

# THE USE OF GOOGLE TRANSLATE IN ENHANCING EFL STUDENTS' WRITING SKILLS

Fauzan Hasan Rizky<sup>1</sup>, Martriwati<sup>2</sup>

<sup>1,2</sup> Universitas Muhammadiyah Prof. DR. HAMKA

<sup>1</sup>*fauzanhasanj24@gmail.com*, <sup>2</sup>*martriwati\_uhm@uhamka.ac.id*

**Abstract:** This study investigates the impact of Google Translate (GT), an AI-powered translation tool, on the writing skills of EFL (English as a Foreign Language) high school students in Jakarta, Indonesia. Employing a mixed-methods approach, the research includes quantitative data from 200 students via a Likert-scale questionnaire and qualitative data from semi-structured interviews with 10 students. The findings reveal that students generally perceive GT as helpful, especially for vocabulary acquisition and comprehension. However, there is a negative correlation between students' writing performance and their reliance on GT. Overuse of GT may hinder critical thinking and reduce students' independent writing skills. Furthermore, some students demonstrate strategies to reduce dependence on GT and engage in self-learning through traditional dictionaries, media exposure, and reading. Teachers also emphasize the need for guided use of GT. The study concludes that GT can support EFL learning if it is integrated carefully, complementing rather than replacing independent language practice.

**Keywords:** *Google Translate, EFL Students, Mixed Methods Research, Technology in Education*

## INTRODUCTION

One of the four fundamental language learning abilities is writing, which is often considered the most challenging. It requires understanding language, vocabulary, and punctuation while generating and organizing ideas. Due to the complexity involved, writing is the most challenging skill to master. This is due to the fact that writing requires the ability to generate and organize ideas as well as to master a variety of writing-related abilities, including grammar, vocabulary, word choice, and punctuation (Valizadeh, 2020). Although writing is crucial in EFL classes, many high school students in Indonesia struggle to achieve the required skill levels. These challenges get worse by factors like anxiety, lack of interest, and low confidence. According to Anwar et al. (2020) Motivation among students differs. While some are highly motivated and ready to learn better, others consider English more as a required academic subject than a useful skill. This can depend on the environment, the

accessibility to resources, and support from friends or teachers. Some of the students are tend to use AI in their English learning.

These days, many people use web-based machine translation technologies, such as Google Translate. Using statistical methods to predict the most accurate phrasing, this free service provides translations across multiple languages. Additionally, users have the ability to customize translations, which slowly improves the system's accuracy. This adds a degree of human interaction (Groves & Mundt, 2015a). A machine translation technology called Google Translate was created by Google to allow users to translate webpages, documents, and text between languages. The service can facilitate communication across linguistic boundaries by offering translations that include contextual meanings and pronunciations in addition to literal word-for-word translations through features like text-to-speech.

At KHARISMAWITA High School Jakarta, it has been discovered that even though students frequently use Google Translate for assignments, they continue to perform poorly on writing tests. This highlights how important it is to comprehend how AI technologies influence students' writing abilities, such as word usage, accuracy, and fluency.

Based on the situation above the writer is interested in investigating the student's motivation in writing English and the way they use Artificial Intelligence such as Google Translate in their writing skill and the purpose of this study is to find out how Google Translate as an Artificial Intelligence tool might improve the writing abilities of EFL Students. Google Translate has gained popularity among EFL students as a result of the increasing use of digital resources for language study, particularly for writing assignments. Although it provides quick help with grammar and vocabulary, questions regarding students' reliance and impact on writing development still exist. The research questions include:

1. What motives do EFL Students have that makes them use Google Translate to enhance their writing skill?
2. What effects does Google Translate have on EFL Students' vocabulary usage, writing accuracy, and grammar structure?

### 3. How do EFL students feel about Google Translate as an additional resource to improve their writing?

The researcher's goal in conducting this study is to better understand how and why EFL students utilize Google Translate when writing. It is anticipated that by studying their motivations, their specific effects on important writing components, and their individual perspectives, the results will provide insightful information to both teachers and students. In the end, the researcher believes that this study will help make digital tools like Google Translate more balanced and effective in language acquisition, encouraging more independence and fluency in EFL writing.

