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Navigating the Future of Translation: A Descriptive Qualitative Comparison of DeepL and Google Translate in Translating High School Social Texts

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ABSTRACT

This descriptive qualitative study investigates the translation performance of two prominent machine translation (MT) tools—DeepL and Google Translate—in the context of high school-level social texts in Indonesia. Five Indonesian texts covering topics such as environment, culture, education, and digital behavior were translated into English using both tools. The translations were assessed by human evaluators based on three key criteria: accuracy, fluency, and contextual appropriateness. The study also incorporates theoretical perspectives on neural machine translation and its role in education to frame the analysis. Findings indicate that DeepL consistently outperforms Google Translate, especially in fluency and contextual sensitivity, although both tools have strengths and limitations. This research contributes practical implications for language educators and students in using MT critically and effectively in learning environments.

Keywords: *Machine Translation, DeepL, Google Translate, Social Texts, Qualitative Analysis*

INTRODUCTION

Recent theories in the field of machine translation have emphasized the growing integration of artificial intelligence and neural network models. According to Vaswani et al. (2017), the introduction of the Transformer model has revolutionized translation tasks by

enabling systems to better capture contextual relationships within texts. Moreover, Castilho et al. (2020) argue that neural machine translation (NMT) systems are increasingly able to replicate human-like translation fluency, especially in high-resource language pairs.

In the educational context, Bowker and Buitrago Ciro (2019) highlight the pedagogical implications of using MT tools in language classrooms, suggesting that students benefit most when guided through post-editing and critical evaluation activities. Furthermore, Garcia and Pena (2021) note that while MT systems are improving, their effectiveness is heavily influenced by the genre and complexity of the source text, which is particularly relevant in high school social texts.

Machine translation (MT) technology has rapidly transformed the way people communicate and learn languages, particularly in educational contexts. With just a few clicks, users can obtain instant translations across hundreds of languages. For students at the high school level, where English is often taught as a foreign language, MT tools like Google Translate and DeepL have become indispensable for reading, writing, and completing classroom tasks. However, the effectiveness of these tools in translating texts used specifically in high school contexts has not been deeply explored.

As students frequently encounter texts with social themes—ranging from environmental issues to cultural values and personal identity—the challenge lies in how well MT tools can preserve the nuances, tone, and meaning of these social messages. Social texts are rich in context and often use idiomatic expressions, emotional tone, and informal language. These characteristics make them more difficult for automated systems to translate accurately and naturally.

Google Translate, being the most commonly used MT tool globally, benefits from an extensive database and wide language coverage. Its ease of access and integration into web browsers and mobile apps makes it the default choice for many students and teachers. In contrast, DeepL, although newer and less widespread, has received praise for producing more fluent and natural translations in European languages. Its Indonesian-English translation capabilities, however, have not been extensively studied.

The importance of translation quality in the classroom is often underestimated. When students use MT tools to translate reading passages or produce English compositions,

the quality of the machine-generated text influences their learning, understanding, and motivation. Poor translations can lead to misunderstandings or reinforce incorrect grammar and vocabulary usage.

This research investigates how DeepL and Google Translate perform when tasked with translating short social texts intended for high school learners. The research question guiding this study is: How do DeepL and Google Translate differ in translating social texts for high school students in terms of accuracy, fluency, and contextual appropriateness?

Understanding this difference is crucial not only for educators who design lesson plans that incorporate technology but also for students who rely on such tools for completing tasks and improving their English. As language education increasingly embraces digital tools, assessing their effectiveness becomes essential.

This study uses a descriptive qualitative design to compare the translation outputs of both tools. Instead of relying on automatic metrics such as BLEU scores, the analysis is based on human judgment. This approach allows for a deeper understanding of subtle language nuances, including cultural references and emotional tone.

Moreover, this research fills a gap in current literature by focusing on high school texts, rather than academic or technical documents. The selected texts are short, realistic, and aligned with themes commonly found in Indonesian high school English curriculum. The simplicity and relevance of these texts make them ideal for assessing machine translation performance in actual classroom situations.

Ultimately, the results of this study are expected to contribute to the development of more effective language learning practices by guiding students and teachers in choosing and using MT tools wisely. The findings will also offer insights into how educators can support students in critically evaluating and editing machine-generated translations.

