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The Model of Arabic Learning Translation Using Artificial Intelligence in Social-Media

Abd. Rozak, Kisno Umbar, Azkia Muharom Albantani
Universitas Islam Negeri Syarif Hidayatullah Jakarta
Corresponding E-mail: azki@uinjkt.ac.id

Abstract

This research is aimed at revealing the existence of new alternatives in translation teaching media. Translation teaching media is still strongly suspected to be dominated by the use of dictionaries, both in print such as Munawir, Munjid, Mahmud Yunus, and digital dictionaries like al-Maany, Google Translate, and other applications. The alternative media offered is social media such as Twitter (X). Social media usually used in public communication can be utilized as an alternative for translation learning. How to utilize social media such as Twitter in translation learning? How accurate is social media in teaching Arabic-Indonesian or Indonesian-Arabic translation? This research falls under the category of qualitative research when viewed from the source of text data used. The method used in the research is descriptive qualitative method. The researcher will systematically present examples of using social media (Twitter) in translation learning. The data source in this study is tweets in Arabic language on Twitter. The results of this study indicate that Twitter can be an alternative translation teaching media. The auto-translate system available on Twitter provides several advantages in translation teaching, such as access to authentic and contemporary materials, development of translation speed and accuracy, exercise in finding equivalent words that are currently trending in the Arab world. However, the translations displayed by the auto-translate system on Twitter still need to be considered because there are various contexts that machine translators cannot read.

Keywords: *translation media, auto-translate, Twitter (X)*

Introduction

Translation plays a crucial role in facilitating cross-language communication, enabling the exchange of information on a global scale across various contexts. However, the translation process often involves complex challenges, such as understanding the structural nuances of both the source and target languages and grasping the relevant cultural contexts (Ruhmadi & Al Farisi, 2023). As a fundamental

basis for developing translation skills, translation studies receive significant attention in overcoming these obstacles (Al-Ayubi, 2017).

One of the hurdles in translation studies includes a deeper understanding of language structure, subtleties of meaning, and the application of cultural contexts that can affect translation accuracy (Izmayanti, 2023). This presents challenges in developing adequate translation skills. Quality translation learning resources are also often scarce, limiting students' ability to develop a profound understanding of translation concepts.

In the era of information and communication technology development, particularly artificial intelligence (AI), new potentials emerge to address barriers in translation studies. AI technology has significantly impacted various sectors, and the application of AI in translation has brought benefits in enhancing translation efficiency and accuracy (Yves, 2019). Techniques such as neural machine translation (NMT) and deep learning have substantially improved the quality of machine translation, though they still face limitations in capturing language nuances and complex cultural contexts (Yang et al., 2020).

The role of AI technology in the translation field involves the development of machine translation systems capable of producing instant and adequate translations in various languages (Xu et al., 2019). For instance, platforms like Google Translate have opened access to quick translations, facilitating cross-language interactions. However, it is necessary to recognize that machine translations have limitations in capturing contextual meaning, cultural variations, and deeper language nuances, which are often required in more complex translation situations (Arifatun, 2012).

Unlike Google Translate, some social media platforms used for communication, such as Twitter, have adopted translation interface systems, allowing users to communicate across languages. These applications can bridge authentic communication among users speaking different languages. The features provided by social media become intriguing as they offer translation results and direct communication with speakers of other languages, such as Arabic.

When linked to translation studies, social media can serve as an alternative authentic learning medium. Indonesian speakers, for instance, can directly communicate with Arabic speakers using features provided by Twitter. This use of social media represents a new approach in translation learning, which traditionally relies on digital or printed dictionaries. Recent translation studies often focus on machine translation analysis, such as research by Wuryantoro (2011) and Al-Ayubi (2017). Additionally, there is considerable research on translation error analysis, as seen in studies by Anisya (2021) and Khoiriyah (2020).

Given these research trends, it is essential to develop alternative aspects of translation teaching that introduce translation while enabling direct communication with native speakers. This article aims to conceptualize the utilization of social media, such as Twitter, in translation studies. It also examines the accuracy of the auto-translate

system provided by Twitter and its potential support for translation teaching. This approach applies AI technology in translation studies by integrating machine translation models with social media platforms. The use of social media as a learning environment offers the potential for more contextual and interactive interaction, considering the widespread popularity of social media across various demographics.

