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Lamya Rasheed Al-Ali
Department of Translation - College of Arts – University of Basrah

*** Corresponding Author Email:**
lamya.rasheed@uobasrah.edu.iq

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The Influence of AI on Improving Translation Skills: A Survey Study

A B S T R A C T

In the development of the digital world, translation is considered an integral part of communication among nations and cultures. This study aims to shed light on the influence of Artificial Intelligence (AI) on improving and enhancing the skills of the 4th-year students in the Department of Translation. It seeks to analyze how AI-powered translation software, such as Google Translate, DeepL, Microsoft Translator, Gemini, ChatGPT, etc., enhances linguistic proficiency and ability to translate texts accurately and effectively. The descriptive analytical approach is adopted by using a questionnaire distributed to a sample of fourth-year students in the Department of Translation/University of Basrah. Likert scale is employed to evaluate students' responses regarding the efficacy of modern technologies in improving their skills. The study focuses on several aspects, including methods for searching vocabulary, translation accuracy, and the challenges students face in using AI applications. The results indicate that there is a tangible improvement in some aspects of translation when using AI applications. However, there are still challenges related to accuracy and cultural context. In addition, integrating traditional education with modern technologies plays a major role in enhancing students' capabilities and developing their translation skills.

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تأثير الذكاء الاصطناعي على تحسين مهارات الترجمة: دراسة استقصائية

م.م. لمياء رشيد العلي
قسم الترجمة – كلية الآداب - جامعة البصرة
البصرة - العراق

المُستخلص

تُعد الترجمة جزءا لا يتجزأ من التواصل بين الأمم والثقافات خاصة في ظل تطور العالم الرقمي اليوم. تهدف هذه الدراسة إلى تسليط الضوء على تأثير الذكاء الاصطناعي (AIفي تحسين وتعزيز مهارات طلبة السنة الرابعة في قسم الترجمة. تسعى هذه الدراسة إلى تحليل كيفية تعزيز البرمجيات المعتمدة على الذكاء الاصطناعي، مثل Google Translate وDeepL وMicrosoft Translator وGemini و ChatGPT شائعة الاستخدام حاليا، للكفاءة اللغوية والقدرة على ترجمة النصوص بدقة وفعالية. تم تبني المنهج الوصفي التحليلي من خلال استخدام استبانة تم توزيعها على عينة من طلبة السنة الرابعة في قسم الترجمة/جامعة البصرة. تم استخدام مقياس ليكرت لتقييم استجابات الطلبة بشأن فعالية التقنيات الحديثة في تحسين مهاراتهم. كما ركزت الدراسة على عدة جوانب منها أساليب البحث عن المفردات، ودقة الترجمة، والتحديات التي يواجهها الطلبة عند استخدام تطبيقات الذكاء الاصطناعي. أشارت النتائج إلى وجود تحسن ملموس في بعض جوانب الترجمة عند استخدام تطبيقات الذكاء الاصطناعي، إلا أن هناك تحديات ما زالت قائمة تتعلق بالدقة والسياق الثقافي. فضلا أن لدمج التعليم التقليدي مع التقنيات الحديثة أثرا كبيرا في تعزيز قدرات الطلبة وتطوير مهاراتهم في الترجمة.

الكلمات المفتاحية: الذكاء الاصطناعي، البرمجيات المعتمدة على الذكاء الاصطناعي، DeepL، Gemini، ChatGPT، الكفاءة اللغوية

I. Introduction

Translation has undergone a process of evolution throughout human history. It is considered a fundamental modern experience that has gone from the manual performance of the individual using personal attitudes and linguistic awareness to a field that is constantly influenced by the advancement of modern technologies. Thus, translation is not a mere mechanical activity, but an integral part of intercultural tools in the process of translating literature, academics as well as some business collaborations in the era of advanced digital technologies. Given the rising demand to produce translations rapidly and with reasonable levels of quality, there is also a call for technology and application, including AI (Golovatska & Tereshchuk, 2024). It could be noted that AI technologies apply to a vast number of translation industries, including translation technologies, machine translation, and deep learning. These technologies, according to Trujillo (1999), are indeed capable of analyzing texts and translating contents at a faster pace compared to manual efforts. With the reliance on AI applications, questions have emerged in connection with the ability of these applications to build up students' translation skills and whether they can improve or even replace human translation.

II. Literature Review

The practice of translation in the modern world has a much broader meaning than just the simple exchange of words from one language to another, but rather the art of interaction among cultures and languages of the world. This calls for translation inferences that take into account the artistic features of the text, which include style, context, and figures of speech, as well as the cultural features that would involve customs, values, and most importantly, cultural norms. Good translation requires understanding both languages, objects, and meanings of the message to convey the same thing in the context of culture. In this regard, it can be stated that translation is not only about the conversion of language but also about the cultural intermediation

between two societies and, therefore, impacts the exchange of ideas, concepts, and innovations from one society to the other (Bassnett, 2014).

Translating the arts and cultural values of a certain language and culture adequately into another language and audience so that it resembles the original content is considered a creative process that requires the translator to have advanced analytical and cognitive skills. The translator has these skills to render a translated text that preserves the meaning of the source text but does not violate cultural values. Therefore, in this context, researchers like Lefevere (2016) have observed that translation is not just the transmission of language, but the transmission of culture, hence a very complex and multifaceted process. Literary or philosophical texts are especially complex, as the cultural and artistic depth of a text needs to be conveyed with accuracy and professionalism.

During the past few decades, translation technologies have flourished significantly due to technological progress, in particular, the development of artificial intelligence (AI) applications. Translation technologies, such as 'Google Translate', 'DeepL', etc., use deep learning and AI-based language models to analyze the text feeds and translate automatically. As this technology has evolved, machine translation can cope with this type of text better than it used to. Although it still has trouble representing intricate cultural meaning and literary style, it is still an innovative technique (Koehn, 2020).

For many such fields, it is essential to have fast and accurate translation, because these recent developments provide tremendous tools to improve translation efficiency. Human translation is, however, still required, most particularly on literary and philosophical texts that need a solid appreciation of emotions, style, and cultural context. Consequently, several researchers would argue that machine translation combined with human translation is the best way to achieve better and more precise results (Moorkens et al., 2018).

Artificial Intelligence (AI) is a discipline of computer science that aims at creating systems that can work and think like humans, for instance: making decisions, learning and comprehending (Russell & Norvig, 2016).

AI, specifically, has been on the rise over the past few decades with the advancements in bringing in machine learning as well as deep neural networks and deep learning using highly complex algorithmic methods to interpret data and extract patterns. These developments have proved to have advanced AI a lot and enabled it to perform versatile functions including image recognition, natural language understanding, and even performing conversation with the use of AI systems (Goodfellow et al., 2016).

III. Theoretical Framework

1. The Concept and Usage of Artificial Intelligence

AI is applied in numerous application areas in many fields such as healthcare, education, transportation and business. For example, in the medical field, AI is used in predicting diseases by analyzing medical images and recommending treatment. In the transport field, AI is employed in the creation of self-driving (Amodei et al., 2016).

AI systems have tremendously influenced translation in many aspects, for example, the use of machine translations. Machine translations are translation programs based on neural networks and deep learning techniques to produce accurate and fast translations. Programs, Apps. and software, such as Google Translate, DeepL, Gemini, ChatGPT. etc., use AI to analyze texts in various languages and provide immediate translations. These systems have evolved to include linguistic and cultural nuances in the translation process making the task of machine translation much more accurate (Koehn, 2020).

Despite the tremendous development, such technologies are not perfect and have some challenges when translating texts that involve cultural metaphors, irony, puns, or idioms. Translation of humor or irony, for instance, is somewhat difficult for artificial intelligence, as it includes an understanding of the human to give the same meaning. According to Sultan and Al-Ali (2024), translators must carefully analyze

the target audience and define humor or irony regarding their communications with cultural standards and ensure understanding. Accordingly, human translation will still be required, especially in the areas of literature and laws. Below are some well-known AI translation tools:

- ***Google Translate***

Google Translate is a translation app that has found practical use by many people around the world. Initially, it started in 2006 as a statistical machine translation system, and then it became a neural machine translation (NMT) in 2016. Google Translate uses deep learning techniques for text analysis and provides translations of over 100 languages. Through text, images, or a live conversation, it is easy to use and offers translation services. It performs text, audio and image translation and supports a wide range of more than 100 languages. However, it has been criticized for poor translation, especially for ambiguous texts that may include cultural references or idioms (Wu et al., 2016), (Lee, 2024).

