies on guided instruction, peer collaboration, and critical thinking. By integrating these perspectives, educators can foster autonomy and meaningful language acquisition while ensuring GT for EFL writing serves as a support rather than a substitute for learning.

### **Methodology**

#### **Research design**

This study employs a qualitative research design to explore the impact of GT on EFL writing skills. The research integrates semi-structured interviews, focus group discussions, and content analysis of students' writing samples to gain a comprehensive understanding of both the linguistic and perceptual dimensions of GT use. By analyzing students' writing alongside their reflections and



discussions, this study ensures a holistic approach to investigating GT's role in EFL writing development.

### Sampling method and participants

This study employed a convenience sampling method, selecting 59 pre-intermediate English Department students based on availability and willingness to participate. The sample included only female students, which limits the generalizability of the findings. Since gender differences can influence language learning strategies and technology use, future research should include a more balanced gender representation to explore whether male students demonstrate different usage patterns or attitudes toward MT tools like GT.

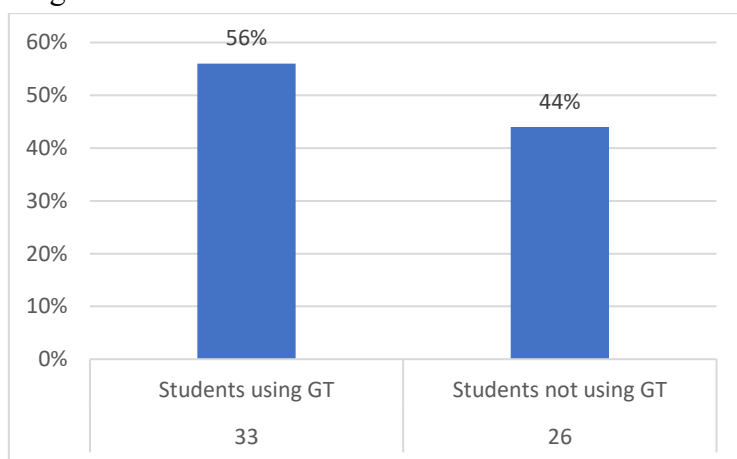
### Data collection process

Data were gathered through individual interviews, focus groups, and content analysis of students' writing assignments. Seven students participated in semi-structured interviews, each lasting 20-25 minutes, where they shared personal experiences, motivations, and perspectives on GT use. Additionally, 52 students took part in focus group discussions, with each session lasting 45-50 minutes and

consisting of 6-8 participants. These discussions allowed for collective insights and peer interactions regarding GT's effectiveness. While interviews were not recorded to encourage candid responses, detailed field notes were taken to ensure the authenticity of participant perspectives. Students' writing assignments were also analyzed, focusing on language accuracy, syntactic complexity, and coherence, offering empirical evidence to support qualitative findings.

### Data analysis

This section analyzes the collected data, focusing on GT's role in EFL writing among university students. The findings reveal key trends, patterns, and insights from participants' responses and writing samples. Out of 59 students, 56% (33 students) reported using GT in their writing process, primarily by drafting in their native language (L1) and then translating into English (L2). This trend indicates a common reliance on GT to support writing tasks. Conversely, 44% (26 students) did not favor GT use, highlighting a division in student preferences regarding its effectiveness in language learning (Figure 1).



**Figure (1):** Students' perceptions about using GT in EFL Writing.

The qualitative analysis reveals a nuanced impact of GT on language proficiency, writing accuracy, and learning outcomes. Many students prefer drafting in their L1 before translating, using GT to bridge linguistic gaps, refine vocabulary, and enhance sentence

structures. While some appreciate it as a valuable aid, others acknowledge both its strengths and limitations, citing concerns about grammatical errors, inconsistencies, and the risk of over-reliance. Some use GT selectively, while others worry that excessive dependence

could impede independent writing development and raise academic integrity issues.

Many students, prioritizing originality and proper citation, prefer self-correction and practice over automated translation to strengthen their writing skills. At the same time, a significant portion of students praised GT for its role in improving writing fluency and translating complex phrases. One student described it as a “lifesaver” for quickly translating ideas into English, while another highlighted its utility in grammar and vocabulary correction, stating, “*It gives me suggestions and correction*”. Additionally, GT boosted confidence in writing, with one student likening it to receiving “feedback from an expert.” These insights suggest that GT functions not only as a linguistic tool but also as a confidence booster in EFL writing.