The AI technology development solutions offered for translation learning include providing more interactive and adaptive learning resources. The proposed learning model can help students overcome obstacles in understanding language structure, subtleties of meaning, and cultural contexts with the support of advanced translation tools. Utilizing social media as a learning platform can enrich students' learning experiences through direct interaction with translation content relevant to their daily lives.

It is hoped that the findings of this research will positively contribute to enhancing the quality of translation studies by leveraging the potential of AI technology and social media platforms. The implications of this research are expected to further encourage the development of innovative and adaptive translation learning approaches, enabling students to develop better translation skills to meet the demands of the current global world.

Method

This study employs a qualitative approach to address the two identified research questions. The qualitative approach will facilitate an in-depth understanding of the role of AI technology and social media integration in translation learning. The following section outlines the methodology used in this study.

The primary data sources for this research consist of several randomly compiled Arabic tweets collected by the researcher. These primary data are obtained through indirect observations of Twitter pages, which will be processed and analyzed. Secondary data include the number of Twitter users, relevant literature such as theories and concepts that underpin the study, to reinforce the research findings.

The data collection technique employed in this study is simple random sampling (Arieskal & Herdiani, 2018), where members of the population are given equal opportunities to be selected as research samples. This technique involves randomly selecting samples for the study and is a straightforward method used in research. Additionally, it serves as a basic sampling technique that can be expanded into more complex sampling methods.

Result

Translation Engine

A human translator's role is complex, requiring proficiency in both the target and source languages and a deep understanding of the cultures associated with these languages (Hasyim et al., 2021). Despite numerous advantages, such as adaptability,

quality, and effectiveness, human translators are expensive. This is why scientists are interested in developing what is known as machine translation (MT) (Brour & Benabbou, 2021).

Machine Translation (MT) is a subfield of Natural Language Processing (NLP) aimed at developing and improving computer-based translation systems (Ameur et al., 2020). Early approaches to machine translation heavily relied on human translation rules and linguistic knowledge. At a basic level, MT performs the substitution of words, phrases, and simple grammar from one language to another. With the rapid advancement of Artificial Intelligence (AI) technology, machine translation has become a primary field within natural language processing. The main goal of translation activities is ensuring that the target language reader understands the message (Hasyim et al., 2021).

Machine Translation systems are trained on vast databases, and the quality of translations heavily depends on the content of these databases (Farkas & Németh, 2022). To translate text on the internet, one simply needs to input the source language text into a computer screen to receive an instant translation in the target language. One popular application for this is Google Translate. The typical method programmed for these translation tools is literal or word-for-word translation, as it is still impossible to design a translation machine with human-like capabilities. In automated translation, the meaning of the text is identified by individual words or phrases rather than complete sentences. Consequently, automated translation generally struggles with capturing the meaning of longer texts, idioms, and culturally related terms. These translations are often criticized for their inaccuracy. This phenomenon also appears in translations on platforms like Facebook, Twitter, and TikTok.

However, Meta claims that its machine learning experts have created a neural network that translates languages up to nine times faster and more accurately than current systems using standard text translation methods. Neural networks are modeled after the human brain. One problem neural networks can solve is translating sentences from one language to another, such as Arabic to Indonesian. These networks can also be used for tasks such as text summarization.

Sample Data

Figure 1 *Source Language from Arabic*

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SL : (Source Language)	جمال وإبداع.. شابان يقطعان وقتهما في المترو بتلاوة آيات كريمة في محاكاة رائعة لكبار القراء
TL : (Target Language)	Kecantikan dan kreativitas.. Dua pria muda menghabiskan waktu mereka di metro dengan membacakan ayat-ayat mulia dalam simulasi yang luar biasa dari qari senior

Translation Analysis Results

Sungguh indah dan kreatif.... Dua pria pemuda menghabiskan waktu mereka di transportasi umum dengan membacakan ayat-ayat yang mulia dalam peniruan yang mengagumkan dari qari hebat

