

The use of machine translation services in writing

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ABSTRACT

This study aims to find out about the use of machine translation in academic writing courses by students and whether machine translation has a vital role in students' writing in academic writing. The subjects of this study are students who are majoring in English education and have taken Academic Writing in semester 6. The research data was collected by face-to-face semi-structured interviews. In this study, Machine Translation plays an important role in student writing. Their status of not being a native speaker is the reason why machine translation is used continuously. The majority of them said that without machine translation, they were not confident in their writing.

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1. Introduction

With the rapid development of technology, many things have emerged that make it easier for humans in almost all aspects of life. Nowadays, people can search for something quickly through a browser by simply typing keywords. This also applies in the field of translation; technology development presents a translation machine that anyone can access easily, either from a browser or an application. Unlike looking up the meaning of a word through a dictionary that requires us to search one by one, with a machine translator, we only need to mention the desired word, and the meaning of the word will appear not only in one language but almost covering all languages in the world.

Sinhal and Gupta (2014) stated that machine translation is a sub-field of computational linguistics investigating software for translating text. It is also supported by Mahardika (2017), and it aims to help people translate one language (source language) into another language (target language). Along with the development of the times, people prefer something that can be used efficiently and quickly. The need for foreign languages, especially English, is also considered increasingly vital for us to learn, considering that we live in an era of widespread communication between languages. This makes machine translation increasingly in demand and used by translators and the wider community. Students are also not spared by this phenomenon of using machine translation. As students need media to translate foreign languages into native languages and vice versa, machine translation is used as one of the media used daily. Today's technological developments require every learning and teaching activity to utilize technology for both inside and outside the classroom. Some examples of using technology to support learning and teaching activities are language learning applications, English-language learning YouTube channels, and online language translation machines (Gumartifa et al., 2022)

Alhaisoni and Alhaysony (2017) mentioned that language learners used to consult dictionaries to learn the meanings of unfamiliar words in their chosen language. Traditional dictionaries take time to consult, and L2 learners may struggle to grasp the meaning of the English language. Afzal (2019) also

stated that a dictionary is tricky for those unfamiliar with the technology. Besides, the dictionary has implementation practice, especially for non-native English students.

Machine Translation is also used by students who are the subject of this study. Almost all students that are subjects of this study use machine translation as a medium that helps in translation. More precisely, machine translation is used to help students find the meaning of a word or sentence or to help students find the right word according to the context. With this in mind, a study was made to learn more about the use of Machine Translation and the effects felt based on the user's experience.

Machine translation is a subfield of computational linguistics that studies using software to translate text or voice from one natural language to another (Al-Tuwayrish, 2016). Machine translation has many uses; one of the primary uses of machine translation is as a translation tool from one language to the destination language. According to Marito and Ashari (2017), Machine Translation become an alternative to knowing the meaning of a foreign language. In addition, Machine Translation is also used to check the use of grammar and proper sentence structure that adapts to the English language. According to Tsai (2019), EFL students generally cannot write like native authors because their native language strongly influences their writing. Due to this concern, students are often motivated to utilize machine translation (MT) to assist them in the writing process when given writing assignments.

As a medium used by various groups, machine translation has several positive and negative effects on users. According to Fitriani et al. (2021), some of the positive impacts of machine translation include saving time due to its efficient use, its use to increase vocabulary, and its use as a grammar checker. Based on the statement of Amin et al. (2023), machine translation also dramatically impacts the confidence, convenience, motivation, and time efficiency of graduate students completing their thesis. Machine translation is also very accessible, making it practical and efficient.

However, translation machines also experience negative impacts felt by users. The negative impacts cause interdependency, making understudies ineffective to open word reference to seek other sources of information, sluggish to double-check interpretation, and ultimately harming students' writing skills (Fitriani et al., 2021).

