

Analyzing the differences: U-dictionary and Google translate's English-to-Indonesian speech translation

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Abstract: This study investigated the use of U-Dictionary and Google Translate in translating English Speech into the Indonesian language. This study aimed to test whether U-Dictionary outperforms Google Translate in translating English Speech into Indonesian. The true experimental design was applied to examine the result of the translation from U-Dictionary and Google Translate. Two raters assessed the translation result from U-Dictionary and Google Translate using a translation scoring rubric (In the "Equal Variances Assumed" section, the two-tailed significance value is 0.000, which is less than 0.05). The result showed that U-Dictionary didn't outperform Google Translate in translating English Speech into Indonesian. On the contrary, Google Translate outperformed U-Dictionary Google Translate in translating English Speech into the Indonesian language. Here, the source language is English and the target language is Indonesian language. The result strongly suggests that Google Translate app is more effective than U-Dictionary in translating English to Indonesian in relating topics such as biography, daily life, and culture of certain community. The further research is expected to investigate the efficacy of Google Translate towards U-Dictionary in different scope of discourse like economic, politic, law, and etc. Moreover, the future research may compare among Machine Translation (MT) or among translation apps.

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1. Introduction

The inception of Machine Translation (MT) has spurred a multitude of researchers to delve into its efficacy and its pivotal role in facilitating the transfer of knowledge and information from English to Indonesian or other languages. This technological advancement has become a focal point for exploration, with scholars aiming to unravel its potential and contributions to bridging linguistic gaps and fostering cross-cultural communication (Baziotis et al., 2020; Behnke & Heafield, 2020; Bowker, 2020; Budianto et al., 2020, 2022b, 2022a; Budianto & Sayidah, 2022).

Current studies have examined and named the broad MT to some new name MT; BLUE and showed the effective result of using Machine Translation (MT) but they applied for different source and target language (Dabre et al., 2020b, 2020a; Guo et al., 2020; Guzmán et al., 2019; Ji et al., 2020; Jia et al., 2019; Keguruan et al., 2020; Kim et al., 2019; Lee, 2020; Liu et al., 2021; Maruf et al., 2021; Müller et al., 2019). Furthermore, researchs have underscored the increasing importance of Machine Translation (MT) in facilitating the translation process across various source and target languages. Notably, the efficacy of MT has been highlighted in language pairs such as Chinese to English (Bowker, 2020; Q. Wang et al., 2020), Czech to English (Popel et al., 2020), and Korean to English (Ryu et al., 2022). Additionally, MT has proven to be instrumental in translating from English to German (Behnke & Heafield, 2020; Guo et al., 2020; X. P. Nguyen et al., 2020; Zheng et al., 2020) and English to French (Nguyen et al., 2020; Zheng et al., 2020; Arivazhagan et al.,

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2019). The impact extends further to translations from English to Nepali (X. P. Nguyen et al., 2020; Guzmán et al., 2019), English to Sinhala (X. P. Nguyen et al., 2020; Guzmán et al., 2019), English to Romanian (Liu et al., 2021), English to Russian (Lee, 2020), and English to Turkish (Behnke & Heafield, 2020). Furthermore, MT plays a significant role in translating from English to Spanish (Agrawal & Carpuat, 2019), French to German (Kim et al., 2019; Arivazhagan et al., 2019) and German to Czech (Kim et al., 2019). These findings underscore the broad applicability and effectiveness of MT across diverse language pairs (Abidin et al., 2021; Agrawal & Carpuat, 2019; Airlangga et al., 2016; Arenas & Moorkens, 2019).

The utilization of Machine Translation (MT) has witnessed widespread application across various fields of study, with notable prominence in sectors such as education, medical, legal, and business. In the realm of education, MT has been harnessed in education (Yang & Wang, 2019), showcasing its pivotal role in facilitating language learning, cross-cultural communication, and knowledge dissemination. In the medical domain, MT has proven invaluable, its application evident in tasks like translating medical documents, aiding communication between healthcare professionals and patients with diverse linguistic backgrounds, and enhancing global collaboration in medical research (Vieira et al., 2021). Similarly, the legal field has experienced the impact of MT (Vieira et al., 2021), contributing to the translation of legal documents, facilitating international legal proceedings, and fostering efficient communication in a multilingual legal landscape. Moreover, in the business sector, MT has found application playing a crucial role in breaking down language barriers in international trade, enabling effective communication in multinational corporations, and streamlining global business operations (Bowker, 2020). This pervasive integration of MT across these diverse fields underscores its transformative potential and adaptability in addressing linguistic challenges across various professional domains.