The data in Figure 1 indicates a discrepancy in the results of automatic translation on the Twitter application. The meaning found in the source language (SL) in the "tweet" above is not accurately translated by Twitter's automatic translation feature. Consequently, the translation of several words does not align with the intended meaning in the target language (TL). For instance, the phrase "جمال وإبداع" (SL) is translated by automatic translation as "Kecantikan dan kreativitas" (TL), whereas it should be interpreted as "sungguh indah dan kreatif," which better conveys the intended meaning. In Arabic language rules, the phrase "جمال وإبداع" is an exclamatory sentence (ta'ajjub). Additionally, the word "كريمة" (SL) is translated by automatic translation as "Mulia" (TL), which is fairly accurate. However, to better convey the meaning to the target audience (TL) and laypeople, it should be translated as "Al-Qur'an," as "al-karim" is also one of the names of the Qur'an. Nonetheless, some words are accurately translated, such as "المترو" (SL), which is translated by automatic translation as "Metro" (TL). This word is translated using the borrowing technique, where the translator borrows an expression or word from the source language (Hensa Utama & Masrukhi, 2021). Although the word's translation is accurate, in the context above, Metro can also be interpreted as a currency operating in Egypt. Furthermore, the phrase "محاكاة رائعة" (SL) is translated as "*simulasi yang luar biasa*" (TL). Literally, the translation is correct, but if you look at the whole, the translation is not accepted; it is more correctly translated with "*peniruan yang mengagumkan*." Likewise, the phrase "كبار القراء" (SL), which is translated as "*qori senior*" (TL), is literally correct, but in this context, it is less acceptable, but it is more correct when translated as "*qori hebat*" (TL).

Based on the analysis of Figure 1, it is evident that automatic translation on the Twitter application exhibits discrepancies when translating from Arabic to Indonesian. The phrase "جمال وإبداع" in Arabic, translated as "Kecantikan dan kreativitas" in Indonesian, does not accurately convey the intended exclamatory meaning of "sungguh indah dan kreatif." Similarly, while "كريمة" is translated as "Mulia," a more suitable translation for the target audience would be "Al-Qur'an," considering its significance as one of the names of the Qur'an. The term "المترو" is accurately borrowed as "Metro," though in context, it could also refer to the Egyptian currency. Furthermore, " محاكاة رائعة" is correctly translated as "simulasi yang luar biasa," yet "peniruan yang mengagumkan" might better capture its meaning. Similarly, "كبار القراء" is translated as "qori senior," which is literal but "qori hebat" might be more contextually appropriate.

Figure 2. *Source Language from Arabic*

SL : سحب رعدية ممطرة على أجزاء من مناطق المدينة المنورة والرياض والقصيم وحائل والجوف والحدود الشمالية والأجزاء الشمالية من المنطقة الشرقية.

TL : Hujan badai mengguyur sebagian wilayah Madinah, Riyadh, Qassim, Hail, Al-Jawf, perbatasan utara dan bagian utara wilayah timur.

The data in Figure 2 shows that the translation of the source language (SL) performed by Twitter's auto-translate feature is accurate and consistent with the intended meaning in the target language (TL). This accuracy is due to the use of standard and correct language, which allows the translation machine to interpret the text effectively. For example, the phrase "المنورة والرياض والقصيم وحائل والجوف" (SL) is translated as "Madinah, Riyadh, Qassim, Hail, Al-Jawf" (TL), which is appropriate because these words are city names, minimizing the likelihood of translation errors. Some of these words literally have Indonesian equivalents, such as "المنورة" (SL), which translates to "*yang disinari*" (TL), but the technique used to translate the name of the city is the borrowing technique, precisely if the name is translated into unaccepted (Perdana, 2017). Furthermore, the sentence in Figure 2 does not contain many verbs, which are often the cause of translation errors.

Figure 3. *Source Language from Arabic*

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SL : قائد دراجة يلقى عاقبة قيادته باستهتار مستغلًا القانون الجديد في بريطانيا الذي يعطي أولوية استخدام الطريق للدراجات.

TL : Pengendara sepeda dihukum karena mengemudi sembrono, memanfaatkan undang-undang baru di #بريطانيا, yang mengutamakan sepeda untuk menggunakan jalan raya.

