TRANSLATION QUALITY OF LITERARY TEXT OF INDONESIAN NOVEL "LASKAR PELANGI (THE RAINBOW TROOPS)" INTO ENGLISH USING FACEBOOK MACHINE TRANSLATION

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ABSTRACT

This study aims to identify and categorize the types of corrections or post-edits found in English translations of Indonesian literary texts and evaluate the quality of these translations using Facebook Machine Translation (FMT), specifically in translating the Indonesian novel "Laskar Pelangi" into English. Using a descriptive qualitative approach, the study examines various types of translation post-edits such as substitutions, insertions, deletions, and shifts, identified through HTER analysis. The correction or post-editing process for the English translation of the novel "Laskar Pelangi" using FMT was scrutinized and categorized by comparing the original Indonesian source text with the post-edited version translated by a professional human translator and by referring to the translated book version in English. The findings indicate that FMT achieves an 80.23% translation accuracy rating at the Good level based on TQI, with a 19.77% rate of translation inaccuracy. The types of post-edits identified include 54.2% substitutions, 33.7% insertions, 7.2% deletions, and 4.8% shifts. The analysis highlights a prevalent occurrence of substituted words in the post-edited translation, showcasing FMT's commendable performance in addressing translation issues on the popular platform.

Keywords: Facebook Machine Translation, Laskar Pelangi, Literary Text

A. INTRODUCTION

The constant evolution of technology leads to increasing demands, especially in communication between nations, necessitating high-quality language proficiency for effective understanding among diverse language users. As articulated by Munday (2008), the phenomenon of translation holds significant sway over daily life. Machine translation emerges as a valuable tool, particularly for Indonesian users navigating the intricacies of the world's largest social media platform, which serves as a conduit for both domestic and international communication. Latifah et al. (2022) underscore the indispensability of translation in fostering connections across nations, enabling Indonesians, in particular, to bridge linguistic gaps, notably in English, the predominant language for global communication, as emphasized by Hidayat et al. (2021). This underscores the reliance on machine translation to facilitate seamless English communication due to its ease, practicality, and efficiency compared to human translation methods.

Literary expression serves as a means for individuals to immortalize their emotions, thoughts, and joys through written endeavors. While literary content is readily accessible on social media platforms, the ease of distribution prompts apprehension among writers regarding the preservation of their work. Literary creation stands as one of humanity's most remarkable achievements, aiming to immortalize thoughts and serve others. Despite its widespread availability, literary content on social media platforms is often subject to reluctance for preservation due to its easy dissemination. Nonetheless, textual expression remains a profound testament to human ingenuity and creativity.

Considering various functionalities, Facebook serves as a viable platform for literary endeavors. It facilitates real-time information dissemination and direct engagement with a broader community, fostering opinion sharing through its comment feature. As the second most popular platform after Google, Facebook holds significant sway in conveying information and facilitating writing activities. However, it faces challenges in translation, particularly from Indonesian to English, as noted by users, necessitating further scrutiny to enhance its functionality. Despite these challenges, Facebook's pervasive influence and accessibility, coupled with its provision of the Facebook Machine Translation (FMT) feature, present a valuable opportunity for Indonesians to engage with a global audience seamlessly. English, being a global language, underscores the significance of FMT in bridging linguistic barriers and enabling effective communication on a worldwide scale.

Despite the notable advantages of translation, Facebook machine translation exhibits weaknesses in accurately translating posts uploaded by authors on the Facebook platform. The quality of translation by FMT is inherently tied to the mechanics of machine translation, differing significantly from human translation processes. As outlined by Bell and Candlin (1991), translation involves replacing representations in one text with equivalents in another, necessitating a translator's comprehensive understanding of both the source language (SL) and the target language (TL) for accuracy. Conversely, machine translation relies on corpus patterns and databases for translation.

However, the automated approach of machine translation faces challenges in maintaining natural language flow when translating between different languages. Baharuddin (2022) highlights various aspects such as sentence structure, information accuracy, aesthetics, sense, appropriate wording, cultural nuances, and communication expression, all contributing to naturalness in translation. The challenges lie in the lack of methods for integrating text with semantic knowledge and the need for

extensive and parallel corpora to ensure accuracy. Despite these shortcomings, machine translation tools, with their efficiency and simplicity in providing instant translations, remain heavily relied upon by many users.

