THE ANALYSIS OF POST-EDITING OF LITERARY TEXT OF GNMT BY STUDENTS OF ENGLISH DEPARTMENT UNIVERSITY OF MATARAM

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Abstract

This article is aimed at determining the accuracy of post-editing translations on GNMT by English Department students. The objects of this study were students of the English Education Study Program, Faculty of Teacher Training and Education, University of Mataram, who were admitted to the "Translation and Interpreting" course in the fourth semester of the 2021-2022 academic year. Data obtained through observation and documentation was used in two literary texts. The results of this study indicate that almost all students have poor accuracy in their post-editing results. Most of the post-editing accuracy levels of the two texts produced by students were not acceptable, with the criteria of "highly accurate" at 1%, followed by 14% for "accurate," 35% for "less accurate," and "inaccurate" at 51%. Based on these percentages, it can be concluded that the level of accuracy of the translation in post-editing from GNMT shows inaccurate results. Therefore, it still needs to be improved to meet the target audience by paying attention to the naturalness of the target language in terms of sentence structure, grammar, and punctuation in order to produce a better translation.

Keywords: *Google Neural Machine Translation, post-editing, literary text, short story*

Abstrak

Artikel ini bertujuan untuk membahas tingkat keakuratan post-editing terjemahan GNMT oleh mahasiswa Program Studi Bahasa Inggris. Objek penelitian ini adalah mahasiswa Program Studi Pendidikan Bahasa Inggris Fakultas Keguruan dan Ilmu Pendidikan Universitas Mataram yang mengikuti mata kuliah "Translation and Interpreting" pada semester empat tahun ajaran 2021-2022. Data yang diperoleh melalui observasi dan dokumentasi dengan menggunakan teks sastra. Hasil penelitian ini menunjukkan bahwa hampir semua siswa memiliki akurasi yang buruk pada hasil post-editing mereka. Tingkat akurasi post-editing kedua teks yang dihasilkan mahasiswa sebagian besar tidak dapat diterima, dengan kriteria "sangat akurat" sebesar 1%, diikuti 14% untuk "cukup akurat", 35% untuk "kurang akurat", dan "tidak akurat" sebesar 51%. Berdasarkan persentase tersebut, dapat disimpulkan bahwa tingkat akurasi post-editing terjemahan GNMT menunjukkan hasil yang sangat rendah. Oleh karena itu,

masih perlu ditingkatkan untuk memenuhi target audiens dengan memperhatikan *natural* bahasa target dari segi struktur kalimat, tata bahasa, dan tanda baca agar menghasilkan terjemahan yang lebih baik.
Kata kunci: *Google Neural Machine Translation, post-editing, text sastra, cerita singkat*

A. INTRODUCTION

Mastery of spoken and written English is necessary to gain access to all news and information in all spheres of modern life. The bulk of periodicals, newspapers, and novels are published in English. Many English speakers require assistance to acquire information and catch up. However, not all of the content in English-language texts is easily grasped by second-language English speakers. As a result, there is a surge in demand for efficient and quick translation services. Machine Translation (MT) is an example of such a service. MT is the translation conducted by a machine using a formula loaded into computer software to assist in translation. After inputting the text from the source language, which is subsequently translated by the machine and transferred to the target language, this is a complete machine translation (Larson, 1998; Wardana et al., 2022; Zulaika et al., 2022). Translation is the process of interpreting a text from one language into another without altering the document's content or meaning (Baharuddin et al., 2022; Purnomo & Baharuddin, 2018; Sumiati et al., 2022). Translation activities involve transferring words from the source language into the target language. Google Translate, the most commonly known translation app, can be considered for specific uses. Google Translate is a free automatic MT that provides instant multi-language translation (Wardana et al., 2022). Post-editing text produced by the MT system has the distinct specialty of human translation editing and is becoming a new field of study (Baharuddin, 2022; Nida, 1964; Nida & Tiber, 1969; Purnomo &