Translation Analysis Results

Pengendara sepeda mendapat konsekuensi dikarenakan mengemudi sembrono memanfaatkan undang-undang baru di #Britania yang memprioritaskan penggunaan jalan untuk sepeda.

The data in Figure 3 indicates a discrepancy in the results of automatic translation on the Twitter application. The meaning in the source language (SL) in the "tweet" above is not accurately translated by Twitter's automatic translation feature, resulting in several words not aligning with the intended meaning in the target language (TL). For instance, the phrase "يلقى عائقبة" (SL) translated by automatic translation with "dihukum" (TL) is not quite accurate; it is more acceptable to interpret it as "*mendapat konsekuensi*". Something is interesting about this translation, because automatic translation is not limited to literal translation techniques. Furthermore, the phrase " قيادته باستهتار" (SL) is translated by automatic translation as "mengemudi sembrono" (TL). While this is generally correct when translated using the ziyadah translation technique, which involves literal translation or word-for-word translation (Hidayat, 2020, p. 45), adding the word "dengan" between "mengemudi" and "sembrono" would make the target language sentence clearer.

Additionally, there is a sentence with incorrect word order: " يعطي أولوية استخدام الطريق للدراجات" (SL), which is translated by automatic translation as "mengutamakan sepeda untuk menggunakan jalan raya" (TL). The word "sepeda" should be placed at the end of the sentence, resulting in "memprioritaskan penggunaan jalan untuk sepeda" for better clarity and accuracy in the target language.

Figure 4. *Source Language from Arabic*

SL : بعد طلب الكثير من القراء معلومات حول تكلفة الدراسة في أمريكا.. تعرف على تكلفة الدراسة في أمريكا من هنا.

TL : Setelah banyak pembaca yang menanyakan informasi tentang biaya kuliah di Amerika.. Pelajari biaya kuliah di Amerika dari sini.

The data in Figure 4 shows that the translation of the source language (SL) performed by Twitter's auto-translate feature is accurate and consistent with the intended meaning in the target language (TL). This accuracy is due to the use of short phrases or non-complex sentences, which reduces the risk of translation errors. Additionally, the presence of city or country names, such as "أمريكا" (SL) translated as "Amerika" (TL), is rendered accurately as the name is the same in both writing and pronunciation.

Discussion

In this study, the researchers selected 4 samples or data points to serve as the objects of our research. These four data points contain "tweets" in Arabic as the source language (SL) that were translated into Indonesian as the target language (TL) by Twitter's automatic translation feature. Based on the research conducted on these six words, several anomalies in the Twitter application's translation of words or sentences were observed. A translation can be considered of high quality if it meets certain criteria, including that the message conveyed in the translation must be the same as the original text, the translated text adheres to the applicable linguistic rules and does not conflict with the cultural norms of the target language, and it can be understood by all readers (Nababan et al., 2012). From the sample translations done by the Twitter application, it is evident that the translations are not accurate and therefore do not meet the criteria of high-quality translations.

Like other translation engines, the automatic translation feature on the Twitter application translates language directly. However, this study found several errors in the translations produced by Twitter's automatic translation engine, which can lead to misinterpretations of the meaning for users of this feature. Previous research has highlighted that the accuracy of machine translation still needs to be considered due to the limited ability of translation engines, which are still restricted to phrase and word levels (Faqih, 2018, p. 90). These errors often stem from the engine's inability to understand context, cultural nuances, and idiomatic expressions, resulting in literal translations that miss the intended meaning. For instance, idiomatic phrases may lose their original intent when translated word-for-word, and homonyms can lead to multiple inaccurate interpretations. The rigidity of phrase-level translations also means that grammatical structures are often mishandled, leading to awkward sentences. Without human-like understanding, subtleties such as tone and formality are frequently missed, making communication less effective (Johnson et al., 2017). Addressing these limitations is crucial as the demand for accurate translation services grows. Future advancements in AI and natural language processing promise better contextual understanding and cultural sensitivity in translation systems (Bahdanau et al., 2014).

Until then, users should critically assess translations, aware of possible errors and misinterpretations.