Ghasemi & Hashemian (2016, p.13) propose using HTER analysis to assess and correct machine translation errors, categorizing faults into four main types: substitution, insertion, deletion, and shift. Further studies by Putera (2014), Aeni et al. (2023), Afifah et al. (2023), Dewi et al. (2023), Farhana et al. (2023), and Rosita et al. (2023) provide additional insights into the analysis of errors and the quality of machine translation.

Facebook machine translation operates on a similar concept as other translators, utilizing source language (SL) and target language (TL) translations, akin to Google Translate, which boasts corpora for over 100 languages. Despite its popularity and continuous improvements, Google Translate still falls short of achieving the level of perfection seen in human translation. Literary texts constitute a significant portion of content on Facebook pages, often subject to machine translation. However, the quality of translation, especially in literary texts, often fails to convey the intended message accurately, as the primary function of literary text is to impart knowledge to readers, requiring utmost precision and fidelity to the original text.

Studies on machine translation, particularly concerning Facebook, remains relatively limited due to the recent surge in popularity of Facebook and social media platforms. Founded by Mark Zuckerberg, a Harvard student, in 2004, Facebook's widespread adoption began to accelerate around 2008 in Indonesia, surpassing the previously dominant social networking site, Friendster.com. By April 2010, the number of Facebook users in Indonesia had skyrocketed to 21,195,800, reflecting near-universal adoption of the platform in the country. This phenomenon is largely attributed to the forces of globalization and technological advancement.

Today, millions of individuals worldwide access the internet daily, utilizing various devices beyond just computers. With the widespread availability of smartphones, accessing Facebook has become seamless and ubiquitous, enabling users to remain connected to the platform anytime and anywhere.

B. Methods

This research adopts a descriptive qualitative approach to provide in-depth insights into the data. Qualitative research prioritizes words over numbers in data collection and interpretation (Bryman, 2008a: 366). The study examines and discusses the various types of corrections found in FMT translation. The qualitative data collected focus on the output of FMT and its relevance to the research, emphasizing the qualitative nature of the data necessary for identifying

subject-specific patterns. This approach is particularly suitable for social science domains such as linguistics research.

As the primary investigator, the author collects data from the novel "Laskar Pelangi" (Rainbow Troops), analyzing its plot structure, including Exposition, Rising Action, Climax, Falling Action, and Denouement. The data collection procedure involves reading both the English and Indonesian versions of the novel and posting a representative sample on Facebook by copying and pasting the plot structure into a Word document. The next step is to translate the data using Facebook's automatic translation feature, simulating real-world scenarios where users rely on automated tools for cross-language content conveyance. A table is then created to ensure the accuracy and consistency of the gathered information.

To evaluate the translation quality of FMT in translating "Laskar Pelangi" from Indonesian to English uisng FMT, a comprehensive analysis process is undertaken. This procedure involves collecting a diverse selection of posts, particularly excerpts from the book "Laskar Pelangi," and ensuring their availability in both the machine-translated English version and the original Indonesian language.

Identification and classification play a crucial role, with a manual comparison between each original Indonesian post and its machine-translated English counterpart. The data are then categorized into different types of correction, including substitution, insertion, deletion, and shift. A comparative analysis with human translation by Kilbane serves to gauge the performance disparity between machine and human translation. Quantitative analysis follows, encompassing the calculation of correction type frequencies to estimate the incidence of translation correction using HTER. Additionally, the proportion of correctly translated posts is determined relative to the entire set studied, contributing to an overall assessment of translation quality.

The subsequent steps in the research entail the application of the Human Translation Error Rate (HTER) index to assess the disparity between reference text translated by humans and machine-translated text. This involves calculating the average HTER score for the entire dataset, along with correction and accuracy rates using specified formulas. The final stage of the analysis centers on interpreting the Translation Quality Index (TQI) from the obtained HTER scores. This translation of HTER scores into TQI is achieved through the application of the Schiaffino and Zearo formula. The resulting TQI scores are then interpreted descriptively to provide a comprehensive measurement of the overall translation quality.

Table 2.1. Schiaffino and Zaero's Translation Quality Index (2005: 42).

