



## Google Translate: Strategies to Optimize Its Academic Writing Translation

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### ABSTRACT

Google Translate (GT) has been increasingly used by academics in translating their articles into English. Various translation errors are identified in the results produced by GT, limiting its functionality. Our present research had the objectives to: (1) identify errors produced in Indonesian-English GT translation and, based on the previous results, (2) explore strategies for optimizing Indonesian-English GT translation. This qualitative research, employing the Grounded Theory model, analyzed nine abstract documents (ca. 2100 words). There were 144 errors identified in the Indonesian-English GT translation of our documents, consisting of lexical errors (45%), grammatical errors (43.1%), and excessive wording (11.8%). Twelve strategies for modifying the Indonesian documents were proposed in order to assist GT producing better English documents. The strategies were grouped into Avoid, Maintain, and Enhance categories based on the nature of modification done to the documents. Detailed results are presented, followed by the discussion of how the proposed strategies might affect GT functionality and pedagogical practice.

## INTRODUCTION

It is undisputed that English plays a significant role in international communication, extending to academic sector. Academics conduct various research, gain new knowledge and information as a result, and publish them for others to read and act on. To reach as many readers as possible, they need to find good journals or publishers. These publishers often require the academics to send their submission in English.

Such requirement generates a new challenge for academics with poor to no English proficiency; they have to become English learners. However, they might not have the time to take classes and learn the language in order to reach the minimum

proficiency for producing acceptable documents in English. In addition to time-consuming (Gultom, 2016), various other challenges in English learning classes have been identified. The challenges mainly stem either from the teacher factors (Boy Jon et al., 2021; Nguyen, 2011; Sikki et al., 2013) and the learner factors (Haidara, 2016; Marcellino, 2015; Rahmatunisa, 2014). Due to the number of challenges, the academics turn to translator as a quick solution to their problem instead of improving their English proficiency.

The quality of a translation result is greatly affected by the capabilities of the translator. These include the knowledge regarding the topic, the mastery of both source and target languages, even the physical and psychological states of the translator. Due to these strict requirements, finding quality translators is a hard task and they often charge high fee for their service.

Advancement in technology has brought machine translation, such as Google Translate (GT), into equation of this matter. This technology offers several advantages over its human counterpart, such as quick translation result and wide access to precise vocabulary. It also offers flexibility and relatively cheaper price in its access. However, it does come with its own flaws. Various research have underlined the fact that GT produced various errors in its translation results (Herdawan, 2020; Ismail & Hartono, 2016; Napitupulu, 2017; Sujarwati & Lorenza, 2022). Several other researchers have taken a further step by analyzing the present state of GT-user relationship; the attitude of users towards using GT in general (Maulidiyah, 2019; Murtisari et al., 2019) in light of the existing flaws and how they integrate GT in their learning and writing (Brahmana et al., 2020; Chandra & Yuyun, 2018) in spite of the existing flaws.

The current GT functionality and the ideal condition in which it produces perfect translation are separated by a time gap that no one is certain when it will be resolved. A previous research has revealed that over years GT produced slightly better translation, but new errors emerged as well (Lotz & Van Rensburg, 2014). It underlines that even though the GT development continues to develop a better

Artificial Intelligence (AI) for their system, there is no clear time scale of which GT will be perfected or at least produce acceptable results. This situation presents an opportunity to conduct research that very few academics have done; what users can do to optimize GT translation result.

As mentioned in the previous section, a large number of research have identified errors produced by GT. By further analyzing those errors and their causes, we can devise ways to help GT produces better translation result. A rare discussion of this topic is found in the research by Sun et al., (2022), which explored strategies to optimize translating Chinese abstracts to English by using GT. Some of the proposed strategies were based on differences between the two languages (i.e. structure or vocabulary) and the others were based on specific writing styles (preferred or best avoided). Similar to China, Indonesia is not an English-speaking country. However, the Indonesian-English language differences are unique compared to Chinese-English. In addition, it has been pointed out that the GT works with hundreds of languages and its accuracy in translating different language pairs vary to some extent (Aiken & Balan, 2011). Hence, the previously proposed strategies are not applicable to enhance Indonesian-English GT translation. This research attempted to fill this gap by exploring the strategies that could be useful for academics in translating their documents from Indonesian into English by using GT.