METHOD

This study employed a descriptive qualitative design to examine the translation performance of two MT tools. Unlike quantitative designs that rely on numerical data or automated scoring systems, the qualitative approach in this study allows for a deeper

analysis of translation quality through human interpretation. This is especially useful for evaluating the subtle nuances found in social texts. The descriptive nature of the study means that it aims to document and interpret the translation phenomena as they occur, rather than manipulate variables or establish cause-effect relationships. It is based on real-world usage of machine translation tools in educational settings, specifically how students might use them without professional editing or post-processing.

Five short Indonesian texts were selected based on their relevance to high school English learning. Each text contained 100 to 150 words and covered topics such as environmental sustainability, digital behavior, cultural diversity, gender equality, and social responsibility. These texts mirror the kinds of reading materials students are exposed to in the national English curriculum. Texts were chosen to reflect a variety of linguistic features, including idiomatic expressions, emotional tone, metaphors, and informal structures. By including such diversity, the study ensures that the evaluation covers a wide range of translation challenges.

Each of the five Indonesian texts was input manually into both Google Translate and DeepL. The researchers ensured that no pre-editing or simplification was performed, in order to simulate the authentic experience of a student using these tools. The resulting English translations were saved for analysis. Each text was translated on the same day using both platforms to ensure consistency in terms of system updates or changes in output. No additional tools, plugins, or browser extensions were used during the process.

The evaluation focused on three key dimensions: (1) Accuracy – whether the translated content preserved the original meaning; (2) Fluency – whether the English output was grammatically correct and stylistically natural; and (3) Contextual Appropriateness – whether the translation suited the social and cultural context of the original message.

RESULTS

The effectiveness of machine translation tools can be analysed through the lens of various theoretical perspectives. According to Hutchins (2005), while early rule-based systems struggled with linguistic complexity, modern neural machine translation (NMT) models significantly improve contextual understanding. Additionally, Koehn (2020) points out that current NMT systems often surpass traditional models in fluency, though they still present challenges in handling culture-specific language.

From a pedagogical viewpoint, Pym (2012) suggests that translation in language learning should be approached as a transformative practice that builds awareness of form, function, and meaning. This is echoed by Kiraly (2014), who emphasizes the value of collaborative translation analysis in promoting critical thinking and learner autonomy. These theoretical foundations strengthen the justification for comparing translation outputs through qualitative evaluation, particularly in the context of educational texts.

Below are five social science texts that were translated using both Google Translate and DeepL. Each text is followed by a comparative analysis based on three criteria: Accuracy, Fluency, and Contextual Appropriateness. The comparisons are presented in tabular format for clarity.

TEXT 1: Urban Social Inequality

Original (Indonesian)

"Ketimpangan sosial menjadi masalah yang semakin nyata di kota-kota besar. Perbedaan antara si kaya dan si miskin terlihat jelas dari tempat tinggal, akses pendidikan, hingga layanan kesehatan. Banyak keluarga berpenghasilan rendah tinggal di pemukiman kumuh, sementara orang-orang kaya hidup di apartemen mewah. Ketimpangan ini memicu kecemburuan sosial dan potensi konflik antarwarga. Pemerintah perlu mengambil kebijakan yang adil dan berpihak pada kelompok rentan untuk menciptakan keadilan sosial di tengah perkembangan kota."

Google Translate

"Social inequality becomes an increasingly real problem in big cities. The difference between the rich and the poor is clearly seen from place of residence, access to education, to health services. Many low-income families live in slum areas, while rich people live in luxurious apartments. This inequality triggers social jealousy and potential conflict between citizens. The government needs to take fair policies and side with vulnerable groups to create social justice in the midst of city development."

DeepL

"Social inequality is becoming a more visible issue in major cities. The gap between the rich and the poor can be seen clearly in housing, access to education, and healthcare services. Many low-income families reside in slums, while the wealthy live in luxury apartments. This disparity often fuels social envy and potential conflicts among residents. To ensure social justice during urban development, the government must implement fair policies that protect vulnerable communities."

Comparative Table

Criteria	Google Translate	DeepL	Evaluation
Accuracy	Rather literal, "social jealousy" is awkward.	"Social envy" is more idiomatic and contextually accurate.	DeepL is more accurate.
Fluency	Feels mechanical and overly literal in sentence flow.	Sentences are more natural, and grammar is more consistent.	DeepL is more fluent.
Contextual Appropriateness	Lacks an academic tone and feels less refined.	Fits well within the tone and context of a social science discourse.	DeepL is more contextually appropriate.