- ***DeepL***

DeepL is an example of AI translation services and deep learning, which is considered to be superior to some of the market's platforms. It was created in 2017 and has an exceptionally high performance in translating text from/into European languages like German and French. Translation services provided by DeepL are known for their ability to analyze the full context of texts before translation and reproduce metaphorical meanings to the extent possible. One of its main features is its ability to improve translation quality based on user feedback, which contributes to continuous refinement (Lee, 2024), (Bunga et al., 2024), (Linlin, 2024).

- ***Microsoft Translator***

Microsoft Translator is one of the services included within Microsoft Cloud services that utilizes AI to perform immediate translation to over 60 languages. This tool works well with other Microsoft products, such as Office and Teams, making it suitable for organizations that already use these systems for business translation. Moreover, Microsoft Translator can also translate audio and conversion, which is

helpful in real-time talking and translation documents (Tundik et al., 2018), (Fujii & Inaba, 2020), Hutchinson, 2021).

- ***ChatGPT***

ChatGPT is an advanced language model designed by OpenAI. It applies deep learning to produce a high-quality, well-formed text in the flow of conversation. While not strictly a translation tool, ChatGPT can translate between languages where this is supported based on its training data. It is exceptional in interpreting extensive context in large texts and provides wise recommendations; thus, it helps translate texts containing technical or scientific data (Brown et al., 2020), (Gao, 2023), (Peng, et al, 2023), (Chan and Tang,2024).

- ***Gemini***

Gemini is one of the key examples of further development of an essential element of MT technology. The NMT features that we described earlier in this paper are underpinned here by its multimodal decoding features that are intended for delivering contextual MT, the latter referring to the former as the process of translation based on text and/or graphics, and the current extending to include even audio signals. The multimodal abilities that are exercised in this model help interpret the verbal material and also the written texts that are saturated with cultural connotations, idioms, and meanings referred to and relevant and different in context. Translators are mentally challenged by the small details that always lag behind in translating. While Google reliably outperforms the language models in the supported languages Gemini excelled in definite languages obtaining the best results in South Levantine Arabic, Romanian and Mesopotamian Arabic (Ferrag & Bentounsi 2024), (Othman et al., 2024), (Briakou et al., 2024).

2. Techniques for Searching Vocabulary and their Meanings through AI

AI, as an approach to searching vocabulary, has brought tremendous change in the field of translation. Interpreting tools are another area that benefited from deep learning applications, so these applications have sped up the process of translation and thus relieved translation service providers. Splitting a text into segments and

utilizing techniques like neural networks and self-attention work well in giving accurate translations which are relevant to the context in use. The utilization of AI in vocabulary search as one of the recent changes in the area of translation and language has turned into one of the key interactions that play a significant role in new and highly effective solutions in the realms of vocabulary and meaning searches (Yunjiu et al., 2022), (Oktadela et al., 2023).

Smart applications have become a vital element when it comes to searching for vocabulary and meaning in machines and interpreting in real-time. Among these are; Deep Neural Network (DNN) applications such as Google translation and neural machine translation (NMT) applications developed using deep learning and machine learning technologies, opportunities that offer better accuracy and specificity in a translation process (Bahdanau, Cho & Bengio, 2014).

These systems compile language information from different sources including bilingual dictionaries, articles and multimedia resources. They then use NLP processing to describe texts so that the meanings of words in their contexts can be well understood. Smart applications, therefore, incorporate AI to carry out contextual analysis which helps in a much better understanding of the correct meaning of words depending on their position in a particular sentence and the other surrounding words (Vaswani et al.,2017).

Advanced techniques, which are based on the most widely used word embedding like Word2Vec and GloVe, basically provide a way to map a word and its semantics within a specific context to some numerical coefficients. This assists the translators in learning the contexts of words as well as the different possible meanings of a single word depending on context (Mikolov et al., 2013).

AI has significantly enhanced the speed of translation during the process of searching certain vocabularies. So, there is, to some extent, no need to go through huge and conventional dictionaries to infer an instant and accurate translation. For instance, studies show that NMT, by using deep learning approaches, delivers faster translation

than that of rule-based and statistically formulated translation programs (Koehn, 2009).

These tools also increase the translation rate as well as the accuracy, which takes into account the different meanings of a given word. Instead of giving a literal or loose sense of the word or phrase, the new generation of AI translations gives correct contextually relevant meaning closer to the actual text. As Vaswani et al. revealed in their study in 2017, self-attention mechanisms have greatly enhanced the translation, since each of them takes an entire word and processes it concerning the other words in the sentence.

3. Benefits of AI-Human Integration

Integrating AI with human translation is one of the enhancements that have made translation quality and accuracy much better. Following AI to give the first translation and then having a human translator work on editing the draft is a good balance between speed and accuracy in any field like health care, game industry, and international business environment. Moreover, these approaches provide efficient and effective solutions besides making it easier for organizations and people to communicate across language barriers.

The main reason behind using both AI and human translation is to increase the amount of work done while improving its quality. This means that the input from AI is relied on for supporting human translating: approximate translations which may then undergo the final cultural/qualitative touch. In this regard, scholars have advised that one of the approaches is to use computer-assisted translation CAT tools with a human environment where machine translation works in collaboration with an intelligent text editor and analyst (Gaspari et al., 2015).

One basic approach is to provide the initial translation with the help of AI and then fix it based on the cultural and contextual information that people deal with. According to Sultan (2024), if a translation fails to capture the essence of the original, it can be disappointing for both the writer and the reader. To ensure that readers from diverse cultural backgrounds can fully grasp the story and its ideas, it is crucial to

remain faithful to the source language in translation. Such a process as post-editing is useful for reaching the desired rate of work, which is effective in large-scale translation activities (Koponen, 2016). Another one is known as predictive translation through which the AI system offers translations for segments as translator types, thus improving the efficiency of translating with solid consistency (Escartín & Arcedillo, 2015).

AI translations have been found useful in the medical field by offering first drafts of such texts as reports and guidelines. Experts then proofread these drafts to check for both language and medical correctness. This minimizes mistakes and speeds up the finishing of tasks, which is very important in areas that demand precision and production of information quickly as is the case with the health sector (Torregrosa et al., 2020).

In gaming industry, AI-based translation is also adopted to extend the product market to other countries through first translation drafts. These drafts are reviewed by specialists to check whether they appropriately convey cultural sensitivity where needs arise, such as in local settings (O'Hagan & Mangiron, 2013).

In multinational corporations, strategies of AI translation improve the efficiency of cross-functional communication among several teams that use different languages within the corporation. AI translation systems can be used to translate training documents and internal procedures of the company, with human resources personnel working later on editing it to make appropriate legal and cultural adaptations. These outcomes entail increased work productivity and enhanced dissemination in global networks of work (Shen, 2018).

IV. Research Methodology

1. Significance of the Study

The importance of this study emerges from the need for an investigation of the effect of AI on translation skills among translation students. The skills they develop when using these applications during their academic years could therefore affect their development of independent skills. Therefore, this research seeks to assess the effects

of the applications to the existing translation techniques, concerning the improvement of language and culture. Besides, this research will also make a helpful suggestion on how to apply these applications appropriately in the teaching and learning of translation in universities.

2. The Problem Statement

The research centers on a set of key questions:

-How effective are AI apps intended to help assist and enhance translation techniques?

- Does the use of these applications improve the quality of translation to academic and professional standards?

- What are the barriers students experience while using the technologies?

3. Research Hypotheses

The research questions are predicated upon a series of hypotheses intended to assess possible influences of AI in the sphere of translation:

- The first hypothesis assumes that the use of AI applications makes students develop translation skills, which are supported by technology that provides fast and efficient comprehension of texts.