Writing is one of the productive English skills that students studying English as a Foreign Language (EFL) in Indonesia need to master for academic writing and communication purposes, such as letters, essays, communications, articles, journals, project reports, theses, etc. It asserted that writing is vital in language production used for the global mediation of knowledge (Fareed et al., 2016). Writing is one of the most essential language skills in a person's life. The benefits of writing are as follows: (1) writing can be used to develop initiative and creative power. In connection with mechanical elements such as language, spelling, and punctuation, it must also be supported by elements of creativity that cannot be separated from the ability to think about crises, namely the ability to take the initiative and the ability to create new things. (2) writing can also contribute to intelligence (Mariana et al., 2018).

The researcher found several previous studies related to the research to be carried out. This is done to support and strengthen research. First, the research by Lee (2019) from the School of Global Communication, Kyung Hee University, Yongin, South Korea, titled "The impact of using machine translation on EFL students' writing." This study investigated the role of MT as a CALL tool in EFL writing. Lee employed a different design with students translating their L1 writing into L2 without the help of MT and then correcting their L2 writing using the MT translation for comparison. Text analysis of students' writing outcomes revealed that MT helped to decrease lexico-grammatical errors and improve student revisions. Using MT for revisions also positively affected student writing strategies and helped them think of writing as a process. The interviews and reflection papers demonstrated that students viewed MT during writing positively. This study found that MT can be a valuable aid to language learning. However, teachers must know its limitations and provide adequate guidance to benefit student learning. This study used a mixed method, which included quantitative and qualitative data analysis; students were tasked with writing about texting in the language of today's youth and then continued with interviews one by one. Based on this research, it was found that students face difficulties in using translation machines.

The second is research titled "EFL Students' Perception About Machine Translation" by Marito & Ashari (2017). Based on the research, the effects of using Machine Translation were three: positive,

negative, and no effects. On the positive side, it focused on the practiceness. They can get a general description of the meaning of a word; they just need to understand context. Machine Translation makes them confused because sometimes the grammar and structure differ from what they knew, making them confused when deciding the correct one. Besides this, Machine Translation made them lazier in open dictionaries. This dependence made them too lazy to memorize new words. Furthermore, the last was no effect, but the researcher is doubtful of this answer; their unawareness of the research may have caused it. It gave two different answers: yes and no. Machine translation can reduce learning interest. The researchers used a descriptive qualitative method and a questionnaire as a g-form to collect data.

The third research is by Chung & Ahn (2019), titled *The Effects of Using Machine Translation on Linguistic Features in L2 Writing Across Proficiency Levels and Text Genres*. This study examines how learners' use of MT affects L2 writing complexity, accuracy, lexical complexity, and fluency (CALF) through assessment by human raters and automated computer tools. It investigates whether it has a significant impact. In addition, this study also investigated whether skill level and text genre influence learners' use of MT.

The study compared students' writing with or without MT assistance. From the results, the text analysis of the student's writing showed a significant improvement in accuracy but no clear benefit in syntactic and lexical complexity. It was also found that using MT provides different advantages and disadvantages depending on the proficiency level (high vs. low) and text genre (narrative vs. argumentative). Survey responses strongly indicated that students were delighted with MT and planned to use it again even though they realized its limitations. Overall, this study found that MT can improve accuracy but must be used carefully to benefit other aspects of L2 writing.

The fourth study is by Wirantaka and Fijanah (2022) they were titled *The Effective Use of Google Translation in Writing*. This points to examining teachers' recognition of the compelling utilization of Google Decipher (GT) in students' composing learning. This ponder utilized a subjective approach, notably a graphic subjective plan. The members of this ponder were six instructors within the English Instruction division of a private college in Yogyakarta. The information collection method utilized was met. This consideration uncovered that the instructors found GT viable to be utilized by the understudies in their composing exercises. In expansion, the instructors expressed the benefits of GT, explicitly making a difference to understudies in finding data about English, expanding students' lexicon and its utilization, being a spell checker, being an elocution checker, and being a linguistic use arrangement. In expansion, this ponder found four techniques for compelling utilization of GT, specifically: pre-editing, altering, single-word interpretation, and, as it was, utilizing GT for checking. These discoveries infer that GT is advantageous in students' composing, and they ought to use it successfully.

Some studies that have been described focus on students' writing skills, the same as the research that will be conducted. The difference is in the writing category itself. This research was conducted by making the Academic Writing course a place for researchers to conduct research. Some of the research above shows the advantages and disadvantages of machine translation in the field of writing. It is of concern to the researcher whether there are similar opinions regarding the use of machine translation in academic writing.