## LITERATURE REVIEW

Traditional techniques for language learning have evolved as a result of the implementation of AI tools like Google Translate into EFL classroom. More specifically, researchers and educators have focused on its function in supporting the improvement of writing skills in EFL students. The main topics covered in this literature review include Google Translate as artificial intelligence, EFL students' writing abilities, and perceptions of its usage.

### I. EFL Writing Skill

Writing can be used for a number of things, including storytelling, argumentation, information documentation, sharing knowledge, and emotional expression (Polat & Dedeoğlu, 2024). Writing is a process of transforming thoughts, ideas, and information into written symbols or language that other people can read and understand. It stands out by its objective tone, precise language, arguments supported by evidence, and clear structure. According to Campbell (2019) Academic writing is one of the most difficult assignments for most students to face. Academic writing is a challenge for both domestic and foreign students, but foreign students also have language obstacles and lack familiarity with international academic writing styles. Especially for Indonesian learners, the process of becoming competent in English writing has particular difficulties. Learning English grammar is usually affected by the structural and syntactical differences between Bahasa Indonesia, the country's official language, and English.

## 2. Google Translate as Artificial Intelligence

Artificial Intelligence (AI) is a field of computer science concerned with developing machines and systems that can carry out activities typically requiring human intelligence. These activities might involve perception, learning, problem-solving, thinking, reasoning, and comprehending natural language. Research studies conducted by Sumakul et al. (2022) indicate that AI may benefit education, despite certain doubts and concerns. AI-based apps have been created for teaching and learning, and specifically for English as a Foreign Language (EFL) class. Google developed GT, a free, multilingual machine translation tool, to translate text, documents, web pages, and other types of content between different languages. Real-time speech translation, document translation, internet translation, text translation, and the ability to translate text captured with a camera are among the primary capabilities. Although its accuracy varies depending on the language pair and the complexity of the content, GT has evolved to become a popular tool for personal, educational, and professional reasons since its launch in 2006 (Medvedev, 2016). Due to its ability to provide dual translation services in multiple languages with speed and accuracy, students have learned about this application's capabilities and have started using it more frequently, both within and outside of the classroom (Tsai, 2019).

## 3. Aspect of Perception

The process through which people organize and interpret sensory information to create a meaningful sense of the outside world is known as perception. It involves employing the senses (sight, hearing, touch, taste, and smell) to identify, choose, and understand stimulation from the environment. Pitcher (2015) stated that perception in psychology refers to both the reception of sensory information and the way in which the brain processes and analyses it. Individuals' perceptions might differ significantly depending on a variety of circumstances, including expectations, emotions, culture, and previous encounters. Walgito (2004) claimed that students' perspectives of learning are divided into three categories: cognitive, affective, and conative. Affective aspects are feelings or emotions that are not controlled by thoughts about how students feel during learning habits, cognitive aspects are participants' knowledge or opinions about how students learn, and conative aspects are students' behaviour or attitudes toward learning.

## METHOD

A mixed-methods strategy is used in this study to investigate how EFL students feel about using GT when writing in English. About ten students from KHARISMAWITA High School in Jakarta will participate in semi-structured interviews, and about 200 students in grades 10–12 in the JABODETABEK area will complete an online survey. A Likert-scale items questionnaire consists of 17 items covering GT's usefulness, benefits, and challenges, adapted from a study conducted by Mun (2024). Open-ended questions are used in the semi-structured interview which consist of 6 questions, adapted from the research studied by Teng (2024) who explored how EFL students felt about and used AI in their writing process, with a particular emphasis on the effects of the platform in a Macau-based setting to dig deeper into the experiences of the students. Quantitative data were calculated using SPSS with visual representations, including descriptive statistic, correlation test and simple linear regression results. These statistical techniques are useful tools in assessing the relationships between continuous data collected during a clinical study (Zou et al., 2003). A more practical statistical method is regression modeling, which uses confidence intervals to assess the model's uncertainty and the strength of the relationships in the data.

Questionnaire data was analyzed using SmartPLS4 and tested for validity and reliability. Validity test is a concept that accurately measured in the context of quantitative research. This validity test is carried out to measure whether the data is valid obtained after research is valid data or not, with using the measuring instrument used (questionnaire) (Price et al., 2015). Here's the result of the validity test.

