



## Post-Editing Machine Translation (PEMT) as the preference method for university students in Indonesia

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### Abstract

Language translating process by Indonesian students is particularly suffered from many errors. Its defined strategy should be carefully watched due to completing its translating perfection. Thus, this study identifies the problematic translation ways commonly referred and used by university students in Indonesia. The mixed method using embedded design between qualitative and quantitative data with a case study approach was carried out to find the preferences of the translation method used by the students. The respondents are 50 English Department students from different levels of studying years. The result shows that Post-Editing Machine Translation (PEMT) was preferred among other translating methods. The reasons are related to the ease and quality of the translation work. 76.90% of the students responded and chose to have PEMT as the preference. However, there were only 53.8% of them implementing PEMT as the translating process, and 38.5% were familiar with Machine Translation (MT) without post-editing instead. It indicates an inconsistency in the use of the translation methods as each of them experienced and chose different type of methods. However, PEMT was placed as the most referred translating method used by the students. This suggests that the presence of technology is well utilized while still paying attention to the quality of the translation through the post-editing process.

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## INTRODUCTION

The development of technology is unavoidable in many fields. In the process of education and business, technology has a very significant role (Dede, 2010; Haleem et al., 2022; Shaji George et al., 2023). This significant development can facilitate the process of human work, including in the context of translation (Jolley & Maimone, 2022). In other words, various aspects have incorporated technological assistance as a tool to make work easier, including in the field of education and translation business. Although there are not a few who question the feasibility of technology in such work.

The role of translation in the academic world is important. Various jobs today require everyone to understand more than one language. One that must be understood is English, which is still recognized as an international language (Teng et al., 2019; Zainuddin et al., 2019). Therefore, the process of language transfer from various source languages is very prominent to do.

For academic purposes, students, teachers, lecturers and researchers must have the ability to switch languages (Tursunovich, 2022). One of the goals is to have a broad insight into the information provided by various languages. In addition, the world of international publishing both scientific journals and media demands the use of internationally recognized languages. In the context of being an Indonesian student, the source language that is not English is certainly a special challenge in the academic journey that requires them to publish their work. Therefore, the role of translation in the academic world is unavoidable, especially for those who do not master a foreign language other than their mother tongue or daily language.

Unfortunately, the translation process carried out by Indonesian students in particular still suffers from many errors. These errors can be found in the aspects of vocabulary, prepositions and unfinished sentences (Merris & Sari, 2019). In addition, for Indonesian students, difficulties in translation are also experienced in grammatical aspects. However, from several studies, the most common translation error is the addition and subtraction of meaning that does not match between Source Language (SL) and Target Language (TL). This requires critical thinking skills in the process (Azin & Tabrizi, 2016). Therefore, students should at least understand the proper techniques and methods of translation so as to minimize both simple and severe errors.

In translation, there are several popular types of translation. Based on some theories, there are several techniques in translation, namely 1. Adaptation; 2. Amplification (Addition); 3. Borrowing; 4. Claim; 5. Compensation; 6. Description; 7. Discursive Creation; 8. Repetition of Defined Equivalence; 9. Generalization; 10. Linguistic Amplification; 11. Linguistic Compression; 12. Literal Translation; 13. Modulation; 14. Particularization; 15. Reduction; 16. Substitution; 17. Transposition and 18. Variation (Borko & Chatman, 2018). Meanwhile, more generally, there are four translation methods that are technically often used in the process of language transfer. According to Pacific International Translation (PacTrans), in the process of language transfer for a business, it includes Machine Translation (MT) which has no human linguistics included. The second is Post-Editing Machine Translation (PEMT) with human review added. The third type is human translation (HT), which is usually done by professional translators without any machine touch. The last one is Human Translation (HT) plus revision. This type is a type of translation that has been recognized and according to standards. But of course it has a long processing time (Pactranz, 2023).

The comparison of Machine and Human translation that often arises is about processing time. Of the four methods described by Pacific International Translations, PEMT is the most common method used. In addition, by adapting the results of machine translation together with the human works, its adjustment process is alleged to produce a good combination of translation (Martínez-Gómez et al., 2012). The lack of translators' ability to perform the language transfer process, especially at the student level, is the main problem of the need to introduce these methods. Therefore, the four methods mentioned above have been introduced to the students which are a combination of machine and human to illustrate and facilitate the students in the process of language transfer for various purposes. These two types of language transfer (machine and human) are different, but when combined with the Post Editing Machine Translation approach where humans adapt the machine translation to add a sense of meaning, it will be better. This is important as not all translating machine can have a sense of feeling towards a certain topic. Only a few models have been developed that allegedly have good accretion capabilities in providing translation results such as Probabilistic Latent Semantic Analysis (PLSA) (Shen & Guo, 2022).

