



# The Effect of Using Google Translate as a Machine Translation on the Writing of Students at the University

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## Abstract

This study aims to examine the effect of using Google Translate as a machine translation students writings at the State Islamic University of North Sumatra (UINSU) Medan. The research method used in this study is a qualitative approach, and the research design used descriptive analysis. The data collection technique in this study used questionnaires and interviews, which were distributed to participants where a total of 20 questionnaires were answered based on their own opinions and reinforced with interview results. Participants in this study involved 10 English education students who used Google Translate (GT) as machine translation in translating their academic assignments. The result of this study is that GT has a significant impact on the grammatical accuracy and the quality of sentence structure in students' writing. However, this tool has a more pronounced strength in handling simple sentences compared to complex sentences. Although it is capable of providing a fairly helpful initial translation, the results still require manual review and additional editing to produce writing that is more natural and truly adheres to English grammar rules.

**Keywords:** *Effect, Google Translate, Indonesian Students, Machine Translation, Writing Skills*

## Introduction

These days, English plays a major role in everything, particularly in school. It is necessary for someone to comprehend the definition and purpose of an English term. Translation is therefore one of the four additional talents needed to acquire the English language in addition to speaking, listening, reading, and writing. Translation serves as the primary function as well.

In the international context, the use of automatic translation tools like Google Translate has become a global phenomenon that affects the way people learn and use foreign languages. In countries like Japan and South Korea, which are known for their high levels of technological literacy, Google Translate is widely used by students to understand English literature. However, research shows that although this tool helps speed up the translation process, the results are often inaccurate, especially in complex sentence structures and the use of formal grammar. With the increasing dependence of students around the world on this technology, the issue of how translation tools affect the quality of academic writing has become increasingly significant, making this study relevant for improving digital literacy and better language understanding in the era of globalization.

In Indonesia, English is a foreign language that has a crucial role in various fields, including higher education. Students at Medan State Islamic University (UIN Medan) as one of the tertiary institutions in Indonesia, are also inseparable from the need to master English as a means of international communication.

In the world of education, the use of translation tools such as Google Translate has become a common trend in the process of learning foreign languages and academic writing. A global survey in 2023 showed that more than 70% of college students use Google Translate to complete their academic assignments, especially in translating articles, essays, and final projects. However, although this technological advancement brings many benefits, there are concerns about the quality of the translation results, especially regarding the accuracy of grammar and sentence structure, which still often require manual editing.

However, it cannot be denied that not all students have adequate English skills. This can be a barrier in accessing literature, sources of information, and participating in academic activities that require an understanding of the English language. To overcome this problem, the use of machine translation is an attractive alternative. Machine translation is a computer system designed to translate text or speech from one language to another using artificial intelligence technology.

Because of its ease, Google Translate (GT) is one of the most popular machine translation services. More than 100 billion words are currently translated each day (McGuire, 2019). He also mentions the use of automatic machine translation, such as the statistical machine translation service, GT, which was introduced in April 2006 and uses documents from the United Nations and the European Parliament to collect linguistic data. It looked for commonalities in these texts during translation to assist select the correct translation (Twose, 2019). GT has been the internet's go-to site for quick and easy foreign language translations (Sommerlad 2018). Indeed, millions of individuals throughout the world utilize this service every day to translate any language (Herlina et al. 2019).

Google Translate serves as a translation medium for a variety of languages, including an English-to-Indonesian translator, online dictionary, meaning reference, spell checking, and pronunciation (Maulida 2017).

Technology-enhanced language learning (TELL) is prevalent since it allows students to expand their involvement and understanding. Students can use technology to improve their talents, particularly in vocabulary skills. They need to improve their technological skills. Google Translate is one of the newest technologies (Duong et al. 2021). Google Translate is a machine system. Google Translate is Google's software for determining the meaning of vocabulary. It can translate words, phrases, and sentences. (Suhono et al. 2018).

GT employs a word-to-word system operation to translate words. Google also adds a system that allows it to translate based on certain words or idioms in order to improve translation quality. Another strategy that GT takes is statistical translation. According to Grajales (2015), the Google Translate revolution began in 2007 when Google introduced a new algorithm based on statistical models to improve translation accuracy. This Statistic Based Translation allows GT to learn any suggestions and frequent words from billions of words preserved in Google's library of texts. However, like a machine, GT makes errors, and its translation of sentences/texts only provides a broad grasp rather than a meaningfully and grammatically correct.

However, despite numerous studies evaluating Google Translate's use in academic contexts, most previous research (Johnson and Lee, 2018) has focused on the translation of simple texts and has paid less attention to the impact of its use on more complex writing, particularly in the context of student academic writing. This gap becomes increasingly crucial to study as more students rely on translation programs such as GT to finish their academic responsibilities. As a result, the purpose of this study is to fill a gap in the literature by investigating how Google Translate influences grammatical accuracy and sentence structure in students' academic writing.