However, recent studies had distinguished with similar goals in examining MT which tried to find out the effectiveness and better quality among others (Vieira, 2019; Vieira et al., 2021; Vilar et al., 2006; Q. Wang et al., 2020; S. Wang et al., 2020; Wei et al., 2020; Yamada, 2019; Yang & Wang, 2019; Zheng et al., 2020; Zhou et al., 2019). What to remember that one type of MT might be fruitful for only one field of study. Therefore, it cannot be claimed one MT is effective for all types of fields of study. This study focused on applying Google Translate (GT) and U-Dictionary (UD) respectively in translating English to Indonesian language for general speech talking about habituality.

Several previous studies have identified the contributions as well as risks of machine translation (MT). Within the framework of this research, evidence indicates that MT plays a crucial role in facilitating global access to information and expediting cross-language communication processes. These positive contributions include improved communication efficiency, cross-cultural collaboration, and broader access to diverse sources of information. However, along with these benefits, certain risks have also been identified. Some studies highlight the potential for distortion of meaning or translation errors that may arise in the context of MT, which can impact the accurate and precise understanding of information. Therefore, while MT provides significant benefits, a comprehensive understanding of its potential dangers is also crucial in optimizing its utilization (Vieira et al., 2021; Vilar et al., 2006).

Various results from previous studies indicate variations when different methods are applied. Most of the applied methods show that Machine Translation (MT) is highly beneficial in translating one language to another. These results reveal diversity in the approaches used, but the common consensus is that MT plays a significant role in facilitating the translation process. From these findings, it can be concluded that the use of MT has substantial potential to enhance efficiency and accuracy in cross-language communication. Definitely, certain challenges may arise, and further efforts are needed to optimize the performance of MT in various translation contexts and situations. However, the presence of MT still needs human editing to match the comprehensible result of translation (Abidin et al., 2021; Agrawal & Carpuat, 2019). Moreover, one study claims

human translation is more fluent than MT (Abidin et al., 2021). The use of Google translation is one of MT which has been examined by some researchers (Prates et al., 2020; Ryu et al., 2022; Vieira et al., 2021).

This study aims to investigate commonly used machine translation (MT) tools, namely Google Translation (GT) and U. Dictionary (UD). The use of Google Translation and U. Dictionary were considered as the most familiar apps used by Indonesian students. The focus of this research is to ensure better translation quality between Google Translation and U. Dictionary when translating the speech of Miss Supranatural 2019, 2021, 2022 from Indonesia. The speech delivered by the those Misses Supranatural represented the way of Indonesian people towards life and culture, Moreover this is in accordance with the content in learning translation courses in the English study program. This research is important due to by observing and comparing the performance of both translation engines, it is hoped that improvements or enhancements can be identified to improve the accuracy and consistency of translation results by MT. The outcomes of this research are expected to provide further insights into the translation capabilities of these machine tools, particularly in the context of translating speeches from the Indonesian language.

2. Materials and Methods

The study applied a t-test to compare two MTs which so-called U-dictionary and Google Translate. The data were taken from the speech delivered by Miss Supranatural 2019, 2021, 2022 from Indonesia as an example of speeches in translation learning in the English department.

Fourty-seven sentences were translated using U-Dictionary. The results of the translation were copied and put on the table. Similar steps were conducted when using Google. The result of the translation in the table was assessed by two experienced English teachers of translation at one of the universities from Surabaya Indonesia. The criteria of translation provided were as follows (Table 1). The total score from the two raters then was calculated to get the average.

