THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE TRANSLATION PROFESSION: A COMPETENCY-BASED ANALYSIS

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ABSTRACT

This study explores the impact of artificial intelligence (AI) on the translation profession through a competency-based lens. It investigates how AI has changed the work pattern of translators and identifies both technical and non-technical competencies essential for translators to remain relevant in the AI era. Using a qualitative descriptive method, data were collected through semi-structured interviews with professional translators who are members of the Indonesian Translators Association (HPI) in South Sulawesi. The findings indicate that while AI improves time efficiency and offers translation assistance, it still cannot replace human involvement in cultural and contextual translation aspects. The study highlights key skills required by translators such as CAT tool proficiency, post-editing capabilities, cultural awareness, critical and analytical thinking, decision-making, and endurance. These results provide practical implications for translator education and professional development in the age of automation.

Keywords: Artificial Intelligence, Translator, Competency, CAT tool, Post-editing

ABSTRAK

Penelitian ini bertujuan untuk menganalisis dampak kecerdasan buatan (AI) terhadap profesi penerjemah melalui pendekatan berbasis kompetensi. Studi ini mengungkap perubahan pola kerja penerjemah akibat penggunaan AI serta mengidentifikasi kompetensi teknis dan non-teknis yang dibutuhkan agar penerjemah tetap relevan di era digital. Penelitian dilakukan menggunakan metode deskriptif kualitatif melalui wawancara semi-terstruktur terhadap penerjemah profesional yang tergabung dalam Himpunan Penerjemah Indonesia (HPI) wilayah Sulawesi Selatan. Hasil penelitian menunjukkan bahwa AI meningkatkan efisiensi waktu dan membantu proses penerjemahan, namun belum mampu menggantikan peran manusia dalam menangani konteks budaya dan nuansa bahasa. Penelitian ini mengidentifikasi keterampilan utama yang dibutuhkan penerjemah seperti penguasaan alat bantu penerjemahan (CAT tools), kemampuan pasca-penyuntingan, pemahaman budaya, berpikir kritis dan analitis, pengambilan keputusan, serta ketahanan kerja. Temuan ini memberikan implikasi praktis bagi

pendidikan dan pengembangan profesi penerjemah di tengah kemajuan teknologi otomatisasi.

Kata Kunci: *Kecerdasan Buatan, Penerjemah, Kompetensi, Alat CAT, Pasca-penyuntingan*

A. Introduction

The development of artificial intelligence (AI) technology has changed many industry sectors, including translation. The presence of translation engines such as Google Translate and DeepL makes the translation process faster and more efficient. However, despite the increased speed, the quality of AI translation is still unable to fully replace the linguistic accuracy and cultural sensitivity of human translators (Castilho, 2017; Pym, 2014).

This transformation requires translators to master new competencies, such as post-editing skills, mastery of Computer-Assisted Translation (CAT) tools, and understanding of AI algorithms used in translation systems (Garcia, 2020; O'Brien, 2012). On the other hand, the need for contextual and cultural understanding still makes the role of humans irreplaceable (Bowker & Ciro, 2020).

The purpose of this study is to identify the impact of AI on the translation profession and analyse the technical and non-technical competencies needed for translators to remain competitive and relevant in the AI era.

This research focuses on analyzing the impact of artificial intelligence (AI) on the translation profession, with an emphasis on the competencies required for translators to adapt to technological developments. The respondents in this study are professional translators who work in various fields and are members of the Indonesian Translators Association (HPI).

However, it does not cover other language-related professions, such as interpreters or subtitlers, nor does it address the legal and ethical aspects of using AI in translation.

B. Research Metodology

This research uses a qualitative approach with analytical descriptive method. Data were collected through

semi-structured interviews with active members of the Indonesian Translators Association (HPI) in South Sulawesi who have experience using AI in the translation process. Data were analysed using thematic analysis techniques and competency checklists. Thematic analysis was developed by Braun & Clarke (2006), which includes the process of coding, identifying themes, and interpreting meaning based on the data obtained, while the checklist results will be analysed by matching the data from the respondents with the list of competencies that have been identified. This allows researchers to evaluate the extent to which translators have or have not possessed the competencies needed in the AI era.

C. Findings and Discussions

A. Findings

In this study, interviews were conducted with several professional translators to understand their perspectives on the use of artificial intelligence (AI) in translation. From the interviews, several main themes emerged, namely the impact of AI on the way translators work, the competencies required by translators in the AI era.