The unique contribution of this research lies in its focus on specifically examining the impact of using Google Translate on the grammatical accuracy and quality of sentence structure in the writings of UINSU Medan students. Unlike previous research that tends to evaluate Google Translate in general, this study takes a more focused approach by linking the use of translation technology with students' academic writing abilities. This research also offers insights into how students utilize Google Translate as an aid, as well as providing an evaluation of its limitations and benefits directly within the context of higher education. This is expected to serve as a reference for teachers and students to wisely utilize technology in the learning process.

The main unresolved issue based on existing theories related to the use of Google Translate lies in the accuracy and quality of its translations, especially in an academic context. In theory, Google Translate is designed to provide quick and easy translations, but its limitations in understanding complex grammar, cultural context, and nuances of meaning often pose challenges. Translation results often require revision, especially for complex sentences or the use of structures that demand high grammatical accuracy. Moreover, previous research has mostly discussed the general use of Google Translate, without focusing on its specific impact on the quality of academic writing, particularly among students. This indicates a need to understand how this tool affects students' writing in a local context, such as at UINSU Medan, making the contribution of this research important to address the existing gap.

This research is important to study because the use of Google Translate as a translation tool has become an inseparable part of academic life, especially among students. As an easily accessible technology, Google Translate is often used to complete academic tasks, especially in the context of writing in a foreign language such as English. However, there are still concerns about the accuracy of grammar and the quality of the sentence structure produced, which can affect the overall quality of academic writing. This research is relevant to society, especially the academic community, because it provides an in-depth understanding of the effectiveness of Google Translate as a language learning tool. The results can be a guide for students in using this technology optimally, as well as providing input for developers to improve the accuracy and quality of translations, thereby supporting the improvement of foreign language literacy in society.

The purpose of this research is to analyze the impact of using Google Translate on the grammatical accuracy and sentence structure quality in the writings of UINSU Medan students, as well as to evaluate the extent to which this tool can assist students in improving the quality of their academic writing. This study's findings could help students and educators understand the limitations and benefits of using translation tools when writing academic texts.

## **Literature Reviews**

Previous research has demonstrated that machine translation can be a useful additional learning aid while writing in a second language. According to research by Ali and Alireza (2014) as well as Garcia and Pena (2011), machine translation enables students to write more quickly, more fluently, and with fewer errors. Garcia and Pena (2011) also discovered that machine translation was most helpful to beginning students, who were able to speak more and express themselves more clearly in L2 writing. Godwin-Jones (2015) found that by providing scaffolding for learning, machine translation improved students' writing. Additionally, Nino's

(2008) study showed that students' machine translation skills—which are critical for good writing—improved dramatically (Chen, Huang, Chang, & Liou, 2015).

According to Correa's (2014) research, publishing using machine translation aided students in improving their writing process, metalinguistic awareness, and final product. In a similar vein, Amaral and Meurers (2011) assert that during L2 writing, machine translation can offer linguistic modeling, enhance linguistic awareness, and expand L2 lexical, semantic, syntactic, and pragmatic knowledge. By improving lexical fluency, machine translation can help students write more effectively (Chen et al., 2015). Actually, research has frequently found that machine translation outperforms traditional dictionaries when it comes to translating technical jargon, phrases, and collocations.

This conclusion has been drawn from comparisons between machine translation and dictionaries as well as other electronic reference tools (Bahri & Mahadi, 2016; Frodesen, 2007). Furthermore, whereas dictionaries and other electronic reference aids fall short in supporting language learners' acquisition of lexical information, machine translation may be able to better meet their demands (Chen et al., 2015). According to Bernardini (2016), a corpus that is "fully adaptable to the learner's individual needs and preferences" is analogous to machine translation in language classroom settings (p. 16). Data-driven learning follows, and studies have shown that it works well for ESL/EFL students, especially those at lower levels (Nation, 2001).

According to Zafitri and Harida (2017), Google Translate supports over 100 languages and has multiple levels. Google Translate can help individuals translate more than a hundred languages. It may translate individual words, phrases, or sentences.

According to Pratama and Utami (2022), using an online dictionary makes it easier for students to master vocabulary. One example of an online dictionary is Google Translate. Google Translate is Google's online dictionary. Google Translate has become a popular dictionary for the public.

Google Translate covers a large number of languages and has become one of the most popular translation tools on the internet (Constantine, 2019). While Google Translate offers advantages in terms of usability and language support, its translation results are not always perfect. Because the Google Translate translation algorithm does not always fully understand the context or nuances of the text, translation results can be erroneous or unclear (Jooste W, 2021). As a result, users of Google Translate should exercise caution when using translation results, particularly in situations requiring high accuracy and precision (Menezes, 2019).

