

The Impact of Google Translate on High School Students' Writing Ability

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Received: 1st January

Accepted: 26th January 2024

Published: 24th February 2024

Abstract

The rapid development of information and communication technology, Google Translate has become a tool that used often in education, especially to help student in written assignments. This study aims to explore the impact of using Google Translate on high school students' writing abilities. This research uses mixed methods including, quantitative methods with a quasi-experimental design and using a questionnaire to measure students' perceptions on how much impact Google Translate has on writing skills. Quantitative methods with the Independent Samples T-test to assess differences in writing ability between groups who use Google Translate and those who do not. In addition, descriptive analysis was carried out on questionnaire data to understand students' perceptions of the impact of Google Translate in the writing learning process. The results show that the use of Google Translate has a positive impact on increasing students' writing scores. However, there is variation in student perceptions regarding the effectiveness and accuracy of these tools. This research provides important insights for educators in integrating technology in education, by considering the benefits and limitations of these digital translation tool in the context of learning to write.

Keywords: *Google Translate; Writing Ability; High School Students; Technology in Education*

1. Introduction

In the last few decades, information and communication technology use has grown quickly. The improved accessibility to global resources and information is one important outcome of this achievement. Google Translate is a machine translation tool that allows websites, documents, and text to be translated across languages. Given how convenient Google Translate is, it is common for lecturers or teachers to observe students grabbing their smartphones right away when they are having trouble understanding a language during class. To help them catch up with the learning process more quickly, they are able to translate any English vocabulary, both in the form of words and sentences (Hardini & Dewi, 2021). This web-based, multilingual translation service is available for free. It is also accessible as an app for mobile devices. Instead of striving for a word-by-word translation, the likelihood that different translations of a phrase will be accurate is estimated by Google Translate, which is a statistics-based translation engine. Additionally, it allows for some user interaction. Users can edit the original translation, and the database will incorporate this correction (Groves & Mundt, 2015). The use of Google Translate has permeated various facets of everyday life, including education. Within the educational environment, this automatic translation tool is frequently employed by students to assist them in completing assignments, particularly in the realm of writing. Students often rely on Google Translate to translate text in foreign languages, comprehend study materials in foreign languages, or even aid in the process of crafting essays.



The use of Google Translate among students can represent a significant development, but it also raises questions about its impact on students' writing abilities. In some cases, too trusting on this tool can hinder the development of students' original writing abilities and may even result in violations of academic ethics (Fitriani et al., 2021). In the realm of classroom dynamics, a concerning trend has emerged among students a marked addiction to their smartphones during class practice sessions. This habit, wherein students feel compelled to consult their devices for every encountered word, has become distressingly prevalent. A prime illustration of this phenomenon is the evident preference among students to resort to their smartphones for the instantaneous formulation of sentences (Hardini & Dewi, 2021). On a contrasting note, the utilization of Google Translate appears to indirectly stimulate students' curiosity. Immersed in a continuous encounter with fresh vocabulary from the target language, students seem drawn into a realm of linguistic exploration. This practice not only enriches their knowledge but also fosters ongoing learning, as each interaction with Google Translate presents them with novel insights and discoveries (Wirantaka & Fijanah, 2022). Google Translate can also serve as a valuable tool in understanding foreign languages and enriching students' language proficiency. The study by (Lee, 2020) illustrates the potential of Google Translate as a valuable tool for enhancing students' grasp of foreign languages and refining their language proficiency. This research seeks to build on Lee's findings by investigating the impact of Google Translate on students' writing abilities. Additionally, it aims to explore students' perceptions of using Google Translate to improve their writing skills. Through empirical investigation, this study aims to uncover the significance of Google Translate in enhancing students' writing proficiency and to understand students' attitudes toward its integration into their language learning journey.