To find out about the effects of using Machine Translation based on user experience and the relationship with students' writing skills, the problem is formulated into several, namely:

- a. What kinds of machine translation are used by sixth-semester students of English education study programs at Universitas Ahmad Dahlan Yogyakarta?
- b. What are the roles of machine translation in students' writing?
- c. What kind of impacts were experienced by the students after using the machine translation?

This research is significant because it discusses translation machines that various groups, especially students, increasingly use—considering how important it is to understand the impact of translation machines on students' writing skills so that students can utilize them appropriately. In this case, the researcher is aware of the dependence on media expected to help the writing process. With that, this research is expected to provide another point of view regarding the existence of translation machines as a medium to assist writing. Like a double-edged knife, machine translation can help support writing skills or weaken writing skills because of the thought of helplessness within. This

research contributes to the literature that may be useful for other authors as a reference. This research will also explain the potential benefits and risks of using machine translation on students' writing skills and can be used as a guideline for using machine translation.

2. Method

This research used a descriptive qualitative method. The research subjects were five of sixth-semester students of the Writing in Academic Context B class at the English Education Study Program of Universitas Ahmad Dahlan Yogyakarta, with a total of five students. Data collection used semi-structured interview techniques. The researcher used an interview instrument with 12 questions to conduct the research. Before the data was processed, the researcher gave the transcript to the subject so that the veracity of the data could be confirmed. The data were analyzed using qualitative data analysis of Miles and Huberman's interactive model (Yuana, 2016). The results of the audio interviews went through a manual transcribing process. The interview transcripts were then processed using the coding method to clarify the subject's answers in the interview.

3. Findings and Discussion

3.1. Findings

This research aimed to describe the use of machine translation services in writing in class B of the Academic Writing Class in the sixth semester at Universitas Ahmad Dahlan Yogyakarta. To achieve the aim of this research, the researcher took all steps to collect the data, using interviews as a data collection method.

The subject of this research was sixth-semester students of Writing in Academic Context class B in the English Education Study Program, Universitas Ahmad Dahlan Yogyakarta. With a total of six students. From the results obtained through interviews, all participating students had various opinions about using machine translation services in writing. The following data were obtained:

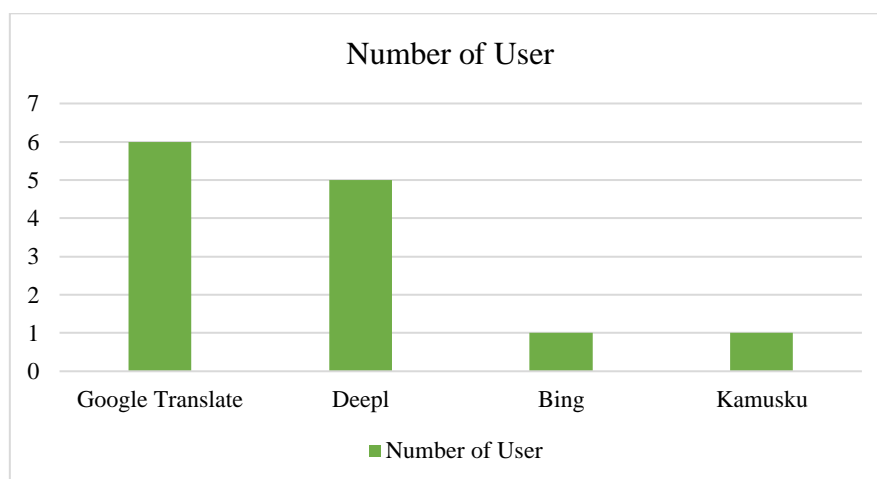


Fig. 1. Numbers of User

1. The kinds of machine translation are used by sixth-semester students of English education study programs at Universitas Ahmad Dahlan Yogyakarta

The data above is a diagram of the number of users of translation machines from various brands. Google Translate, Deepl, Bing, and Kamusku are among them. In addition to the brands already mentioned, Yandex was also used by one of the participants. However, because the frequency of use was too low and the relevance to the data was small, Yandex was not included in Figure 1. From Figure 1, the description of the translation machine will be explained one by one according to the data from the participants. The description will be adjusted to the formulation of the study. The following is a description of each product starting from the quantity of users and application performance.

a. Google Translate

Google Translate has the most users according to the diagram above as many as 6 users or it can be concluded that all participants have used Google Translate. Google Translate is an application that many participants knew even before entering university. 2 out of 6 participants have used Google Translate since school and continued until entering college. While the rest used Google Translate since the first semester of college.