Classification	TQI scored
Excellent	90-100

Good	80-89
Average	70-79
Improvable	60-69
Low	50-59
Poor	1-50
Negative	0

Table 2.1 above presents Schiaffino and Zaero's Translation Quality Index (2005: 42), which categorizes translation quality scores into various classifications. The table outlines the classifications along with their corresponding TQI scores as follows: Excellent: TQI score ranging from 90 to 100; Good: TQI score ranging from 80 to 89; Average: TQI score ranging from 70 to 79; Improvable: TQI score ranging from 60 to 69; Low: TQI score ranging from 50 to 59; Poor: TQI score ranging from 1 to 50; Negative: TQI score of 0. This classification system provides a structured framework for assessing the quality of translations, with each category representing a different level of proficiency and accuracy.

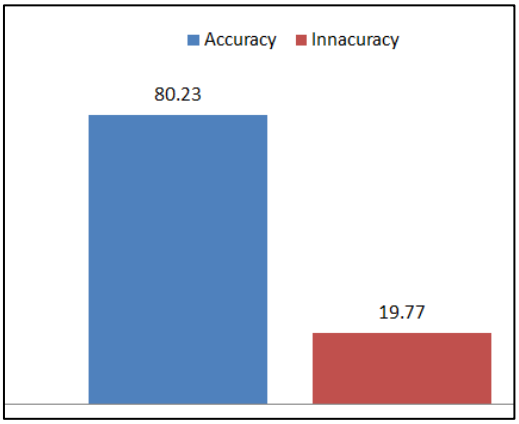
C. Findings and Discussion

3.1. Findings

Researchers utilized several instruments for data collection and analysis that included FMT, original source text excerpts, professional human evaluator, HTER, and TQI. The sampled texts were selected using purposive sampling technique. There were five samples in total, with the researchers analyzing the entire content of the novel "Laskar Pelangi" to examine its plot structure, which includes exposition, rising action, climax, falling action, and denouement. The word count for each sample was as follows: 143 words in sample 1, 277 words in sample 2, 506 words in sample 3, 373 words in sample 4, and 350 words in sample 5.

The researchers obtained the data by copying and pasting the text samples onto Facebook platform, ensuring availability in both the machine-translated Indonesian version and the English version. The researchers manually identified and classified the data by comparing each original Indonesian post with the human-translated Indonesian version, making grammatical corrections to ensure valid and accurate editing results.

Figure 3.1. Accuracy and Inaccuracy rate in FMT translation

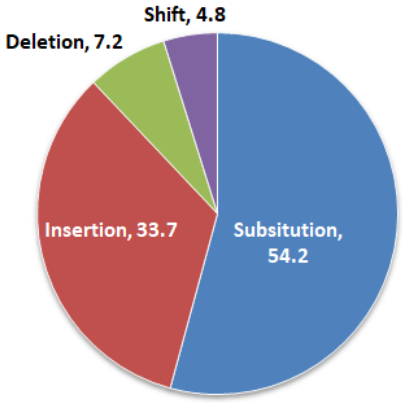


Upon completing the analysis, it was determined that Facebook Machine Translation achieved a relatively high accuracy score of 80.23% out of 1649 words in the sample set, with a 19.77% of inaccuracy rate as shown in Figure 3.1. The score of 80.23 is categorised as “good” based on TQI. The types of

edits involved substitution, insertion, deletion, and shifts as shown in Figure 3.1.

Meanwhile, Figure 3.2 below illustrates the number of edits found in the translation of 1649 sampled words.

Figure 3.2. Percentage of Edits in the FMT Translation



The figure shows that the majority of corrections involved 54.2% substitutions, 33.7% insertions, 7.2% deletions, and 4.8% shifts. The researchers compiled a table containing general information, which will be further expounded upon in a detailed discussion of each correction category. This detailed analysis aims to determine the percentages of corrections within each category.

Here are the examples of FMT errors corrected by HTER.