Table 1. Scoring Rubrics

Score	Criteria
1	Very Poor
2	Poor
3	Neutral
4	Good
5	Very Good

3. Results

Based on the test results, Google Translation (GT) demonstrated an average score of 3.6, while U. Dictionary (UD) scored an average of 2.7 (refer to Table 1). This indicates that, on average, GT outperformed UD in the translation task.

Upon analyzing the results of the independent sample test for post-test 1 (Table 2), it's noteworthy that the significance value of Levene's test for equality of variance is 0.23, exceeding the threshold of 0.05. This suggests that the variance between GT scores and UD scores is homogeneous or equal. In the "Equal Variances Assumed" section, the two-tailed significance value is 0.000, which is less than 0.05. Consequently, based on the outcomes of the independent sample t-test, the null hypothesis (Ho) is rejected, and the alternative hypothesis (Ha) is accepted. In simpler terms, there is a statistically significant difference between using GT and UD for speech translation. In summary, the data supports the conclusion that GT performs significantly better than UD in translating speech, as evidenced by the higher average score and the rejection of the null hypothesis in the independent sample t-test (Based on Table 3).

Table 2. Group Statistics

	Category	N	Mean	Std. Deviation	Std. Error Mean
Rubric score average	Google Translate	47	3.6064	1.06289	.15504
	U-Dictionary	47	2.7660	1.16026	.16924

Table 3. Independent Sample Test

		Levene's Test		t-test for Equality of Means						
		F	Sig.	t	Df	Sig.	Mean	Std. Error	95% Confi. interval	
							Diff.	Diff.	Lower	Upper
Rubric score average	Equal variances assumed	1.420	.237	3.662	92	.000	.84043	.22952	.38458	1.29627
	Equal variances not assumed			3.662	91.302	.000	.84043	.22952	.38453	1.29632

The research findings state that the raters believe that the use of Google Translate is better than the U dictionary in translating general speech from English to Indonesian language. It can be inferred that Google Translate is effective for general speech which contains general information NOT specific ones like economics, politics, law, and health. The finding is in line with the previous studies saying that Google Translate is useful for translating general information.

4. Discussion

4.1 Accuracy of Translation

In evaluating the accuracy of translation between U-Dictionary and Google Translate, it is crucial to conduct a comprehensive analysis by testing various English speech inputs. The objective is to understand how each platform handles nuances and linguistic complexities present in different source languages. By using diverse speech inputs, the diversity and adaptability of U-Dictionary and Google Translate in delivering accurate Indonesian translations can be assessed. Different outcomes were indicated in a study conducted by [Nadhianti. et al., \(2016\)](#) The study revealed that Google Translate is considered inaccurate in translating English to Indonesian and vice versa. This conclusion is based on the percentage of accurate occurrences in Google Translate translations, which is only 49.1% for English to Indonesia and 37.1% for Indonesia to English. These figures are below 50%, providing a foundation to comprehend potential inaccuracies in translating the video content of the Miss Supranatural event.

Key aspects of the evaluation involve examining the Indonesian translations generated by each platform. This includes comparing the translation output with the intended meaning of the English speech input. Translation accuracy is not solely determined by the literal translation of words but also by the platform's ability to capture context and subtle nuances inherent in spoken language ([Maruf et al., 2021](#)). The evaluation considers the linguistic challenges posed by colloquial expressions, idioms, and cultural references in English speech. U-Dictionary and Google Translate must be tested for their proficiency in deciphering and translating these elements accurately into Indonesian ([Nadhianti. et al., 2016](#)). This aspect is crucial for assessing the understanding of context and cultural sensitivity of both platforms.

To measure the precision of U-Dictionary and Google Translate, it is important to evaluate their performance in handling variations in tone, formality, and regional accents in English speech. Accurate translations should not only convey the literal meaning of words but also reflect the intended tone and level of formality. Examining how well the platforms adapt to different English language accents ensures a more comprehensive evaluation of their overall effectiveness. Given the dynamic nature of language, both platforms should be tested for their ability to adapt to evolving language trends, slang, and new expressions. Translation accuracy should encompass the use of conventional language up to contemporary linguistic element ([Yeswari & Ardi, 2023](#)). This ensures that

U-Dictionary and Google Translate remain relevant and effective in translating modern spoken English into Indonesian.

