



Information Literacy and Critical Analysis in Translation in the Era of Artificial Intelligence (AI)

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ABSTRACT

Artificial intelligence (AI) has been widely used in the field of translation in recent years. However, the use of AI in translation has been limited due to its limitations in handling cultural nuances, implicit meanings, and complex language structures. This study aims to analyse the meta-language awareness of English Language Education students in conducting critical analysis of translation since the emergence of AI. In addition, this study explores how students assess the accuracy and bias in AI translation results and the extent to which they are able to correct or improve the translation independently. This case study focuses on students' perspectives and viewpoints in understanding, evaluating, and critiquing the translation results produced by AI and how their critical analysis skills develop in the context of translation. The findings highlight that AI can serve as a valuable tool, but it should not be solely relied upon for tasks requiring deep linguistic understanding, particularly in academic, professional, and cross-cultural communication settings.

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1. Introduction

In recent years, artificial intelligence (AI) has been developing rapidly, covering various aspects of human life. AI has been applied in various fields, including education, health, business, and communication, helping humans complete complex tasks more quickly and efficiently. AI's ability to process and analyze large amounts of data has made it a very useful tool in information processing, including in the field of translation. The integration of artificial intelligence (AI) into translation tasks has significantly transformed the field, bringing substantial convenience for users in various applications. AI translation models use large-scale pre-training and deep learning machines to quickly analyze enormous amounts of text, which reduces down on the need for human translators and manual workflows (Jiang, 2023; Wei, 2020). This process not only speeds up the processing of huge amounts of text, but it also reduces on the need for constant human interaction. This lowers response times and costs (Jiang, 2023; Wu et al., 2016).

Moreover, the evolution of user-centered design in AI-driven translation systems has enhanced personalization and usability. Machine translation systems that incorporate user-generated textual content and adapt to individual linguistic nuances show improved contextual accuracy and reliability, leading to greater user confidence and satisfaction (Zhang et al., 2022). This personalized approach makes sure that translations are not only quick, but also have the right level of detail to meet different communication demands (Zhang et al., 2022). These improvements align with broader objectives to create systems that are both efficient and responsive to user experience considerations (Zhang et al., 2022).

The implications of AI translation extend into professional fields, where they offer significant operational benefits. AI-powered translation tools have transformed traditional workflows by automating repetitive translation tasks, allowing professional translators to focus on higher-level linguistic analysis and creative language tasks (Wang, 2023). Although challenges such as occasional grammatical inconsistencies persist (Li et al., 2023), the overall impact includes enhanced productivity and streamlined operations, crucial for meeting the fast-paced demands of global communication (Wang, 2023). Also, this greater efficiency makes translation services more available, which helps spread information and culture more widely (Zhou, 2024).

Furthermore, advances in AI continue to aid in overcoming language barriers globally. Improvements in algorithmic sophistication ensure that translation systems maintain competitive performance while adapting to a broader range of languages and dialects (Zhou, 2024). This clarity and speed of communication facilitate smoother interpersonal and cross-cultural interactions, underscoring the essential role of AI in a globalized context (Jiang, 2023). While vulnerabilities such as adversarial attacks have been identified that could compromise translation quality (Chertkov et al., 2024), ongoing research continues to enhance the robustness and reliability of systems. In simple words, AI has introduced considerable convenience to the translation field by reducing translation time, enhancing personalization and user satisfaction, and streamlining professional workflows. The integration of large-scale data processing, personalized machine learning, and user-centered design within AI translation systems highlights the transformative impact of these technologies on both routine and specialized translation tasks (Chertkov et al., 2024; Jiang, 2023; Soysal, 2023; Wang, 2023; Wu et al., 2016; Zhang et al., 2022; Zhou, 2024).

However, although AI offers many benefits in the field of translation, its impact is not always positive. One of the main challenges is the accuracy and quality of translations produced by AI, especially in the context of cultural nuances, implicit meanings, and complex language structures. AI models often fail to account for cultural references or idiomatic expressions, which can alter the meaning of the source text if not appropriately handled. Studies have noted that while AI has significantly improved in producing translations comparable to human performance in some domains, there remain notable gaps, particularly in comprehending and translating culturally rich or nuanced content (Mohamed et al., 2024; Popel et al., 2020). This indicates that while AI tools may excel in translating standard language, they can fall short in contexts where contextual understanding and cultural competency are essential (Zaki & Ahmed, 2024).

Moreover, the complexity of human language, with its myriads of implicit meanings and layered contexts, presents a formidable barrier to AI translation accuracy. Texts that require an understanding of irony, satire, or specific emotional subtleties can lead to misinterpretation or oversimplification in AI-generated translations (Abu-Rayyash, 2023). For example, AI is often challenged by complex sentence structures and tone variations, which are crucial in conveying the intended message accurately. Research indicates that machine translation systems significantly underperform in these areas compared to expert human translators, who utilize their understanding of context and connotations to deliver more nuanced translations (Al Sawi & Allam, 2024).