Nearly half of the students reported positive experiences with GT, emphasizing its contributions to language proficiency, grammatical accuracy, and vocabulary enhancement. They appreciated its efficiency, particularly in saving time and facilitating expression, with many describing it as an indispensable aid rather than merely a shortcut in language learning. However, some students argue that reliance on GT limits their ability to articulate ideas independently. They stress the importance of authentic language learning, with one student stating, “*I prefer to struggle with my own words rather than rely on GT. This helps me truly learn the language and improve my skills*”. Another highlighted the value of learning from mistakes, asserting that “*Using GT doesn’t allow me to reflect on my errors and improve my writing*”. This perspective underscores concerns about linguistic autonomy, emphasizing that independent writing and self-correction are essential for long-term proficiency. More significantly, some students fear that dependence on GT

weakens their overall language development. They worry that quick translations discourage deeper engagement with vocabulary and grammar, potentially diminishing their motivation to practice writing and speaking independently. These concerns highlight the need for a balanced approach, one that leverages technology as a supportive tool while fostering active engagement in language learning.

Reflecting on ethical concerns, one participant admitted, “*Sometimes, I feel like I’m not really writing my own words when I use GT*”. This highlights the risk of over-reliance on GT, where students may neglect critical thinking and independent writing. Moreover, without proper guidance, GT can obscure the distinction between academic support and plagiarism, underscoring the need for responsible and ethical use in academia.

### **Reliability measures and inter-coder reliability**

To enhance credibility and minimize researcher bias, the study employed multiple validation techniques. Triangulation was ensured through the integration of interviews, focus groups, and content analysis, allowing for cross-verification of findings. To strengthen inter-coder reliability, two independent researchers analyzed the qualitative data separately using a pre-established coding framework, ensuring consistency and objectivity in interpretation.

Inter-rater reliability was employed to ensure the accuracy and uniformity of qualitative data analysis, particularly in assessing students’ writing samples and their perceptions of using GT as a writing aid. Additionally, inter-rater reliability was applied to qualitative data collected from interviews and focus groups, where students discussed their experiences and attitudes toward GT. The analysis focused on key themes such as writing

confidence, accuracy, fluency, and concerns about dependency on GT. To quantify agreement between raters, Cohen's Kappa coefficient was calculated, ensuring a high level of consistency in data interpretation (McHugh, 2012).

### **Ethical considerations**

The study adhered to ethical research guidelines to ensure participant protection, privacy, and voluntary participation. All students were provided with informed consent forms, outlining their right to withdraw at any time without consequences. To maintain anonymity and confidentiality, participants were coded, and no personal identifiers were collected.

### **Findings and discussion**

The qualitative research on GT's impact on EFL students' writing revealed key insights into its role in language learning. Many students reported that GT enhanced their writing accuracy and quality, particularly in grammar and vocabulary. Nearly half of the participants indicated that they used GT regularly for their EFL writing tasks. Those who favored GT praised its efficiency in translating text quickly and offering grammatical and lexical suggestions. These findings suggest that GT serves as a valuable tool for students seeking immediate language support, though its impact varies based on individual learning preferences and usage patterns.

The interviews and focus group discussions (Appendix 1) suggest that GT significantly impacts students' EFL writing, offering both benefits and challenges. Frequent use indicates its integration into students' language-learning routines. While many find it valuable for improving writing quality, concerns about over-reliance and potential inaccuracies highlight the need for critical engagement and instructional guidance to maximize its effectiveness.

### **Writing Samples**

These are samples of tasks given to students: (1) Letter Writing and (2) Event Announcements, both of which required students to communicate effectively in English while maintaining clarity, coherence, and grammatical accuracy. GT played a crucial role in enhancing sentence structure, refining vocabulary choices, and ensuring syntactic accuracy, as evident in the students' assignments.

**Letter Writing Task:** Students were assigned to write letters discussing significant cultural or national events. GT assisted them in structuring ideas, refining grammar, and improving vocabulary use, making their writing more fluent and readable.

**Sample 1: Eid Al-Adha:** A student wrote a letter to a friend explaining the significance of Eid Al-Adha, stating:

*"Eid Al-Adha commemorates the willingness of Prophet Ibrahim (Abraham) to sacrifice his son as an act of obedience to God, and it also marks the end of the Hajj pilgrimage to Mecca."*

This sentence is grammatically correct and well-structured, indicating that GT helped the student form a complex yet clear explanation. The formal tone and precise vocabulary choices suggest GT's assistance in ensuring coherence and clarity.