- The second hypothesis assumes that there are challenges that hinder relying on AI translation, including the inability to navigate the complexities of various cultures.

- The third hypothesis assumes that integrating humans with AI translation could improve the quality of final translations.

4. Research Method

The study adopts the descriptive analytical approach as it aims at describing the phenomenon and analyze its components while assessing the influence of various variables. Regarding the issue of translating skills affected by AI, the research constitutes a modern and multifaceted field; therefore, the most suitable method will be the descriptive-analytical since this approach enables identifying and revealing the various effects of AI technologies on translating skills more intensively, which

contributes to the reliability of the results and the validity of recommendations provided (Creswell, 2014).

5. Population and Sample of the Study

The study sample includes fourth-year students in the Department of Translation, as it is believed that they possess an appropriate level of both language proficiency and translation cognition that enables them to understand the implications of AI. The study sample consists of (313) students selected randomly to give a generalized conclusion and reflect on their experience of their understanding of the effects of AI on their translation skills.

6. Data Collection and Analysis

- Questionnaire: For this study, a specific questionnaire was developed to evaluate the influence of AI technologies on students' translation performance. The questionnaire encompasses diverse sections that include general translation skills, the impact of AI in translation as well as how students cope with these technologies. It works as an essential means to gather quantitative data and to compare the participants' attitudes regarding the various aspects of the study to reduce the subjectivity of the results, it was completed by the participants in an educational setting where they were able to answer all the questions with a high level of privacy.
- Likert Scale: To assess and analyze students' perceptions, the Likert scale was employed in this study to measure students' attitudes by asking them to what extent they agree or disagree with a particular statement. The questionnaire contains Likert five-point scale (ranging from *strongly agree* to *strongly disagree*) to evaluate students' acceptance of the use of AI for translation with reference to the improved results as well. The Likert scale yields quantitative data for statistical methods of data analysis, thus facilitating objective, precise, and unbiased interpretation of results.
- Analysis: For data analysis, the results obtained were subjected to statistical analysis depending on the kind of data collected, mean frequencies, test for relationship between two variables and other relevant tests using SPSS software. The main objective of the statistical analysis is to provide an easy understanding of the

current situation regarding AI in relation to translation skills, as well as to make it easier to draw conclusions with the help of numerical values that can prove the results of the study.

V. Analysis and Findings

1. Using AI Applications in Translation

In this survey, 313 people were involved in analyzing the characteristics of the sample. As can be seen in Figure (1), 65% were females and 35% were males among the 313 participants. Data shows a much higher percentage of females versus males participating in the study. Almost all the members present in the study sample persons were familiar with the AI techniques, 51% had less than 1 year, 30% had 1 to 2 years, 19 more than 2 years, and 1 who never used them before. This implies that a significant portion of the participants are new to AI techniques — 70% have had less than two years of experience. The emergence of new areas of application of AI technologies leads us to think about a growing interest towards the adoption of these tools, but many are still in the early stages of learning how to use them. The 1% of participants that have never used AI techniques can be an indicator of a lack of awareness or a lack of access to which we can then inform future education and outreach programs to increase the adoption of AI (see Figure 2).

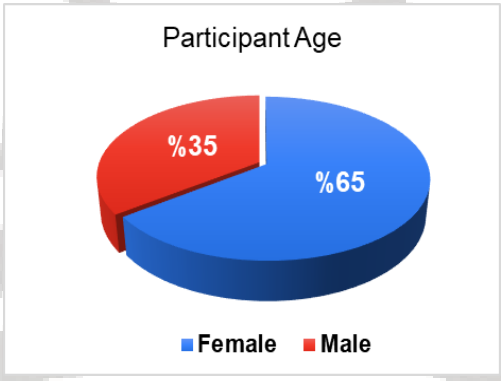

Figure 1: Participant Age.

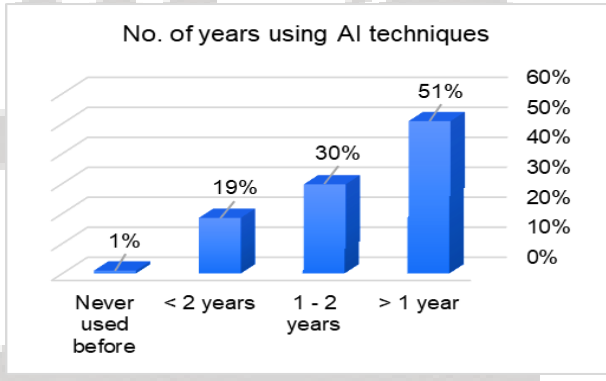

Figure 2: Years of using AI Technologies.

Figure (3) indicates that the most popular AI apps were Google Translate (42%) and ChatGPT (40%), followed by much less used tools such as Gemini (6%), DeepL

Translator (2%), and Microsoft Translator (1%). This means that Google Translate and ChatGPT constitute the most popular and spreading AI applications in the study. As their high usage rates suggest, these tools are appreciated by the users as being proficient in translation and conversational tasks according to their functionalities. On the other hand, the few applications that utilize tools such as Gemini, DeepL Translator, and Microsoft Translator can indicate low awareness and utilization of those tools due to factors like lack of awareness, accessibility, or effectiveness perceived. While this gap is critical, it highlights opportunities for additional education and marketing toward expanding awareness of the benefits that lesser-known types of AI applications can bring to a wider audience.

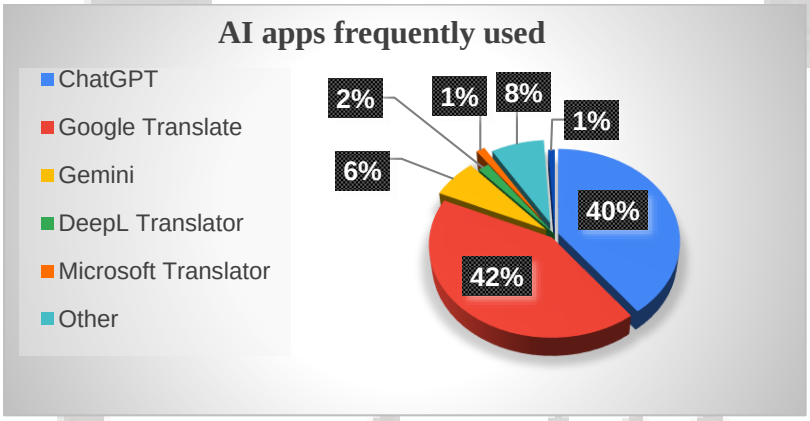

Figure 3: AI frequently used apps.

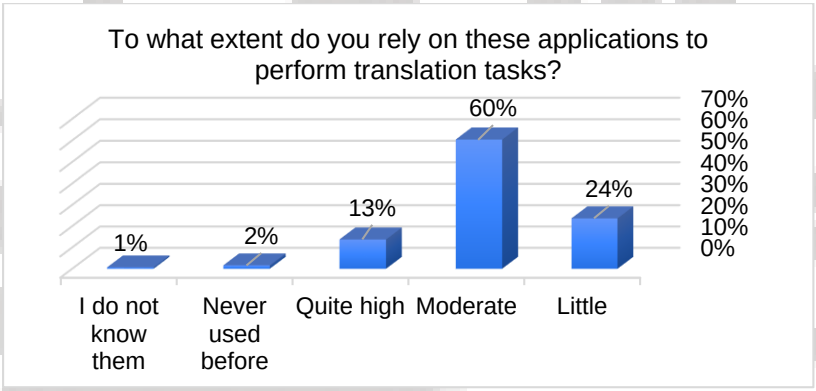

Figure 4: Reliance on AI apps to perform translation tasks.

Data in Figure (4) demonstrates the ways to depict how strongly people rely on various applications for translation tasks. As stated by 60%, the amount of

dependency on these applications to support their translation work is moderate — that is to say, they are vital but not overbearing. Furthermore, 24% reported minimal usage as they do use it occasionally or inconsistently. Only 13% stated to have high interaction and therefore indicated a higher reliance on these tools in their translation process. Meanwhile, 2% had never previously used these applications, and 1% had never heard of them or were unaware of their existence. This distribution shows a broad familiarity and moderate reliance on such tools among users, but little variation in use.