In her research titled "The impact of using machine translation on EFL students' writing," Sangmin-Michelle Lee discovered that employing machine translation for revision had a favorable effect on students' writing techniques and improved their understanding of the writing process. The results of the interviews

and reflection papers showed that students had a favorable opinion of using machine translation when writing. According to this study, machine translation can be a helpful tool for language learners. However, in order for machine translation to benefit students' learning, teachers must be aware of its limits and give them the support they need. Based on the explanation above, the following research questions are:

1. How does the use of google translate affect the grammatical accuracy of student's writing at uinsu?
2. Does the use of google translate affect the quality of sentence structure in student's writing?

## Method

Researchers employed a qualitative methodology in this investigation. Actually, qualitative research is grounded in positivism and builds upon it by using real objects as important instruments and delving deeper into real-world circumstances. Senny and others (2018). The study's subject's thoughts, feelings, opinions, and beliefs are all connected to qualitative research and are not all measurable. explains that a method for examining and understanding the importance that people or groups attach to a social human issue is qualitative research.

The design of this research uses descriptive analysis applied in the process of revealing the facts found in the study. The researcher wants to determine the impact of using GT as a machine translation on students' writing. In its use, the data collected will later be described as a detailed narrative derived from empirical evidence. Descriptive research is a method of research conducted with the main purpose to create a description or descriptive about a situation objectively. Descriptive research method is used to solve or answer the problems that are faced (Notoatmodjo, 2002)

The respondents used in this study were 10 students from the English Education Department at UINSU. The determination of respondents was carried out using the purposive sampling technique, where 10 UINSU students were selected as participants based on certain criteria. The selection of this sample size is based on the principle of data saturation, where the number of participants is considered sufficient to obtain relevant data variation without redundancy of information. The criteria for selecting participants include students who actively use Google Translate in writing their academic assignments and have experience in reviewing and revising translation results. Data were collected through questionnaires and online interviews conducted via WhatsApp video calls. Purposive sampling is known as a sampling technique based on the suitability of certain criteria possessed by the sample or respondent (Sugiyono, 2019).

In this research, research ethics are upheld to ensure that the rights and privacy of participants are protected. Because data collection was conducted online through questionnaires and interviews via WhatsApp video calls, each participant was provided with clear information regarding the research objectives, data collection procedures, and the use of the data they provided. Before participating, participants were asked to voluntarily provide consent through written or verbal confirmation, after they understood the contents of the research information sheet presented by the researcher.

Guaranteeing confidentiality is also a top priority. The identities of the participants, including names and other personal data, will not be included in the research report. All data collected will only be used for academic purposes and will be securely stored to prevent unauthorized access. Participants are also given the freedom to withdraw from the research at any time without pressure or any consequences. With this approach, the research is conducted ethically and respects the privacy and comfort of the participants throughout the data collection process.

Data were collected using two instruments: (1) a questionnaire and (2) in-depth and open semi-structured interviews. Questionnaires and interviews were used to collect data on the impact of GT usage on students' writing. To ensure that the data collected is universal, comprehensive, unconstrained, and transparent, qualitative research is based on the interview instrument. Data for this study was gathered through interviews and questionnaires. In order to answer the research question about the effect of GT usage on students' writing's grammatical precision and sentence structure, questionnaires were utilized to gather qualitative data.

This research also uses semi-structured interviews to triangulate the data. Interviews were conducted using a semi-structured guideline developed based on the results of the initial questionnaire, to delve deeper into students' experiences and perceptions regarding the grammatical accuracy and sentence structure in Google Translate's translations. One of the limitations of this method is the small sample size, which may not fully reflect the experiences of all UINSU students. However, since this research aims for in-depth exploration rather than generalization, this method is still considered appropriate for uncovering more detailed insights regarding the topic under study.

The questionnaire is presented in the form of statements divided into two parts. The first section contains 10 statements to answer the research question about the impact of GT usage on the grammatical accuracy of students' writing, distributed via a Google Form link. The second part also contains 10 statements to answer the research question about the impact of GT usage on the quality of sentence structure in students' writing. Each statement uses a Likert scale presented on a 4-point scale ranging from "strongly agree" to "strongly disagree," seeking the subjects' perceptions of the impact of GT usage on the grammatical accuracy and sentence structure quality in students' writing. Interviews were

conducted with only 2 students. In-depth interviews aim to delve deeper into the information related to the participants' questionnaire responses. The interview was conducted via video call on WhatsApp, and the researcher had previously obtained permission, so the participants were willing to be interviewed. The interview was conducted for 10 minutes, and an audio recording was also made to anticipate any misunderstandings or answers that the researcher might miss. The respondents were asked to explain clearly and in detail without any pressure from the researcher.

In the data analysis process, researchers adopt the stages of data triangulation by conducting data reduction, data display, and concluding with the conclusion drawing/verification process. Triangulation is used to test the validity of the obtained data. In the conclusion section, the determination from specific statements to general statements is used. Data analysis in this study was conducted simultaneously with the data collection process. This means that every analysis activity is conducted during and after the data collection process. After the data is collected, the interview data is carefully analyzed by examining the responses of each respondent, then the main points are drawn and comprehensively compared as the main findings.