**Sample 2: Saudi Founding Day:** In another letter, a student described the historical significance of the Saudi Founding Day, writing:

*"Saudi Founding Day marks the establishment of the first Saudi state in 1727, highlighting our rich cultural heritage and historical significance."*

This sentence demonstrates historical accuracy and effective use of formal language, likely enhanced by GT's ability to suggest refined vocabulary and grammatical precision.

### Event or Festival Announcement Task:

Students were also required to write announcements for events and festivals, which needed to be concise, engaging, and informative. GT played a key role in helping students construct clear and promotional language.

**Sample 1: Jeddah City Attractions:** In an announcement promoting Jeddah City's attractions, a student wrote:

"Jeddah is a vibrant city known for its historical landmarks, stunning beaches, and modern attractions, making it a perfect destination for visitors."

The use of strong adjectives such as "vibrant" and "stunning" suggests GT-assisted lexical enrichment, making the description more engaging and visually appealing.

### Sample 2: Saudi Founding Day

**Celebration:** For an event announcement about Saudi Founding Day celebrations, another student wrote:

"Join us in celebrating our history with cultural performances, exhibitions, and traditional Saudi cuisine."

This sentence effectively conveys a promotional and engaging tone, showing how GT might have helped the student refine word choices and enhance readability.

As such, GT played a crucial role in helping students organize their ideas, refine grammar, and enhance vocabulary, leading to more fluent and coherent writing.

Table 1 presents a statistical representation; quantitative summaries were integrated to highlight students' perceptions of GT's impact on EFL writing.

**Table (1):** Students' perceptions of GT's impact on their EFL writing.

Category	Focus Group Question	Yes (%)	No (%)
Vocabulary Improvement	Has GT helped you improve your vocabulary?	56	44
Grammar Accuracy	Has GT helped you improve grammatical accuracy?	71	29
Writing Fluency	Do you feel that GT has helped you write more fluently?	64	36
Cohesion & Clarity	Has GT helped make your writing more cohesive and clearer?	81	19
Over-Reliance Concerns	Are you concerned that relying too much on GT affects your writing skills?	36	64
Confidence in Writing	Has GT increased your confidence in expressing yourself in writing?	68	32
Use for Sentence Structure	Do you use GT to structure your sentences better?	59	41
Use for Spelling Check	Do you use GT to check spelling errors?	75	25
Use for Synonyms & Word Choice	Do you use GT for finding synonyms and choosing better words?	62	38
Preference for Manual Writing	Do you prefer writing without using GT?	40	60
Ethical Concerns (Plagiarism)	Are you concerned about plagiarism when using GT?	45	55
Desire for GT Training	Would you like to receive training on how to use GT effectively?	80	20

The results reveal a mixed yet generally positive perception of GT's impact on EFL writing. A significant majority of students acknowledged GT's benefits in key areas such as grammar accuracy (71%), writing fluency (64%), cohesion and clarity (81%), and confidence in writing (68%), suggesting that GT serves as a valuable tool for linguistic

refinement and structured writing support. Additionally, 75% of students use GT for spelling checks, while 62% rely on it for synonyms and word choice, indicating its role in vocabulary expansion. However, despite these advantages, 56% of respondents noted only moderate vocabulary improvement, suggesting that while GT aids word selection, it

may not significantly enhance long-term vocabulary retention. Moreover, only 59% of students found GT helpful for structuring sentences, implying that while it assists with grammar and coherence, it may not fully address syntactic complexity.

Interestingly, concerns about over-reliance on GT were relatively low, with only 36% of students expressing worry that it negatively affects their writing skills, while 64% disagreed. This suggests that most students perceive GT as a supplementary aid rather than a crutch. Similarly, a majority (60%) preferred writing without GT, reinforcing a commitment to independent learning. Ethical concerns, particularly regarding plagiarism, were divided (45% concerned vs. 55% unconcerned), highlighting the need for greater awareness of academic integrity in AI-assisted writing. Notably, 80% of students expressed a strong interest in receiving structured training on GT usage, emphasizing the importance of integrating technology into language education with clear pedagogical guidance. These findings underscore the necessity of a balanced approach, ensuring that GT is used as a learning facilitator rather than a replacement for active language acquisition.