The present research sought to identify and analyze errors in Indonesian-English GT Translation in academic writing. Specifically, it focused on the abstracts as they represent the whole articles. Then, strategies for modifying the Indonesian text were proposed to assist GT in producing better English translation. The following research questions were formulated:

1. What errors are found in Indonesian-English GT abstract translation?
2. What strategies can be used for optimizing Indonesian-English GT abstract translation?

### ***Translation***

The notion of translation has been described and discussed extensively in various research. In general, translation can be defined as the process of transferring ideas from the Source Language (SL) to the Target Language (TL), either in spoken or written form (House, 2014; Prafitasari et al., 2019). In short, translation exists to bridge different languages.

On the surface, translation seems like a superficial textual operation. However, good translation does not only concern with equivalent SL-TL structure, but also the meaning (Malmkajer, 2012). Therefore, a translator is required to have a sufficient mastery in both SL and TL, as well as the necessary knowledge regarding the topic being translated. Moreover, the translator needs to implement the correct translation techniques and strategies in order to produce quality results (Hartono, 2020).

### ***Google Translate***

GT is a machine translation service launched in 2006. It is capable of translating documents in over 130 languages. Compared to human translator, GT offers flexibility in access and produces quicker results. However, there are some drawbacks. In its earlier stage, the system made use of statistical machine translation to perform its tasks. Due to the inherent flaws of the system, the translation results were riddled with various errors (Madnani, 2011). It has since upgraded its system into neural machine translation system in 2016. The new system works better compared to the previous one as less errors were identified in the results (Wu et al., 2016). However, the newer system is not applicable yet to translate all possible language pairs. Despite the limitations and errors it produces, GT is a popular tool used by students and academics.

### ***Translation Error***

Translation problems occur when a translator produces a poor quality translation. The source of problems could stem from the translator failure in transferring the correct SL sentences, phrases, or words into the correct TL version. Both human

and machine translation suffer from this cause of problems. Another cause of translation problems is the inability of a translator in recognizing poor SL sentences, phrases, words or mistyping, leading to poor TL version. This cause of problem is commonly found in machine translation as it does not have the capability of revising the SL document. These two causes of problems lead to translation errors, which are non-equivalencies between SL and TL (Koller, 1979; Rahmatillah, 2016).

There are many kinds of translation error typology used by various researchers. This happens as there is no clear and definitive typology that is universally acceptable. In their research, Salam et al. (2017) classified translation errors into inversion, omission, addition, deviation, and modification categories. Ghasemi & Hashemian (2016) classified their findings into lexico-semantic, tense, preposition, word order, verb group, and voice errors. Cuc (2017) analyzed his findings based on linguistic, comprehension, and translation classifications of errors. Meanwhile, Sun et al. (2022) specifically categorized translation problems produced by GT into grammatical and lexical errors.

## **RESEARCH METHOD**

### ***Data Collection***

This qualitative research collected its data from nine abstract documents (ca. 2100 words) written in Indonesian language. A translation service agency, where one of the authors worked for, provided the documents they had finished translating. As a large quantity of documents were available, the authors set two inclusion criteria in selecting the documents. The first criteria was the documents were publication-ready, discarding low quality ones unworthy of publication. The second criteria was the documents were written with the topic of education. The topic selection was based on the fact that two out of three authors of this research came from education background. It ensured that the education-specific terminologies can be checked accurately and the general idea of each document could be understood properly. Prior to data analysis, the documents were translated into English by using GT.