The reason the participants chose to use Google Translate was because at that time they only knew one brand of translation machine, Google Translate itself. So they had no other choice but to use the brand. From the research subjects who used Google Translate as a medium in helping their writing process, here are the advantages and disadvantages of Google Translate.

1) Advantages of Google Translate

- a) Google Translate can be accessed easily through the web. An app version is also available to make it easier for participants so that they do not need to access it via the web.
- b) Google Translate helps in finding the meaning of a word that the user thinks looks foreign or difficult words.
- c) Using Google Translate saves time in the process of writing or doing assignments. Unlike using a dictionary that must be interpreted one by one. Machine translation can translate many sentences or even paragraphs at once
- d) There is no limit to the number of words in the translation column. This makes it easier for participants if they want to translate in large quantities.

2) Disadvantages of Google Translate

Here are some of the disadvantages of Google Translate according to the participants. The weaknesses mentioned are the participants' reviews after using Google Translate for different lengths of time.

- a) The sentence structure of the translation still needs improvement.
- b) The result lacks accuracy in terms of grammar.
- c) The translation results are sometimes inaccurate, especially if the text has double meanings.
- d) Google Translate has limitations in translating contemporary vocabulary.
- e) The language style produced by Google Translate seems rigid and not flexible, unlike human translation.

b. DeepL

The DeepL application is in second place with the most users according to the diagram above. Of the 6 participants, 5 participants participated in using the DeepL application. One of the participants used DeepL since semester 3, another one used it since semester 4, while the other participant used it since semester 6. The participants admitted to using DeepL to help them in courses related to writing skills, one of which was a course in semester 6, namely Academic Writing.

The participants claimed that DeepL's performance was better when compared to Google Translate. That is why participants who have used DeepL, no longer use Google Translate or rarely use it. Apart from the more varied features, the participants said that DeepL's translation results are better and proper than Google Translate. Here are the advantages and disadvantages of DeepL according to the participants:

1) Advantages of DeepL:

- a) Unlike using a dictionary that must be interpreted one by one. Machine translation can translate many sentences or even paragraphs at once. So the time used is more concise when compared to opening a dictionary.

- b) It has a sentence variation feature that helps participants choose sentences according to the right context.
 - c) DeepL produces more accurate translation results when compared to other apps by structure.
 - d) Grammatical errors are minimal when compared to other applications.
 - e) It can be accessed through the web or the application. So it is easily accessible to participants.
 - f) DeepL provides a variety of features for both free and premium users. This makes it easier for users who want to enjoy more complete features.
- 2) Disadvantages of DeepL
- a) Sometimes the translation results are not always accurate and require participants to double-check.
 - b) There is a word count limit (5000 words) for free users.
 - c) There is a limit on the use of the translation feature in a day in one account. So if the participant has reached the limit of use, the participant must switch accounts to use DeepL again.
 - d) The price is quite expensive for students' pockets if they want to upgrade to premium features.
 - e) DeepL has limitations in translating current vocabulary.
- c. Bing

From the diagram listed above, Bing is one of the applications with the least users, which is only 1 participant. Participants used Bing for 3 semesters during lectures, from semester 1 to semester 3. The following are the advantages and disadvantages of Bing according to participants:

- 1) Advantages of Bing
- a) Bing can be accessed from the web or accessed directly from MS Word. This makes it easier for participants so there is no need to access via the web.
 - b) Features of this machine are more comprehensive when compared to other translation engines in terms of casual, standard, or formal language options.
 - c) It has a feature that helps non-natives when visiting a country, in that it provides expressions commonly used in daily conversations of the relevant country.
- 2) Disadvantages of Bing
- a) Translations are not always accurate in terms of structure and grammar.
 - b) Although it can be accessed as a translation feature directly from Ms Word, Bing requires a stable internet network.
- d. Kamusku

Besides Bing, Kamusku has the lowest number of users among the apps. According to the Figure 1, there is only 1 participant who uses Kamusku. Unlike other translation engines, Kamusku can only translate words, not sentences or paragraphs. Like the name of the product "Kamusku", this translation engine works like a dictionary that makes it easier for participants to find vocabulary.