The findings highlight a growing reliance on GT, with students acknowledging its benefits in improving grammar accuracy, fluency, and cohesion while also expressing concerns about its potential drawbacks. Given this, educators and educational institutions play a critical role in guiding students toward responsible and effective use of GT. Teachers must integrate structured training and instructional strategies that encourage students to use GT as a supplementary tool rather than a primary writing aid. This includes fostering critical thinking, self-editing skills, and awareness of translation limitations, ensuring that students engage with language learning actively rather than passively. Additionally, institutions should

implement workshops, digital literacy programs, and academic integrity policies to help students navigate the ethical and educational implications of AI-assisted writing. By providing clear pedagogical frameworks, educators can ensure that students harness the benefits of GT without compromising independent language development or academic honesty.

Despite the benefits of MT in EFL, several studies have highlighted key challenges and ethical concerns, including translation accuracy and contextual awareness (Almusharraf & Bailey, 2023), over-reliance and passive learning (Ahmad et al., 2024), academic integrity and plagiarism risks (Dinneen, 2022; Abimbola, 2023). To address these concerns, educators should incorporate critical evaluation techniques, where students analyze MT-generated outputs, identify errors, and refine translations independently. Additionally, blended learning approaches combining AI-driven tools with interactive classroom discussions can enhance both linguistic competence and digital literacy.

The findings of this study align with previous research on GT in EFL writing, confirming both its advantages and limitations. Consistent with Cancino & Panes (2021) and Kol et al. (2018), this study found that GT improved vocabulary, grammatical accuracy, and fluency, with 56% of participants reporting vocabulary gains, aligning with Alrajhi's (2022) findings. Additionally, 71% of students noted improved grammar, supporting Kim & Han's (2021) assertion that GT aids in syntactic accuracy. However, concerns about over-reliance persist, with 36% of students fearing diminished autonomy, echoing Stapleton & Kin (2019) and Ilmi (2019). This study also supports Organ (2022) and Chompurach (2021), who found that some students trust GT's translations more than their own abilities. The findings of this study further align with

Dinneen (2022), emphasizing the ethical concerns surrounding digital translation tools, particularly their role in cross-language plagiarism and the challenges they pose to academic integrity. It is important to note that without explicit institutional policies on translation tool usage, students may not perceive its misuse as an academic integrity breach, highlighting the need for clearer guidelines and ethical training. These findings highlight the need for structured pedagogical strategies to maximize GT's benefits while preventing dependency, contributing to the broader discussion on its role in EFL learning.

The findings also align with Krashen's Input Hypothesis (1982) and Vygotsky's Sociocultural Theory (1978), reinforcing GT's role as both a facilitator and a potential obstacle in language learning. Krashen's theory suggests that comprehensible input aids acquisition, reflected in students' improved syntactic complexity and grammatical accuracy when using GT, as noted in Stapleton (2021) and Cancino & Panes (2021). However, Krashen's Affective Filter Hypothesis (1985) warns that over-reliance on GT may hinder autonomy, a concern echoed by 36% of participants. Vygotsky's ZPD framework supports GT as a scaffolding tool that helps students refine their writing, similar to findings from Knowles (2022) and Rowe (2022). Yet, unstructured GT use may limit cognitive engagement, as highlighted by Organ (2022) and Chompurach (2021). These findings suggest that while GT enhances writing, its effectiveness depends on structured integration that fosters both technological support and independent learning.

### **Limitations**

This study has several limitations that should be acknowledged. First, the exclusive focus on female students limits the generalizability of the findings, as gender

differences in language learning and technology use were not explored. Second, factors such as English proficiency, motivation, and prior experience with GT were not controlled, which may have influenced students' perceptions and usage patterns. Additionally, the reliance on self-reported data introduces the risk of social desirability bias, where participants may have overstated or understated their dependence on GT. Moreover, the absence of a control group makes it difficult to determine the exact impact of GT compared to other instructional methods. Future research should adopt experimental designs, include a more diverse sample, and conduct longitudinal studies to assess GT's long-term effects on EFL writing. Despite these limitations, this study offers valuable insights by integrating qualitative analysis with content evaluation, contributing to the ongoing discussion on GT's role in language learning.

### **Conclusion**

This study investigates the impact of GT on pre-intermediate EFL students' writing skills, revealing both its advantages and limitations. The findings indicate that GT enhances vocabulary expansion, grammatical accuracy, and text cohesion, consistent with Krashen's Input Hypothesis that exposure to structured input supports language acquisition. However, unregulated GT use raises concerns about over-reliance, passive learning, and reduced language autonomy, aligning with Vygotsky's Sociocultural Theory, which emphasizes guided learning for effective development.