Therefore, Post-editing machine translation (PEMT) is allegedly a widely used translation method in the world. Besides being easy, the accuracy rate in translation using this method is also known to be very high (Tezcan et al., 2019). However, the Machine Translation is also evaluated

regularly by many researchers. At the same time, the features provided by machines in the process of assisting humans in translation are considered to be very good and are constantly improving (Tezcan & Bulté, 2022). Thus, the selection of methods in translation is something that must be done and recognized more deeply. It is not only about the quality and time spent but also about the comfort and ease felt by the translator.

So, the tendency of students to choose translation methods is a must. This is an urgency for prospective academics so that they do not totally use machine or other translation services. By knowing this tendency, students also gain insight into the four commonly used translation methods, because before being asked questions, students are first given an understanding of the four translation methods as mentioned above.

In addition to the process of measuring one's ability to apply Human Translation (HT), finding other alternatives is the right step. Therefore, this study aims to find out the students' tendency to perform the language transfer process after being given materials and exposure to the translation method. In addition, respondents were also given the opportunity to perform the language transfer process using this method. Previously, they were assisted by using a translation machine for further adaptation. Therefore, this study also aims to analyze the accuracy of students' translation results using PEMT.

**METHODS**

This research is a mixed-method with equal embedded design between quantitative and qualitative data using a case study approach that aims to find out the tendency of a certain phenomenon of the most-used translation method by the students. A total of 50 students were selected as respondents from the English Education Department consisting of different levels in term of years of study. In this study, the focus is to find out the preference of students of English Education Study Program at Universitas Muhammadiyah Bangka Belitung in conducting translation process. The questionnaire of rating scale and open-ended questions were addressed to gain the information on the students' work in the translation process after previously given a task of translation. It was derived from the types of Translation according to Professional Language Translation Service and previously tested to another group of students. This research was conducted at Universitas Muhammadiyah Bangka Belitung, in the English Education Study Program.

This study was conducted on January 2023. The technique used was to use selected questions followed by open-ended questions in writing so that students have the flexibility in answering the questions asked. The first stage is collecting the data from respondents by providing open-ended questions. Then, data reduction of the raw manuscript was also obtained. After that, the data were presented in diagrams to make it easy to read. Furthermore, the conclusion of the data previously analyzed using discourse analysis techniques was done.

**FINDING AND DISCUSSION**

**Results**

Data collection through open-ended questions in written form allows students to answer more freely and without feeling pressured. So that the choices they choose will better represent what they feel.

The first choice tendency is related to the students' perception of the ease of use and quality assurance of the four methods. From the four methods synthesized, the tendency of students in choosing the translation method is with *Post Editing Machine Translation* (PEMT) as can be seen through the figure below.

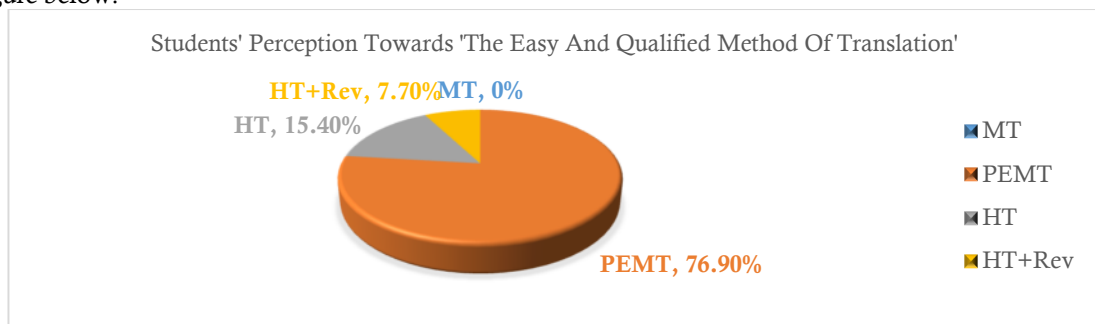


Figure 1: Students' Opinions on Easy and Quality Interpreting Methods

Figure 1 above shows that 76.9% of students think that using the PEMT method in doing language transfer in doing assignments is considered easy with good quality. While those who think the language transfer process is easy and good with the Human Translation (HT) method are 15.4% followed by Human Translation plus revision by 7.7%, namely by asking peers to revise or recheck the language that has been translated. Finally, in the diagram there are no students who choose Machine Translation (MT) as an easy and quality option.