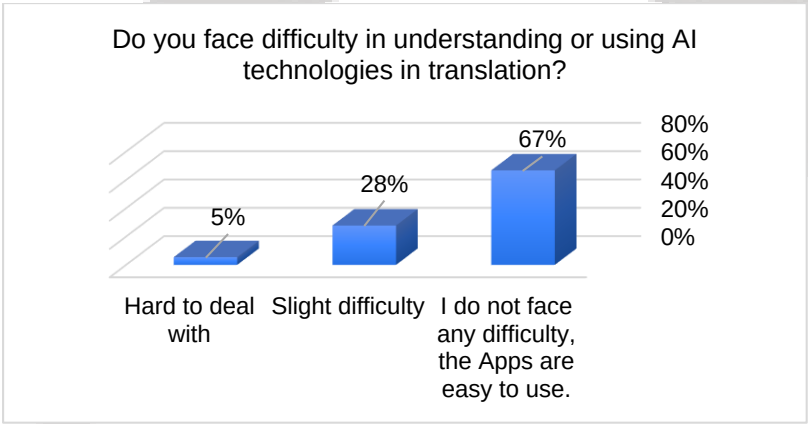

Figure 5: Difficulty using AI apps in translation.

Using AI technologies for translation proves to be hard for respondents, which is revealed by the data in Figure (5). Approximately 67% reported no difficulty when using these applications, as they are very user-friendly and easily accessible. Some learning curves or minor challenges in usage were reported, as 28% found it slightly difficult. About 5% found these technologies hard to deal with, implying that usability problems are not too common. So, the results show that AI translation tools are generally accessible and relatively easy to use, and there are few barriers to their effective use.

2. Influence of AI on translation skills

The data in Figure (6) shows how the AI was perceived to help provide a quick understanding of a text. Out of 313 respondents, 51% agreed that these tools will help in realizing this goal, while 18% strongly agreed that these tools help in this goal.

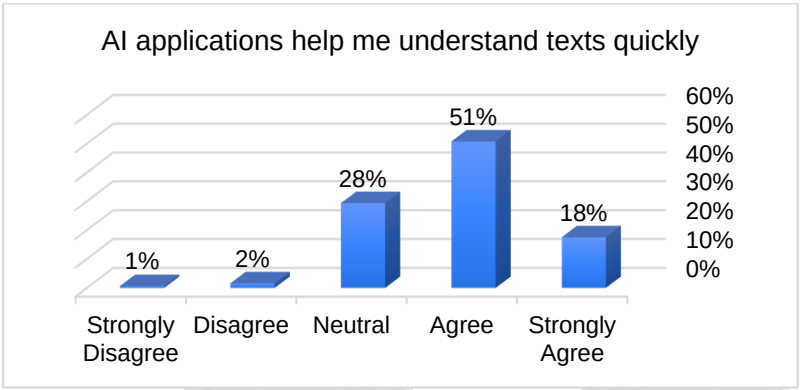

Figure 6: AI apps help in understanding texts.

Based on Figure (6), up to 28% of respondents were neutral, suggesting different experiences or a lack of great influence among the respondents. 2% of respondents disagreed and only 1% strongly disagreed, indicating very little dissatisfaction. Overall, it seems that AI applications will be widely viewed as useful supplementation of text comprehension.

Different opinions are evidenced by the data regarding the dependence of translation accuracy with AI technologies, as in Figure (7). A large number of respondents, 41%, remained neutral, indicating either uncertainty or the experience was variable. Meanwhile, 18% agreed and 3% strongly agreed that AI could enhance translation accuracy. Nevertheless, a notable ratio, 34%, disagreed, and 4% strongly disagreed, indicating skepticism about the role of AI in ensuring the accuracy of such a workflow. The significance of these results lies in its display of a divided perception of the role of AI in translation accuracy, some consider it a value and some others do not trust or rely on a different method.

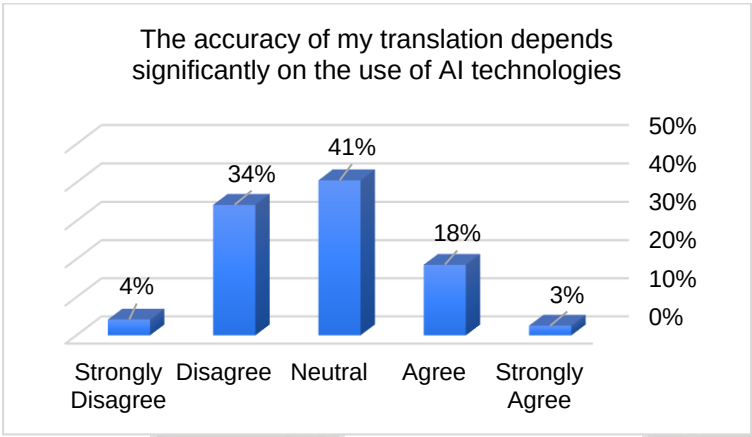

Figure 7: Translation accuracy depends on AI apps.

Figure (8) demonstrates user perceptions of how AI affects vocabulary search skills. A majority of 78 % agree or strongly agree that AI helps find the vocabulary, showing it to be an effective linguistic tool. 18% remain neutral, meaning that they have no strong sentiment towards AI — they experience AI as mixed or situationally. Only a few (4%) disagree or strongly disagree with AI use or its utility; thus, little use or use of AI is relied upon in this arena. However, most users found AI beneficial for improving vocabulary-related tasks.

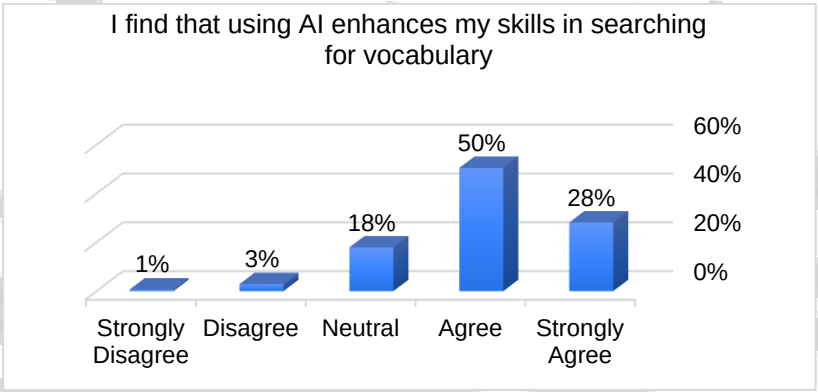

Figure 8: Using AI in searching vocabulary.

Figure (9) shows that a majority of respondents (73%) agree or strongly agree that AI applications help them with specialized texts, namely technical, scientific or economic content, which means that they can rely on AI in this task. About (21%) of the total respondents are neutral, which indicates varied or situational experiences,

and a small percentage (6%) disagree or strongly disagree showing the highly limited or no perceived benefit of AI in managing specialized texts. The results demonstrate the broad applicability of AI to complex, domain-specific material.

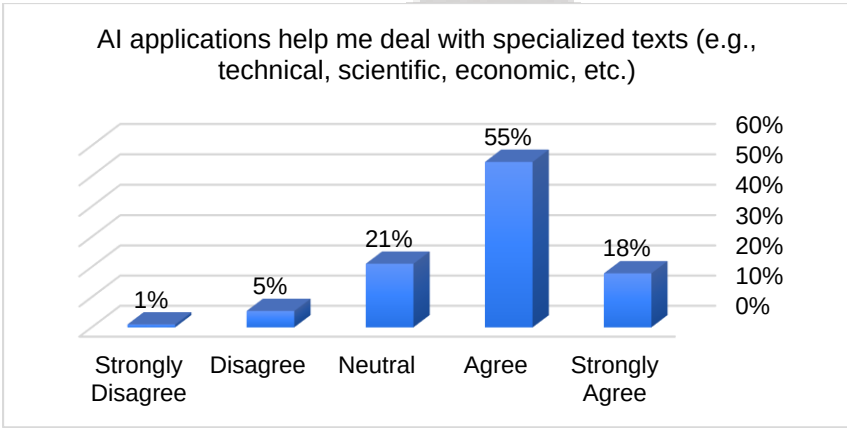

Figure 9: AI apps help with specialized texts.