The impact of these limitations extends beyond individual translations. The reliance on AI tools has implications for communication equity and inclusion. While AI translation tools have the potential to bridge linguistic divides, their shortcomings can exacerbate inequalities by failing to serve communities that depend on accurate translations for critical information (Zaki & Ahmed, 2024). This presents a paradox where, despite technological advancements, the essential human elements of understanding and empathy remain irreplaceable. To that reason, information literacy and critical analysis skills are becoming increasingly important for AI users in translating text, given the potential for bias in the algorithms used and the limitations of AI in understanding context in depth.

Then, the next challenge, dependence on AI makes humans reluctant to learn a new language from the language they want to translate. Even though these systems are quite useful for helping people talk to each other, they typically have challenges giving people a deep understanding of the nuances of grammar. This can lead to people being able to speak the language without really learning how it works (Sipayung et al., 2021). Research shows that neural machine translation models and hybrid approaches are effective at gathering contextual information, which leads to high-quality translations. However, their ease of use may unintentionally hinder people from actively learning a language (Sipayung et al., 2021). For instance, AI-based tools like ChatGPT have demonstrated significant promise in interactive language practice by providing prompt corrections and feedback. However, such interventions may lead to diminished engagement with the learning process itself, as users may develop a dependency that reduces deeper cognitive engagement with the language (Avsheniuk et al., 2024). This phenomenon can create challenges in developing essential linguistic skills, as

reliance on AI tools may minimize the necessity for learners to mentally process and internalize linguistic rules and structures (Avsheniuk et al., 2024).

Moreover, the limitations of MT systems in reliably correcting grammatical errors underscore a key drawback: users may not cultivate a robust understanding of the language they are translating (Reidina & Yuliani, 2020). This over-reliance on technology may provide short-term communicative benefits but poses risks for long-term implications on language proficiency and critical thinking skills in language use (Reidina & Yuliani, 2020). Consequently, while AI and MT tools present valuable resources for immediate translation needs and accessibility, it remains essential to integrate these technologies with traditional language education for comprehensive language acquisition (Şişianu & Puşcaşu, 2024).

In addition, dependence on AI in translation can also hinder a person's critical and analytical thinking skills towards language. The over-reliance on AI translation poses significant risks regarding cognitive engagement. Studies indicate that frequent use of automated tools can lead to skills atrophy, where users become increasingly reliant on technology and less capable of performing critical language analyses independently. The capacity to engage in deep reading, nuanced interpretation, and contextual understanding diminishes, as the cognitive load required for these tasks is redistributed to AI systems. Understanding language extends beyond mere translation; it involves appreciation for syntax, semantics, and pragmatics. Due to automated translation's potential to oversimplify complex ideas, users may fail to cultivate a rich understanding of the language's intricacies. Consequently, learners may struggle to express themselves effectively and creatively in a target language, leading to diminished linguistic competencies over time. When individuals are no longer accustomed to analyzing the meaning of a text in a foreign language, they tend to accept the translation results raw without considering the accuracy and appropriateness of the context. This can have an impact on misunderstandings in communication, especially in situations that require clarity and cultural sensitivity, such as in diplomacy, international business, or academics. In the long term, this phenomenon can cause a gap in language proficiency and a decrease in the number of people who have bilingual or multilingual competence. In fact, the ability to speak more than one language not only increases professional opportunities but also broadens one's horizons in understanding global perspectives.

To that extent, specifically, especially for students of the English Language Education study program, information literacy and critical analysis skills in translation are very important skills to develop. As prospective language educators and practitioners, they are not only required to understand linguistic and translation theories, but also to be able to apply these skills in various academic and professional contexts. The ability to research, evaluate, and synthesize information from various sources allows them to understand the latest developments in the field of translation, choose the most appropriate strategy, and produce accurate and contextual translations. With these skills, students can avoid relying entirely on AI technology in translation and be more critical in assessing the accuracy and relevance of the information they obtain.

In addition, the ability to critically analyze translation theory and practice, as well as identify and overcome bias in translated content, is an equally important aspect. English Language Education students need to understand that language is not just a means of communication, but also reflects different cultures, ideologies, and perspectives. In the translation process, bias can arise from various factors, including the translator's personal preferences, cultural influences, or even the limitations of automatic translation technology. Therefore, students must be equipped with a deep understanding of how bias can affect translation results and how they can strategize to overcome it. In this way, they will not only become competent translators but also be able to be careful critics of translations, whether produced by humans or AI.

This study aims to analyze the meta-language awareness of English Language Education students in conducting critical analysis of translation since the emergence of Artificial Intelligence (AI). Meta-language awareness refers to a person's understanding of the structure, function, and use of language reflectively and analytically. In the context of translation, this awareness includes students' ability to research, evaluate, and synthesize information from various sources, critically analyze translation theory and practice, and identify and address bias in translated content. This study examines how students utilize AI in translation and how this technology affects their understanding of the translation process analytically. Does AI help them improve their understanding of translation theory or does it reduce their critical thinking skills? In addition, this study also explores how students assess the accuracy and bias in AI translation results and the extent to which they are able to correct or improve the translation independently.