### ***Data Analysis***

The three authors of this research were involved in the data analysis. Author 1 had a master degree in English education, with over 6 years of working in translation service. Author 2 also had master degree in English education. Both Author 1 and Author 2 taught English and Bahasa Indonesia subjects in their institution. These two authors were responsible for analyzing the data. Author 3 had the experience and knowledge of research design and provided the template and guidance of which the research data were analyzed.

In answering the first research question, a descriptive qualitative analysis was conducted. Author 1 and Author 2 scanned the Indonesian-English GT translation results for problems in the form of errors and unnatural wordings. The results were then tabulated and classified based on the typology invented by Sun et al. (2022): grammatical and lexical errors. Their typology was used in this research as the system was designed to classify errors produced by GT, similar to what this research attempted to.

In order to answer the second research question, a grounded theory analysis was conducted. The already-classified GT errors were analyzed further. Author 1 took the first stage of analysis by identifying every source of GT translation errors. The original sentences containing the source of errors were then subjected to modification in attempt to assist GT in producing better English translation result. Once the whole nine documents underwent the process, the analysis proceeded by implementing the Grounded Theory model by (Glaser & Strauss, 2017) to categorize the modifications. The data analysis went through three steps: open coding, axial coding, and selective coding. Author 1 and Author 2 created the initial open coding system by providing explanation for each modification. After that, the axial coding step took place for grouping the codes based on the similarities in modification. This stage produced 12 modification strategies. These strategies were grouped further in the selective coding step to draw the general theme of the modifications. This final step produced three types of strategies.

## FINDING AND DISCUSSION

### *GT Translation Errors*

In total, there were 144 translation errors identified from the Indonesian-English GT translation. There were 65 (45%) lexical errors and 62 (43.1%) grammatical errors. An additional category emerged in our research, the excessive wording category (11.8%). An example of this problem is presented in Table 1.

Table 1. Excessive Wording

IND (Original)	ENG (Original)
Metode yang digunakan dalam penelitian ini adalah metode kuantitatif. Analisis yang digunakan dalam penelitian ini adalah analisis regresi linier berganda.	The method used in this research is a quantitative method. The analysis used in this study is multiple linear regression analysis.

This category referred to phrases or sentences that were grammatically and semantically correct its Indonesian wording. However, the phrases or sentences sounded unnatural and excessive in its English wording due to containing multiple similar words that could be omitted. In addition, the translated documents were abstracts, which must be precise and concise. A good translator would notice this and provide an alternative shorter sentence. The summary of identified errors is presented in Table 2.

Table 2. GT Translation Errors

No	Errors	Type	Total (%)
1	Lexical Error	a. Untranslated Word	26 (18)
		b. Literal/Uncontextual Word	38 (26.3)
		c. Missing Word	1 (0.7)
2	Grammatical Error	a. Singular/Plural Mismatch	10 (7)
		b. Problematic Word Order	21 (14.6)
		c. Tense Error	24 (16.6)
		d. S-V Disagreement	7 (4.9)
3	Excessive Wording		17 (11.8)
	Total		144 (100)

***Strategies for Optimizing Indonesian-English GT Translation***

The authors proposed 12 strategies in modifying Indonesian abstract documents in order to assist GT producing better English translation. Of the identified 144 translation errors, 142 (98%) of them were resolved by these strategies. The other two errors were resolved without applying any strategy. It showed that correcting a part of sentence might simultaneously correct the other parts.

Table 3. Strategies for Optimizing GT Translation

Type	Strategy
Avoid	Avoid the use of word “yaitu”
	Avoid nominal sentence with repetitive words
Maintain	Use complete sentence
	Provide each noun phrase with its own noun
	Use the correct writing mechanics
	Chunk long phrases into shorter ones
Enhance	Use concise, unambiguous, and academically appropriate vocabulary
	Use quantifiers to specifically introduce plural and singular nouns
	Borrow time marker for sentences intended to state past events
	Use passive voice and omit the sentence object when possible
	Use English version directly for local or specific terms
	Use words (instead of Roman numerals) to show grades

*Strategy 1: Avoid the Use of Word “yaitu”*

The word yaitu literally translates into namely. While namely is rarely used in English, yaitu is frequently used in Indonesian to provide further information, even several times in a sentence. As presented in Table 4, GT performed literal translation and the word namely appeared as many times in English version as the word yaitu in Indonesian version. This was repetitive and unnecessary. By avoiding yaitu and using other writing style, such as using colon or parentheses, a simpler and non-repetitive sentence was produced. Seven (4.8%) errors were resolved by using this strategy.