**Tabel I. Validity Test**

	R test	Note
X1	0.777	Valid
X2	0.807	Valid
X3	0.781	Valid
X4	0.777	Valid
X5	0.777	Valid
X6	0.757	Valid
X7	0.688	Valid
X8	0.887	Valid
X9	0.875	Valid
X10	0.699	Valid
Y1	0.771	Valid
Y2	0.78	Valid
Y3	0.699	Valid
Y4	0.701	Valid

The validity test table shows the correlation (R test) results for every item that ranges in labels X1 through X10 and Y1 through Y4. All items' R values—which range from 0.688 to 0.887 and above the usually accepted limit of 0.60—suggest strong relationships. The table shows that every item is under the "Valid," meaning that it has passed the validity test and therefore has been considered acceptable to analyze the objective perceptions of the research. This confirms, for further data analysis, the validity and reliability of the questionnaire.

After all questions are declared valid, a reliability test is then carried out. According to (Sürücü & Maslakci, (2020), reliability test is the ability of measuring instruments to deliver comparable outcomes under various conditions. It also serves as an accuracy to which to measure the results, and implementing the same object will provide the same data.

**Tabel 2. Reliability Test**

	<b>Cronbach's alpha</b>	<b>Composite reliability (rho_a)</b>	<b>Composite reliability (rho_c)</b>	<b>Average variance extracted (AVE)</b>
<b>Benefits</b>	0.844	0.845	0.889	0.615
<b>Challenges</b>	0.751	0.785	0.826	0.454
<b>Usefulness</b>	0.782	0.792	0.851	0.534

The study instrument's internal consistency was calculated using Cronbach's Alpha. The results show that the Y variable has a Cronbach's Alpha value of 0.813 and the X variable a value of 0.930. These figures both show a great degree of reliability since they surpass the widely accepted level of 0.70. This suggests that every variable's evaluation questionnaire items are dependable and consistent, so preparing the instrument for further data analysis in the research.

## **FINDINGS AND DISCUSSION**

This section presents the findings of the study, which aimed to examine EFL students' perceptions of GT in improving their writing skills. Semi-structured interviews and a questionnaire were used to collect data. Descriptive statistics, Spearman's correlation, and simple linear regression were used to analyze the quantitative data and identify the direction and strength of the relationship between the two variables. Additionally, student interviews were conducted to obtain qualitative insights on their perspectives, usage behaviors, and opinions regarding the role of GT in their writing process. Overall, these findings offer a comprehensive insight into the manner in which EFL learners comprehend and utilize GT, as well as its potential impact on their development as independent writers.

**Table 3. Descriptive Statistics**

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
X_GT	231	12	48	36.93	4.282
Y_WS	231	4	16	9.72	2.623
Valid N (listwise)	231				

According to descriptive statistics from the data. Scores for the variable X\_GT (students' perception of Google Translate) varied from 12 to 48, with a mean of 36.93 and a standard deviation of 4.282. This suggests that participants' perceptions of GT are usually good, albeit there is some variation. With a mean of 9.72 and a standard deviation of 2.623, the scores for Y\_WS (students' writing skills) different from 4 to 16, suggesting average writing performance with significantly fewer variability than GT perception. These findings suggest that although students' writing skill still differs they generally view GT as a helpful method for learning English, especially in writing. While the lower mean and narrower range for writing skills suggest potential for additional growth, the relatively high mean score for GT use may reflect its widespread accessibility and help in the writing process. Students utilized Google Translate as an aid to learning, especially the language purpose because of its convenient functions such as translating multi-languages, saving time, using it easily, and improving pronunciation (Pham et al., 2022). Students are aware of Google Translate's limitations when it comes to translating long texts, paragraphs, and sentences, too. In order to maximize its influence on writing results, it is crucial to acknowledge the importance of guided use (Wei, 2021a).

**Table 4. Spearman's Correlation Test**

Correlations				
			X_GT	Y_WS
Spearman's rho	X_GT	Correlation Coefficient	1.000	-.160*
		Sig. (2-tailed)	.	.015
		N	231	231
	Y_WS	Correlation Coefficient	-.160*	1.000
		Sig. (2-tailed)	.015	.
		N	231	231

\*. Correlation is significant at the 0.05 level (2-tailed).