1. Subsitution

Figure 3.3. Substitution in FMT translation (Source Text 2, Sent. 2)

Source Text (Indonesian)	Lintang dan daya tarik pikirannya perlahan-lahan menjadi kekuatan hidup baru kami. Dia berbaris ke irama genderangnya sendiri. Dia adalah mantradalam gurindam - pantun-pantun dua baris.
Official Translation (English)	Lintang and the magnetism of his mind slowly became our new life-force. He marched to the beat of his own drum. He was the mantra in our *gurindam* rhymes—two-lined aphorisms.
FMT Translation	The stars[1-SUB] and the gravity[2-SUB] of his mind are slowly becoming our newlife force. She[3-SUB] marches to the beat of her[4-SUB] own drum. He is the mantra of our gurindam two line poem.
HTER Correction	Lintang[1-SUB] and the appeal[2-SUB] of his mind are slowly becoming our new life force. He[3-SUB] to the beat his[4-SUB] own drum, he is the mantra of our gurindam two line poem.

1-SUB: The word “Lintang” the name of the main character is mistranslated into “The stars”. Lintang is a person’s name and must not be translated.
2-SUB: The word “daya tarik” is translated into “the gravity”. This phrase must be best translated into “magnetism” or “appeal”.
3-SUB: The subjective pronoun “dia”, a male, is mistranslated into “she”, a pronoun for female gender. “Dia” in this context is referred to Lintang who is happened to be a boy, not a girl.
4-SUB: The objective pronoun “-nya” in “genderang**nya** is mistranslated into “her”, a female gender. “-nya” in this context is referred to Lintang who is a boy. There is a problem of FMT in understanding gender-neutral pronoun in Bahasa Indonesia and therefore must be substituted.

2. Insertion

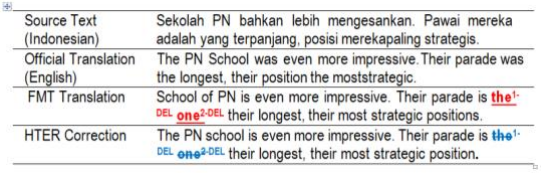
Figure 3.4. Insertion in FMT translation (Source Text 1, Sent. 4)

Source Text (Indonesian)	Kami sangat miskin sehingga tidak pernah punya cukup uang untuk mengadakan karnaval yang bagus.
Official Translation (English)	We were so poor that we never had enough money for a good carnival performance.
FMT Translation	We're so poor ....[1-INS] we never have enough money to throw a good carnival.
HTER Correction	We're so poor that[1-INS] we never have enough money to throw a good carnival.

1-INS: The translation of source word “sehingga” which means “to such a degree”, “so”, or “that” in English is not translated by FMT. Without the word "that," the sentence is still grammatically correct. However, it simply changes the flow and emphasis of the sentence slightly and therefore the word “that”, as used in the official English translation, must be inserted or added.

3. Deletion

Figure 3.5. Deletion in FMT translation (Source Text 3, Sent. 4)



Source Text (Indonesian)	Sekolah PN bahkan lebih mengesankan. Pawai mereka adalah yang terpanjang, posisi merekapaling strategis.
Official Translation (English)	The PN School was even more impressive. Their parade was the longest, their position the moststrategic.
FMT Translation	School of PN is even more impressive. Their parade is the[1-DEL] one[2-DEL] their longest, their most strategic positions.
HTER Correction	The PN school is even more impressive. Their parade is ~~the~~[1-DEL] ~~one~~[2-DEL] their longest, their most strategic position.

1-DEL and 2-DEL: The phrase “the one” is redundant and should be deleted.

4. Shift

Figure 3.6. Shift in FMT translation (Source Text 3, Sent. 6)

Source Text (Indonesian)	Penghargaan tertinggi untuk Penampilan Seni Terbaik telah dipajang secara permanen selama setidaknya 40 tahun di etalase kaca yang menonjoldi Sekolah PN.
Official Translation (English)	The supreme award for Best Art Performance had been eternally displayed for at least 40 years in the prominent glass display case at the PN School.
FMT Translation	The highest award for Best Performance Art has been on permanent display for at least 40 years in the prominent glass window display[1-SHI] at PN School.
HTER Correction	The highest award for Best Performance Art has been on permanent display for at least 40 years in the prominent glass display window[1-SHI] at PN School.

1-SHI: The ST phrase “etalase kaca” which means “glass display” or “glass window display” is mistranslated by FMT into “glass display window”. Here, the word “display” is head noun while “window” is the noun modifier. Shifting the word “window” in modifier position add to a grammatically correct sentence.