3. Students' challenges while using AI technologies

The data in Figure (10) indicates that a large number of respondents, 69%, agree or strongly agree that they face difficulties in translation of some AI applications' insufficient ability to handle cultural context. This also points to a common limitation of such tools; in that they do not deal well with nuanced aspects of cultural elements. However, 22% are neutral due to varying or situational experience, but 9% disagree or strongly disagree with the statement, meaning they find it easier to manage. This indicates that AI tools need to be better at handling the cultural nuances in translation.

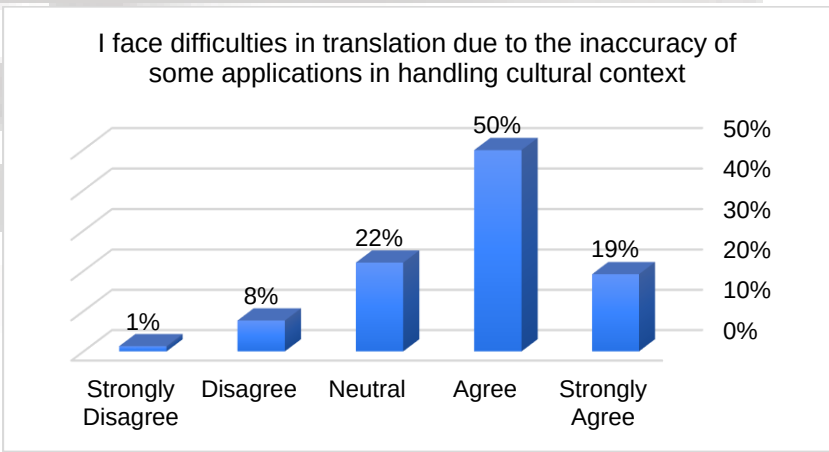

Figure 10: Difficulties in handling cultural contexts.

In Figure (11), it is found that a large majority (71%) of respondents agree or strongly agree that AI applications have insufficient accuracy for complex texts, indicating participants who do not consider AI tools to cover all the bases with respect to handling complicated materials. Around 21% remain neutral, which implies mixed or situational experience. Only 8 % disagree or strongly disagree, which suggests AI applications are more accurate for complex texts for a few users. This indicates widespread concern about AI's readiness to handle complex material with the requisite precision.

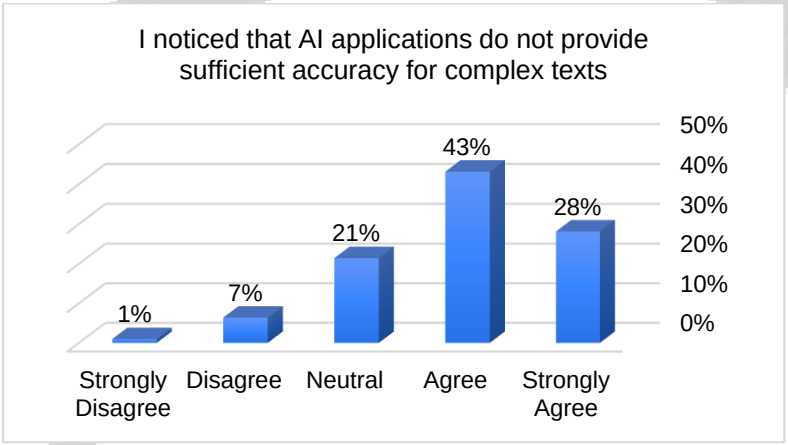

Figure 11: AI insufficient accuracy when dealing with complex texts.

According to the data in Figure (12), about two-thirds of respondents (68%) agree or strongly agree that they need time to edit translations that come from AI applications for them to be accurate; justifying the need for human intervention to polish the outputs from AI. About 23% of participants were neutral, indicating that it depends on the context and whether editing is needed or not, so it is a diversity of students' experiences. Only a few (9%) disagree or strongly disagree with the notion that AI-generated translations need little or no revision. Overall, the results show that while AI tools are useful, human editing is necessary to ensure perfect and trustworthy translations.

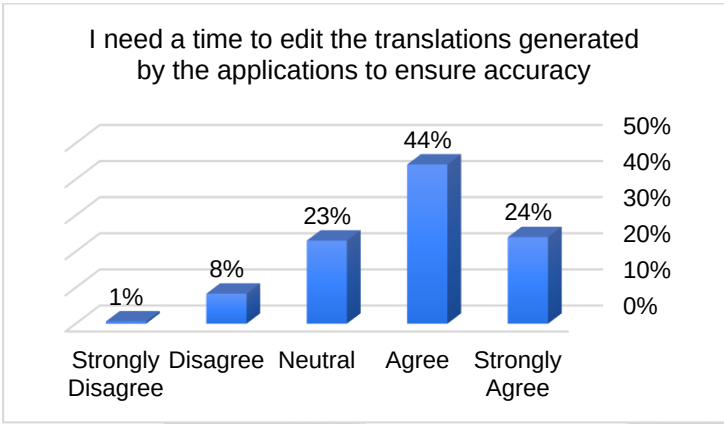

Figure 12: Time needed to ensure acceptable translations after AI.

The data in Figure (13) shows that 97% believe that human translation is still needed even after using smart applications because AI is still not perfect in translating the context accurately and appropriately. However, only 3% remained neutral, with 0% disagreeing or strongly disagreeing with the statement. So far, almost no one thinks that AI can do a 100% perfect translation, which could replace human translators. These findings emphasize the critical importance of human expertise in assuring the quality and veracity of translations, even when every advanced AI tool is used.

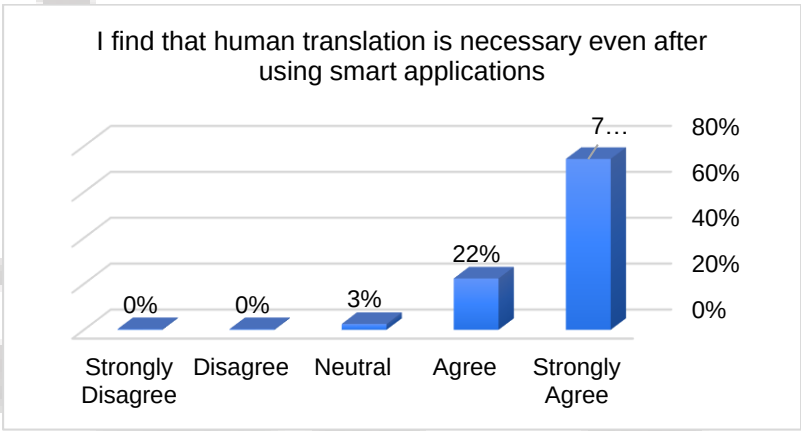

Figure 13: Needs for Human editing after smart apps translations.

4. Integration of AI and human translation

Figure (14) shows that 91% of the respondents have agreed or strongly agreed with the idea that the integration of human translation with AI applications enhances the quality of the translation. This means there is a high level of confidence in the synergy

that can be achieved when AI tools and human skills are brought on board, especially because the two can be mutually reinforcing. A mere 8% are neutral – perhaps they are sometimes unsure, or this varies depending on the situation; and 1% disagreed, while none of the participants strongly disagreed. The results reveal that the large majority of the participants consider the combination of AI and human translation as a highly effective way of improving the quality of translation.