The results of the Spearman's correlation test indicate a weak but significant negative relationship between the writing skill evaluations of EFL students and their opinions of GT. With a p-value of 0.015 and a correlation coefficient of  $r = -0.160$ , it appears that students' writing performance likely to decrease significantly as their reliance on or positive perception of GT improves. Despite the relationship's weak strength, its statistical significance suggests that using GT may have a negative correlation with an individual's ability for independent writing. Students who rely too much on GT are unlikely to be very involved in the writing process; instead, they might rely on automatic suggestions rather than learning their own grammar, vocabulary, and sentence structure. Their writing results may suffer over time as a result of this dependence since it may weaken their confidence or independence. According to Mulyani & Afina, (2021) When students use electronic translation tools frequently and passively instead of as learning tools, it may limit their ability to acquire a language. However, it's crucial to remember that GT can still be useful if applied correctly, such as as a tool for vocabulary checks, comprehension enhancements, or language structure comparison.

**Table 5. Simple Linear Regression**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.172 <sup>a</sup>	.030	.025	2.589

a. Predictors: (Constant), X\_GT

Students' views of Google Translate (X\_GT) and their writing abilities (Y\_VS) were examined using simple linear regression analysis. According to the model summary, the perception of Google Translate explains almost 3% of the variation in students' writing skill ratings, with an R value of 0.172 and an R<sup>2</sup> of 0.030. This effect was statistically significant despite its small size.

**Table 6. ANOVA**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	46.840	1	46.840	6.986	.009 <sup>b</sup>
	Residual	1535.428	229	6.705		
	Total	1582.268	230			

a. Dependent Variable: Y\_WS

b. Predictors: (Constant), X\_GT

**Table 6. Coefficient**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.615	1.482		9.184	<.001
	X_GT	-.105	.040	-.172	-2.643	.009

a. Dependent Variable: Y\_WS

The regression model is statistically significant, according to the ANOVA table, with  $F(1, 229) = 6.986$ ,  $p = 0.009$ , meaning that it significantly predicts the dependent variable (writing ability).

According to the coefficients table, the regression coefficient for X\_GT is  $B = -0.105$ , with  $p = 0.009$ ; this indicates that writing scores drop by 0.105 units for every unit increase in Google Translate's perceived quality. According to the negative regression coefficient ( $B = -0.105$ ), students who use GT more frequently or have a more positive opinion of it typically score slightly lower on writing tests. This result confirms the relationship and refers to a possible problem with writing development's over-reliance on translation technologies. If students use GT as a shortcut rather than as an additional learning tool, it seems to have no long-term value for writing proficiency, even though it may provide instant linguistic support.

The results of the interviews showed a number of recurrent themes that highlight the perceived advantages and disadvantages of GT in relation to writing in an EFL learning classroom. Below is a discussion of these themes.

## **I. Perceived Usefulness and Vocabulary Development**

The majority of students said that GT is a useful and user-friendly tool, particularly for enhancing vocabulary learning and English text comprehension. Many reported that GT gave them a point of reference while building vocabulary in English and allowed them to quickly figure out the meanings of new terms. For example, S3 and S5 remarked,

*“I can gain knowledge from the vocabulary that I didn’t know before.”*

*“The advantage is that we can learn vocabulary that we didn’t know before.”*

This highlights GT’s role in expanding their lexical knowledge. According to the quantitative data conducted by (Ting & Tan, 2021), utilizing the results of pre-test and post-test with a positive mean score, GT significantly improved students' vocabulary acquisition. This improvement was backed by statistics, indicating that the tool can help students comprehend and remember new vocabulary. S2 stated,

*“When I translate a word I don’t know, I write it in my notebook and add the meaning, so I can remember and memorize it.”*

Keeping Personal Vocabulary Notes, or PVNs, is one of the most popular methods for learning new words. In order to keep track and arrange the words they encounter, together with their definitions and any further information, the students apply the PVN technique. The use of PVN as a vocabulary acquisition method to enhance vocabulary in terms of cognitive, emotional, and conative components is seen positively by EFL students (Mufida & Kuswardani, 2023).