With the increasing prevalence of Google Translate usage in education, there is a pressing need for in-depth research to examine the true impact of this tool on the writing abilities of secondary school students. Therefore, this study aims to comprehensively and profoundly explore the impact of using Google Translate on the writing abilities of secondary school students. In essence, if used carefully, Google Translate can serve as an effective learning tool to enrich students' understanding of a foreign language and improve their writing skills (Fitriani et al., 2021) based on previous research has a hypothesis that Google Translate will have a significant impact on writing ability (H0). In another hand google translate does not have a significant impact on writing ability (H1).

With a better understanding the impact of using Google Translate on students' writing abilities, hopefully, it can helps to develop improved guidelines and recommendations for educators and students regarding the use of this tool in an educational context. This research is expected to make a valuable contribution to the educational literature and aid in enhancing the understanding of technology's role in the learning process. Though that is the most typical, some students use Google Translate and their comments display a variety of emotions. The tool is considered ordinary by them, and most of them believe that using Google Translate could improve their language skills. They were concerned that Google Translate's frequent grammatical errors might impair their grasp of grammar. Furthermore, there was ethical controversy around the usage of Google Translate at advanced discourse levels when the translated works were submitted as the students' original work without any changes (Education & Vol, 2023). so therefore through a meticulous scientific approach and in-depth analysis, this research will address crucial questions regarding the impact of Google Translate on the writing abilities of secondary school students, with the ultimate goal of improving the quality of education and empowering students to face increasingly complex global challenges.

Technology in Education

The realm of education has undergone a profound evolution, largely catalyzed by technological advancements. The significance of technology within educational settings cannot be overstated. Indeed, the introduction of computers into classrooms has significantly streamlined the learning process for teachers and students alike. According to research by (Raja & Nagasubramani, 2018) the incorporation of computers has notably simplified the acquisition of new knowledge, making learning more accessible and efficient. Moreover, technology has brought about an enhanced sense of enjoyment in both teaching and learning activities. Its pervasive influence has made technology an indispensable component of education, both within the confines of traditional classrooms and beyond. In language education, technology plays a pivotal role, offering numerous benefits to language learners. As highlighted by (Ahmadi, 2018), technology has revolutionized language learning by facilitating personalized lesson modifications and fostering improved language acquisition. In the classroom, the use of technology also has a very positive effect on student

motivation and performance, this is proven by the significant differences in student motivation and performance, seen from the perspective of technology users and non-users. (Afkarin & Asmara, 2024)

Google Translate

Google Translate, among Google's array of products, stands out as one of the most widely used free multilingual translation tools. Research is devoted to the use of machine translation in the study of foreign languages (Godwin-Jones, 2015) Explore how students in non-linguistic fields use machine translation tools. According to him, more theoretical study has to be done to prepare these students to create and carry out didactic tasks in the classroom that can boost their desire for translating professionally oriented texts into high-quality translations. Additionally, this program offers a number of helpful functions, like word alignment, speech recognition, alternate translation, language swapping, and word generation (Dian Saputra, Haryanto Atmowardoyo, 2021).

Writing Ability

Pranoto (2004) defines writing as the process of articulating thoughts in written form or transmitting information to others through written communication. It is essential to acknowledge that writing proficiency is among the most challenging skills for students to acquire (Ahmed, 2010). Therefore, it falls upon educators to enhance students' writing abilities, enabling them to engage in writing activities for academic tasks and beyond.

Previous research underscores the impact of technology, including automatic translation tools like Google Translate, on students' writing skills. Anderson observes that while technology facilitates access to information, its unregulated use can impede the development of students' writing capabilities (Hanmoğlu, 2018). Furthermore, given the considerable influence of Google Translate on language learning, it is perceived as a valuable educational resource capable of aiding students in improving their writing proficiency and expanding their vocabulary (Jaganathan & Lee, 2015)

Previous Study and Research Gap

Previous research has highlighted the effectiveness of machine translation (MT) as a valuable tool for learning to write in a second language (Godwin-Jones, 2015). By offering support for learning, MT has been shown to boost students' writing activity (Godwin-Jones, 2015). This is particularly beneficial for beginners, as MT helps them express themselves more effectively and communicate better in their second language writing. Additionally, MT aids in providing linguistic models, increasing awareness of language structure, and enhancing various language aspects like vocabulary, semantics, syntax, and pragmatics during second language writing (Amaral & Meurers, 2011). However, there's a concern raised by (Stapleton & Leung Ka Kin, 2019). that automated translation might decrease motivation among second language learners to develop writing skills in their target language, especially in situations where writing tasks are required. Research has also documented MT's disadvantages. It is less helpful in finding grammatical solutions, but it is beneficial in expanding vocabulary and raising understanding of grammar principles in context (Josefsson, 2011).