Table 4. Strategy 1

IND (Original)	ENG (Original)	IND (Modified)	ENG (Modified)
...kualitas keterampilan argumentasi ilmiah siswa cenderung pada level 3 yaitu 28,5%	...the quality of students' scientific argumentation skills tends to be at level 3	...kualitas keterampilan argumentasi ilmiah siswa cenderung pada	...the quality of students' scientific argumentation skills tends to be at level 3



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dan level 4 yaitu namely 28.5% and level 3 (28,5%) dan (28.5%) and level 4  
 67,7%. level 4 namely 67.7%. level 4 (67,7%). (67.7%).

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*Strategy 2: Avoid Nominal Sentence with Repetitive Words*

Making a statement in a roundabout manner seems to be culturally-embedded writing style in Indonesian writers. An example of this case is presented in Table 5. The kind of sentence “Jenis penelitian yang digunakan adalah penelitian tindakan kelas yang dilakukan dalam 2 siklus” is acceptable and commonly found in Indonesian abstracts. Two penelitian words were present in the sentence. This is because the sentence was in nominal form, in which the word adalah (the equivalent of to-be in English) required repetition of the noun present in the Subject. When translated into English, it resulted in excessive wording. By avoiding to use adalah and restructuring the sentence into verbal form, unnecessary words could be removed. The result was a sentence with less words yet more concise. Of the 144 errors, 11 (7.6%) were resolved by using this strategy.

Table 5. Strategy 2

IND (Original)	ENG (Original)	IND (Modified)	ENG (Modified)
Jenis <i>penelitian</i> yang digunakan adalah <i>penelitian tindakan kelas</i> yang dilakukan dalam 2 siklus.	The type of <i>research</i> used was classroom action <i>research</i> conducted in 2 cycles.	Penelitian tindakan kelas ini dilakukan dalam 2 siklus.	This classroom action research was conducted in 2 cycles.

*Strategy 3: Use Complete Sentence*

Indonesian and English languages share several similarities, one of which is the sentence structure. Therefore, a missing component in a sentence (such as Subject or Verb) will hinder the translation process and produce unacceptable result. Table 6 presents an example in which a clause was missing its Subject (...karena [missing Subject] harus beradaptasi dengan...). GT then assigned the pronoun they as its Subject, which was incorrect given the context. By providing the correct Subject

(kita), an acceptable translation result was produced. There were nine (6.2%) problems resolved by implementing this strategy.

Table 6. Strategy 3

IND (Original)	ENG (Original)	IND (Modified)	ENG (Modified)
Hal ini menyebabkan tatanan kehidupan yang normal menjadi berubah karena harus beradaptasi dengan sistem kerja yang baru.	This causes the normal order of life to change because <i>they</i> have to adapt to the new work system.	Hal ini menyebabkan tatanan kehidupan yang normal menjadi berubah karena <i>kita</i> harus beradaptasi dengan sistem kerja yang baru.	This causes the normal order of life to change because <i>we</i> must adapt to the new work system.

*Strategy 4: Provide Each Noun Phrase with Its Own Noun*

Clarity in the original text is paramount for better GT translation. When there are two or more noun phrases have the same head nouns, a writer should not omit one of the head nouns for the sake of simplicity. As shown in Table 7, there were two instruments used in the research (angket GLS dan angket minat baca). However, the writer omitted the word angket from the second noun phrase (angket GLS dan minat baca). Such wording was comprehensible in Indonesian, but it led to GT correctly translating only one instrument, with the second instrument translation made no sense. Reinstalling the noun prevented this problem. This strategy managed to solve 4 (2.8%) of identified GT translation errors.