## **2. Impact on Writing Skill Development and Motivation**

The use of GT and students' writing development have a complicated relationship, according to the interviews. According to the analyses conducted by Chiu et al., (2024), student expertise (i.e., self-regulated learning and digital literacy) and teacher support were required for intrinsic motivation and competence to learn with the AI. Some students claimed that regular GT use, especially in the early learning phases, was responsible for their early writing improvements, while others claimed that over-reliance caused passive learning. S1 admitted,

*“Because I was too lazy to think, I just used Google Translate.”*

Emphasizing how reliance on GT discouraged independent sentence construction. GT can offer immediate solutions, but if applied carelessly, it might damage writing-related cognitive functions as planning, idea organization, and grammar awareness (Wei, 2021b).

However, some students view the impact of their writing skill development using GT positively, S4 stated,

“When I was learning English online, I used GT a lot. At first, I knew nothing about writing in English, but now I can write better because I learned from using it.”

Particularly when they were first starting to write in English, many students thought that GT helped them improve their writing abilities. Even though students didn't always fully understand the underlying grammar, GT acted as a model and a guide for creating grammatically accurate phrases. S5 shared,

"It motivated me to learn English since I won't have to use Google Translate if I get fluent."

When Google Translate made it easier for them to comprehend difficult material or interact with others on games and other platforms, several students expressed a greater interest in learning English. According to the study conducted by Groves & Mundt (2015), there are three assumptions that have been developed in order to evaluate the implications of GT. The first is that as the Google database expands, the translation's grammatical quality is getting better. Second, the authors are expecting that it will continue to be free for users to access at the point of access and be accessible on a growing number of platforms, including computers, tablets, and smartphones. Their third assumption is that students will use the technology if it is accessible to them and beneficial to them, regardless of what their teachers or counsellors suggest.

### **3. Teacher's Feedback and Usage Regulation**

In general, feedback from teachers suggested employing Google Translate with caution. Teachers approved the use of it for new words, according to some students, but they encouraged students to ask their teachers or fellow students first. S7 and S4 both commented,

"Our teacher said we should try to understand on our own first and that using Google Translate is acceptable, but not too frequently."

"My teacher would rather that we write in our own words, even if they are not perfect, than completely rely on Google Translate,"

Some students say that they now try to write or determine meanings before using GT, suggesting that this teaching has a beneficial effect on their views. This change indicates that students are becoming more aware of the need to find a balance between ease of use and skill improvement by listening to their teacher's advice. Teachers concur that in online learning environments, artificial intelligence might completely provide scaffolding for students' scientific writing to solve the defined scientific problem. Teachers were encouraged to actively search for and utilize online resources for problem-solving when collaborating with the system, which, in their view, made the writing process really interesting (Kim & Kim, 2022).

The results showed that although teachers were aware of GT's weaknesses especially its grammatical errors and generalization of meaning, they nevertheless had an overall positive view of its application for students' individual skill development. According to research conducted by Andari et al., (2022) investigated that when time was of the essence, teachers liked GT's ease, accessibility, and helpfulness in assisting with vocabulary and simple translating tasks for the students. For basic texts especially, GT was a helpful tool despite limitations that let students with daily translating tasks.

#### **4. Strategies for Reducing Reliance**

Many students stated to using GT, but they also realized how important it was to mix its use with independent learning strategies. Students talked about a variety of personal approaches to raise their language competency without depending too much on GT to reduce reliance. Moreover, regarding their language abilities, the results of this research show that students are become more aware of the limitations and possible potential risks of depending too much on artificial intelligence. Their worries about AI giving incorrect answers and not helping the acquisition of useful abilities like writing could indicate the need of a more ordered and balanced method of using AI technologies in language education (Oyun-Erdene & Bulgantamir, 2025).