The utilization of automatic translation tools, such as Google Translate, has significantly increased in recent decades. Previous researches point out that these tools have assisted students in accessing resources in foreign languages, but they also note varying opinions on whether the use of these tools has a positive or negative effect on the development of students' writing abilities. (Rodríguez Vázquez, 2016) Demonstrates how some students may become excessively reliant on Google Translate, ultimately hindering their ability to write original texts in foreign languages. The results of this research provide an in-depth understanding of the potential negative impact of excessive use of automatic translation tools on students' writing abilities. (Putri, 2021) Note that the use of Google Translate can be an effective tool in education when integrated judiciously. They propose that Google Translate can be used as a learning tool to enrich students' understanding of foreign languages and enhance their language skills. This research provides a positive perspective on the use of this tool in education.(van Rensburg et al., 2012) Discusses the issue of academic ethics related to the use of Google Translate in school assignments. The article explores how the use of this tool can present challenges in preventing plagiarism and teaching students about academic integrity (Kurniawan et al., 2022).

Through this literature review, researchers can gain an understanding of the diversity of opinions and findings regarding the use of Google Translate in educational contexts. This will help guide the research

on the impact of these google translate tools on high school students' writing abilities. Then what differentiates this research from previous research is that researchers want to specifically study the impact of using Google Translate, not machine translation. Researchers used mixed methods so they not only used tests like previous research but also calculated students' perceptions of the impact of Google Translate on writing abilities. Researchers looked for positive or negative impacts in learning to write for high school students through the grades they got when doing assignments and whether it had an impact on their grades and then what student perception about the impact of using Google Translate in learning to write.

2.Method

This research uses mixed methods including, quantitative methods with a quasi-experimental design and using a questionnaire to measure students' perceptions on how much impact Google Translate has on writing skills. In quasi-experimental studies, researchers administer a treatment and then analyze the resulting changes in the treatment group. However, the samples used were random and researchers could not manipulate the subjects. In this research, there must be an experimental and control group determined using random groups. Quasi-experimental research aims to find out between variables involving a control group and an experimental group. Therefore, quasi experiments can be used for research that wants to investigate relationships between variables. To find out the results of (RQ2), qualitative research using a questionnaire was carried out. This will assist researchers in understanding students' perspectives regarding the impact of Google Translate on their writing skills. Then this questionnaire method was applied to support the results of the experimental design.

This study involves dividing classes into two groups: the control group, which did not receive any instruction involving Google Translate during the learning process, and the experimental group, which received training on the effective use of Google Translate as part of their learning activities.

Participants

Participants in this research consisted of 10th grade students at SMA Muhammadiyah 1 Babat. One class consists of 25 students that would be divided into two groups. The controlled group and experimental group in this study randomly selected. 12 students grouped into the controlled group and 13 students into the experimental group.

Instruments

Quasi-experimental research aims to realize an event to reveal the cause-and-effect relationship between two variables. There were two groups in this quasi-experimental research. The first stage is a controlled group test session where students are asked to create a descriptive text of no more than 500 words on an educational topic.

The second instrument that is used in this research is a list of questions. Data on students' perceptions of the use of Google Translate in improving their writing skills were collected through the questionnaire. Questionnaires are collected online via Google Form. Researcher adapted this instrument from previous research (Rahayu, 2021). For this questionnaire, Sampling from students in the experimental group was conducted by the researcher to ascertain their perceptions after using Google Translate, aiming to determine whether it had a significant effect on them.

