



## Translation Quality in the Era of Artificial Intelligence: The Integration of AI Translation Technology and Translators' Linguistics and Cultural Knowledge

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**Abstract:** The development of science and technology in the field of translation, especially the emergence of artificial intelligence (AI), has had a profound impact on the translation industry. There have been many doubts about the potential elimination of translation-related majors at universities due to the appearance of accurate, fast, and inexpensive AI-powered translation software. However, in reality, this field continues to develop and exist. This article addresses cultural sensitivities and ethical considerations when deploying AI in language tasks. In translation, AI and linguistics can interact, creating the potential to redefine the boundaries of global connectivity, improve cross-cultural understanding, and enhance how people interact in a multilingual world. The research was conducted at the Academy of Journalism and Communication in Hanoi, Vietnam. Surveys and observations were used in this study, and appropriate analytical procedures were developed. The results will highlight the quality and effectiveness of translation when artificial intelligence (AI) technology is integrated with human knowledge of culture, social ethics, and language. This paper may be beneficial as it provides a new professional perspective for educators and practitioners in general, because these future trends will increase the integration of AI into the work of translators.

**Keywords:** Artificial Intelligence, Translation Quality, Machine Translation, Cross-Cultural Communication, Linguistic and Cultural Knowledge, Translation Ethics

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## INTRODUCTION

Translation has existed since the early days of human civilisation. Since the dawn of civilisation, we humans have used language to convey our thoughts and ideas. We use a set of symbols or codes to communicate or convey an idea, thought, or emotion to the person we are addressing in a communication process. And so, we have translation. Translation is a means of communication. It is precisely through translation that people in different regions, using different languages, can communicate with each other, creating interconnected and mutually dependent relationships.

Translation can be understood as a process of communication, in which the transfer of a message/text content from one language to a new language takes place. Regardless of its meaning, every act of translation is related to the expression of meaning. A translation is a text that is considered different from the original (source text), but in reality, the source text and the translated text still retain the meaning they convey. It is often said that translation gives a work a new appearance by placing it in a different form. Translation is a process of interpretation. The nature of translation depends on the nature of the document. In addition to having equal proficiency in both the source and target languages, a good translator also needs to have a talent for writing in the target language and be familiar with the cultural and social context in which the text is situated.

The field of translation, which is widely used in global communication and cultural exchange, has undergone many transformations. Initially, only human translators, who possessed extensive knowledge of various languages and cultures, played the primary role in translating from one language to another. However, with the development of science and technology and the demand for translation, tools, translation software, and especially artificial intelligence (AI) have emerged, threatening the crucial job positions of translators and driving the development of the translation industry. Artificial intelligence (AI) has infiltrated every aspect of human life, extending beyond the scope of the computer industry. It has been applied in commerce, science, and education to increase efficiency on a large scale, especially for low-value, easily automatable tasks. The rapid development of AI is increasingly enhancing the ability to understand and manipulate language, analyse data, and perform complex computational functions. This could change the landscape of translation. AI-based translation tools are very fast, efficient, and accurate, raising questions about the future implications for translation professions. While some people worry that AI will overshadow human translators, others embrace it as a wonderful tool that can make their work more efficient and of higher quality.

This article discusses the impact of artificial intelligence on the translation industry, particularly focusing on the perspectives of translation students. In

addition, the study also affirms the role of the translator's understanding of culture and language in the quality of translation, thereby setting the requirement to combine technology with the translator's cultural and linguistic understanding to enhance translation effectiveness.

## OVERVIEW OF THE DOCUMENT

Currently, there are many differing opinions on the impact of AI on the translation process and the final quality of the translation. Many studies emphasise both the beneficial and harmful impacts of artificial intelligence on translation in four aspects: speed, accuracy, quality, and ethics related to artificial intelligence.

Concerning the impact of artificial intelligence on translation speed, it can be seen that, thanks to ChatGPT's powerful information processing capabilities and high speed, the coherence and consistency of the translated text are maintained throughout the translation process. In Ye's study (Ye L, 2024), one of the main benefits of AI-based language translation tools, especially ChatGPT, is the ability to provide instant translations. With ChatGPT, users can translate in real-time while engaging in conversation and interaction. During the application process, appropriate translated content can be generated as long as ChatGPT receives accurate source language input. He also noted that translators often need a lot of time to complete a translation; in some cases, this can take several days if the text is particularly complex. In contrast, ChatGPT can perform translation quickly, completing the task in just a few seconds while ensuring high accuracy. In addition to efficiently managing multiple translation tasks simultaneously, AI tools like ChatGPT also have the ability to learn and recognise, enabling them to process large amounts of linguistic data. And Alkodimi also asserts that AI tools can translate text faster than humans, allowing students more time to refine and enhance the translated material, ultimately resulting in a better final product (Alkodimi et al. 2024).