A popular strategy was to validate translations and ensure accuracy by looking to traditional dictionaries. Students claimed that reading their GT results alongside dictionary entries helped them understand context and word choice. S8 shared,

"I usually double-check the translation in a dictionary, especially if the meaning from Google Translate doesn't sound right,"

Digital media involvement learning was another successful strategy. Many students talked about how they naturally acquire up vocabulary and sentence structures by watching movies, listening to music, and playing games in English. In order to better understand without constantly using Google Translate, S4 commented,

"I try playing games or setting them to English. I also watch English movies or series in order to understand English more"

Reading books was also highlighted as a helpful tool for increasing vocabulary and enhancing understanding. S9 and S10 altogether shared,

"There are a lot of books at the library, and we can find the meanings ourselves instead of always using Google Translate,"

"We should learn more English from books."

This suggests that more application of learning methodologies helps students to improve their academic performance. If students utilize fewer educational techniques, their academic performance could suffer; conversely, if they utilize more educational techniques, their academic performance could improve. The study's findings may have pedagogical implications for teachers who aim to address their students' use of learning practices. To continue improving their learning results, it's also essential that students identify which language learning techniques best suit their learning preferences and employ as many of these techniques as possible (Pawlak, 2021).

## **CONCLUSION AND SUGGESTION**

The objective of this study was to find the relationship between EFL students' perceptions on GT perceptions and their writing competency. The two variables displayed a weak but significant negative connection according to the findings of the simple linear regression and Spearman

correlation tests. Students who used GT more frequently or who had positive opinions of it are more likely to score worse on tests of writing abilities. The results imply that even with a little effect size ( $R^2 = 0.030$ ), a strong reliance on GT could not be good for the development of independent writing skills.

Additionally with the goal of assisting them with writing projects and vocabulary comprehension, the findings of the interviews offer more insight on how students usually view Google Translate as a useful tool for their English language learning process. Many claimed it made learning easier for them and raised their confidence when reading English books. But because Google Translate was so easy, some students began to rely too much on it, which consequently reduced their ability for critical thinking, independent writing, and an entire involvement with the learning process.

Nevertheless, some students suggested that they wanted to learn more on their own and acknowledged the tool's limitations. They discussed using dictionaries, reading English-written books, watching movies, playing games in English, and combining these activities with AI-powered language tools to help reduce their reliance. These responses indicate that while Google Translate may help in language acquisition, it performs best when accompanied with active, self-directed learning strategies. The interviews highlight the importance of employing digital translation tools in a balanced and guided manner to enhance competency and confidence in EFL writing.

A number of future research potential are suggested in light of the study's limitations and conclusions. Future research should investigate how the quality, frequency, and purpose of GT use influence various writing aspects, such as grammar, coherence, and vocabulary development, despite this study finding a weak but significant negative relationship between students' perceptions of GT and their writing abilities. Furthermore, the primary focus of this study was on seniors in high school in a JABODETABEK. A deeper understanding of how GT use differs across situations would be provided by extending the research to different age groups, educational levels, or wider geographical areas. Comparative or cross-cultural research may also provide insight into how GT is viewed and applied by EFL students around the world.

Lastly, future research could examine the connection between learner autonomy, motivation, and GT use, as well as the possibility of combining GT with other AI-powered tools (such as grammar checkers and paraphrasing assistants) to promote a more comprehensive, effective language learning, given that some students indicated an awareness of GT's limitations and a desire to study independently.