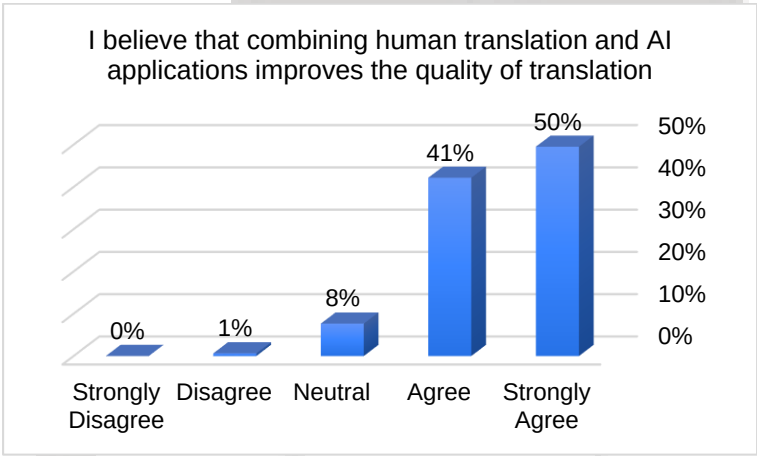

Figure 14: Combining human translation and AI applications to improve the quality of translation.

According to the study, there is a clear consensus (95% of respondents) on the usage of manual editing and revision after using AI to obtain more accurate outcomes, which strengthens the need for a human whereby the final touches on the translated text are often done by humans. 5% of the responses are neutral, indicating little ambiguity or fluctuation in their experience, while none falls into the disagree or strongly disagree category. These results indicate the usefulness of the AI applications while showing that particularly manual editing is necessary to achieve the desired accuracy and quality of a translation (see Figure 15).

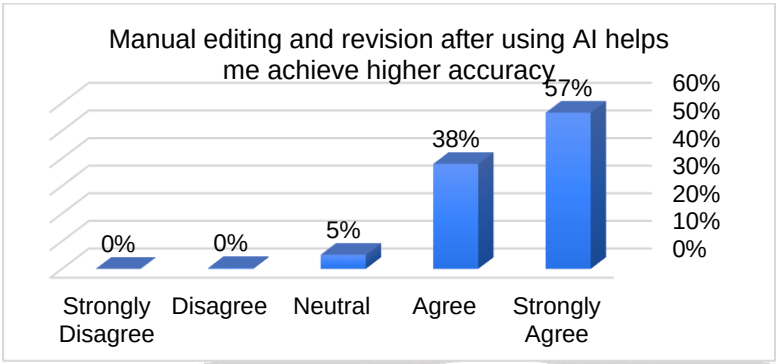

Figure 15: Manual editing and revision after using AI help in achieving higher accuracy.

Figure (16) demonstrates that 69% of participants agree or strongly agree that AI provides acceptable draft translation that can only be fine-tuned, as such, there is a clear affirmation of utilizing AI as a first approach to translation. Of these, 27% are neutral respondents, which means that the given participants may have had mixed encounters with the AI-generated drafts depending on situations or input the drafted piece was to contain. 4% of the respondents were dissatisfied with AI-generated drafts, with no one strongly rejecting this statement, which means that dissatisfaction is almost nonexistent. The findings indicate that AI is considered beneficial for creating the first versions of translations, but that further human editing is required.

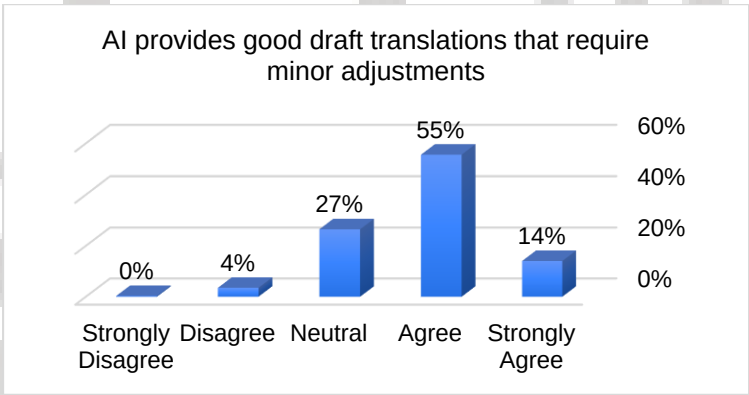

Figure 16: AI provides acceptable draft translations that require minor adjustments.

The data in Figure (17) confirms that, to a reasonably significant extent, AI is accepted as a useful instrument in enhancing productivity among translators: 60% of the participants either agree or strongly agree with the statement that using AI made

them work more effectively as translators. Approximately 25% are neutral, which might concern such people who would have both positive and negative outcomes or find productivity gains contingent on the context. However, only 5% disagreed or strongly disagreed, suggesting a low level of skepticism on the effects of AI on productivity. Here, the results demonstrate that AI is perceived as a useful tool for translational work and translator productivity enhancement.

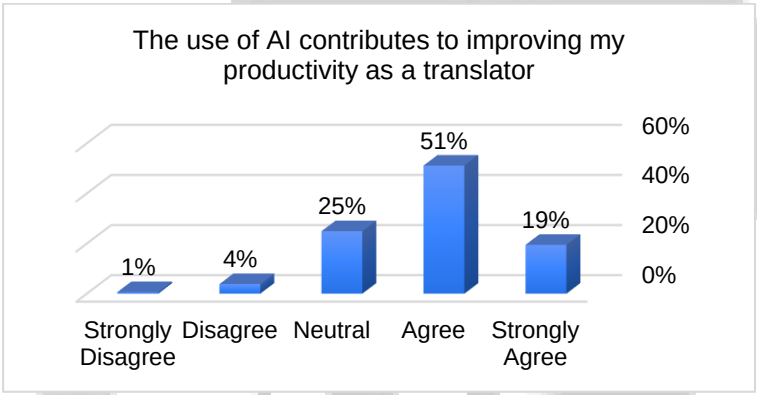

Figure 17: The use of AI contributes to improving productivity.

5. Overall performance evaluation

The survey data in Figure (18) shows that the overall disapproval of the statements about the possibility of the full substitution of human translation by AI translation in the future is quite high: 55 %. Approximately 23% of the participants are neutral, which means that sometimes they have positive, and sometimes negative attitudes. Only 22% of respondents show they agree or strongly agree with the statement that AI could completely replace human translators. These outcomes underscore pre-suppositions that human-generated content will remain necessary in translation, particularly for those operations that depend on culture and contextualization.

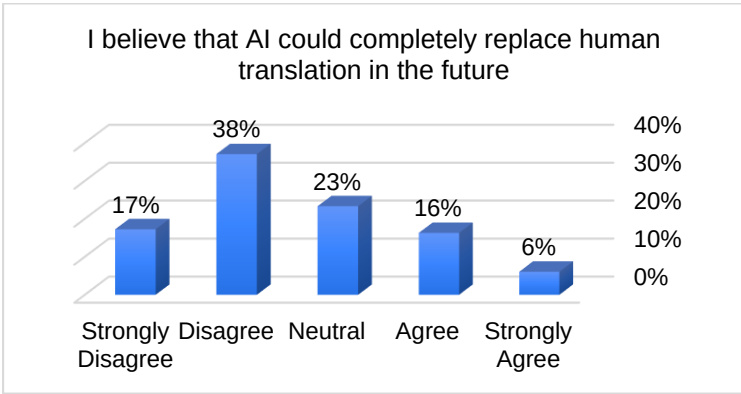

Figure 18: Probability that AI could completely replace human translation in the future.

The information shows that more than half of the participants (54%) to some extent or definitively stated that they regard AI as a constructive tool in their academic improvement process. However, a relatively large percentage (35%) show no opinion, meaning that they may have had variable results or may still have ambiguous views as to its efficiency in this aspect. A total of 11% disagree or strongly disagree with the statement because of their perceived uncertainty about how AI contribute to the improvement of academic skills. It can be stated that the results revealed the idea that AI is widely considered as a beneficial support but there is a potential for improving users' trust and engagement with the corresponding tools in the academic context (see Figure 19).