1. The Impact of AI on the Translation profession

The findings from these interviews provide a direct insight into the changes that translators have experienced in their daily working practices, especially since the arrival of AI-based technology in the translation process.

a. Working with AI makes translating easier

Respondents in this interview revealed that working with AI makes the translation process easier. One respondent highlighted that AI is very helpful in speeding up the work.

Another respondent also stated that AI is a good tool to help humans translate. This shows that AI plays a supporting role in the translation process, increasing efficiency and reducing the translator's workload.

b. Time efficiency

Respondents highlighted that the use of AI in the translation process has an impact on time efficiency. Before using AI, translating 10 pages took about 8 hours. However, with the help of AI, the time needed can be cut in half, to about 4 hours. However, an additional time of about 2 hours is required for post-translation editing. This is due to the fact that AI translations can sometimes feel stilted or not fully contextualised.

This finding shows that AI can significantly improve time efficiency in translation but still requires human intervention to ensure the final quality is more natural and faithful to the intended meaning. AI is able to speed up the work process, but it has not yet fully replaced the role of humans in the aspects of editing and understanding the language context.

c. Providing Additional References

Respondents revealed that the use of AI provides benefits in terms of additional references. One respondent stated that AI helped him by providing more references that could be used in his work. This shows that AI can act as a source of information that helps users to find a wider selection of words or terms that are more appropriate in certain contexts.

Other respondents also mentioned that they rely on AI for specific tasks, such as identifying obvious errors, typos, and other similar mistakes. While the main purpose is to detect technical errors, it also indirectly helps in providing a better reference for users in refining their final work.

d. AI as a Tool

Respondents in these interviews consistently emphasized that AI is not a replacement for humans, but rather a tool to assist in various tasks. One respondent emphasised that while AI can be used in the process of searching for terms, it still requires human knowledge and experience to ensure the relevance and accuracy of the use of the terms. In other words, AI can provide suggestions, but the final decision remains in the hands of humans. Other respondents also asserted that AI is just a tool operated by humans, so full control remains with the user. Meanwhile, others stated that they rely on AI for certain tasks, such as identifying obvious errors and correcting typos. This shows that AI does have benefits in improving work efficiency, but it cannot completely replace human skills and judgement.

2. Competence Needed by Translators in the Era of AI

The interviews revealed a range of technical and non-technical skills that are becoming increasingly crucial, reflecting the shifting professional demands in the increasingly digitised world of modern translation.

a. Ability To Utilize Computer-Aided Translation (CAT) Tools

This chart illustrates the results of the interviews on the competencies required for the use of Computer-Aided Translation (CAT) tools among translators. The chart shows the respondents' level of agreement on various subcompetencies that are considered important in supporting translation efficiency and consistency.

From the interviews, it is evident that most respondents agree that mastery of CAT software such as Trados or MemoQ is a very important skill. This also applies to the understanding of the function of translation memory (TM) in

maintaining terminology consistency as well as the management of terminology databases to speed up the translation process. These three aspects received full agreement from all respondents.

b. Post Editing Machine Translation (PEMT)

The interview results regarding competencies in Post-Editing Machine Translation (PEMT). The chart shows the respondents' level of agreement on the various subcompetencies that are considered important in improving the quality of machine translation.

Based on the data shown, the majority of respondents agreed that the ability to identify and correct linguistic errors in machine translation is a very important skill. In addition, skills in post-translation editing techniques, reviewing and improving sentence structure to make it more natural, and applying quality standards and editing guidelines according to client needs were also considered crucial by all respondents.

However, there was a slight difference of opinion regarding the ability to adjust the machine translation to fit the target cultural context. Most respondents considered this skill important, but one person stated that it was not necessary.

c. Linguistic Skill

The results of interviews with respondents regarding the linguistic competences that are considered important for translators. Each sub-competency shown in the chart is marked in blue, which means that all respondents agree that these aspects are highly relevant in today's translation field.

In an interview conducted with the respondents, it was found that there are five main aspects of linguistic skills that are considered crucial for a translator. All respondents agreed that the mastery of vocabulary and grammar in both the source and target languages is a foundation that cannot be ignored.

In addition, they also highlighted the importance of understanding local idioms and expressions, which often pose a challenge for machine translators. Idioms and expressions typical of a culture have implied meanings that cannot always be translated literally, thus requiring in-depth understanding.