## REFERENCES

- Andari, A. Z., Sofyan, R., & Yusuf, M. (2022). The The Teachers' Perception towards the Use of Google Translate as a Translation Tool. *RADIANT: Journal of Applied, Social, and Education Studies*, 3(1), 1–14.
- Anwar, K., Ubaidillah, M. F., Tarrayo, V. N., Ismiatun, F., Khotimah, K., Irawansyah, I., & Sulistiyo, U. (2020). Orientations in learning English as a foreign language: How do Indonesian students view them. *EduLite: Journal of English Education, Literature and Culture*, 5(1), 32–42.
- Bimo Walgito, B. W. (2004). *Pengantar Psikologi Umum*. Andi.
- Campbell, M. (2019). Teaching academic writing in higher education. *Education Quarterly Reviews*, 2(3).
- Chiu, T. K. F., Moorhouse, B. L., Chai, C. S., & Ismailov, M. (2024). Teacher support and student motivation to learn with Artificial Intelligence (AI) based chatbot. *Interactive Learning Environments*, 32(7), 3240–3256.
- Groves, M., & Mundt, K. (2015a). Friend or foe? Google Translate in language for academic purposes. *English for Specific Purposes*, 37, 112–121.
- Groves, M., & Mundt, K. (2015b). Friend or foe? Google Translate in language for academic purposes. *English for Specific Purposes*, 37, 112–121.
- Kim, N. J., & Kim, M. K. (2022). Teacher's perceptions of using an artificial intelligence-based educational tool for scientific writing. *Frontiers in Education*, 7, 755914.
- Medvedev, G. (2016). Google translate in teaching English. *Journal of Teaching English for Specific and Academic Purposes*, 4(1), 181–193.
- Mufida, H. A., & Kuswardani, R. (2023). EFL STUDENTS' PERCEPTION OF PVN (PERSONAL VOCABULARY NOTES) AS A VOCABULARY LEARNING STRATEGY. *SEAQIL Journal of Language Education*, 2(1), 10–19.
- Mulyani, M., & Afina, F. (2021). THE STUDENTS' ATTITUDE TOWARDS GOOGLE TRANSLATE. *The Journal of English Language Teaching*, 3(1).
- Mun, C. (2024). EFL learners' English writing feedback and their perception of using ChatGPT. *STEM Journal*, 25(2), 26–39.
- Oyun-Erdene, E., & Bulgantamir, D. (2025). STUDENTS'RELIANCE ON AI TOOLS IN EFL COURSES IN HIGHER EDUCATION: CHALLENGES AND OPPORTUNITIES. *AGRICULTURAL SCIENCES*, 40.

- Pawlak, M. (2021). Investigating language learning strategies: Prospects, pitfalls and challenges. *Language Teaching Research*, 25(5), 817–835.
- Pham, A., Nguyen, Y., Tran, L., Huynh, K., Le, N., & Huynh, P. (2022). University students' perceptions on the use of Google Translate: Problems and solutions. *International Journal of Emerging Technologies in Learning (IJET)*, 17(4), 79–94.
- Pitcher, G. (2015). *Theory of perception*. Princeton University Press.
- Polat, İ., & Dedeoğlu, H. (2024). The Effect of Writing about Immediate Environment and Experiences on Narrative and Informative Text Writing Skills. *Reading & Writing Quarterly*, 40(3), 251–267.
- Price, P. C., Jhangiani, R. S., & Chiang, I.-C. A. (2015). Reliability and validity of measurement. *Research Methods in Psychology*.
- Sumakul, D. T. Y. G., Hamied, F. A., & Sukyadi, D. (2022). Artificial Intelligence in EFL Classrooms: Friend or Foe?. *LEARN Journal: Language Education and Acquisition Research Network*, 15(1), 232–256.
- Sürücü, L., & Maslakci, A. (2020). Validity and reliability in quantitative research. *Business & Management Studies: An International Journal*, 8(3), 2694–2726.
- Teng, M. F. (2024). "ChatGPT is the companion, not enemies": EFL learners' perceptions and experiences in using ChatGPT for feedback in writing. *Computers and Education: Artificial Intelligence*, 7, 100270.
- Ting, F. K., & Tan, K. H. (2021). Enhancing English Language Vocabulary Learning among Indigenous Learners through Google Translate. *Journal of Education and E-Learning Research*, 8(2), 143–148.
- Tsai, S.-C. (2019). Using google translate in EFL drafts: a preliminary investigation. *Computer Assisted Language Learning*, 32(5–6), 510–526.
- Valizadeh, M. (2020). The effect of comprehensive written corrective feedback on EFL learners' written syntactic accuracy. *Advances in Language and Literary Studies*, 11(1), 17–26.
- Wei, L. K. (2021a). The use of Google Translate in English language learning: How students view it. *International Journal of Advanced Research in Education and Society*, 3(1), 47–53.
- Wei, L. K. (2021b). The use of Google Translate in English language learning: How students view it. *International Journal of Advanced Research in Education and Society*, 3(1), 47–53.
- Zou, K. H., Tuncali, K., & Silverman, S. G. (2003). Correlation and simple linear regression. *Radiology*, 227(3), 617–628.