Table 7. Strategy 4

IND (Original)	ENG (Original)	IND (Modified)	ENG (Modified)
Instrument penelitian yang digunakan adalah angket GLS dan minat baca siswa.	The research instrument used was the GLS questionnaire and students' reading interest.	Dua instrument penelitian yang digunakan adalah <i>angket GLS</i> dan <i>angket minat baca siswa</i> .	The two research instruments used were the <i>GLS questionnaire</i> and the <i>students' reading interest questionnaire</i> .

*Strategy 5: Use Correct Writing Mechanics*

Unlike human translators, GT could not correct typographical errors. The word r-hituing had an extra letter in it (Table 8). This simple error made the word unrecognizable for GT and it considered the word as non-existent in its database. The word appeared untranslated in the English version. The authors simply corrected the error and the correct translation was produced. There were four (2.8%)

similar errors and all of them were resolved by simply providing the correct spelling or punctuation.

Table 8. Strategy 5

IND (Original)	ENG (Original)	IND (Modified)	ENG (Modified)
Hasil penelitian melalui kalkulasi rumus korelasi <i>Product moment</i> diperoleh sebesar 0,196....	The results of the study through the calculation of the product moment correlation formula obtained a <i>rhitung</i> of 0.196...	Hasil kalkulasi <i>Product moment</i> memperoleh <i>r-hitung</i> sebesar 0,196...	Product moment calculation results obtained <i>r-count</i> of 0.196...

*Strategy 6: Chunk Long Phrases into Shorter Ones*

GT has been notoriously known to struggle in translating longer phrases. The longer the phrase is the higher chance GT translates it in incorrect word ordering. Table 9 presents an example of this problem, in which the phrase "...kinerja guru MI Murni Sunan Drajat Lamongan..." was translated into "...the Performance of MI Murni Sunan Drajat Lamongan Teachers..." This was a grammatically correct translation. However, there was a subtext element that the emphasis of the phrase rested on kinerja guru (the research variables were work-life balance, motivasi kerja, and kinerja guru). Thus, the word teacher should not be put at the end of the phrase. The authors inserted the preposition *di* between kinerja guru and the rest of the phrase. Therefore, a better translation was produced by GT. In total, there were 15 (10.4%) errors resolved by using this strategy.

Table 9. Strategy 6

IND (Original)	ENG (Original)	IND (Modified)	ENG (Modified)
Pengaruh Work-Life Balance dan Motivasi Kerja terhadap Kinerja Guru MI Murni Sunan Drajat Lamongan di Masa Pandemi	The Effect of Work-Life Balance and Work Motivation on the Performance of MI Murni Sunan Drajat Lamongan Teachers in the Pandemic Period	Pengaruh Work-Life Balance dan Motivasi Kerja Terhadap Kinerja Guru <i>di</i> the Islamic Elementary School of Murni Sunan Drajat Lamongan di Masa Pandemi	The Effect of Work-Life Balance and Work Motivation on <i>Teacher Performance</i> at the Islamic Elementary School of Murni Sunan Drajat Lamongan during the Pandemic

*Strategy 7: Use Concise, Unambiguous, and Academically Appropriate Vocabulary*

Poorly chosen words create problems not only for writing in general, but also GT translation. As an example presented in Table 10, the phrase "...harus diperhatikan" wanted to tell that kehidupan pribadi was important, albeit it did not state the idea in a straight-forward wording. The GT translation result "...must be considered" had a slightly deviated meaning as the phrase lacked the urgency compared to its Indonesian version. By replacing the ambiguous phrase with the word penting (important), the authors avoided the trouble of dealing with this sub-standard GT translation. There were 22 (15.2%) errors resolved by using this strategy.