Another ability that is considered essential is the skill in handling the difference between formal and informal language. A translator must be able to adjust the language style based on the context of the text being translated. Last but not least, sensitivity to nuances of meaning is also highlighted. The translator should be able to convey the message from the source language to the target language accurately, without losing the implicit meaning contained in the original text.

d. Cultural Skill

The results of interviews with respondents regarding the cultural

competencies that are considered important for translators. All subcompetencies in the chart are marked in blue, indicating that all respondents agree on the importance of these aspects in translation practice.

In the interviews conducted with the respondents, it was found that cultural skills are an equally important aspect of the translation process. All respondents agreed that understanding the cultural differences between the source and target languages is necessary to maintain the relevance of the translated text.

In addition, translators should also have the ability to identify cultural elements that may require adaptation in translation. Not all cultural terms or concepts can be translated directly without adjusting to the social and cultural context of the target readers. Therefore, the skill of adapting the translation to fit the social, cultural and emotional setting of the audience is very important.

The respondents also emphasised that a translator should understand ethical standards in translation, especially when dealing with texts related to sensitive cultural issues. Mistakes in translation of such texts can lead to misunderstandings or even cultural conflicts.

e. Critical Thinking Skill

In the interviews with the respondents, critical thinking skills emerged as a much-needed aspect of translation, especially in evaluating artificial intelligence-generated translations. Most respondents agreed that the ability to identify areas for improvement in machine translation is crucial.

In addition, translators should also be able to distinguish between errors that truly require correction and adjustments that are merely contextual. This ability allows the translator to not only correct technical errors but also ensure that the translation remains true to the intended meaning.

In terms of information accuracy, the majority of respondents agreed that assessing the accuracy of information in relation to the context and purpose of the translation is an essential skill. However, one respondent expressed disagreement with this aspect, which is evident from the orange coloured bars on the graph.

f. Analytical Thinking Skill

The interviews on analytical thinking skills in translation showed that all respondents agreed on the importance of various aspects of this skill. One of the competencies considered crucial is the ability to identify common patterns in machine translation errors to improve efficiency in the final editing process. This is becoming increasingly relevant as artificial intelligence-based translation is increasingly used.

Respondents also acknowledged that a translator should be able to analyse complex sentence

structures and adapt them to the target language. This shows that a deep understanding of the grammar and syntax of both languages is necessary for the translation to remain accurate and natural.

g. Decision-making Skill

One interesting finding from the interviews was the importance of decision-making skills in the context of AI-based translation. Respondent R4 emphasised that the translator still has a central role as the final decision maker of the translation produced by the technology. Although AI can provide a variety of alternative translations or diction suggestions, translators still have to do in-depth research to choose the most appropriate and contextually appropriate equivalent.

This statement shows that AI is not able to fully replicate human intuition and judgement in determining the most appropriate meaning, especially in texts that are complex or culturally nuanced. Therefore, decision-making skills supported by research capacity is a key competency that translators need to have in this technological era. Translators do not only act as users of technology, but also as curators of meaning who must weigh various options based on in-depth knowledge, experience and contextual understanding.

h. Endurance Skill

From the interviews, it was found that one of the non-technical competencies that respondent R5 considers crucial is endurance. The respondent explained that in practice, professional translators are often faced with tight deadlines, such as having to complete a translation within two to three days. This condition demands physical and mental ability to stay focused, consistent and productive within the limited time.

The findings show that the presence of AI technology does not automatically reduce work pressure in translation. While AI can speed up the initial process, the need to carry out further editing and verification of results still requires translators to work intensively in a short duration. Thus, endurance is an important aspect that determines the success of a translator in dealing with fast-paced work dynamics that demand high accuracy.

B. Discussion

This section discusses in more depth how the data obtained reflects the changing dynamics of the translation profession in the era of artificial intelligence. This discussion relates the findings to theories and previous research to see how they align or diverge. The aim is to interpret the meaning of the data and provide a broader understanding of the implications of AI on the competencies and roles of today's translators.

1. The impact of artificial intelligence on the translation profession

Based on the research results, artificial intelligence (AI) has brought significant changes to the translation profession. This finding is in line with previous research which shows that AI improves translation efficiency through automation (Moorkens, 2020; Vieira & Alonso, 2019). However, AI has not fully replaced the role of human translators as it still has limitations in capturing cultural nuances and language context (Bowker & Ciro, 2020).