In another point, the tendency that was asked was related to the method that is often used. In contrast to the tendency that students have in mind towards the ease and quality of translation, some students still use Machine Translation as their choice in doing assignments even though they actually understand that in order to maintain the quality PEMT is better than MT. This percentage can be seen through the diagram below.

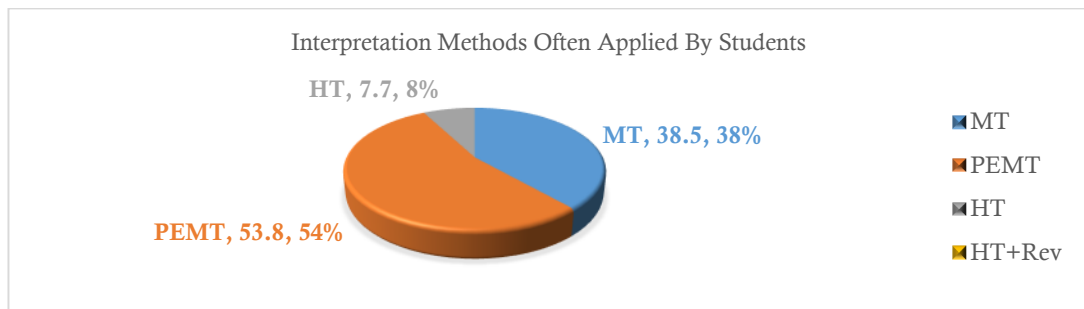


Figure 2: Interpretation methods often applied by students

The reasons why students choose PEMT in the process of language transfer both from Indonesian and vice versa are very diverse. However, most of them are related to time efficiency. The following is a summary of some students who gave their opinions about the reasons for choosing the PEMT method.

*"Sometimes the machine translation has errors from the grammatical side, so you have to read it again, and edit the erroneous parts, and I think it is more efficient."* (Student 1, 2 & 3)

*"It is more efficient and accurate because it uses AI memory instead of human memory. Editing is done to give a human touch to the language so that there is no misunderstanding in the translation."* (Student 4 & 5)

*"Because in my opinion using a machine can minimize time and then be reviewed by humans to correct such as words or grammar that are not correct. It is beneficial to save time. However, its meaning is still in accordance to the source language."* (Student 6)

However, judging from Figure 2, there are some students who actually use the Machine Translation (MT) method for several reasons as summarized below.

*"Because it may be more efficient in terms of time and can be done anywhere easily cheap and fast,"* (Student 7 & 8)

*"Because it's simple, we know that Indonesian people have a very simple hobby. They just need to understand the meaning. But it is only my general opinion not as a person who works in the field of foreign languages."* (Student 9)

However, there are some students who tend to use HT+Rev, which is using the human touch and getting revisions from others as a form of confirmation of what the translator has done before. The reason is related to translation standardization.

*"Because of the standardized translator, then every word/writing, etc. needs to be revised by fellow people who have equal qualifications because it avoids human errors that occur by every human being whether it is small or large."* (Student 10 & 11)

However, if we look at the graph, PEMT occupies the first position as a translation method that is considered efficient and still prioritizes the quality of translation results. In addition, PEMT is also

the most widely used method by students in the translation process for several reasons as mentioned above.

### **Discussion**

In recent years, the use of Machine Translation along with the booming use of the internet is easy to find. Unlike past years, the translation process was done without any machining process (Banks, 2020). In general, the use of MT only achieves feasibility as a translation tool not in the purpose as a tool used for professional purposes (Carl et al., 2015). But in reality, the use of Machine Translation is still popular in various circles. More than half of the jobs are identified as errors caused by the machine translation (Rivera-Trigueros, 2022). Despite the fact that Machine Translation is not new to some users, but there are still many users are persisting in the use of Machine Translation itself (Lee, 2021). The reason is to find some words that are not known in meaning and write assignments with relatively fast time effectiveness not only in Indonesia but also in several other countries (Alhaisoni & Alhaysony, 2017).