The research data indicate that one reason for the inaccuracy of Twitter's automatic translation is that each word in the source language is translated based on its common literal meaning without considering the intended context or content of the text. Another factor contributing to the low accuracy is the difference in sentence structure between Arabic as the source language and Indonesian as the target language. The Subject-Predicate-Object-Complement (SPOC) structure in Arabic differs from that in Indonesian. In Arabic, sentence analysis based on grammatical rules can identify a sentence's subject, predicate, and object. In Arabic, within a nominal sentence, the subject (mubtada) and predicate (khabar) are identified, whereas in a verbal sentence, the subject (fa'il) and predicate (fi'il) are determined (Akmaliyah, 2017, p. 131). The structural differences in sentences between Arabic and Indonesian include that in Arabic, a sentence (jumlah) often begins with a noun (isim) or verb (fi'il), whereas in Indonesian, the sentence structure typically starts with a noun (subject/nomina) (Bustomi & Hudaya, 2018, p. 14). These structural differences between the source and target languages can reduce the translation accuracy of the translation engine.

Twitter and Arabic-Indonesian Translation Teaching

Twitter has significant potential in translation teaching, particularly in the context of translating from Arabic to Indonesian. In the provided samples, this platform has demonstrated its positive impact on assisting in learning and practicing translation. The analysis conducted by researchers shows that Twitter's translation results tend to be acceptable with few errors.

From these samples, Twitter's use in translation teaching offers several important benefits, including:

1. **Access to Authentic and Contemporary Materials**: Twitter is a rich source of information that allows translation students to interact with the target language in real-life situations. The material from Twitter covers a wide range of topics, including current news, opinions, trending events, and popular culture. This provides students valuable opportunities to learn how the language is used in everyday contexts and understand the variations that emerge on this social platform.
2. **Development of Translation Speed and Accuracy**: Twitter's unique characteristic of limiting message length to a few characters encourages students to practice crafting concise and efficient sentences. The translation process from Arabic to Indonesian on Twitter involves selecting the right words and capturing the essence of the message, which can help students hone their skills in formulating accurate and contextually appropriate translations.
3. **Practice in Finding Equivalent Expressions**: Twitter provides opportunities for students to develop their ability to find equivalent expressions between phrases and idioms in the source and target languages. Given the character

limitations on Twitter, students must be creative in choosing the most appropriate words to convey an effective message.

4. **Understanding Linguistic and Sociolinguistic Variations**: Twitter presents an opportunity for students to understand linguistic and sociolinguistic variations in the target language. The language used on this platform can reflect various levels of formality, dialects, slang, and communication styles. Students will learn to recognize the context of different variations, helping them become more competent and responsive translators.
5. **Empowerment for Independent Learning**: Using Twitter in translation teaching allows students to learn independently. They can explore materials, attempt translations, and compare their results with existing ones. This enables students to develop confidence in their translation abilities and feel more engaged in learning.

In addition to these advantages, some considerations must be taken into account when using Twitter in translation teaching. Twitter translations are not entirely accurate, and the platform presents diverse contexts. Although Twitter provides varied content, not all of it is suitable for educational purposes. Some content may not be ethically appropriate or meet the desired learning standards. Despite the analysis showing that Twitter translations are generally acceptable, there is still a risk of errors or misunderstandings in the translations. Students need guidance to revise and critically evaluate their translation results.

By acknowledging these factors, educators can effectively leverage Twitter to enhance the teaching and learning of translation from Arabic to Indonesian, helping students develop practical and contextually relevant translation skills.

Conclusion

From the discussion above, it can be concluded that Twitter can be a highly beneficial tool in Arabic-Indonesian translation teaching. This platform offers several advantages in translation teaching, such as access to authentic and contemporary materials, development of translation speed and accuracy, practice in finding equivalent expressions for trending words in the Arabic-speaking world, and understanding linguistic and sociolinguistic variations.

However, the use of Twitter must be supported by appropriate supervision and guidance to ensure effective and accurate learning. The researchers' findings also acknowledge shortcomings in Twitter translations. There are several considerations to be mindful of when utilizing Twitter in translation teaching. Twitter translations are not entirely accurate, and there is diverse contextual variation. While Twitter provides diverse content, not all of it is suitable for educational purposes. By acknowledging these points, educators can harness Twitter effectively to enhance Arabic-Indonesian translation teaching, facilitating practical and contextually relevant learning experiences for students.

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