Educators, institutions, and policymakers must establish clear guidelines on the ethical use of translation technology and plagiarism, ensuring that students understand its limitations and are encouraged to develop independent writing skills while upholding academic integrity. Educational institutions and universities should provide explicit training on

responsible GT use, incorporating critical evaluation activities, where students analyze and revise GT-generated content. Importantly, writing instructors should emphasize self-editing strategies alongside translation technology to promote autonomous language development. Moreover, policymakers in higher education should consider guidelines on MT integration, ensuring that GT serves as a learning aid rather than a writing substitute. Students should be encouraged to balance GT with independent composition, reinforcing their ability to construct grammatically and syntactically accurate texts without full reliance on translation tools.

It is important to note that the study's small sample size, gender limitation to female students, and lack of a control group restrict its generalizability. Additionally, variations in language proficiency and prior GT experience may have influenced the results. Future research should include more diverse, gender-balanced samples across proficiency levels and explore regulated GT use in writing courses to develop concrete models for pedagogical integration. By addressing these limitations, future studies can establish structured, evidence-based approaches to GT use in EFL instruction, ensuring both academic integrity and effective language development.

#### **Disclosure Data**

- **Ethical Approval and Consent to Participate:** All participants provided informed consent after being briefed on the study's objectives and the confidentiality of their data.
- **Availability of Data and Materials:** All data and materials used in this study are available upon request from the authors in accordance with research ethics and institutional guidelines.
- **Author Contribution:** The first author was responsible for designing the study,

collecting and analyzing the data, and drafting the manuscript. The second author contributed to parts of the literature review and revised the submitted manuscript. The third author assisted in the literature review and data collection. All authors reviewed and approved the final version of the paper.

- **Conflict of Interest:** The authors declare that there are no conflicts of interest related to this study.
- **Acknowledgment/Funding:** The authors extend their appreciation to the Deanship of Research and Graduate Studies at King Khalid University for funding this work through the Large Group Project under grant number (420/1445).

#### **Open Access**

This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this license, visit <https://creativecommons.org/licenses/by-nc/4.0/>

## References

- Abimbola, L.I. (2023). The Impact of Machine Translation on Vocabulary Acquisition and Reading Comprehension in ESL Learners. *Pulchra Lingua: A Journal of Language Study, Literature, & Linguistics*, 2(2), 80-93. <https://doi.org/10.58989/plj.v2i2.27>
- Adas, D., & Abu Shmais, W. (2011). Students' Perceptions Towards Blended Learning Environment Using the OCC. *An-Najah University Journal for Research - B (Humanities)*, 25(6), 1681–1710. <https://doi.org/10.35552/0247-025-006-009>
- Ahmad, A., Zulfikar, M., & Batool, B. (2024). Impact of Technology on Language Learning: A Study of Translation Apps and their Usage at Undergraduate Level in University Education. *Journal of Social Sciences Review*, 4(4), 119-130. <https://doi.org/10.54183/jssr.v4i4.432>
- Al-Bataineh, A. (2010). The Effect of the Internet on Improving Foreign Language Students' Writing Performance. *An-Najah University Journal for Research - B (Humanities)*, 24(4), 1241–1258. <https://doi.org/10.35552/0247-024-004-009>
- Almusharraf, A., & Bailey, D. (2023). *Machine translation in language acquisition: A study on EFL students' perceptions and practices*. *Journal of Computer-Assisted Learning*, 39, 1988–2003. <https://doi.org/10.1111/jcal.12857>
- Alrajhi, A. S. (2022). Genre effect on Google Translate–assisted L2 writing output quality. *ReCALL*, 35(3), 305–320. <https://doi.org/10.1017/s0958344022000143>
- Arfiana, A., Sabarun, S., & Widiastuty, H. (2022). CORRELATION BETWEEN STUDENTS WRITING ABILITY AND LEARNING MOTIVATION IN GOOGLE TRANSLATE WRITING CLASS. *PROJECT (Professional Journal of English Education)*, 5(2), 334. <https://doi.org/10.22460/project.v5i2.p334-343>
- 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*, 11(3), 226–240. <https://doi.org/10.24093/awej/vol11no3.14>
- Cancino, M., & Panes, J. (2021). The impact of Google Translate on L2 writing quality measures: Evidence from Chilean EFL high school learners. *System*, 98, 102464. <https://doi.org/10.1016/j.system.2021.102464>
- Chang, P., Chen, P. J., & Lai, L. L. (2022). Recursive editing with Google Translate: the impact on writing and error correction. *Computer Assisted Language Learning*, 1–26. <https://doi.org/10.1080/09588221.2022.2147192>
- Chompurach, W. (2021). “Please let me use google translate”: Thai EFL Students' behavior and attitudes toward Google Translate use in English writing. *English Language Teaching*, 14(12), 23. <https://doi.org/10.5539/elt.v14n12p23>
- Dinneen, C. (2022). Students' use of digital translation and paraphrasing tools in written assignments on Direct Entry English Programs. *International Journal for Educational Integrity*, 37(1), 40-55. <https://files.eric.ed.gov/fulltext/EJ1341751.pdf>
- Fidinillah, M. A. (2022). Google Translate Application for Simple Writing. *Scope : Journal of English Language Teaching*, 7(1), 72. <https://doi.org/10.30998/scope.v7i1.12917>