The participant said that she used Kamusku only during the first semester of college. With a span of use that is arguably not long, participants still feel the advantages and disadvantages of the Kamusku application during use. The following are the advantages and disadvantages of Kamusku according to participants; The advantage of Kamusku is that it is available offline. This makes it easier for participants to access the application because it does not

require an internet network. While the disadvantage is the limited facility that can only translate vocabulary.

2. The roles of machine translation in students' writing

The role of machine translation here is divided into two indicators. Number one is the difference in the need for the use of translation machines in each participant both for writing needs and writing related to academics. Number two is the importance of translation machines in the participant's writing.

a. Differences in the use of translation machines in each participant

Machine translation is used to assist participants in the writing process, especially academic-related writing. Apart from utilizing technological advances, the academic writing process that requires formal language makes participants need a medium to ensure whether the language style in their writing is correct. In addition to the two reasons above, here are other reasons for the use of machine translation by the participants:

- 1) To find variations or synonyms of a word
- 2) To ascertain whether the sentence is grammatically correct.
- 3) To ensure the sentence structure is correct.
- 4) To translate sentences from Indonesian to English and vice versa
- 5) To make it easier to find the meaning of a word because looking through a dictionary wastes time
- 6) To double-check the sentence in English whether it can be read well in Indonesian
- 7) To learn new vocabulary through the double-checking process carried out by participants
- 8) To increase the participants' confidence in their writing.

From the many reasons for using machine translation as mentioned above. This proves that machine translation has played a role in helping participants in their writing process. The participants admitted that machine translation plays an important role in their writing process. The participants said that machine translation occupied as much as 50-60% of the presence of media needed during the writing process. Some of the participants said that they needed machine translation as a reference for writing a sentence or paragraph in English.

"Fifty fifty sih, ga yang vital banget gua gabisa nulis tanpa ini gitu enggak, but this application helps me a lot apalagi buat susunan kalimatnya. Kadang aku pake translate kalo udah mentok banget gimana ngedeliver kalimat dari indo ke inggris, terus ga yang se ketergantungan itu juga, sometimes I did write the sentence before terus buat cek aja bener ga sih susunan kalimatnya"

("Fifty-fifty anyway, not so vital that I can't write without this, but this application helps me a lot, especially for the sentence structure. Sometimes I use translate if I'm stuck on how to deliver a sentence from Indonesia to English, then it's not that dependent either, sometimes I did write the sentence beforehand just to check if the sentence structure is correct or not." FN)

The existence of machine translation as a reference medium reduces the worry of errors in writing. This proves that in addition to helping as a medium of translation, the existence of machine translation also plays a role in the participants' mentality.

3. The impacts experienced by the students after using machine translation

The impact of the translation engine will be explained by stating the effects felt by the participants after using the translation engine for different durations as described in point number one. The impact here will be explained by taking the angle of any indication of dependence felt by the participants. During the writing process, participants faced difficulties when doing it without the help of machine translation. In addition, participants felt a dependency on the translation machine. Of course, dependence on something must have a reason. Here are some of the reasons behind the dependence on machine translation:

- a. The doubts about one's ability as an EFLer that is not on par with that of a native writer.
- b. The lack of knowledge of English encouraged participants to use machine translation as a medium of assistance.
- c. The poor ability to write in formal language.
- d. The lack of confidence in the writing produced without the help of machine translation.