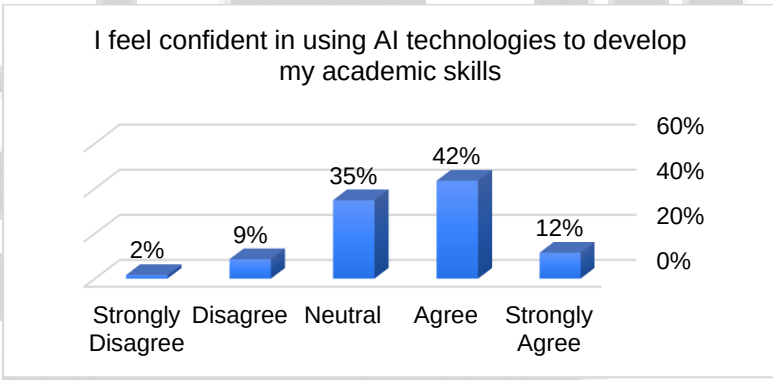

Figure 19: Using AI technologies to develop academic skills.

The data in Figure (20) shows that 71% of participants believe that AI applications provide useful support in academic translation. About 25% are neutral, which means that some of them could consider AI as effective just in certain situations or have not had to work with them much. Indeed, 4% opposed it, but none of the participants strongly opposed the use of AI in academic translation. This affirms confidence in the use of AI to support academic translation work, but there could always be room for refinement or expansion of such function.

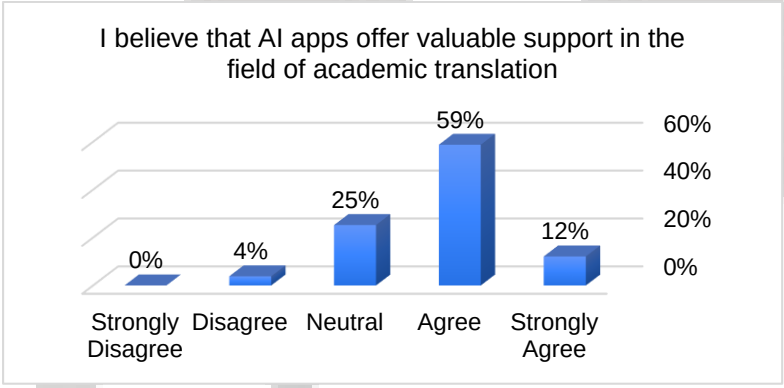

Figure 20: AI apps offer valuable support in the field of academic translation.

Specifically, it is identified that a vast number of participants (88%) insist on the superiority of human translation when dealing with complex texts involving cultural expressions or idioms. This suggests that human translators can do a better job in translating complex and culturally sensitive work as compared to AI. A further 8% appear to be uncertain or variable in their opinions, and only 4% in the disagree/ strongly disagree category. Accordingly, it is important to highlight that there is still a way to go before AI is in a position to fully understand and interpret culturally rich and idiomatic language, underscoring the irreplaceable value of human expertise in such contexts (See Figure 21).

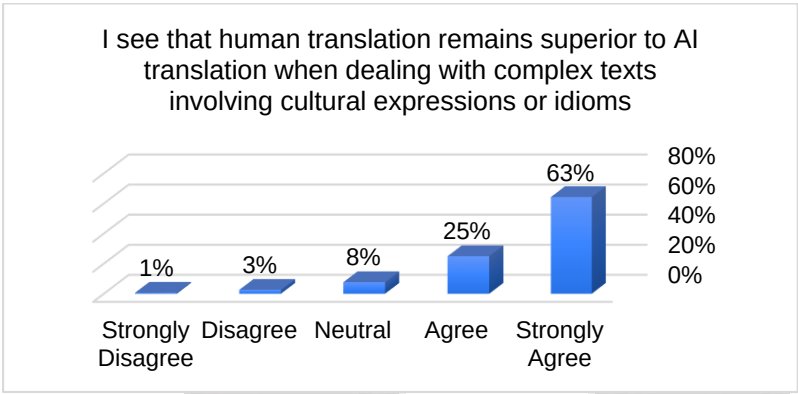

Figure 21: Human translation outperforms AI translation when dealing with complex texts.

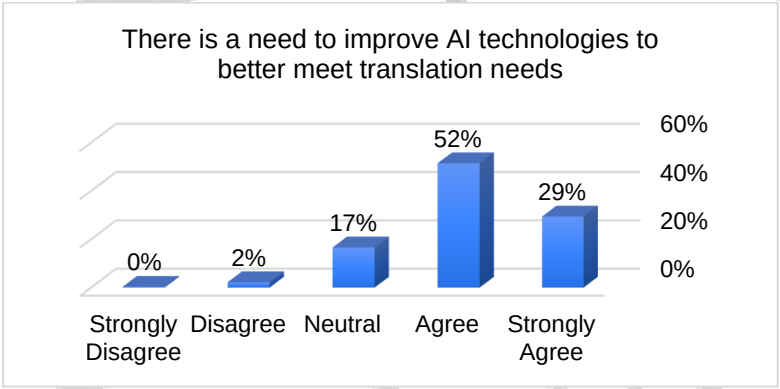

Figure 22: The need to improve AI technologies.

The data in Figure (22) reveal that 81% of the participants have a perception on the agreement or the strong agreement of enhancing AI technologies to provide even improved translation service concerning the current perspective of AI in translation. About 17% are neutral, which may mean that some of the respondents may feel that AI is sufficient in a current setup or may have mixed experience. Only 2% described their perceptions as disagreeing, and no one strongly disagreed, clearly showing that there is little opposition to the need for improvements. These results indicate the need to develop AI's ability to improve its efficiency in existing challenges in carrying out translation responsibilities.

VI. Discussion

The presentation of the hypotheses for the study shows how the use of AI applications complements human translation in addressing emerging requirements in the various translation tasks. The respondents' views in terms of AI effectiveness, limitations and possibilities of combining it with human experience reveal actual information on technology in the translation process. The hypotheses involve the realization of the element of improved translation skills by use of AI, the culture barrier that poses a constraint to total reliance on AI and the advantages of the use of AI in complementation of human efforts for improved translation quality. Generally, the majority of the analyses are supportive of the hypotheses put forward in the study:

Supporting the First Hypothesis: "The use of AI applications makes students develop translation skills, which are supported by technology that provides fast and efficient comprehension of texts".

The data confirms that the use of AI helps and supports translation: 70% of the respondents mentioned that the applications of AI enhance and increase productivity at work. Furthermore, 68% agree that AI provides good drafts that need a small tweak and is as useful to give a quick insight into the text. These results prove that AI can help to build technology-enhanced translation skills and facilitate the text comprehension process.

Supporting the Second Hypothesis: "There are challenges that hinder relying on AI translation, including the inability to navigate complexities of various cultures".

The survey shows that 89% of the participants agree that AI translation has difficulties when dealing with culture-related texts or idioms. Likewise, 54% disagree with the future possibility of AI fully replacing human translators. These results uncover AI's weaknesses in the social and cultural cues and reemphasize the hypothesis, which states that cultural subtlety poses a critical challenge to the exclusive use of AI translation.

Supporting the Third Hypothesis: "Integrating humans with AI translation could improve the quality of final translations".

92% of the participants believe that the integration of human input with artificial intelligence enhances the quality of translation. 95% of them understand that manual intervention is still necessary to attain higher levels of accuracy. These outcomes confirm the hypothesis that combining human-centered abilities with AI tools improves the coordinated approach's result and the final translation quality.

Regarding the three hypotheses, the study supports all of them, stressing the cultural sensitivity that although AI tools help translate texts at high speed and without errors, human participation is still imperative. Therefore, the use of expert humans with the help of AI takes a leap in the quality of translation, making it quite clear that both these techniques support each other. Such findings call for the further development of AI systems and technologies at the same time acknowledging the value of human translation, especially in difficult scenarios and corresponding culturally sensitive tasks.

VII. Conclusion

The advancement in AI technology has proven to have a positive influence on translators' productivity, as they can focus on tasks that require human skills, such as editing text and achieving smooth translation, rather than being busy with manual vocabulary searches. This study reveals the contribution of AI applications in promoting translation productivity as well as fostering skills in technology-assisted translation. Whereas AI tools are useful as helpful assistant when dealing with complex texts and specialized languages in producing the first drafts of translation, they are not devoid of weaknesses and tend to struggle with cultural references, idioms, and complicated texts. For this reason, human translation plays a crucial role, especially in aspects that entail cultural and language implications. It is now appreciated that the integration of Artificial Intelligence in translation with human knowledge provides the best solution which enhances translation quality. These findings call for further research and development in machine translation to respond

to the requirements of professional translation more effectively, and at the same time to recognize the role of human intelligence. Possible future research could explore in more detail how co-actions happen between AI and human translators in translation practice, particularly in certain fields, including legal or medical translations as well as literature translations. The information obtained would be beneficial to measure if AI applications enhance the students' confidence and readiness for professional translations.