## Results

### The Effect of Using GT on the Grammatical Accuracy in Students' Writing

This research aims to determine the impact of using GT on the grammatical accuracy of English department students' writing. Participant data shows that GT is quite helpful for English major students in completing their academic tasks; however, revisions are necessary because the GT translations are less accurate in terms of both grammar and writing. As shown in the questionnaire results in Table 1 below.

*Table 1. The Effect of Using GT on the Grammatical Accuracy on Students' Writing*

No	Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
1	Google Translate helps improve the grammatical accuracy in my writing.	0	7	3	0
2	The results of Google Translate often produce grammatical errors such as the use of tenses or conjunctions.	0	6	4	0



3	I often find grammatical errors that affect the meaning after using Google Translate.	0	6	4	0
4	The use of Google Translate makes it easier for me to choose the appropriate tense forms in academic writing.	0	4	6	0
5	Google Translate often misinterprets verb forms based on tenses.	0	6	4	0
6	The translation results from Google Translate are more helpful compared to the manual translation I made regarding grammar.	0	8	2	0
7	The use of articles like "a," "an," and "the" in Google Translate's results often fits the context of the sentence.	1	7	2	0
8	I rarely find mistakes in the use of prepositions in the translation results. Google Translate	0	5	5	0
9	Google Translate minimizes grammatical errors in my academic writing.	0	7	3	0
10	The translation result from Google Translate needs a little revision to correct the grammar.	2	7	1	0

From the results of the questionnaire above, we can see that the influence of using GT on the grammatical accuracy of English department students' writing is quite significant because the use of GT can help improve the grammatical accuracy in their writing. The majority of participants, 7 out of 10 students, agree with the statement that GT can help improve the grammatical accuracy in their writing. This indicates that they feel GT contributes positively to producing more accurate translations in terms of grammar, although there may still be improvements needed after using the tool. This could indicate that this tool is quite useful in improving or refining their grammar usage, although it is not always perfect.

Meanwhile, a minority of 3 out of 10 students do not agree with the statement, which could mean they feel that GT is not effective in improving grammatical accuracy. There is a possibility that they find grammatical errors or feel that the translation results require more revisions than providing assistance in terms of

grammar. They may experience limitations in using this tool, or prefer other ways to improve grammatical accuracy, such as self-study or using other more reliable methods.

From this data, it can be concluded that the majority of students at UINSU feel that Google Translate has a positive impact on the grammatical accuracy of their writing, although some are dissatisfied or feel less helped. This may be related to each student's level of understanding of using Google Translate and their preference for other writing aids.

Interview findings support the survey results, which indicate that GT significantly helps improve the grammatical accuracy in their writing, as seen in this quote:

*"In my opinion, GT is quite helpful, especially in completing tasks quickly." However, when it comes to the accuracy of grammar and writing, I feel it still falls short. The translation results often need to be revised to align with the context and correct language rules. For example, sometimes the use of tenses or sentence structure is not appropriate, so it still needs to be edited to make it more natural and accurate. Even so, as an initial tool, GT is still very useful for speeding up the translation process. (student AA)*

From the interview results, student AA stated that although GT helps speed up the task completion process, he also acknowledges that the translation still needs revision, especially for grammatical accuracy, such as tenses and sentence structures that often do not fit the context. AA student's statement regarding the use of GT, which helps speed up the translation process and provides initial ease, is very much in line with the majority of participants who agree that GT helps improve grammatical accuracy. Although not perfect, this tool provides initial assistance that is considered beneficial by the majority of students. Additionally, student AA's response underscores a more critical view of GT, arguing that while the tool is indeed helpful, it still falls short in terms of grammatical accuracy. This aligns with the 3 participants who disagreed with the statement. They feel that the translation results are often inadequate and require substantial revisions.

In general, interviews with AA students enriched the questionnaire results by providing a deeper insight into the process of using GT. The majority of participants who agreed likely see practical benefits from this tool in completing tasks, although they also recognize its limitations in terms of grammatical accuracy. For some students, as mentioned by student AA, the use of GT requires further adjustments and revisions to ensure grammatical accuracy, leading to disagreement from a small number of respondents who feel that this tool is not sufficiently helpful.

Related to the questionnaire statement "The GT translation results require minor revisions to improve grammar," the majority of participants, 9 out of 10 students, agreed that the translation results from GT need minor revisions to improve grammar. This indicates that the majority of students feel that although GT assists in translation, the resulting translations often still require adjustments related to grammar. Students may find some minor errors that need to be corrected, such as the use of words or sentence structures that are less precise, although no major revisions are necessary. The presence of minimal revisions indicates that GT is quite effective in providing translation results that are close to correct, although not perfect.

Whereas 1 in 10 students who do not agree with this statement might feel that the GT translation results are good enough without the need for revision. This shows that although the majority feel there are shortcomings that need to be addressed, there is also a small minority who believe this tool works well enough in delivering accurate translations. These students may have different experiences, where the translations produced by GT already meet their expectations without needing much improvement.