Baharuddin, 2018). This study considers the timely evaluation of MT and post-editing literature as a result of the emergence of GNMT, where claims have been made about the high quality and ability to place translated words in appropriate contexts, as well as the growing availability of e-books. NMT is designed to learn from human translation and adapt the translator's thinking to the context and patterns of human thought (Baharuddin et al., 2022). The current study has two goals: first, to assess translator attitudes toward the post-editing output of GNMT, which has received little or no research; and second, to test the ability of a cutting-edge GNMT system to assist the post-editing of literary texts. Literary Translation put the GNMT system to the test in terms of its ability to efficiently produce translations followed by post-editing while exceeding expectations of the limited quality of the perishable text. MT systems typically make more errors than humans, and the outcomes may be hard to comprehend. Therefore, participants in this study must use their knowledge to correct GT translation results to achieve maximum quality output. Post-editing refers to the repair of MT translation results. such as smoothing the raw results, correcting errors, revising the entire section, or, in the worst-case scenario, retranslating the entire segment and correcting the text that the machine translation system has translated from the source language to the target language. As a result, after completing the MT process and analyzing the output, a post-editing process is required. The human translation process must also ensure that source and target texts impart exact

information and that the tonality of the translation matches that of the original document. As a result, a complete analysis of the post-editing activities and practices is required. Even so, post-editing activities in accurate translation or translation training are always regarded as an essential and "natural" process; more research should be conducted to investigate what happens in that process. This research is helpful because it enables the trainer or student to consider the post-editing process, which requires appropriate action to address any issues discovered. This study examines the post-editing results of University of Mataram students using Google's English-Indonesian Translation. In analyzing the data, the following concepts and theories must be applied to get a better result and explanation: Google Neural Machine Translation Translation is translating the text's meaning into words in other languages. (Newmark, 1998). Google again revamped its system and gave it the name Google Neural Machine Translation (GNMT). Machine translation (MT) is a technique that uses a computer to translate a human or source language automatically. (Christiane Nord, edited by Anna), that translation is a form of human-machine interaction determined by its purpose, or skopos. One of Skopos's main factors in communicative activity is the recipient with special fictitious communicative needs. This applies to both source text (ST) and target text (TT). Skopos theory is an approach to translation developed in Germany in the late 1970s (Vermeer, 1978). Post-editing improves machine-generated translations with minimal manual work. The definition shows post-editing as a phase of improving the quality of repair of machine-translated text with minimal effort (TAUS). Post-editing is the correction of translated text from the source language into a machine translation system. The purpose of the definition implies that post-editing is the improvement of the source text into the target text that the machine translation system has translated (Allen, 2003). Literary Text Literary texts are no longer seen as unique and autonomous but as the works of several pre-existing codes, discourses, and readers. Thus, every word in a text is intertextual; therefore, the text must be read not only in terms of the meanings assumed to be in the text but also in terms of the relationship between the reader and other stylistic discourses outside the text (Hatim & Mason, 1997; Kristeva, 1986, 2021; Munday, 2001). Based on the explanation above, this research is expected to produce good post-editing translations carried out by English Department students at the University of Mataram on the use of GNMT in terms of the accuracy of the translation results.

B. RESEARCH METHOD

This study is descriptive qualitative research. Qualitative research is a type of research whose findings are not obtained through statistical procedures or other forms of calculation and aims to reveal the symptoms in a holistic-contextual way by collecting data from a natural setting by utilizing the researcher as a key instrument. Qualitative research is descriptive and tends to use an inductive approach to analysis. Process and meaning based on the perspective of the subject are highlighted more. This study is designed descriptively because the data are in the form of words, phrases, and sentences in the output of literary texts. Thus, this study used qualitative research methods. The data source in this research is the students of the English Language Education Faculty of Teacher Training at Mataram University who take courses in "IT-Based Translation" in the fifth semester of the 2022–2023 academic year. There are seven classes in each academic year, and each class consists of more than 30 students. This study focuses on the post-editing results of English Department students' literary text output and

the use of Google Neural Machine Translation. The researcher chose observation and document study (Translation text assignment) as the research instrument. The researcher observed students' learning behavior and recorded student activity in online classes, as well as considering online attendance when evaluating student work in completing assignments. In the IT-Based Translation class, twelve assignments must be completed in one semester. However, not all of these assignments were used as data sources for this study. The researcher gave a writing test to the students as supporting data. Researchers get documents from participants. Data is collected from assignments via Google Forms intended explicitly for research purposes, such as post-editing the translation of GNMT results. For this study, the type of literary text that was used is a short story entitled "60/40 by Julian Barnes" and "The Prisoner Who Wore Glasses by Bessie Head."