The research findings show that AI improves translation efficiency through speed and cost reduction, as expressed by respondents who use tools such as Google Translate and DeepL. This is in line with Castilho's (2017) and Garcia's (2020) research that AI speeds up the translation process, especially for technical and repetitive texts. However, the interview results also confirm that the quality of AI translation still requires human intervention for cultural context adjustment and language nuances, as emphasized by Pym (2014) and Liu et al. (2019).

The concept of Human-AI Collaboration that emerged in the research findings reinforces the argument of Herbig et al. (2019) that the integration of AI and human expertise results in higher quality translations. Respondents stated that the role of the translator shifts from “text producer” to “critical editor”, which is in line with O'Brien's (2012) theory of post-editing machine translation (PEMT). This shift requires translators to master not only linguistic skills, but also technical capabilities in utilizing AI-based tools.

Most respondents stated that AI helps speed up the translation process, especially in the early stages of translation or drafting. However, they still need to do post-editing to ensure the translation is in line with the context and the expected quality standards. This supports O'Brien's (2012) view that today's translators work not only as pure translators but also as editors and validators of machine translations.

Although AI speeds up the work, findings show that it still cannot handle complex translations, such as legal and literary texts, which require a deep understanding of the cultural and social context (Garcia, 2020). This

confirms that AI serves more as an auxiliary tool than as a replacement for human translators.

2. Competence Needed by Translators in the Era of AI

The research findings identified two main categories of competencies: technical and non-technical. Technical competencies such as the use of CAT tools (Trados, MemoQ) and PEMT are in line with Moorkens' (2020) research which emphasizes the importance of technological adaptation in translator education curricula. Respondents also highlighted the need to understand AI algorithms for translation optimization, which is in line with Bowker's (2020) recommendations.

On the non-technical side, in-depth linguistic skills and cultural sensitivity are key. This finding reinforces Danks and Griffin's (1997) theory that human translators still excel in handling culturally nuanced texts, such as literature or marketing, where AI is limited. In addition, critical thinking and analytical skills such as identifying biases or inconsistencies in machine translation are essential, as described by Nitzke and Hansa-Schirra (2021).

Besides the previously described competencies, there are some new competencies that translators must have in the current era. Nowadays, the translator is not only a user of technology but also a decision-maker in determining the quality of translation. AI can provide various translation options, but the final decision regarding the use of terms, sentence structure or language nuances remains in the hands of the translator. These decisions should be based on an understanding of the context, the client's needs, and translation quality standards.

According to research by Moorkens et al. (2018), translators working with AI must have fast and accurate decision-making skills, especially in post-editing work, as they have to decide which parts need to be fixed, changed, or kept. In addition, translators are often faced with a dilemma between time efficiency and translation quality. Therefore, decision-making skills are becoming increasingly crucial in this profession.

This skill also relates to ethical aspects, such as considering whether the translation produced by AI is in line with cultural values and the accuracy of information. Translators must be able to critically assess and filter information to ensure that translations

are not misleading or biased (Castilho et al., 202).

The second new competency is endurance. Endurance in the translation profession refers not only to physical endurance in the face of tight deadlines, but also mental and emotional endurance. Translators often work under pressure with high workloads and short deadlines. With the advent of AI, demands for speed and efficiency are increasing, so translators need to have high endurance to remain productive without compromising on quality.

According to O'Brien's (2013) research, translators with good resilience are better able to adapt to technological change, manage work stress and maintain high quality standards. In addition, with the development of AI, there are concerns about the changing role of interpreters and uncertainty in the industry. Therefore, translators with emotional resilience will be better able to face these changes with a positive and adaptive attitude.

Endurance is also needed in the face of revisions and criticisms from clients or editors. In many cases, a translation may undergo several revisions before it is finally accepted. Mentally endurance translators will be better able to accept feedback constructively and use it to improve the quality of their wothe.

E. Conclussion

Artificial intelligence is bringing big changes to the world of translation, especially in terms of work process efficiency. However, AI has yet to fully replace human translators in terms of cultural sensitivity and contextual accuracy. Therefore, today's translators must master technical competencies such as the use of CAT tools and PEMT, and strengthen non-technical competencies such as linguistic ability, cultural understanding, critical thinking, analytcal thingking, desicion making, and work endurance.

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