On the subject of accuracy of translations produced by artificial intelligence, the aforementioned authors have also provided an assessment. Specifically, Ye (2024) determined that translations produced by AI, particularly ChatGPT, are smoother, more accurate, and better preserve the style and meaning of the original text. ChatGPT has the ability to significantly enhance the accuracy of translations to some extent. With its vast data processing and collection capabilities, it can do many things to simplify translation efficiency. Along with that, ChatGPT's AI translation features include the ability to manage terminology. This mechanism will increase the accuracy of the translation output. The translation process is rapidly transforming as advancements in AI translation develop. However, the drawbacks of AI tools are also very clear. Even with its increasing popularity, its knowledge base only includes translations from content provided by the founding company and lacks

understanding of context or linguistic nuances, making language translators cautious about the reliability of the translations. According to Hussein and Kadhim, case study analysis shows that human translation surpasses machine translation primarily in the ability to convey the intended meaning accurately and, conversely, is a more suitable way to achieve cultural sensitivity and the highest efficiency. However, according to the authors, the accuracy of AI translation still falls short compared to human translation. It is noteworthy how AI struggles to grasp the complexity and cultural nuances present in a text compared to human translation. Regarding the use of phrasal verbs, proverbs and idioms, metaphors, and colloquialisms, human translators far surpass AI in translation (Hussein & Kadhim, 2024). 2024).

With respect to translation quality, according to Sun (2021), AI's translation capabilities have made significant progress. Therefore, many articles in the field of translation have suggested that artificial intelligence could completely replace human translators; the replacement index for human translators has reached a notable level of 0.38%. However, Sun emphasised that the quality of AI translations is still not up to par with human translations. AI translations may not capture the intended meaning of the original text, leading to differences that are sometimes significant enough to make the translated text difficult to understand. Therefore, one should not expect a perfect translation from AI as if it were the best and highest quality translation.

The criteria for a good translation set by Massoud (1988) are as follows: "it is an understandable translation; it is a concise and fluent translation; it is a translation that uses common phrases or idioms; it conveys, to some extent, the subtleties of the original text; it has the ability to distinguish between metaphorical language and literary language; it is a translation that can reconstruct the cultural/historical context of the original text; it clearly translates abbreviations, and general terms, songs, and lullabies; it is a translation that conveys as much meaning as possible from the original text." El Zeini (1994) proposed a practical model for evaluating translation quality, placing content criteria and stylistic criteria in equally important positions. She hopes that "translators can minimise the errors or damages caused by these translation mistakes, as well as eliminate issues related to the lack of clarity in the translation content". El Shafey (1985) proposed different criteria for the translator and a good translation, which are: "knowledge of the grammar of the source language combined with vocabulary knowledge, as well as a good understanding of the text to be translated; the translator's ability to transfer the text to be translated (the source language text) into the target language; the translation needs to capture the style or tone of the original text, and the translation needs to convey the message of the text to be translated".

In relation to ethics related to artificial intelligence, many people firmly believe that there are ethical issues that need to be addressed, such as privacy violations, which raise concerns that sensitive and confidential data may be collected and inadvertently leaked to the public without user consent; issues of intellectual property rights violations; translation inaccuracies that include racism, cultural bias, and ideological manipulation; or accountability when software or providers do not take responsibility for any negative or unintended consequences caused by the generated content. a. The topic of ethical concerns is discussed by researchers and translation practitioners (Federici et al, 2023); (Guerberof & Moorkens, 2023); (Savoldi et al, 2021). They also fall within the definition of AI ethics, which refers to the principles and ethical guidelines that must be adhered to when designing, developing, and applying AI (Hagendorff, 2020).