The results of the questionnaire indicate that, in general, GT is quite helpful in terms of grammatical accuracy, but the results still require some revision to ensure a more precise translation. The majority of students feel that this translation is quite close to being correct, but there are still some parts that need improvement. Only a small number of students feel that GT is sufficient without any changes. This indicates that although GT is effective, there is still room for improvement in terms of grammatical accuracy.

Interview findings support the questionnaire results, which indicate that GT translation results require minor revisions to improve students' grammar, as seen in this quote:

*"Yes, I agree." The results of GT translations often require revisions. Although GT can help quickly, we can't just copy-paste it because the translation is sometimes inaccurate." Sometimes, the sentences can be stiff or even incorrect in certain contexts. So, it is indeed important to check and edit the translation results to better align with what we mean. GT is just an auxiliary tool, so revisions are still necessary to make the final result more accurate and natural. (student RZ)*

From the interview results, student RZ stated that he agreed with the statement, adding that GT translations often require revisions, although this tool can help quickly. Student RZ highlighted several weaknesses, such as sentences that sometimes feel stiff or incorrect in certain contexts. Therefore, it is important to check and edit the translation results to ensure that the translation aligns with the intended meaning. RZ students reflect the views of the majority of participants who

agree that the GT translation results require some revisions to improve grammar. RZ students acknowledge that although GT provides quick assistance, the translation results are often inaccurate or stiff, indicating a need for adjustments or improvements. This is in line with the questionnaire results, which show that the majority of participants (9 out of 10) feel that GT translations still need some revision to be more accurate and contextually appropriate.

In the interview, student RZ emphasized that GT is an auxiliary tool, which means that although it is helpful, there is still a need for verification and improvement. This is also related to the results of the questionnaire, which showed a consensus among participants that this tool is not perfect and requires improvement. As explained by student RZ, rigid or contextually incorrect translations are one of the reasons why revisions are still necessary.

The results of the interview with RZ students reinforce the questionnaire findings, which indicate that the majority of students feel that the GT translation results require minor revisions to improve grammatical accuracy. RZ students emphasize the importance of adjustments and editing in ensuring that the translation results align with the desired communication goals. Thus, both the interview and questionnaire results indicate that although GT can assist quickly and efficiently, this tool still requires revision to achieve more accurate results in academic writing.

Table 2. The Influence of Using GT on Sentence Structure in Student Writing

No	Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
1	Google Translate often produces sentences that are easy to understand without needing much correction.	0	7	3	0
2	Sentences translated by Google Translate are often too stiff and require revision to improve their naturalness.	1	8	1	0
3	The complex sentence structure translated using Google Translate remains in accordance with English grammar rules.	0	8	2	0
4	Simple sentences generated by Google Translate still retain the correct meaning.	1	9	0	0

5	Compound sentences from Google Translate are often well-structured without needing many changes.	0	6	4	0
6	Translated sentence Google Translate often loses the context or original meaning that is intended to be conveyed.	0	5	4	1
7	Sentences translated by Google Translate are often too long or less effective in conveying ideas.	0	5	5	0
8	Google Translate makes it easier for me to construct sentences with more varied structures in academic writing.	1	6	3	0
9	I feel that the sentences generated by Google Translate have a coherence of ideas that align with the context of the writing.	0	6	4	0
10	Google Translate produces sentence structures that meet the needs of formal academic writing.	2	7	1	0

### **The Effect of Using GT on the Sentence Structure in Student Writing**

This research aims to determine whether the use of GT affects the quality of sentence structure in the writings of English department students. Participant data shows that GT affects the quality of sentence structure in students' writing quite well, and the GT translation results also maintain the correct meaning, but still require editing for a more natural and accurate outcome. As shown in the questionnaire results in Table 2 below.

From the results of the questionnaire above, we can see whether the use of GT affects the quality of sentence structure in the writings of English department students. It is quite influential because the sentence structures produced by GT still adhere to English grammar rules. The majority of participants, 8 out of 10 students, agree that the complex sentence structures translated using GT still adhere to English grammar rules. This shows that the majority of students feel that although the translated sentences may be complex, GT is capable of producing translations that still adhere to the applicable grammar rules. Students tend to feel that this tool can maintain the correct sentence structure, although there is a possibility that the translation may still require some revision in terms of context or word choice.

Whereas 2 students disagreed with that statement. This shows that a few students feel that GT does not fully adhere to grammatical rules well in complex sentence structures. They may encounter errors in sentence structure, such as mistakes in word order or errors in the use of conjunctions that alter the meaning

or fluency of the sentence. These students might also feel that this tool struggles to translate longer or more complex sentences, resulting in translations that do not meet their expectations.

The results of the questionnaire indicate that the majority of students feel that Google Translate can maintain complex sentence structures according to English grammar rules. However, there is a small number of students who feel that this tool does not always produce accurate translations in terms of complex sentence structures. However, overall, these results indicate that Google Translate is effective in handling more complex sentence structures, although there are some shortcomings that need to be addressed, especially for longer sentences or those requiring a deeper understanding of context.