C. FINDING AND DISCUSSION

1. Research Findings

During the data collection process, the researcher observed by observing in class. In class, students are enthusiastic about their learning and try their best to post-edit the lecture's text. In learning activities, students must understand the text. The lecturer explains in detail the meaning of each sentence in the original language, each unique expression, and the application of translation theory. After that, students can do post-editing by correcting parts such as grammar, word choice, punctuation, subject/object, and determining vocabulary to make sentences that are acceptable and appropriate to the text. Therefore, it takes practice to match the vocabulary between the source text and the target text according to the contents of the text; the use of a dictionary is needed to help determine the correct language or phrases to make the

correct target text in Google Neural Machine Translation. Likewise, trials are still being carried out by entering text into Google Translate to examine how the source text differs after post-editing in producing the target text. Based on class observations, researchers collected some data. From the data obtained by previous researchers and the data that went through the condensation stage, appropriate data will be taken for discussion and interpretation. Each student will write a translation of their new sentence one by one and submit it in the Google Form created for this purpose. Two short story texts were given as assignments, using Google translate, which 26 students translated. The results of the translation of the two texts by the translation machine are edited to achieve a high level of accuracy. The short story text consisted of five sentences for text 1 and six for text 2. From the two short story texts, 286 sentences were collected, which were produced by 26 students. In identifying the level of the text translation results carried out by students, analysis and evaluation have been done by applying translation theory and adjusting it based on adequacy and clarity. The accuracy of the text produced by students who do post-editing can produce text with acceptable and good accuracy. During post-editing, students can create an accurate new version of the text by making several changes, such as word selection, punctuation, substituting subject and object, and cutting phrases or sentences. The results then show that the percentage of each sentence is different after students post-edit the source text, which has highly accurate, accurate, less accurate, and inaccurate criteria. Table 4.1 The level of accuracy of the translation after conducting post-editing Criteria Sentences Texs 1 Texs 2 Highly precise (2; precise; 19; 20)Less accurate: 41, 57. Inaccurate 68 77 Based on the findings above, the average quality of text produced by students in post-editing is inaccurate. Students who do post-editing can improve

the quality of their work by making changes such as word choice, punctuation, subject/object substitution, and cutting phrases or sentences. Furthermore, all students have submitted their post-edited texts; as seen from the Google Form, 26 students submitted their works. The translation of student-edited source texts shows relatively inaccurate results because the language used in the text sounds inappropriate and inaccurate. Several word additions in the new text version improve the clarity of the text output from GNMT, making the translation into the target language easier to read. However, post-editing by reducing or deleting certain words in sentences can eliminate the meaning of the source text, so that the text seems strange and makes the translation difficult to understand. Some words can be corrected to get an appropriate and accurate meaning with easy-to-understand grammar. Therefore, post-editing will help better translate text from NMT. Diagram 4.1

percentage with the criteria of text quality on GNMT The diagram above shows the percentage of text accuracy produced by students in post-editing. This indicates that most of the post-editing quality is "highly accurate," at 1%, followed by "accurate," at 14%, "less accurate," at 34%, and "inaccurate," at 51%. Based on these percentages, it can be concluded that the level of translation accuracy in the post-editing of GNMT texts carried out by students shows an inaccurate translation result. Discussion In this section, the researcher wants to discuss the results of their data analysis according to the scope of the research. This discussion should explain the accuracy of post-editing translations by students. The source text of this research is a short story text in English with two different texts; the first text is entitled "60/40," and the second text is entitled "The Prisoner Who Wore Glasses." The text required editing after it was entered into the GNMT.