User feedback and real-world usage scenarios are also crucial factors in this evaluation. Involving the experiences of individuals who have used Google Translate and U-Dictionary to translate English-Indonesian speeches in the context of the Miss Supranatural event can provide valuable insights into practical accuracy and user satisfaction with both platforms. Real-world testing helps bridge the gap between controlled experiments and the complexity of everyday language use. In conclusion, a comprehensive evaluation of the translation accuracy provided by U-Dictionary and Google Translate requires a multi-faceted approach. By testing various English speech inputs, assessing the handling of linguistic nuances, and considering user feedback, we can gain a nuanced understanding of how well these platforms perform in translating spoken English into Indonesian in the context of the Miss Supranatural event in Poland. This holistic evaluation is essential for users seeking reliable and accurate translation services in real-world scenarios, especially in the representation of Indonesia in this prestigious event.

4.2 Language Support and Nuances

Language support is a crucial aspect in evaluating the effectiveness of translation platforms like U-Dictionary and Google Translate. These platforms not only need to offer translations for various languages but also excel in capturing nuances, idiomatic expressions, and everyday language of each language with high accuracy (Budyanti, 2023). In this research, we delve into the extent of language support offered by both platforms, with a specific focus on their ability to comprehend and accurately translate colloquial expressions, idioms, and culturally specific phrases commonly used in English speech when translating into Indonesian. U-Dictionary has gained recognition for its comprehensive language support, often catering to colloquial and culturally nuanced expressions. The platform incorporates an extensive database of idioms and regional phrases, enhancing its ability to provide more contextually relevant translations. Users have reported satisfactory experiences with U-Dictionary's understanding of colloquial speech, highlighting its potential as a robust tool for nuanced translation.

Google Translate, as a widely-used and established platform, also boasts a substantial degree of language support. Its algorithms are continually improving, and it has made strides in recognizing colloquial expressions and idioms (Vieira et al., 2021). According to research by Zafitri and Harida (2020) Google Translate offers translation services for more than 100 languages. Users can seamlessly translate texts, phrases, and even entire web pages between languages. Additionally, it supports various features such as pronunciation, highlighting corresponding words, and acting as a simple dictionary for single-word inputs. However, users' experiences may vary, and there are instances where Google Translate may struggle with certain culturally specific phrases or fail to capture the subtleties present in colloquial speech. The translation of colloquial expressions poses challenges for both U-Dictionary and Google Translate. The informal nature of colloquialisms and idioms often relies heavily on cultural context, making accurate translation a complex task. Users should be aware of potential limitations and discrepancies in conveying the intended meaning when dealing with informal language elements.

To gain a comprehensive understanding, it is crucial to consider user feedback and experiences with both platforms. Real-world usage scenarios provide valuable insights into the platforms' effectiveness in translating colloquial expressions. Analyzing user reviews and testimonials can offer a practical perspective on the strengths and weaknesses of U-Dictionary and Google Translate in handling English speech nuances. Both U-Dictionary and Google Translate are likely to undergo continuous improvements and updates. Developers frequently refine algorithms to better understand colloquial expressions and idiomatic language. Examining the frequency and nature of updates from

each platform can provide insights into their commitment to addressing language nuances and improving overall translation accuracy.

In conclusion, the examination of language support for U-Dictionary and Google Translate in translating English speech into Indonesian involves a multifaceted analysis. While both platforms exhibit strengths, such as U-Dictionary's focus on colloquial expressions and Google Translate's widespread use, users should be aware of potential challenges in accurately translating nuanced language elements. Ultimately, the choice between U-Dictionary and Google Translate depends on the specific linguistic nuances and user preferences relevant to the context of translation.