Table 10. Strategy 7

IND (Original)	ENG (Original)	IND (Modified)	ENG (Modified)
Selain bekerja, para guru juga memiliki kehidupan pribadi yang harus diperhatikan.	Besides work, teachers also have personal lives that must be considered.	Selain bekerja, para guru juga memiliki kehidupan pribadi yang <i>juga penting</i> .	Besides work, teachers also have personal lives which are also <i>important</i> .

*Strategy 8: Use Quantifiers to Specifically Introduce Plural and Singular Nouns*

In Indonesian language, whether a noun is singular or plural does not alter its form. Hence, it is quite common to omit any quantifiers before a noun, especially if such information has been previously stated. However, it matters in English as it can change other words in the same sentence. Table 11 presents an example in which "...guru dan siswa..." was translated to "...teachers and students..." This was incorrect as a previous information in the discourse had revealed that there was only one teacher. As GT did not recognize context, it randomly assigned plural or singular status to any nouns with no quantifier. To avoid this, the authors provided the correct quantifiers for each noun (...seorang guru dan para siswa"). There were few problems of this type (2, 1.4%). All of them were resolved by implementing this strategy.

Table 11. Strategy 8

IND (Original)	ENG (Original)	IND (Modified)	ENG (Modified)
Subjek pada penelitian ini adalah guru dan siswa kelas IV SD Negeri 45 Kota Bengkulu	The subjects in this study were teachers and students of class IV at SD Negeri 45 Bengkulu City	Subjek pada penelitian ini adalah <i>seorang guru dan para siswa</i> kelas empat di the State Elementary School 45 of Bengkulu	The subjects in this study were <i>a teacher</i> and fourth grade <i>students</i> at the State Elementary School 45 of Bengkulu

*Strategy 9: Borrow Time Marker for Sentences Intended to State Past Events*

GT could not recognize context and this statement could not be stressed enough. When no time marker is present in a sentence, GT often translates it in present tense. This is unacceptable as typical academic articles also use other tenses (mainly past tense) in several sections (i.e. methods and findings). In Table 12, the original sentence was translated into present tense as there was no time marker. *Kemarin* was borrowed and put at the beginning of the sentence to inform GT that the sentence was in past context. The strategy was successful as GT translated the sentence in the correct tense. The translated time marker was then removed from the result. In total, there were 20 (14%) similar errors resolved by implementing this borrow-then-remove strategy.

Table 12. Strategy 9

IND (Original)	ENG (Original)	IND (Modified)	ENG (Modified)
Penelitian ini menggunakan model ADDIE.	This study uses the ADDIE model.	<i>Kemarin</i> , penelitian ini menggunakan model ADDIE.	<del><i>Yesterday</i></del> , this study used the ADDIE model.

*Strategy 10: Use Passive Voice and Omit the Sentence Object When Possible*

As stated in strategy 8 section, GT could not provide 100% accurate singular or plural noun translation unless there was a clear quantifier. In this case (Table 13), GT translated the noun *peneliti* as plural. A previous information in the text had shown that there was only one researcher. Putting the quantifier *seorang* would make the sentence sounded unnatural, even though it would assist GT in recognizing that the noun was singular. As an alternative, the sentence structure was switched from active voice into passive voice. Then, the problematic noun

(now as the sentence Object) was removed entirely. The strategy worked as the sentence did not require the information regarding who did the tests. There were 2 (1.4%) problems dealt by using this strategy. This strategy should be implemented only if the removed Object would not make the sentence losing important information.

Table 13. Strategy 10

IND (Original)	ENG (Original)	IND (Modified)	ENG (Modified)
Peneliti juga melakukan uji validitas dan reliabilitas pada ketiga skala tersebut.	Researchers also tested the validity and reliability on the three scales.	Uji validitas dan reliabilitas diterapkan pada ketiga skala tersebut.	Validity and reliability tests were applied to the three scales.