*Table C.1 An example of text that produces the level of accuracy of the text with **highly accurate** criteria in conducting Post-editing*

Text	Source Text	Google NMT	Post-editing
Text 1	Joanna, who had been quiet during these last two topics, now said with a sigh, "you know, i could really do with a cigarette"	Joanna yang tadinya pendiam selama dua topik terakhir ini, sekarang berkata sambil mendesah, "kamu tahu, aku benar-benar bisa melakukannya dengan sebatang rokok"	Joanna, yang tadinya hanya diam selama pembicaraan dua topik terakhir, sekarang berkata sambil menghela nafas, "kau tahu, aku benar-benar bisa melakukannya hanya dengan sebatang rokok"
Text 2	Warder Hannetjie caught his old man with twelve children stealing grapes from the farm shed	Sipir Hannetjie menangkap orang tuanya dengan dua belas anak mencuri anggur dari gudang pertanian	Sipir Hannetjie memergoki lelaki tua bersama dua belas anak mencuri anggur dari gudang pertanian.

The text above has changed the results in the GNMT text, which students have edited with highly accurate criteria. In the first text, the new version shows changes by making

improvements to the translation of the word "pendiam" in the GNMT translation results because it is not appropriate in its use, so it is modified into a phrase "hanya diam",

adding the word "hanya" as an explanation to the sentence "yang tadinya diam". Adding this word makes the sentence look more accurate and easy to understand. The addition of the word "pembicaraan" is only as an explanation in the sentence, which shows that they are having a conversation. Next is the improvement from the word "mendesah" which seems strange, to a new version of the text "menghela nafas" which is more appropriate to use so that the sentence does not seem ambiguous or strange. In text 2 from the post-editing results that have been carried out by students, there is a change from the original GNMT text to the new version of the text by

changing the word "menangkap", which is only addressed to old men, with the new version of the text namely "memergoki", more appropriate to use to strengthen the statement that they were caught in the act of theft. The next word correction is that the original text "orang tuanya" in the sentence "Sipir Hannetjie menangkap orang tuanya" is not suitable for use, so it is changed to the new version of the text to become "lelaki tua" which sounds more accurate. In both sentences, the words "dengan" and "bersama" show similarities, but the use of the word "bersama" is more appropriate and makes the sentence easier to read.

*Table C.2 An example of text that produces the level of accuracy of the text with **accurate** criteria in conducting Post-editing*

Text	Source Text	GNMT	Post-editing
Text 1	It was the week Hillary Clinton finally conceded	Itu adalah minggu dimana Hillary Clinton akhirnya kebobolan	Saat itu adalah minggu dimana Hillary Clinton akhirnya kebobolan
Text 2	They were an enormous quantity of grapes in a ten-gallon tin	Mereka adalah anggur dalam jumlah besar dalam kaleng sepuluh galon	Anggur yang dicuri itu berjumlah sangat banyak dalam kaleng sepuluh gallon.

Based on the source text that has been edited by the student above, the sentence is changed by making improvements such as adding the preposition "saat" at the beginning of the sentence, thus making the sentence more perfect. For text 2, which has been edited by students experiencing changes in sentence structure, such as the use of the word "mereka" in the sentence "mereka adalah anggur" to become a new version of the text "anggur yang dicuri itu". The word "mereka" in the sentence is not needed because it is clearly intended for stolen wine, so there is no need to translate

it with the sentence "mereka adalah anggur" which makes the sentence seem complicated and a waste of words. So the addition of the phrase "yang dicuri" makes the sentence look accurate because it is added with an explanation. The same change was made to the GNMT text "jumlah besar" which was changed to "berjumlah sangat banyak". Modifying the word "besar" into the phrase "sangat banyak" is more appropriate for its use in indicating a quantity. Some word or phrase changes made to the source text make the sentences look simple and accurate so that they are easy to understand..