Translation is a creative linguistic activity of great value. In summary, it is necessary to acknowledge that the rapid development and widespread application of artificial intelligence have impacted translation both positively and negatively. c. The demand for translated texts worldwide is increasing and is expected to rise even more. a. The market has responded by developing increasingly sophisticated artificial intelligence (AI) and machine translation (MT) tools, putting pressure on translation students and leading to widespread concerns about future job prospects (Bulut & Alimen, 2023). ). This has created an existential crisis that necessitates research into the evolving roles of translators and educators in the present era. y. As this field enters its fourth year of reality the reality of ChatGPT, the recent developments in AI/MT, and customer demand indicate that 'mundane', 'formulaic' translation will increasingly be performed by AI/MT, while human translators will be necessary for complex tasks requiring creativity, skill, and non-standard solutions (Škobo & Petričević, 2023).

Advanced machine translation software and widely popular free AI platforms require translation educators to have carefully planned, targeted, and practical responses. Students need translation skills that rely less on rules and more on flexible, adaptive, and creative translation strategies. This includes sensitivity and the ability to skilfully control different styles and registers, awareness of the use of natural and appropriate language in various contexts, the ability to respond to language changes, and, when necessary, the ability to recreate the artistic value of a text in another language. So far, these are the aspects of language use that AI struggles with, and only well-trained and highly experienced human translators are capable of handling them well (Škobo & Petričević, 2023).

## METHODS

A survey was conducted to investigate the impact of artificial intelligence (AI) on translation work

from the perspective of third-year students at the Academy of Journalism and Communication. Surveys are more useful in collecting data and perspectives on the emotions, opinions, and thoughts of individuals. The pedagogical context and research participants focus on a group of 100 third-year students enrolled in translation programs at the Academy. The following participants were selected because they voluntarily participated in the translation research and are likely to have practical experience with AI-assisted translation tools. The online survey method was chosen to collect data because it is quick, cost-effective, and reaches more participants than other methods. This survey was conducted online, allowing most students to participate. The survey tool was created to address two research questions:

Research question 1: What are students' views on the impact of artificial intelligence (AI) on the translation process and the assessments of the quality of the translations obtained? Research question 2: How can artificial intelligence and human translators collaborate to achieve optimal translation results?

Data collection was conducted over a fixed period, providing ample opportunity for participants to complete the survey and yield evaluation results.

## RESULTS AND DISCUSSIONS

Regarding the question about students' perspectives on the impact of artificial intelligence (AI) in translation, considering aspects such as speed, accuracy, quality, and trust when using AI, the results show that for translation speed, the majority of respondents had a positive evaluation. The results obtained show that 87% of respondents believe that AI tools help students speed up the translation process. 7% of users believe that the speed of AI application does not change their translation speed, and the remaining 6% think that when AI is applied to translation, their translation speed decreases.

Concerning the accuracy of the translation, the survey results show that 71% of users who utilise AI-assisted translation believe that the quality of the translation is good with high accuracy in terms of knowledge content. Additionally, 16% believe that AI tools have reduced the accuracy of translations, especially in relation to specialised knowledge. The remaining individuals do not highly rate the accuracy of translations performed by AI. Regarding translation quality, in reality, the impact of AI on translation quality is not easy to assess. It cannot be denied that the quality and accuracy of AI have improved, however, alongside the 65% of evaluators who appreciate the quality of AI translation, the remaining number still doubts the quality of translations performed by AI, especially when it comes to translating fields such as social sciences, literature, art, or other specialised disciplines.

With regard to trust in using AI: One of the emerging observations is that many people agree that AI significantly boosts students' confidence when using translation resources. The majority of students, precisely 79%, reported feeling more confident, and this is due to AI supporting their confidence when performing translation tasks. This mainly stems from the speed, accuracy, and quality of the final product, which are significantly enhanced by AI support and ease of use. However, the rest express doubts about trusting AI, especially when translating specialised knowledge that requires in-depth understanding from the translator.

Relating to students' views on the accuracy and quality of AI tools, survey question 2 addresses the enhancement of translation quality through collaboration between the translator and AI translation tools. The survey results show that, although the role of artificial intelligence in translation cannot be denied, the role of humans greatly influences the quality of the translation, especially concerning cultural and linguistic issues. The majority of respondents believe that AI has the ability to analyse and translate vast amounts of information faster than before. Although AI is gradually penetrating the field of language, the role of humans specifically their understanding of culture, language, judgement, sentiment, and emotions on the quality and persuasiveness of translations is undeniable.