*Strategy 11: Use English Version Directly for Institutions, Titles, or Terminologies*

GT made use of Neural Machine Translation and Translate Community for its database. When both methods failed to recognize certain words, literal translation was performed. Table 14 shows that GT failed to recognize Gerakan Literasi Sekolah (local terminology) and SD Gugus 1 Kota Bengkulu (local institution). The two terminologies were not in GT database. As a result, non-standard translation was produced. The authors handled these by directly providing the official terminology (School Literacy Initiative) or the preferred wording (Elementary School Gugus 1 of Bengkulu). There were 36 (25%) similar cases resolved by implementing this strategy.

Table 14. Strategy 11

IND (Original)	ENG (Original)	IND (Modified)	ENG (Modified)
Hubungan Gerakan Literasi (GLS) dengan Minat Baca Siswa Kelas V SD Gugus 1 Kota Bengkulu	The Relationship Between The <i>School Literacy Movement</i> (GLS) with The Reading Interest Of Students In Class V <i>SD Gugus 1 Bengkulu City</i>	Korelasi antara “School Literacy Initiative” dengan Minat Baca Siswa Kelas Lima di the Elementary School Gugus 1 of Bengkulu City	Correlation between “ <i>School Literacy Initiative</i> ” and Fifth Grade Students' Reading Interest at <i>the Elementary School Gugus 1 of Bengkulu City</i>

*Strategy 12: Use Words (instead of Roman Numerals) to Show Grades*

When GT does not recognize a word, it will translate the word as it is. Indonesian education system usually uses Roman numerals in stating grades, English system usually uses words. To make the translation works, the Roman numerals in Indonesian should be replaced with words (Table 15). By doing this, the authors handled 10 (7%) GT translation errors.

Table 15. Strategy 12

IND (Original)	ENG (Original)	IND (Modified)	ENG (Modified)
... dan kemampuan pemecahan masalah siswa kelas V SDN 05 Kota Bengkulu.	... and problem solving ability of V class students at SDN 05 Bengkulu City	... dan kemampuan pemecahan masalah siswa kelas lima di the State Elementary School 05 of Bengkulu.	... and problem solving ability of <i>fifth grade students</i> at the State Elementary School 05 of Bengkulu.

**Discussion**

*GT Translation Errors*

Confirming previous research, the present one proves that GT limitations in Indonesian-English translation are still there. It mainly has difficulties recognizing context, leading to various translation problems. An exact same Indonesian word, but in different sentence, might be translated into different English words (Herdawan, 2020), showing inconsistency and lack of accuracy. When no time marker is present in the sentence, GT might translate it into incorrect tense (Sujarwati & Lorenza, 2022). Overly long phrase might lead them to being incorrectly arranged in the translation results (Napitupulu, 2017). Unrecognized words, either new or misspelled, will be untranslated by GT (Ismail & Hartono, 2016). The list of problems goes on. It shows that in its 17 years of service, GT still needs further improvement before achieving problem-free translation results through its own effort.

In addition, we propose a new category of problem in the English documents: excessive wording. This happens when an idea is delivered in an unnecessarily

prolonged sentence. A previous research by Pratiwi et al. (2022) revealed that Indonesian academics showed the tendency to use longer and higher number of sentences in writing their articles. The research also mentioned that the finding was especially true for novice writers who submitted their articles in national journals, as was the case of articles whose abstracts were used in this research. It might be because those writers let their Indonesian culture of roundabout manner influences their writing. Another possible explanation is that they thought longer article were academically better compared to shorter ones.

There are two main factors of GT translation problems. The first one is the original text has poor writing. Academics are responsible for their articles, both the ideas and the way the ideas are delivered. This includes sentence structure and writing mechanics. This is important as GT needs the correct Indonesian sentence structure and words in its attempt to produce the correct English version. Missing or misspelled words lead to GT unable to process the document correctly. To mitigate this, the original documents should be subjected to proofreading prior to performing GT translation.

The second factor underlines the fact that GT system is imperfect. Even if the original documents have been proofread, problems will still occur. To mitigate this, users can make use of the Google Translate Community section. This section allows users to contribute in the development of GT, such as providing the correct translation for specific terminologies or adding new vocabulary. The proposed translation will be reviewed by GT before being implemented in its processing system. When the translation is confirmed, future documents containing those words will be correctly translated.