The interview findings support the questionnaire results, which indicate that the complex sentence structures translated using GT remain consistent with English grammar rules, as seen in this quote:

*"In my opinion, the GT translation results for complex sentences still often follow the basic rules of English, although sometimes the context can be different or feel a bit stiff." Nevertheless, the conveyed meaning remains correct and can still be clearly understood. Sometimes, there are indeed differences in structure or word choice that make the sentences feel less natural, but overall, GT is quite effective in maintaining the basic rules of English grammar. So, even though it's not always perfect, the translation is still understandable. (Student AA)*

Student AA stated that GT still follows the basic rules of English grammar for complex sentences. However, he also noted that the context may differ or the sentences may feel somewhat stiff, although the conveyed meaning can still be clearly understood. He also highlighted that the structure and word choices sometimes make the sentences feel less natural, but overall, the translation is still understandable.

The statement of student AA reflects the views of the majority of participants who agree that GT can maintain English grammar rules in complex sentences. However, as he mentioned, even though grammatical rules are still followed, the translation results may feel stiff or less natural. This is consistent with the results of the questionnaire, which show that most participants agree that this tool is quite effective in maintaining the appropriate sentence structure, although it may not always be perfect.

Student AA also emphasized the challenges in terms of context and word choice, which can make the translation feel less smooth. This is in line with the questionnaire findings, which indicate that although 8 students agreed that the sentence structure remained appropriate, there were 2 students who disagreed,

likely due to similar experiences with rigidity or contextual inaccuracies in the translation of complex sentences. Student AA concluded that although not always perfect, Google Translate remains quite effective in maintaining basic grammatical rules. This reinforces the questionnaire findings that show GT still has a positive influence on sentence structure, although there is still room for improvement.

The results of the interview with student AA clarified the questionnaire results that although GT can maintain correct grammatical structure in complex sentences, challenges such as sentence rigidity and contextual inaccuracy remain issues. These results support the conclusion that GT affects the quality of sentence structure in students' writing quite well, but still requires editing for more natural and accurate results.

Also related to the questionnaire statement "The simple sentences generated by GT still retain the correct meaning," according to the questionnaire results. Majority of Participants 10 out of 10 participants agreed with the statement that GT is capable of maintaining the correct meaning in simple sentences. This shows that all respondents feel that even when using an automatic translation tool like GT, the original meaning of the translated simple sentences is well preserved. This shows that GT is effective in converting simpler sentences without altering or damaging the intended meaning.

The accuracy of translations in simple sentences indicates that GT is more reliable in handling texts that are not too complicated or complex. Shorter and more straightforward sentences are easier for translation algorithms to understand, allowing this tool to produce more accurate translations. Thus, these results indicate that for simpler sentences with less contextualization, GT can be regarded as an effective tool.

The results of the questionnaire show that all participants feel that GT is very successful in maintaining the correct meaning in simple sentences. Although this tool may have shortcomings in translating complex sentences, for simpler sentences, GT has proven to be very effective in maintaining accurate meaning.

Thus, it can be concluded that the use of GT has a positive impact on the quality of sentence structure in students' writing, especially for sentences that are not too complex, where this tool can produce translations that are contextually appropriate and do not alter the original meaning.

Interview findings support the questionnaire results, which indicate that GT is capable of maintaining the correct meaning in simple sentences, as seen in this quote:

*"In my opinion, the simple sentences produced by Google Translate still retain the correct meaning." Indeed, sometimes the translations are a bit stiff or don't always fit the context, but generally, the meaning is still understandable. So, even though it's not always perfect, Google Translate is quite okay for simple sentences.*

*The important thing is that the meaning doesn't change, and we can still understand what is meant. (student RZ)*

Student RZ stated that simple sentences translated by GT still retain the correct meaning, although they sometimes feel a bit stiff or not always contextually appropriate. However, he emphasized that the meaning is still understandable, so GT is considered quite good for translating simple sentences. The statement of student RZ aligns with the results of the questionnaire, which showed that all participants agreed that GT retains the correct meaning in simple sentences. His view reinforces the conclusion that GT is effective in preserving meaning, although the translation results may need slight adjustments to improve fluency or context.

RZ students highlighted that although the meaning of the sentence remains intact, the translation can feel stiff or less suitable for the context. This indicates that although GT is able to maintain meaning, improvements in terms of fluency and contextualization are still necessary. This aligns with the views in the questionnaire, which may have led most participants to choose "agree" rather than "strongly agree."

The results of the RZ student interviews support the questionnaire findings that GT has a positive influence on the quality of simple sentence structures in maintaining meaning. However, weaknesses such as sentence rigidity and contextual inaccuracies remain challenges that require additional editing. This reinforces the finding that this tool is quite reliable for simple sentences but still requires revision for more natural results

## **Discussion**

### **The Effect of Using GT on the Grammatical Accuracy in Students' Writing**

Based on the results obtained by the researcher, the majority of students feel that GT helps improve the grammatical accuracy in their writing. From the questionnaire given, 7 out of 10 participants agreed with the statement that GT can improve the accuracy of grammar, while the other 3 disagreed. This indicates that, although GT is considered capable of providing translations that adhere to grammatical rules, there are still some students who find weaknesses in its translation results.