TEXT 2: Cultural Diversity in Daily Life

Original (Indonesian)

"Indonesia dikenal sebagai negara dengan keberagaman budaya. Di setiap daerah, kita dapat menemukan adat istiadat, makanan, pakaian, dan bahasa yang berbeda-beda. Perbedaan ini seharusnya tidak menjadi alasan perpecahan, tetapi menjadi kekayaan yang menyatukan kita. Dengan saling menghargai dan belajar dari budaya satu sama lain, kita bisa hidup berdampingan secara harmonis."

Google Translate

"Indonesia is known as a country with cultural diversity. In each region, we can find customs, food, clothing, and different languages. These differences should not be the reason for division, but become a wealth that unites us. By respecting each other and learning from one another's culture, we can live side by side harmoniously."

DeepL

"Indonesia is known for its rich cultural diversity. Each region offers its own customs, cuisine, traditional attire, and local languages. These differences should not divide us, but instead serve as a unifying treasure. By respecting and learning from each other's cultures, we can live together in harmony."

Comparative Table

Criteria	Google Translate	DeepL	Evaluation
Accuracy	Basic meaning conveyed, but lacks nuance (e.g., "wealth" literal).	Captures intended meaning more precisely (e.g., "unifying treasure").	DeepL is more accurate.
Fluency	Acceptable grammar, but some phrases sound mechanical.	More natural phrasing and varied vocabulary (e.g., "offers," "serve as").	DeepL is more fluent.

Contextual Appropriateness	Culturally sensitive, but slightly rigid phrasing.	Smooth tone and appropriately academic for a social context.	DeepL is more contextually appropriate.

TEXT 3: Environmental Responsibility at School

Original (Indonesian)

"Sekolah bukan hanya tempat belajar, tetapi juga tempat membentuk karakter peduli lingkungan. Dengan membuang sampah pada tempatnya, mengurangi penggunaan plastik, dan ikut serta dalam program daur ulang, siswa dapat berkontribusi menjaga bumi. Kesadaran ini harus ditanamkan sejak dini agar generasi muda terbiasa hidup ramah lingkungan."

Google Translate

"School is not only a place to study, but also a place to shape environmentally caring character. By throwing garbage in its place, reducing the use of plastic, and participating in recycling programs, students can contribute to protecting the earth. This awareness must be instilled early so that the younger generation is used to living environmentally friendly."

DeepL

"School is not only a place for academic learning, but also a space to cultivate environmental awareness. By disposing of waste properly, reducing plastic use, and participating in recycling programs, students can help protect the planet. This mindset should be instilled early so that future generations grow accustomed to sustainable living."

Comparative Table

Criteria	Google Translate	DeepL	Evaluation

Accuracy	Accurate ideas but some awkward wordings like "in its place".	Better interpretation of concepts like "sustainable living."	DeepL is more accurate.
Fluency	Slightly stiff and literal sentence flow.	Natural and fluid phrasing with better transitions.	DeepL is more fluent.
Contextual Appropriateness	Functional, but lacks idiomatic or thematic refinement.	Suitable for an educational and environmental message.	DeepL is more contextually appropriate.

TEXT 4: Social Media and Teen Identity

Original (Indonesian)

"Remaja masa kini sangat aktif di media sosial. Mereka menggunakan platform seperti Instagram dan TikTok untuk mengekspresikan diri, mencari pengakuan, dan membentuk identitas. Namun, terlalu bergantung pada validasi digital dapat memengaruhi rasa percaya diri dan kesehatan mental. Pendidikan literasi digital menjadi penting agar remaja bisa menggunakan media sosial secara bijak."

Google Translate

"Today's teenagers are very active on social media. They use platforms like Instagram and TikTok to express themselves, seek recognition, and form identity. However, being too dependent on digital validation can affect self-confidence and mental health. Digital literacy education is important so that teenagers can use social media wisely."

DeepL

"Modern teenagers are highly active on social media platforms such as Instagram and TikTok. They use these tools to express themselves, seek recognition, and shape their identities. However, overreliance on digital validation may negatively impact self-esteem and mental health. Therefore, digital literacy education is essential to help teens engage with social media wisely."