*Table 4.4 An example of text that produces a level of accuracy of the text with **less** accurate criteria for post-editing*

Text	Source Text	GNMT	Post-editing

Text 1	The likelihood of an al Qaeda attack on the 2012 Olympics and the effect of global warming on English viticulture.	Kemungkinan serangan al-Qaeda di Olimpiade 2012 dan efek pemanasan global pada pemeliharaan anggur Inggris.	Kemungkinan serangan Al-Qaida pada olimpiade 2012 dan efek pemanasan global pada penjagaan anggur Inggris.
Text 2	He found out how tobacco smoke was beaten into the ground, and he found out how conversations were whispered down the wind.	Dia menemukan bagaimana asap tembakau dipukul ke tanah, dan dia menemukan bagaimana percakapan dibisikkan oleh angin.	Dia menemukan bagaimana asap tembakau dihancurkan ke dalam tanah, dan dia menemukan bagaimana rencana disampaikan ke yang lainnya

As seen in the table above, the original text of the GNMT or the new version of the text edited by students did not experience any changes. But there is one word that makes the sentence look imprecise and inaccurate. The word "viticulture" has the same meaning as "pemeliharaan anggur" but the use of the word "pemeliharaan" in the original text or the word "penjagaan" in the new version of the text seems inappropriate in that context. It should be replaced with "budidaya" or "perkebunan", which is a more appropriate translation of the word. In the edited GNMT text above, there is one word that seems inaccurate in its usage, the word "dihancurkan" which refers to tobacco smoke. The word is not suitable for the indestructible nature of smoke because smoke cannot be held or touched. Therefore, this word must be changed to "diarahkan", referring to the end of the sentence, namely into the ground; changing the word can improve the translation results.

Table *4.5* An example of text that produces a level of accuracy of the text with **inaccurate** criteria for post-editing

Text	**Source Text**	**GNMT**	**Post-editing**
Text 1	The table was a clutter of bottles and glasses, and though hunger had been satisfied, some mild social addiction kept making hands reach out to snaffle another grape, crumble a landslip from the cliff face of cheese or pick a chocolate from the box	Meja itu penuh dengan botol dan kacamata; dan meskipun rasa lapar telah terpuaskan, beberapa kecanduan sosial ringan terus terjadi tangan terulur untuk mengambil anggur lain, menghancurkan tanah longsor dari permukaan tebing keju atau mengambil cokelat dari kotak	Mejanya penuh dengan botol dan gelas, meskipun telah puas kelaparan, beberapa kecanduan sosial ringan terus membuat tangan menjangkau cicipi anggur lain, menghancurkan tanah longsor dari permukaan tebing keju atau petik coklat dari kotak
Text 2	Warder Hannetjie seemed to have eyes at the back of his head	Warder Hannetjie sepertinya memiliki mata di belakang kepalanya	Sipir Hannetjie tampaknya memperhatikan bagian belakang kepalanya

In the GNMT text that students have edited, there are slight changes in the sentences. Still, the text is translated very inaccurately, starting from the phrase "puas kelaparan," which looks very out of place because it is translated word for word. There is a translation: "*beberapa kecanduan sosial ringan terus membuat tangan menjangkau*

cicipi anggur lain, menghancurkan tanah longsor dari permukaan tebing keju atau petik coklat dari kotak". The sentence structure changes and is chaotic; the text changes by removing the original meaning of the original text, making some of the sentences look strange and very difficult for readers to understand. Whereas text 2, which has been edited using GNMT, and the new version of the text show differences in the translation, in the new version, there is a translation of "*tampaknya memperhatikan*" that does not match the context of the source text. The change removes an important part of the original text so that the new version cannot be understood and does not make sense.

D. CONCLUSION

This research was conducted to examine and analyze the ability of English Department students in post-editing source texts using GNMT by determining the accuracy of translations in 2 short stories entitled "60/40" and "The Prisoner Who Wore Glasses" from English to Indonesian. With the total data in this study of 286 sentences, this research also explains the percentage of accuracy of the translation. To analyze the accuracy of the translation, the researcher refers to the Skopos theory to make it possible to determine whether students can transfer messages to a language that is good, communicative, and readable after following the target text so that readers can easily understand the text. The results of this study indicate that most of the post-editing accuracy of the two texts produced by students can be accepted with the "highly accurate" criteria at 1% followed by 14% for "accurate", 35% for "less accurate" and "inaccurate" Most students cannot do post-editing well, so it needs to be improved to meet the target audience by paying attention to sentence structure, grammar, and punctuation to produce a better translation.

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