3.2. Discussion

The researchers' primary focus lies on the importance of distinguishing between different types of corrections in English translations of "Laskar Pelangi" posts, coupled with an assessment of the quality of FMT. Emphasizing the significance of categorizing the data into four types of corrections - namely substitutions, insertions, deletions, and shifts based on HTER - the findings of this investigation support previous studies conducted by Cahyaningrum (2021), Zahro (2018), and Julfiah (2023). All of these studies examined quality in terms of accuracy, identifying challenges related to limited vocabulary and appropriate equivalents in the target language.

In contrast, the current study contradicts previous research conducted by Cahyaningrum (2021) and Zahro (2018) regarding machine translation on Facebook. Unlike Cahyaningrum's study, which scored 50% accuracy, and Zahro's study, which identified 55 errors categorized into syntactic (40.01%), mechanic (29.09%), semantic (23.63%), and cultural (7.27%) errors, this analysis, identifying four types of edits by HTER (substitution, insertion, deletion, and shift), focused on correcting posts of the English-translated novel "Laskar Pelangi," revealing a more relatable scenario. This study shows a Facebook machine translation accuracy of 80.23% using HTER and TQI, with the most dominant correction being substitution (2.29%). This contradicts concerns raised in previous studies about the accuracy and effectiveness of machine translation on social media platforms.

Similar findings are reflected in Julfiah's (2023) research entitled "Facebook Auto Translation Methods in Translating Arabic-Indonesian on Al Jazeera Channel Posts." The data analysis was conducted qualitatively, where data collection, analysis, and presentation were done descriptively. The results showed that out of 58 posts and their translations analyzed, researchers found that FAT only applied two methods out of eight

methods proposed by Newmark. The two methods are word-for-word translation and literal translation. A total of 6 translations (10.34%) were classified as word-for-word translations and 52 translations (89.66%) were classified as literal translations, which means that the final results were quite good.

Furthermore, the spotlight then turns to the remarkable accuracy value of 80.23% derived from analyzing 1649 words. This numerical achievement is significant, underscoring the accuracy of FMT in translating Indonesian literary works into English. Moreover, the alignment of the accuracy value with the TQI value of 80.23%, according to the HTER formula, categorizes the translation quality as "good."

The implications of these findings resonate beyond the specific scope of this study. Machine translation, exemplified by the tools used by Facebook, is emerging as a viable way to translate literary texts on social media platforms. As we celebrate the successes, it is imperative to acknowledge and discuss the limitations and challenges encountered during the analysis. Looking forward, the discussion extends to potential directions for future research. Exploring avenues to refine machine translation quality becomes imperative, especially considering the dynamic nature of language and the evolving landscape of digital communication. Addressing these nuances will not only contribute to the academic discourse but also enhance the practical utility of machine translation tools in conveying the richness of literary works across linguistic boundaries.

D. Conclusion

In the exploration of the post-edit process for the English translation of the literary text novel "Laskar Pelangi" using Facebook machine translation, the researchers meticulously categorized corrections into substitution, insertion, deletion, and shift based on the HTER framework proposed by Snover in 2006. This systematic approach involved manual identification and classification of data by comparing original Indonesian posts with their human-corrected versions, taking into account grammatical nuances. The ensuing analysis unveiled a notable 80.23% accuracy in the Facebook machine translation across a sample of 1649 words. The use of TQI further substantiated this accuracy, signifying a commendable performance.

Furthermore, the research findings shed light on the distribution of correction types, revealing that substitution emerged as the most dominant correction category. This insight into the prevalence of specific correction types enhances our understanding of the nuances in the machine translation process, pointing to areas where improvements or focus may be warranted. The robust categorization facilitated by the HTER framework offers a comprehensive overview, allowing researchers and practitioners to pinpoint strengths and weaknesses in the translation output.

In conclusion, the thorough analysis of the correction process using HTER not only validates the accuracy of Facebook machine translation, attested by an 80.23% TQI score, but also provides valuable insights into the nature of corrections needed. The dominance of substitution corrections underscores the importance of refining algorithms to better capture context and idiomatic expressions, contributing to the continuous enhancement of machine translation capabilities for literary texts like "Laskar Pelangi."

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