References

- Amodei, D., Olah, C., Steinhardt, J., Christiano, P., Schulman, J., & Mané, D. (2016). *Concrete problems in AI safety*. arXiv preprint arXiv:1606.06565.
- Bahdanau, D., Cho, K., & Bengio, Y. (2014). Neural Machine Translation by Jointly Learning to Align and Translate. ICLR Conference, 1-15. *arXiv preprint arXiv:1409.0473*.
- Bassnett, S. (2014). *Translation studies*. Routledge.
- Briakou, E., Luo, J., Cherry, C., & Freitag, M. (2024). Translating step-by-step: Decomposing the translation process for improved translation quality of long-form texts, pp:1-17. *arXiv preprint arXiv:2409.06790*.
- Brown, T. B., Mann, B., Ryder, N., Subbiah, M., Kaplan, J., Dhariwal, P., ... & Amodei, D. (2020). *Language models are few-shot learners*. arXiv preprint arXiv:2005.14165.
- Bunga, E. L. M., & Katemba, C. V. (2024). Comparing translation quality: google translate vs deepl for foreign language to English. *Edusaintek: Jurnal Pendidikan, Sains dan Teknologi*, *11*(3), pp: 1147-1171.
- Chan, V., & Tang, W. K. W. (2024). GPT for Translation: A Systematic Literature Review, *SN Computer Science*, *5*(8), pp: 1-9.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (4th ed.). SAGE Publications.
- Escartín, C. P., & Arcedillo, M. (2015, July). A fuzzier approach to machine translation evaluation: A pilot study on post-editing productivity and automated

metrics in commercial settings. In *Proceedings of the Fourth Workshop on Hybrid Approaches to Translation (HyTra)*, pp: 40-45.

- Ferrag, F. & Bentounsi I. (2024). The Use of Artificial Intelligence in Academic Translation Tasks Case Study of Chat GPT, Claude and Gemini. *Ziglobitha,(2)*, pp:173-192
- Fujii, M., & Inaba, M. (2020, January). Survey of Specification Explanations about the Risk of Data Handling in Cloud Translation Services. In *Proceedings of the 2020 the 3rd International Conference on Computers in Management and Business*, pp: 3-8.
- Gao, Y., Wang, R., & Hou, F. (2023). Unleashing the power of ChatGPT for translation: An empirical study, 1-10. *arXiv preprint arXiv:2304.02182*.
- Gaspari, F., Almaghout, H., & Doherty, S. (2015). A survey of machine translation competences: Insights for translation technology educators and practitioners. *Perspectives: Studies in Translatology*, 23(3), pp: 333-358.
- Golovatska, L. and Tereshchuk, G. (2024). The Use of Digital Technologies to Prepare Future Translators for the Modern Requirements of the Linguistic Services Market, *Journal of educational technology development and exchange, 17*(1), pp:175-187. Doi: 10.18785/jetde.1701.10
- Goodfellow, I., Bengio, Y., & Courville, A. (2016). *Deep learning*. MIT press.
- Hutchinson, J. (2021). *Microsoft Translator: Features, Benefits, and Use Cases*. Microsoft Press.
- Shen, T. (2018). Crowdsourcing and Online Collaborative Translations: Expanding the Limits of Translation Studies. *Australian Journal of Linguistics, 39*(2), pp: 284–286. https://doi.org/10.1080/07268602.2018.1439251
- Koehn, P. (2009). *Statistical Machine Translation*. Cambridge University Press.
- Koehn, P. (2020). *Neural machine translation*. Cambridge University Press.

- Koponen, M. (2016). Is machine translation post-editing worth the effort? A survey of research into post-editing and effort. *The Journal of Specialised Translation*, 25, pp: 131-148.
- Lee, T. (2024). Artificial intelligence and posthumanist translation: ChatGPT versus the translator. *Applied Linguistics Review*, *15*(6), pp: 2351-2372. https://doi.org/10.1515/applirev-2023-0122
- Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, 22(140), pp: 5-55.
- Linlin, L. (2024). Artificial Intelligence Translator DeepL Translation Quality Control. *Procedia Computer Science*, *247*, pp: 710-717.
- Mikolov, T., Chen, K., Corrado, G.S., & Dean, J. (2013). Efficient Estimation of Word Representations in Vector Space. *International Conference on Learning Representations*., pp: 1-12. *arXiv preprint arXiv:1301.3781*.
- Moorkens, J., Castilho, S., Gaspari, F., & Doherty, S. (2018). Translation quality assessment. Machine translation: Technologies and applications ser. Cham: Springer International Publishing.
- O'Hagan, M., & Mangiron, C. (2013). *Game Localization: Translating for the Global Digital Entertainment Industry*. John Benjamins Publishing Company.
- Oktadela, R., Elida, Y., & Ismail, S. (2023). Improving English Vocabulary through Artificial Intelligence (AI) Chatbot Application. *Journal of English Language and Education*, *8*(2), pp: 63-67.
- Othman, A., Chemnad, K., Tlili, A., Da, T., Wang, H., & Huang, R. (2024). Comparative analysis of GPT-4, Gemini, and Ernie as gloss sign language translators in special education. *Discover Global Society*, *2*(1), pp: 1-14.
- Peng, K., Ding, L., Zhong, Q., Shen, L., Liu, X., Zhang, M., ... & Tao, D. (2023). Towards making the most of ChatGPT for machine translation. *EMNLP*, 5622–5633, *arXiv preprint arXiv:2303.13780*.
- Russell, S., & Norvig, P. (2016). *Artificial intelligence: A modern approach*. Pearson.

- Nadia odah Sultan, L. (2024). Polyglossia in the Translation of Young Adult Literature: A Descriptive Study of Madeleine L'Engle's A Wrinkle in Time. مجلة 20 الانسانية, للعلوم واسط(4/Pt1), 489-469. https://doi.org/10.31185/wjfh.Vol20.Iss4.725
- Sultan, N. & Al-Ali, L. (2024). Shifting from Formal to Dynamic Equivalence in Raheem's Murder of the Bookseller: A Descriptive Qualitative Study. Adab Al-Basrah Journal, 108(1), pp: 61-77.
- Torregrosa, D., Pasricha, N., Masoud, M., Chakravarthi, B. R., Alonso, J., Casas, N., & Arcan, M. (2020). Aspects of terminological and named entity knowledge within rule-based machine translation models for under-resourced neural machine translation scenarios. *arXiv preprint arXiv:2009.13398*.
- Trujillo, A. (1999). *Translation Engines: Techniques for machine translation*. Springer.
- Tundik, M. A., Attila, H. I. L. T., Gergo, B. O. T. A., Lorand, N. A. G. Y., & Luukkanen, K. (2018). Access-independent cloud-based real-time translation service for voice calls in mobile networks. In *2018 11th International Symposium on Communication Systems, Networks & Digital Signal Processing (CSNDSP), IEEE*, pp: 1-6.
- Vaswani, A., Shazeer, N., Parmar, N., Uszkoreit, J., Jones, L., Gomez, A. N., ... & Polosukhin, I. (2017). Attention Is All You Need. *Advances in Neural Information Processing Systems*, 30, pp: 1-15.
- Wu, Y., Schuster, M., Chen, Z., Le, Q. V., Norouzi, M., Macherey, W., ... & Dean, J. (2016). *Google's neural machine translation system: Bridging the gap between human and machine translation*. arXiv preprint arXiv:1609.08144.
- Yunjiu, L., Wei, W., & Zheng, Y. (2022). Artificial intelligence-generated and human expert-designed vocabulary tests: A comparative study. *Sage Open*, (2), 1-12. 10.1177/21582440221082130.