Writing Result Analysis

The essay is analyzed based on word choice, content arrangement, sentence patterns, as well as spelling and grammar. In the experimental group testing step, students were asked to create descriptive text about the same topic. Each session is given a completion time of 45 minutes. The next step is to compare the essays of groups that did not receive Google Translate learning treatment and those that received effective Google Translate learning treatment. Each participant was tested to ascertain whether there was a significant difference in their writing or whether there was no improvement. Researcher adapted this instrument from previous research (Lengari, 2023).

Writing Ability Comparasion

Writing ability data analyzed using quantitative statistical methods, especially the Independent Samples T-test. This test was conducted to assess significant differences between the average writing ability scores of students in the control group (non-Google Translate users) and the experimental group (Google

Translate users). Perception questionnaire data analyzed descriptively to understand the students' views on the impact of Google Translate.

Perception Questionnaire Analysis:

In addition, data from perception questionnaires collected from the experimental group analyzed descriptively. This analysis aims to understand students' views about the influence of using Google Translate on their writing abilities. This questionnaire measures student responses to various aspects of using Google Translate in learning writing, using a scale from Strongly Disagree to Strongly Agree.

Questionnaire

Four scales (Strongly Disagree, Disagree, Agree, and Strongly Agree) were utilized by researchers to measure markers of perception in the tool. A survey was conducted to find out how high school students felt about Google Translate as a tool for translating descriptive English texts. There are twelve questions on the survey. The questionnaire has four options for each question. The options are Strongly Disagree (SD), Disagree (DA), Agree (A), and Strongly Agree (SA) and the reasons. Thirteen students made up the total number of respondents. The following table illustrates it based on the data:

Table 1. *Questionnaire Sheet*

Question	SD	DA	A	SA
Descriptive material can be translated using Google Translate				
Google Translate make an interpretation of serves to descriptive text				
Do you agree with statements number one and two				
Have you ever had difficulty translating your descriptions using Google Translate				
Google translate can translating so fast				
Understand material what is translated using Google Translate				
There is a problem with the processing of Google Translate translation results				
I haven't trouble spellbinding descriptive text by google translate				
I comprehend the consequences of the translating by google translate				
Google Translate isn't exact enough while interpreting descriptive text				
Google Translate is very good at translating				
When using Google Translate, translating explanatory text becomes troublesome.				

Procedures

The first session, both groups will receive the same treatment regarding material on how to write text descriptions well. The learning session lasts for two subject hours, followed by the random division of the class into two groups at the end of the class meeting: the experimental group and the control group. Subsequently, during the next meeting, the experimental group is directed to the language room, while the control group remains in the classroom.

The second session is an intervention session, the experimental group will receive a learning treatment on how to use Google Translate to write text descriptions effectively and also practice. This treatment was not received by the control group. This session is held for two subject hours.

The third session is a session to test students in writing descriptive text. Both groups will be given the same test with the same time. This session will be held in one subject hour. After the test was completed, the researcher distributed a perception questionnaire about the impact of Google Translate on writing ability in the experimental group. This questionnaire filling session was held in one subject hour.

3.Findings and Discussion

The findings from the data analysis conducted through the Independent Samples T-test are as follows:

1. Descriptive Statistics: The non-Google Translate user group, comprising 12 students, exhibited a mean score of 82.83, with a standard deviation of 7.371. Conversely, the Google Translate user group, consisting of 13 students, demonstrated a higher average score of 92.23, with a standard deviation of 2.862.

Table 2. *Group Statistics*

	Students	N	Mean	Std. Deviation	Std. Error Mean
Grade	Non-Users	12	82.83	7.371	2.128
	Users	13	92.23	2.862	.794

2. Equality of Variances Test: Levene's Test for Equality of Variances was conducted, resulting in an F value of 11.050 with a significance level of 0.003. This outcome indicates that the variances between the two groups are not equal. In other words, there is a significant difference in the variability of scores between the non-Google Translate user group and the Google Translate user group. As a result, it is necessary to consider the diversity of variations when interpreting the results of the Independent Samples T-test. This suggests that the assumption of homogeneity of variances may not hold, and adjustments may be needed in the analysis to account for this discrepancy.