Interviews conducted with 2 students who also support the questionnaire results. Students stated that GT is able to help them construct sentences more quickly and easily, but the translation results often require revisions to improve accuracy. As mentioned by the participants, errors in tense usage or incorrect sentence structures often occur. This shows that although GT can help provide an initial framework for translation, users still need to edit to ensure the results comply with correct grammatical rules. Additionally, there are survey results indicating that 9 out of 10 participants agree or strongly agree that GT translations



require revisions to correct grammar. This confirms that GT is more often used as the first aid tool, not as the final solution to produce completely accurate writing without additional corrections. This shortcoming may be due to the limitations of translation algorithms that still struggle to understand context deeply, especially in complex sentences or those containing idioms.

Overall, the results of this study conclude that GT does indeed have a positive influence on grammatical accuracy, but with certain limitations. This tool is useful for providing an overview or initial draft of a translation, but it still requires the user's critical ability to edit and refine the final result.

### **The Effect of Using GT on the Sentence Structure in Students' Writing**

The influence of GT on sentence structure in students' writing is also a primary focus of this research. From the results of the questionnaire, it was found that the majority of participants agreed that GT is capable of producing sentences with structures that conform to grammatical rules, both for complex and simple sentences. In the statement regarding complex sentence structures, 8 out of 10 participants agreed that the structure adhered to English grammar rules, while 2 participants disagreed. These findings indicate that although GT can maintain most of the correct grammatical structures, there are weaknesses in terms of fluency and word choice.

Interviews with participants provide a more detailed picture of these findings. Students stated that although the GT translation results generally follow basic grammatical rules, the sentence structures produced often feel stiff and less natural. This problem more frequently arises in complex sentences that require contextual adjustments and a deeper semantic understanding. For example, inappropriate word choices or sentence structures that do not align with natural language styles often result in less fluent translations. Students also highlighted that the sentences translated by GT need to be adjusted to better align with the formal writing style used in academic papers. However, for simple sentences, the results of the questionnaire and interviews indicate that GT is more reliable in maintaining the correct structure and meaning. As many as 9 participants agreed and 1 strongly agreed that simple sentences translated with GT still retain their correct meaning. Students assess that for shorter and more direct sentences, GT is capable of providing quite satisfactory results without requiring too many revisions. This is because the GT algorithm is better at processing simple sentences with clearer and less ambiguous grammatical structures.

The study's findings also confirm that Google Translate does not always produce an accurate translation of the source material, which could have led to serious issues when translating written documents (Bezhanova, Byezhanova, and Landry, 2005). According to the findings, Google Translate may only be utilized on a single-word basis, but it still needs extensive review and users' careful and

reasonable judgment. (Fidnillah, 2022).

The purpose of this research is to analyze the impact of using Google Translate on the grammatical accuracy and the quality of sentence structure in the writings of UINSU Medan students. Based on the research results, it appears that Google Translate significantly contributes to helping students produce writing with more accurate grammar, especially for simple sentences. This is reflected in the majority of participants who agreed that this tool simplifies the translation process and maintains the accuracy of meaning, although it still requires some minor revisions in the final result.

Moreover, regarding the quality of sentence structure, the results show that Google Translate is quite effective in maintaining English grammar rules, especially in simple sentences, although in complex sentences the results are still perceived as stiff and less natural. These findings address the research objectives by providing a clear picture that Google Translate can be a useful tool for students, particularly in completing academic assignments. However, this research also emphasizes that Google Translate is not a perfect tool, as it still requires manual editing to refine the translation results, especially for complex sentence structures. Thus, this research supports the goal of evaluating the influence of Google Translate while also providing an understanding of the strengths and limitations of this tool in an academic context.

The results of this study have both similarities and differences compared to previous research on the use of Google Translate. As with previous findings, this study confirms that Google Translate can help users produce translations more quickly and with sufficient accuracy for simple sentences. This is in line with previous research that shows Google Translate is effective in understanding basic grammatical structures and maintaining the general meaning.

However, this study also found that in complex sentences, the translation results from Google Translate often feel stiff and less natural, and require revision to ensure contextual appropriateness. This expands on the findings of previous studies, which generally focused more on translation speed without thoroughly evaluating the quality of sentence structure in an academic context. Moreover, this study differs from previous research as it was conducted in a local context, specifically among UINSU Medan students, thereby providing a new perspective on how the limitations of this tool affect certain user groups. By comparing these findings, this research adds to the existing literature by providing an in-depth analysis of the aspects of grammatical accuracy and sentence structure quality in the use of Google Translate.