In terms of translation techniques, Google Translate employs five out of eighteen techniques described by [Adinda and Rahayu \(2023\)](#), with literal translation and reduction as the dominant ones. Meanwhile, U-Dictionary utilizes seven translation techniques. According to (Tuahman Sipayung et al., 2021), Regarding translation accuracy, although Google Translate has undergone rapid development, machine translation still has limitations in clarity and correctness, with some grammatical errors and punctuation mistakes. Concerning supported languages, Google Translate supports many languages and is continuously updated, while there is no specific information about the languages supported by U-Dictionary in its research findings. Meanwhile, according to the study by [\(Yeswari & Ardi, 2023\)](#), in terms of user interface and integration, Google Translate has a user-friendly interface and is available on various platforms (web, apps, and API), while information about the interface and integration of U-Dictionary is not provided. Overall, Google Translate is more widely known and has more features, while U-Dictionary may be more focused on specific languages. The choice depends on user preferences and specific needs in particular situations. Although machine translation has advanced, its results still need to be evaluated wisely and sometimes require manual revisions to ensure accuracy and clarity.

4.3 Speech Recognition Technology

Speech recognition technology has become a key element in translation platforms such as U-Dictionary and Google Translate. It is important to investigate the efficiency of the speech recognition technology used by each platform. The ability to accurately convert speech into text significantly influences the quality of translation. In this regard, U-Dictionary excels by employing advanced and up-to-date speech recognition technology. The platform is regularly updated to ensure its speech recognition capabilities align with the latest technological developments. The use of algorithms and machine learning models in U-Dictionary is expected to enhance the accuracy of converting speech into text, thus providing more precise translation results.

Google Translate, as one of the leaders in the translation industry, also utilizes powerful speech recognition technology. With substantial technological resources, Google Translate can deliver high levels of accuracy when converting various languages, including translating from English to Indonesian. The strength of Google Translate lies in the diversity of its training data, encompassing various accents and speaking styles [\(Budiyanti, 2023\)](#). It is crucial to analyze how both platforms handle variations in pronunciation, intonation, and speaking speed. U-Dictionary and Google Translate should be capable of recognizing these differences and producing translated text accordingly. In the context of translating videos related to the Miss Supranatural event in Poland, this aspect becomes crucial, especially when Indonesian delegates explain various aspects to a global audience. Moreover, environmental factors can also impact the efficiency of speech recognition technology. Testing should include noisy environments and different acoustic settings. This aligns with the need for testing in various speaking contexts, including translating videos related to the delegation from Indonesia.

Therefore, testing in various speaking contexts is necessary to evaluate their reliability in real-world usage. A platform that can overcome these challenges will be favored in providing a consistent and reliable user experience. The use of Natural Language Processing (NLP) technology should also be considered in the evaluation. How

platforms interpret the meaning from the conversation context and generate translations that are not only grammatically accurate but also contextually appropriate is a critical aspect in assessing the sophistication of this technology (Baziotis et al., 2020). Thus, in investigating the efficiency of the speech recognition technology employed by U-Dictionary and Google Translate, comprehensive and thorough testing is needed to evaluate their reliability. Aspects such as accuracy, handling language variations, responsiveness to the environment, and NLP capabilities all need to be considered to gain a deep understanding of the quality of the speech recognition technology implemented by each platform.

4.4 Real-time Translation Performance

The real-time translation performance of platforms like U-Dictionary and Google Translate is a critical aspect that directly influences user experience. This evaluation involves considering factors such as processing speed, latency, and overall responsiveness when translating English speech into Indonesian in real-time situations. Processing speed is the primary focus in assessing real-time translation performance, as it indicates how quickly a platform can convert speech into translated text (Müller et al., 2019). Users often require instant translations, and the evaluation of processing speed provides insights into how efficiently U-Dictionary and Google Translate deliver translation results in a short amount of time.

Latency, or the delay between input speech and the output of the translation, is also an important factor. Low latency is essential to maintaining smooth conversations and supporting a more natural user experience. In this context, comparing U-Dictionary and Google Translate in handling latency can give an overview of how well both platforms can maintain responsiveness in real-time communication. The overall responsiveness of translation platforms involves assessing the user interface, adaptability to varying network conditions, and the ability to handle changes in speech patterns. This evaluation allows us to understand to what extent both platforms can adapt to different environments, ensuring users get a consistent and reliable translation experience.