#### *Improved GT Functionality*

Compared to human translators, GT has several advantages. It is capable of producing translation result significantly quicker. Moreover, GT can access the entire vocabulary (provided they are not unrecognized words) of various languages, compared to knowledge-dependent vocabulary that human translators have access



to. However, the aforementioned GT limitations consequently narrow its functionality, with various research pointing out that many GT users only use it as a dictionary for checking word by word translation (Brahmana et al., 2020) or spelling and pronunciation (Chandra & Yuyun, 2018).

The twelve strategies proposed in this research can assist GT become a more reliable Indonesian-English translator. These strategies suggest to modify the original text into phrases or sentences in which GT recognizes better, subsequently producing better translation. The Maintain category (three strategies) requires good mastery in Indonesian language structure and mechanics in order to produce complete sentence. The Avoid (two strategies) and Enhance (seven strategies) categories have additional requirements in the form of good Indonesian vocabulary mastery and writing creativity. A wide knowledge of Indonesian vocabulary will help in finding the correct word in the correct context. In addition, good writing creativity will help when restructuring a sentence or phrase is necessary.

It should be noted that the strategies do not resolve 100% of GT translation problems. Nevertheless, they serve as one of the alternatives for Indonesian academics in producing articles written in English. Compared to hiring human translator (requiring fund) or improving their English mastery (requiring time), these strategies provide a more feasible solution.

#### *Pedagogical Implications*

In teaching, this development might alter the way teaching learning process takes place in the classroom, especially in English academic writing classes for Indonesian learners. These classes have the objectives that learners are capable of producing acceptable writing (Irvin, 2010). With the assistance of the strategies, GT can handle the grammar and vocabulary aspects more accurately. Therefore, less emphasis can be given to those aspects, allowing more time for learners to deal with the context of academic writing (such as methods and results that should be delivered in past tenses), skipping the need for them to master those tenses in depth.

The findings might also bring some changes in Indonesian language classes. It is pointed here that better mastery in Indonesian language could facilitate in producing better English translation using GT. Therefore, empowerment classes for Indonesian language mastery can be assigned for learners. Currently, Indonesian language is considered as a general course in college curriculum, but Indonesian study program, with limited time allotment. Hence, more course credits should be allocated for this important subject, or at least bigger emphasis should be given to Indonesian writing skill in its curriculum set up.

## **CONCLUSION**

In conclusion, Indonesian-English Google Translate (GT) translations exhibit errors such as inconsistency, tense inaccuracies, and issues with phrase arrangement. Untranslated words, compounded by excessive wording in English documents also pose challenges. Strategies for optimization include proofreading, active participation in the Google Translate Community Section, and implementing the proposed twelve strategies emphasizing language mastery and creativity. Acknowledging GT's imperfections, these strategies offer pragmatic solutions for Indonesian academics, presenting a viable alternative to traditional translation methods. The findings also have pedagogical implications, suggesting a shift in focus towards contextual aspects in English academic writing classes, and advocating for enhanced Indonesian language mastery in broader education curricula.

This research had several limitations that should be addressed in future research.

1. The documents were of Education field. Thus, the exact strategies might not be applicable to other fields. Therefore, further research examining strategies for other fields (such as laws, economics, politics, physics, etc.) are necessary. To another extent, further research on different type of writing (such as narrative or descriptive writing) might be useful for different kind of writers.

2. The effectiveness of proposed strategies should be tested inferentially whether the implementation of said strategies could produce significantly better GT translation.
3. Different learners might use the strategies to different extents. For instance, some of the proposed strategies rely heavily on the writer's mastery of Indonesian language. It should be examined further how big of an impact one's Indonesian language mastery on the result of English GT translation. Another example is that learners have different perception on the use of GT in assisting them with their writing. The correlation between the two variables might provide better insight regarding who should be using these strategies.

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