3.2. Discussion

This part presents the discussion of the research findings. Three research questions are proposed in this research. The discussion focuses on three research questions: What kinds of machine translation are used by sixth-semester students of English Education Study Programs at Universitas Ahmad Dahlan Yogyakarta? What are the roles of machine translation in students' writing? The third is the kind of impact experienced by the students after using machine translation.

1. What kinds of machine translation are used by sixth-semester students of English Education Study Programs at Universitas Ahmad Dahlan Yogyakarta?

As a student studying English, language skills are something that must be mastered. Language skills include; reading, writing, listening, and speaking. In this study, writing skill is the main point of research. With that, students are very familiar with and must be able to use technology to support translation activities so that they know the foreign language of the words and sentences they want to find out the meaning specifically. Machine translation is a convenience offered by technological developments to students, especially those studying foreign languages. One of the apps used by all participants was Google Translate. Chompurach (2021) said that one example of an online translation machine is Google Translate. Google Translate can be used to translate one language into another in general (Sheppard, 2011). It happens since the fact that Google Translate is one popular translation tool to help students learn English (Chandra & Yuyun, 2018) and it is easy and fast to use to translate from the source language to the target language (Yanti, 2019). The second translator application is DeepL. DeepL is widely recognized as a very important technique used in the field of translation, including the artistic and scientific aspects of the discipline (Sidiq & Syafryadin, 2023). The majority of participants used both applications. A total of 5 participants used both Google Translate and DeepL. From the research data above, the participants used machine translation for a long time (at least one semester). One of them said that they have been using machine translation since the pandemic or when the college period just started (informant RN). As English education students whose assignments are all in English, of course, it means that the translation machine is used regularly by the participants. They have said that the translation machine helps them, especially for doing assignments. However, not all participants use it continuously. Two of them, FN and TT, only use it for difficult assignments such as writing essays or papers.

2. What are the roles of machine translation in students' writing?

Machine translation plays an important role for the participants. The fact that they are not native speakers means they need media to help translate, improve sentence structure, and correct grammar, which is still not right. The participants also said that machine translation greatly impacts their confidence in the writing produced with the help of machine translation. The participants felt that the writing produced with the help of machine translation was better than the writing produced without the help of machine translation. Machine translation also encouraged them to learn the differences and similarities of machine translation. The participants considered the presence of a translation engine to be very important in their writing. The role as a translator and as a medium to review sentences or work written in English. Machine translation also plays an important role in gaining confidence in each participant. The lack of confidence and feeling that they are not equal to the ability of native writers, they consciously and unconsciously rely on the translation machine and make it a must-have tool during their writing process. This is as one of the participants with the initials FN said that as non-natives they have limited abilities and fear of misplacing words that make them rely on machine translation. As Alley (2005) in Giannetti (2016) said using machine translation as a reference tool can help students identify important differences and similarities between their native language and the learned language. With this, students must be able to double-check the final result of the translation. Students have to re-check the words or sentences that match the context or purpose of a sentence's meaning, and then they should make sure the appropriate

sentence is based on context. Consequently, it is suggested that foreign language students adapt English language word translation while keeping the context in mind (Suryani & Fitria, 2022).

3. What kind of impacts were experienced by the students after using the machine translation?

The participants recognized that machine translation gave them confidence in the writing they produced with the help of machine translation. The participants admitted that they felt less confident with their writing due to concerns about grammar or sentence structure errors. This is in line with Amin et al. (2023) that machine translation also greatly impacts confidence, convenience, motivation, and time efficiency. Another impact felt by participants is dependence. The participants felt unable to write related to academics without the help of machine translation. This is in line with the statement of Fitriani et al. (2021) that the negative impacts cause interdependency, making understudies ineffective to open open-word references to seek other sources of information, sluggish to double-check interpretation, and ultimately harming students' writing skills.

4. Conclusion

According to the research results described earlier, the conclusion can be illustrated by that students utilise technological developments by becoming users of machine translation. Machine translation is significantly used as a medium to help students with academic writing. Machine translation plays an important role in students' writing as an auxiliary medium in their writing. Machine translation also fosters students' confidence in the writing produced with the help of machine translation. However, it also backfires on the students. They find it difficult to write academically without the help of machine translation due to lack of confidence in their own writing ability.

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