Looking at the problems above, the use of MT is not something that should be avoided. The development of technology is proof of the progress of civilization. But of course, there are also various shortcomings of technology. When it comes to translation, the human touch in editing after being done by a machine is a must. This is called Post-Editing Machine Translation (Carl et al., 2015). The use of PEMT is popular for the reason of improving the quality of translation results. However, the translator's task in this method is not only to translate the text but also to edit it (Herbig et al., 2020).

In relation to the urgency of translation methods for students, knowing students' tendency in the translation process is very important in order to make an initial effort to unify perspectives in the translation process to find the best and effective method. Some studies advocate students to do post-editing after the machine translation process (Wardana et al., 2022).

#### ***Students' opinions on easy and quality translation methods***

There is a difference between the perception of students' thoughts on effective and quality translation methods and their actual tendency. As seen in Figure 1, no students answered GT as an effective and quality method. As many as 77% answered PEMT as their preferred method based on their knowledge. But in Figure 2, the application in the translation process still shows that 38% are still familiar with and use Machine Translation (MT) especially in doing assignments. This indicates several things, one of which is related to time effectiveness (Katz et al., 2018).

To maintain good translation quality, 77% of the students considered the need for a human editing touch to improve some aspects such as grammar, word choice and meaning. This is a good choice considering some of the shortcomings that machine translation has, including not being able to distinguish between standardized and non-standardized meanings (Mulyadi & Hidayati, 2021; Ratniece, 2016). Therefore, choosing PEMT as a translation method is a good choice as it does not require much time for evaluation. In addition, the proficiency of the second language when using the Machine Translation method is not a significant problem (Chung, 2020). In addition, some of the advantages of the PEMT method in the translation process are the right choice considering that the human touch (editing) can increase the strengthening of meaning in an authorship (Maciej Serda et al., 2019).

In summary, the choice of students who consider PEMT as an effective translation method and has more quality among the four methods presented is a better choice than using machine translation such as GOOGLE translation considering the shortcomings in some features that need to be improved. With the post-editing by humans after the machine translation process, it is expected to improve the quality of the writing produced.

#### ***Students' Tendency to Use PEMT in the Language Transfer Process***

Post-editing machine translation (PEMT) is the method chosen by many students in the translation process. All respondents said that they chose PEMT because it can simplify the language transfer process and use time more efficiently. Of course, this is in accordance with what was conveyed by several previous studies (Alhaisoni & Alhaysony, 2017; Lee, 2021). Apart from being used by students, PEMT is also very applicable for professionals. In other words, almost everyone uses this translation model. Besides being translators, they also act as editors (Koponen, 2016; Wu et al., 2017).

The use of this model affects the speed and accuracy of the translation results. As Student 6 said,

this PEMT model can be used quickly and anywhere. In addition, there are many websites and translation machines that can be used for free. What needs to be done is to carry out the editing process so that the translation quality remains at a good quality. This is because the accuracy of words obtained using machine translation is very limited. This often happens because the machine cannot distinguish between formal and informal words and issues related to context, connotation, denotation and does not have correction tools (Ducar & Schocket, 2018; Habeeb, 2020). Hence, it is importance to get a re-editing process during translating. Even in the same study, one of the translation engines was said to fail in translating idiom sentences. This is because machine translation lacks feeling in the translation process.

However, the use of machine translation requires training so that users can use the platform or machine translation properly. Some studies prove that the use of machine translation must be accompanied by a certain way of use and age limit so that the translation process can produce the best output (Alsalem, 2019; O, 2019). One of the trainings provided is how to edit machine-generated translations. However, one of the skills that must be possessed, especially for foreign learners (L2 learners), is related to proficiency in their second language (Chung, 2020). Therefore, at least the tendency of post-editing choices by respondents is the right choice because the L2 ability, in this case the English language of Indonesians, is still at a level that needs to be improved (Chung, 2020; Melvina & Julia, 2021; Renandya et al., 2018).

## CONCLUSION

After the research, there are some interesting trends in the students' translation process. Firstly, the students know that a good and effective translation process is to do Post-Editing Machine Translation, which means that it is not only limited to machine translation (MT). However, in practice, there are some respondents who use the MT method in their translation process even though they understand that MT has some shortcomings. However, most of the perceptions and choices when conducting the translation process are to use Post-Editing Machine Translation (PEMT). This is the right choice when referring to some mistakes made by students in the translation process, especially for students in Indonesia. So that the results given by the MT can still be edited to correct the meaning between Source Language (SL) to Target Language (TL).

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