The results of this study indicate that the majority of students find Google Translate very helpful in maintaining grammatical accuracy, especially in simple sentences. This is significant because it reflects that this machine-based translation

tool is capable of reducing basic errors in sentence structure, which is one of the main challenges for writers who are not native English speakers. The relevance of this finding is evident in the academic context, where students often face time constraints and language skills to complete tasks that require quick translation. Google Translate, although not perfect, provides a practical solution that enhances efficiency without completely eliminating user manual control.

However, although Google Translate has the advantage of simplifying the translation process, this finding also highlights its limitations, especially in handling complex sentences. More complex sentence structures often result in translations that are stiff or less natural, thus still requiring revision. This finding is relevant to the role of students as active users who are required to understand the context and meaning of translations critically. This interpretation emphasizes that Google Translate is not a substitute for human linguistic abilities, but rather an effective tool when used wisely. Therefore, it is important to promote digital literacy among students so that they can maximize the benefits of this technology while maintaining accuracy and quality in academic writing.

This research contributes to the development of literature on the use of translation technology in the academic context, particularly Google Translate. These findings expand the theoretical understanding of the effectiveness and limitations of machine translation tools in producing writing with accurate grammar and appropriate sentence structure. Theoretically, this research also underscores the importance of considering contextual factors, such as sentence complexity and user proficiency, in evaluating the translation results from tools like Google Translate. Thus, this research can serve as a foundation for more in-depth studies on the integration of technology in language learning.

Practically, this research provides insights for students, lecturers, and educational institutions on how to optimally utilize Google Translate in academic activities. Students can understand that although Google Translate helps speed up the translation process, the results still require manual revision to ensure accuracy and contextual appropriateness. Lecturers can also use the results of this research to design training or guidelines on the effective use of translation tools, thereby enhancing students' digital literacy. Additionally, educational institutions can consider integrating translation technology learning into the curriculum to help students maximize the benefits of technology in supporting their academic writing skills.

One of the main limitations of this study is the use of data collection methods that are entirely online-based, namely questionnaires and interviews via WhatsApp video calls. Although this approach facilitates access to participants, the limitations of non-verbal communication and the depth of interaction can affect the accuracy of data interpretation, especially in interviews. The absence of face-to-face interaction may make some participants less free to express their views in

depth, so the information obtained may not fully reflect their experiences.

Moreover, the limited number of participants (10 students) can be a limitation in generalizing the research results. These findings are more exploratory in nature and may not fully represent the overall population of UINSU students. The influence of these limitations is that the research results need to be interpreted with caution, especially when trying to relate them to a broader context. Studies with a larger participant scope and combined methods (e.g., observational studies) in the future can provide richer and more valid results to strengthen existing findings.

Future research can expand its scope by involving more participants from diverse backgrounds, such as students from different majors or other institutions, to obtain more representative results and stronger generalizations. Additionally, further research could also employ mixed methods, such as adding an analysis of students' writing before and after using Google Translate, to provide a deeper understanding of its impact on writing quality.

Moreover, further research could explore how students' experiences with using Google Translate change in line with ongoing technological updates or algorithm developments. Examining the effectiveness of this tool compared to other translation platforms could also be an interesting topic to provide broader insights into the best technology choices for supporting language learning and academic writing. Finally, practical suggestions for improving digital literacy and manual revision skills among students could also be a focus to bridge the limitations of automatic translation tools.

In conclusion, this study highlights that the use of Google Translate has a significant impact on the grammatical accuracy and the quality of sentence structure in UINSU students' writing. Although this tool provides ease and efficiency in translation, the results show that translations often require revisions to ensure grammatical accuracy and logical sentence structure, especially in complex sentences. This emphasizes that Google Translate is an effective tool, but it cannot fully replace the user's role in editing and understanding the context of the target language. Thus, the use of Google Translate must be complemented by manual revision skills to produce writing that is correct and meets academic standards. These findings provide important insights for students and educational institutions to wisely utilize technology in supporting academic learning and writing.

## **Conclusion**

This research aims to examine the impact of using Google Translate on the grammatical accuracy and quality of sentence structure in UINSU students' writing. Based on the research results, it can be concluded that although Google Translate can help speed up the translation process, the results still often require revisions to ensure grammatical accuracy and sentence structure that adhere to correct language rules. These results align with the research objective of evaluating the extent to which this tool can assist students in improving the quality of their writing.

Theoretically, this research contributes to the understanding of the role of technology in language learning, especially in the context of machine translation. The research results show that although translation tools like Google Translate provide benefits in simplifying the writing process, students still need manual revision skills to ensure their writing is accurate and natural. Therefore, this research opens up opportunities to develop language learning theories that combine technology and manual skills in the writing process.

In conclusion, this research underscores the importance of balancing the use of technology and manual skills in improving the quality of academic writing. Although Google Translate can help, its use still requires further understanding and editing to ensure the results meet the desired academic standards. This research also provides a foundation for further studies in developing smarter and more effective translation tools to support language learning.

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