Comparative Table

Criteria	Google Translate	DeepL	Evaluation
Accuracy	Mostly accurate, but "form identity" sounds mechanical.	Captures nuance better with "shape their identities."	DeepL is more accurate.
Fluency	Literal and repetitive structures.	Natural sentence rhythm and clear transitions.	DeepL is more fluent.
Contextual Appropriateness	Lacks depth in educational or psychological nuance.	More suited for youth literacy and mental health context.	DeepL is more contextually appropriate.

TEXT 5: Gender Equality in Education

Original (Indonesian)

"Setiap anak, baik laki-laki maupun perempuan, memiliki hak yang sama untuk mendapatkan pendidikan. Sayangnya, di beberapa daerah, anak perempuan masih mengalami diskriminasi dan tidak mendapatkan akses pendidikan yang layak. Penting bagi masyarakat dan pemerintah untuk memastikan bahwa kesempatan belajar tersedia bagi semua tanpa perbedaan gender."

Google Translate

"Every child, both boys and girls, has the same right to get an education. Unfortunately, in some areas, girls still experience discrimination and do not get proper access to education. It is important for society and the government to ensure that learning opportunities are available to all without gender differences."

DeepL

"Every child, regardless of gender, has an equal right to education. Unfortunately, in certain regions, girls still face discrimination and lack proper access to schooling. It is crucial for both society and the government to ensure that educational opportunities are accessible to everyone, without gender-based disparities."

Comparative Table

Criteria	Google Translate	DeepL	Evaluation
Accuracy	Accurate core message, but awkward phrases like "get an education."	More precise and formal wording, e.g., "access to schooling."	DeepL is more accurate.
Fluency	Slightly mechanical phrasing, some direct translation.	Fluent and professional language style.	DeepL is more fluent.
Contextual Appropriateness	General educational tone but lacks persuasive impact.	Stronger tone suitable for advocacy and education policy.	DeepL is more contextually appropriate.

DISCUSSIONS

The findings from the comparative analysis indicate that DeepL consistently delivers translations that are more accurate and contextually appropriate compared to Google Translate. This is primarily due to its superior handling of idiomatic expressions and cultural nuances, which ensures that the translated messages maintain the original intent and emotional tone.

In terms of fluency, the language produced by DeepL flows more naturally, with smoother syntactic structures and a coherent lexical choice that mirrors human translation. Conversely, Google Translate often presents a more literal output that, while understandable, can sometimes disrupt the overall readability and natural rhythm of the text.

The ability of DeepL to preserve contextual appropriateness further enhances its effectiveness in an academic setting. By successfully adapting translations to reflect the nuanced social and cultural contexts of the original texts, DeepL proves to be particularly well-suited for educational use, where maintaining the integrity of the source message is crucial.

These results resonate with the theoretical perspectives outlined in the literature. Scholars such as Hutchins (2005) and Koehn (2020) have noted the advancements in neural machine translation, while Pym (2012) and Kiraly (2014) emphasize the pedagogical benefits of employing MT tools in language learning environments. The superior performance of DeepL in our study supports these insights and highlights the evolving role of technology in translation.

Overall, the comparative findings suggest significant implications for educators. Integrating advanced MT tools with guided post-editing and critical evaluation exercises can enhance language learning by promoting deeper engagement with both the strengths and limitations of automated translation systems. This approach not only bolsters linguistic competence but also fosters the development of analytical skills essential for navigating digital language tools.

CONCLUSIONS

The findings of this study align with broader theoretical insights in translation studies. Pym (2012) emphasizes that translation tools should not merely provide linguistic equivalence but should also support the development of learner agency. The ability of DeepL to more effectively preserve nuance and naturalness corresponds with what Sager (1994) identifies as a key component of communicative translation—namely, adapting the message while retaining its intent and tone.

In addition, the pedagogical implication of MT use aligns with Kiraly's (2014) constructivist approach, which advocates integrating technology into language learning environments through guided interaction and reflection. These insights further reinforce the role of MT as an aid, rather than a replacement, in fostering meaningful language development.

This study set out to compare the translation quality of DeepL and Google Translate in the context of Indonesian high school social texts. Based on a qualitative analysis of five short texts, evaluated across accuracy, fluency, and contextual appropriateness, the findings provide strong evidence that DeepL generally outperforms Google Translate in terms of producing more natural and contextually sensitive translations.

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