Table 3. *Independent Samples Test*

		Levene's Test for Equality of Variances	t-test for Equality of Means		
		F	Sig.	t	Df
Grade	Equal variances assumed	11.050	.003	-4.267	23
	Equal variances not assumed			-4.138	14.026

3. Independent Samples T-test: Found a significant difference between the two groups with a t value of -4.267 (assuming equal variance). This shows that the difference in mean scores between the user and non-user groups is statistically significant. Based on RQ1, The results shown by this data have the same results as hypothesis 0, which shows that Google Translate users and non-Google Translate users have significant differences in the results of the writing test. This is also confirmed by (Cancino & Panes, 2021).

Table 4. *Independent Samples Test*

		t-test for Equality of Means			
		Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower
Grade	Equal variances assumed	.000	-9.397	2.202	-13.953

Equal variances not assumed	.001	-9.397	2.271	-14.268
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4. Confidence Intervals and Effect Sizes: The 95% confidence interval for the mean difference between groups was between -13.953 and -4.527. Effect sizes, measured using Cohen's d, Hedges' correction, and Glass's delta, indicated significant and large effects.

Table 5. *Independent Samples Test*

		t-test for Equality of Means
		95% Confidence Interval of the Difference
		Upper
Grade	Equal variances assumed	-4.842
	Equal variances not assumed	-4.527

Table 6. *Independent Samples Effect Sizes*

		95% Confidence Interval			
		Standardizer ^a	Point Estimate	Lower	Upper
Grade	Cohen's d	5.501	-1.708	-2.620	-.769
	Hedges' correction	5.689	-1.652	-2.534	-.744
	Glass's delta	2.862	-3.283	-4.781	-1.750

The findings demonstrate that employing Google Translate substantially enhances students' writing skills. Students who utilized Google Translate achieved markedly higher scores compared to those who did not use the tool. The considerable effect sizes indicate that these differences are significant and meaningful in educational settings. These outcomes underscore the potential benefits of incorporating digital translation tools like Google Translate as an aid in language learning and writing within high school environments. This conclusion is also supported by (van Rensburg et al., 2012)

Questionnaire Results

Questions That Show Strong Positive Perceptions towards Google Translate:

Question 9: Where 92.3% of students agree with the statement, showing a very positive perception of the benefits of Google Translate in the writing process.

Question 3: With 69.2% of students agreeing and 30.8% strongly agreeing, it shows that most students feel Google Translate helps in the writing process.

Table 7. *Question 9*

Frequency	Percent	Valid Percent	Culmulative Percent
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Valid	A	12	92.3	92.3	92.3
	SA	1	7.7	7.7	100.0
	Total	13	100.0	100.0	

Table 8. *Question 3*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	9	69.2	69.2	69.2
	SA	4	30.8	30.8	100.0
	Total	13	100.0	100.0	

Questions That Show Diverse Perceptions:

Question 1: Although 61.5% of students agreed and 23.1% strongly agreed, there were still 15.4% of students who disagreed or strongly disagreed, indicating doubts about the effectiveness of Google Translate.

Table 9. *Question 1*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SD	1	7.7	7.7	7.7
	D	1	7.7	7.7	15.4
	A	8	61.5	61.5	76.9
	SA	3	23.1	23.1	100.0
	Total	13	100.0	100.0	

Question 12: With answers more spread out among the options (7.7% SD, 38.5% D, 38.5% A, 15.4% SA), this shows variation in students' perceptions of certain aspects of using Google Translate.

Table 10. *Question 12*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SD	1	7.7	7.7	7.7
	D	5	38.5	38.5	46.2
	A	5	38.5	38.5	84.6
	SA	2	15.4	15.4	100.0
	Total	13	100.0	100.0	

Questions that Show Confidence in Google Translate's Accuracy:

Question 6: Where 69.2% of students agreed and 15.4% strongly agreed, indicating that most students believe in the accuracy of Google Translate translations.