- Google. (n.d.). Google Translate. Retrieved October 10, 2023, from <https://translate.google.com>
- Ilmi, I. K. (2019). MORPHOLOGICAL ERRORS ON ARAB-INDONESIA TRANSLATION TEXT USING GOOGLE TRANSLATE/ KESALAHAN MORFOLOGIS PADA TEKS TERJEMAHAN MESIN PENERJEMAH GOOGLE TRANSLATE. *Ijaz Arabi Journal of Arabic Learning*, 2(2). <https://doi.org/10.18860/ijazarabi.v2i2.6278>
- Ivenz, P., & Polakova, P. (2024). Gen Z Students and Their Perceptions of Technology in the Process of Second Language Acquisition Based on the Language Proficiency Level. *Arab World English Journal*, 15(3): 3-17. <https://dx.doi.org/10.24093/awej/vol15no3.1>
- Khairunisa, N. N., & Fajaryani, N. (2022). THE USE OF GOOGLE TRANSLATE BY STUDENTS IN WRITING A NARRATIVE ESSAY. *JELT (Jambi-English Language Teaching)*, 6(2), 59–66. <https://doi.org/10.22437/jelt.v6i2.18477>
- Kim, H. K., & Han, S. (2021). College students' perceptions of AI-based writing learning tools: With a focus on Google Translate, Naver Papago, and Grammarly. *Modern English Education*, 22(4), 90–100. <https://doi.org/10.18095/meeso.2021.22.4.90>
- Knowles, C. L. (2022). Using an ADAPT Approach to Integrate Google Translate into the Second Language Classroom. *L2 Journal*, 14(1). <https://doi.org/10.5070/1214151690>
- Kol, S., Schcolnik, M., & Spector-Cohen, E. (2018). Google Translate in Academic Writing Courses? *The EuroCALL Review*, 26(2), 50. <https://doi.org/10.4995/eurocall.2018.10140>
- Krashen, S. D. (1982). *Principles and practice in second language acquisition*. Oxford: Pergamon.
- Krashen, S. D. (1985). *The Input Hypothesis: Issues and implications*. London: Longman.
- Lengari, Y. G. P. (2023). Students' Perception of Google Translate in Improving Writing Skill. *Saintara: Jurnal Ilmiah Ilmu-Ilmu Maritim*, 7(1), 33–37. <https://doi.org/10.52475/saintara.v7i1.204>
- McHugh, M. L. (2012). Interrater reliability: The kappa statistic. *Biochemia Medica*, 22(3), 276–282.
- Naghdipour, B. (2023). Google Translate in EFL writing: Managing contradictions and conflicts. *TESOL Journal*. <https://doi.org/10.1002/tesj.747>
- Organ, A. (2022). Attitudes to the use of Google Translate for L2 production: analysis of chatroom discussions among UK secondary school students. *The Language Learning Journal*, 51(3), 328–343. <https://doi.org/10.1080/09571736.2021.2023896>
- “Please Let me Use Google Translate”: Thai EFL Students' Behavior and Attitudes toward Google Translate Use in English Writing. *English Language Teaching*, 14(12), 23. <https://doi.org/10.5539/elt.v14n12p23>
- Stapleton, P. (2021). Using Google Translate as a Tool to Improve L2 Writing. *International Journal of Computer-Assisted Language Learning and Teaching*, 11(3), 92–98. <https://doi.org/10.4018/ijcallt.2021070106>
- Rowe, L. W. (2022). Google Translate and Biliterate Composing: Second-Graders' Use of Digital Translation Tools to Support Bilingual Writing. *TESOL Quarterly*, 56(3), 883–906. <https://doi.org/10.1002/tesq.3143>

- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.