The data also shows that there is no direct competition between artificial intelligence and human translators. Artificial intelligence excels at completing tasks quickly and processing large volumes of data, while humans are very good at applying knowledge, coming up with creative solutions, or understanding different cultures. The most feasible solution might be to use artificial intelligence for simple repetitive tasks and humans for more complex jobs.

A comprehensive perspective shows that language has never been merely a tool for transferring meaning from A to B. Language is tied to culture, thought, emotion, the ability to persuade, and negotiate. Language opens the door to trade, communication, education, and international cooperation. Those are the values that require people to master, to have professional competence and multicultural understanding. The labour market needs individuals who master languages, understand cultures, and possess clear professional skills.

It is undeniable that technology has a positive impact on the translation industry by helping people translate faster, saving time and effort with some translation support tools. Language is flexible; translators not only need specialised knowledge but also need to accumulate cultural knowledge and continuously learn across multiple disciplines. In translation, no matter how advanced the machinery or technology is, it is still just a tool.

In the context of artificial intelligence technology increasingly penetrating the translation industry, many people expect it to be an effective support tool, especially in shortening time and saving costs. However, according to those in the publishing and translation industry, AI still has many weaknesses when facing a field that requires emotional depth and subtlety, such as translating literary works. One of the most noticeable weaknesses of AI is its rigidity and lack of vitality in writing style. Ms. Hoàng Thanh Vân believes that AI's writing "remains rigid and clichéd" and has yet to express the "soul of humanity," an element that creates an irreplaceable identity in literature. It must be acknowledged that AI translations often lack soul, personality, and struggle to touch the readers' emotions.

AI is a tool, but without a solid knowledge foundation, users can easily become dependent. "If you don't understand the original language, then when you input it into the software, it will use you, rather than you using it". The ability to analyse, correct, and refine translations still entirely depends on human linguistic knowledge and thinking. This is also the reason why students should be encouraged to limit their dependence on AI when they have not yet truly mastered basic skills (Duc Huy, 2025).

Humans still have to rely on their own thinking and creativity. The translator must always clearly understand the purpose of the book they are translating. The translation process is also a process where the translator automatically expands their knowledge and gains experience to avoid being overshadowed by AI. The author has a unique style, and the translator must also maintain their own style. As I mentioned earlier, there are always impartial readers who point out whether a translation has achieved beauty and sufficient depth. Language is not only a means of communication but also encodes culture, context, and local knowledge systems.

The work of translation has never been merely a mechanical substitution of words; it is a cultural intermediary act, a process of judgement, and a creation of meaning. Those profound human aspects remain and will always be the heart of this profession. Artificial intelligence is a powerful tool, sometimes astonishing us, but it is human intelligence, sensitivity, and expertise that truly give meaning to cross-linguistic communication. Higher education institutions teaching foreign language-oriented programs are not against artificial intelligence, but rather focus on training professionals who can use it intelligently, surpass it with creativity, and uphold the core essence of the profession – a deep understanding between cultures and between people (HANU, 2025).

## CONCLUSION

In recent years, artificial intelligence has changed the way we learn, teach, and translate... AI is present everywhere (in research, in classrooms, on computers, mobile phones...) helping to support,

simplify, and automate the process of translation, but at the same time, it is also a major challenge because it is redefining the role of humans in knowledge production and dissemination. Especially in the field of language teaching, translation, and interpretation, artificial intelligence (AI) has a significant impact. Unlike humans, the advancement of AI primarily lies in the transfer of computational abilities rather than the improvement of general thinking skills. However, compared to humans, AI is more useful in everyday cognitive tasks. Thanks to the support of artificial intelligence (AI), the translation industry is opening up many possibilities to enhance collaboration between AI and translators, making the process more accurate, efficient, and productive, thereby contributing to the removal of language barriers in an increasingly globalised world.

Artificial intelligence (AI) in translation has demonstrated the benefits and potential of this technology in supporting translators. From improving the accuracy and efficiency of translations to automating processes and considering contextual and specialised factors, AI is increasingly developing and expanding the collaborative capabilities between humans and machines in translation. However, the use of artificial intelligence also raises ethical issues and concerns about the job security of translators. Therefore, careful consideration and control are needed to ensure professionalism and ethics in the translation industry when applying this technology. The future of translation based on artificial intelligence is very promising, and the reasonable and thoughtful use of this technology will help enhance the quality and efficiency of the translation industry.

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