In real-world situations, variations in accents, slang, and regional differences can pose challenges for translation platforms. Therefore, evaluating the effectiveness of U-Dictionary and Google Translate in handling linguistic nuances is necessary. Good performance in addressing linguistic diversity enhances the accuracy and relevance of translations (Maruf et al., 2021). The platform's ability to maintain context and coherence in translations during real-time conversations also needs attention. This is crucial to ensure that translations are not only accurate individually but also maintain the flow and meaning correctly in the context of the ongoing dialogue.

In the context of the increasing use of mobile devices, the performance of U-Dictionary and Google Translate on various devices is crucial. Dependency on smartphones and tablets demands that translation platforms be optimized to provide a smooth and responsive user experience (Müller et al., 2019). Evaluating the real-time translation performance involves a thorough analysis of processing speed, latency, and overall responsiveness. A comparison between U-Dictionary and Google Translate in this context will provide a better understanding of their capabilities in translating English speech into Indonesian in real-time situations. This understanding is essential for users who seek instant and accurate translations in various communication contexts.

4.5 Updates and Improvements

U-Dictionary and Google Translate are two major players in the world of translation services, offering users the ability to smoothly bridge language gaps. In this analysis, researchers will delve into the frequency of updates and improvements for both platforms to determine the extent of their commitment to sharpening and enhancing translation capabilities over time.

U-Dictionary, known for its comprehensive language support and vocabulary-building features, has shown remarkable commitment to regular updates. The platform

consistently fine-tunes its algorithms and expands its language database to provide users with accurate and up-to-date translations. Users can anticipate frequent updates, often not only in response to translation accuracy but also incorporating new language nuances and expressions. This commitment demonstrates U-Dictionary's dedication to staying current with linguistic developments.

Google Translate, a giant in the translation landscape, has a robust and sophisticated translation engine (Budyanti, 2023). Google's commitment to innovation is evident through regular updates, with improvements extending beyond just language translation. The platform integrates cutting-edge technologies such as machine learning and neural networks, ensuring continuous improvement in translation quality (Artetxe et al., 2020; Maruf et al., 2021). Frequent updates from Google Translate emphasize the company's dedication to maintaining its position as a leader in language technology.

In comparing the two platforms, both U-Dictionary and Google Translate show a commitment to sharpening and improving translation capabilities. U-Dictionary focuses on inclusivity by expanding its language offerings and refining existing translations, while Google Translate emphasizes technological advancements to ensure accuracy and contextual understanding. Users can benefit from the healthy competition between the two, as each strives to outdo the other in providing the best translation services (Tan et al., 2019).

User feedback plays a key role in shaping the trajectory of updates for both platforms. Both U-Dictionary and Google Translate actively engage with user reviews and suggestions, incorporating valuable insights into their development cycles. This user-centric approach ensures that updates address real-world translation challenges, fostering a user experience that aligns with evolving linguistic needs (Quarteroni, 2018). Both U-Dictionary and Google Translate demonstrate a strong commitment to updates and improvements, each employing different strategies to enhance their translation capabilities. The frequent updates from both platforms reflect an industry that is dynamic and responsive to the ever-changing language landscape, ultimately benefiting users seeking accurate and nuanced translations.

5. Conclusions

Our research focuses on comparing the effectiveness of Google Translate and the U-Dictionary app in translating the speech from Miss Supranatural Indonesia in Poland. Through meticulous examination and analysis, we find that Google Translate surpasses U-Dictionary in translating the Miss Supranatural event in Poland, particularly in segments featuring Indonesian delegates introducing their country to a global audience. Our conclusion considers the strengths and weaknesses of each tool, along with linguistic nuances and cultural references specific to the event. This research contributes to understanding how translation tools affect cultural representation, highlighting Google Translate's ability to accurately portray Indonesian content. Ultimately, our study advances knowledge on translation tool efficacy, particularly in cross-cultural communication during global events, emphasizing the importance of accurate representation in an interconnected world. Furthermore, this tool recommend as one of the tools in translating class, English literature department in the future. Futhermore, teaching translation for English Department students would utilize the Google Translate in resulting the effective way.

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