Table 11. *Question 6*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SD	1	7.7	7.7	7.7
	D	1	7.7	7.7	15.4
	A	9	69.2	69.2	84.6
	SA	2	15.4	15.4	100.0
	Total	13	100.0	100.0	

The questionnaire results reveal that high school students generally perceive Google Translate positively in the context of writing instruction. Most students either agreed or strongly agreed that Google Translate is a useful tool in the writing process, particularly highlighting its advantages in translating text and comprehending material.

Questions that received the most positive responses, such as Question 9, where 92.3% of students agreed with the statement, indicate that students highly value Google Translate's contribution to the writing process. This indicates that students feel Google Translate increases their efficiency and effectiveness in writing, especially in terms of understanding and producing text.

However, the results of the questionnaire also showed that there were doubts and varying perceptions among students. For example, in Questions 1 and 12, there is a small number of students who disagree or strongly disagree with the effectiveness of Google Translate. This suggests that although many students find these tools useful, some aspects of their use may not be accepted or considered effective by all students. Most students believe in the accuracy of Google Translate, but remain critical of potential errors in translation. This indicates that students use Google Translate as a tool, but still maintain a critical and reflective approach to the output.

Overall, the questionnaire results underscore the importance of integrating digital translation tools such as Google Translate in education, particularly in helping students overcome language barriers and improve their writing skills. However, it is also important to emphasize that Google Translate should be used as a complement to more conventional language learning and writing methods to ensure holistic and comprehensive skills development.

This research combines quantitative statistical methods on students' writing ability with descriptive analysis of questionnaire data to understand the impact of Google Translate on high school students' writing ability. This study uses detailed statistical methods (e.g., Independent Samples T-test) to assess the impact of Google Translate, which may differ from research methods used in previous studies. Based on the results of the T-test, there was a significant difference between the average writing ability of students who used Google Translate (experimental group) and those who did not (control group). The experimental group showed higher average scores, indicating that Google Translate had a positive impact on their writing abilities. This research confirms previous findings which show Google Translate can improve students' writing skills, as shown by (Amaral & Meurers, 2011) and (Cancino & Panes, 2021).

From the questionnaire data, the majority of students showed positive perceptions of the use of Google Translate in the writing process. Just like research by (Wirantaka & Fijanah, 2022), this research also found that the majority of students had a positive perception of Google Translate in helping the writing process. They found this tool helpful in understanding texts and producing writing. However, there were some students who expressed doubts about the effectiveness of Google Translate, indicating that their experiences with this tool may differ. While many students find Google Translate useful, some aspects of its use may not be accepted or considered effective by all students.

The results of this research show that the use of Google Translate can be a valuable aid in the writing learning process. This tool helps students overcome language barriers and improve their writing skills. However, it is important to remember that the use of Google Translate must be balanced with more conventional methods of language learning and writing to ensure holistic and comprehensive skills development. The focus of this study is on high school students, which may differ from the target group in some previous studies that may involve broader contexts or different age groups.

Overall, this research highlights the importance of integrating digital translation tools such as Google Translate in education, especially in helping students overcome language barriers and improve their writing skills. This research is similar to previous studies in recognizing the use of Google Translate as an aid in education, especially in writing (Fitriani et al., 2021) and (Lee, 2020). However, a balanced and reflective approach is required in using these tools, taking into account both their benefits and limitations. The results of this research provide valuable information for educators in evaluating the potential for technology integration in language and writing education. This research emphasizes the importance of using Google Translate in balance with conventional learning methods, which may not have been explained in depth in previous research.

4. Conclusion

This study demonstrates that Google Translate positively influences the writing abilities of high school students, evidenced by the higher scores of those who utilized the tool. The questionnaire results reflected positive student perceptions of Google Translate, though some reservations about its effectiveness were noted. The research confirms that while Google Translate can be beneficial in learning to write, it should be supplemented with traditional teaching methods for comprehensive skill development. These findings offer valuable insights for educators on effectively integrating technology into education, taking into account students' needs and perceptions.

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