2. Literature Review

Translation

Translation is a complicated process that goes beyond just changing words from one language to another. It also includes cultural, social, and contextual differences. Zethsen argues that translation studies must embrace a more expansive perspective that acknowledges several types of translation, including interlingual, intralingual, and intersemiotic forms, thereby reflecting the intricacy of this phenomenon (Korning Zethsen & Hill-Madsen, 2016). Toury states that translation, as a field of applied linguistics, possesses a scientific character, arguing against reducing it to traditional definitions and instead promoting adaptability to the growing practices within the discipline (Melby et al., 2014; Rahmatillah, 2013). Halverson also stresses the importance of a strong conceptual framework that shows how complicated it is to translate texts without making its many roles and purposes in communication too simple (Halverson, 1999). Roberts defines the notion of translation as a sort of movement, recognizing that translation goes beyond mere linguistic equivalency to encompass the dynamic nature of transferring meaning across diverse situations and cultures (Roberts, 2023).

Information Literacy and Critical Analysis

Information literacy and critical thinking are increasingly recognized as essential skills for students navigating the complexities of contemporary information environments. Information literacy involves the ability to identify, locate, evaluate, and effectively use information from various sources, which is critical for academic success and personal decision-making (Ardyawin, 2024; Supriyanti et al., 2020). As highlighted by Supriyanti et al., (2020) that effective information literacy enables individuals to critically explore and assess information, leading to more informed arguments and better problem-solving. Additionally, Khairunissa emphasizes that strong information literacy skills correlate positively with critical thinking abilities, indicating that training in these areas enhances students' capacity to evaluate information critically and distinguish between credible and non-credible sources (Khairunissa, 2020). This connection underscores the necessity for educational programs to integrate structured information literacy frameworks that cultivate these interconnected skills, thereby fostering a culture of critical inquiry among students (Calero-Mieles & Barban-Forte, 2024; Seifi et al., 2020).

Moreover, the pedagogical approaches to enhancing information literacy must adapt to contemporary learning environments. Collaborative learning strategies, as posited by Sormunen et al., can create engaging conditions that promote students' information literacy practice through teamwork and shared knowledge (Sormunen et al., 2014). The incorporation of cross-disciplinary resources, as explored by Crist et al., (2017) exemplifies effective strategies for enriching students' exposure to information literacy concepts while simultaneously enhancing their communication skills. Effective curriculum design that embeds information literacy instruction is crucial for developing critical thinking skills across various academic disciplines, allowing students to navigate and critique diverse information formats (Sanches et al., 2022; Seifi et al., 2020). Instructional methods should also emphasize reflective practices that enable learners to critically analyze and synthesize information, which are vital components of both literacy and critical thinking development (Ardyawin, 2024; Sanches et al., 2022). This comprehensive approach ensures that students are equipped to tackle information challenges, ultimately leading to higher levels of academic engagement and lifelong learning readiness (Seifi et al., 2020).

3. Method

This study uses a qualitative design with a case study approach to explore the meta-language awareness of English Education students in relation to their critical analysis of AI-based machine translation. This case study focuses on students' perspectives and viewpoints (Baxter & Jack, 2008) in understanding, evaluating, and critiquing the translation results produced by AI and how their critical analysis skills develop in the context of translation. This study involved 12 English Education students who were taking the Translation course as participants. Participants were selected because they had direct experience in using AI in the translation process and already had a basic theory of translation that allowed them to analyze the translation results.

Data were collected through a meta-language awareness questionnaire consisting of Likert Scale-based statements. The statements in this questionnaire were adapted from instruments that have been used in previous studies on meta-language awareness in translation. Some aspects measured in this questionnaire include: ability to research, evaluate, and synthesize information from various sources, ability to critically analyze translation theory and practice, and ability to identify and address bias in translated content.

Meanwhile, the collected data were analyzed using content analysis and data interpretation. Content analysis was conducted by categorizing and interpreting students' responses to statements in the questionnaire to identify their mindsets in understanding and evaluating the role of AI in translation. Data interpretation was conducted by linking the findings obtained with relevant theories in the fields of meta-language awareness and

d critical analysis in translation. With this method, this study aims to provide a deeper understanding of how English Education students view the role of AI in translation and the extent to which they have meta-language awareness and critical analysis skills in assessing translation results produced by AI.

4. Results

No	Criteria	Numbers of Responses (%)				
		SA	A	N	D	SD
1	I actively compare AI-generated translations with other reference sources before using them.	50,00	25,00	25,00	0	0
2	I can identify the strengths and weaknesses of AI-generated translations based on translation theories I have learned.	33,33	41,67	25,00	0	0
3	I usually review AI-generated translations to ensure accuracy and contextual appropriateness.	41,67	33,33	25,00	0	0
4	I understand various translation strategies and can assess whether AI uses appropriate strategies.	25,00	33,33	41,67	0	0
5	I can recognize syntactic or semantic errors in AI-generated translations and correct them.	0	50,00	50,00	0	0
6	I prefer to rely on AI as a translation tool rather than on my own translation skills.	8,33	8,33	58,33	25,00	0
7	I am aware that AI-generated translations may contain cultural or ideological biases that need to be critically examined.	58,33	25,00	16,67	0	0
8	I can identify bias in AI-generated translations and make adjustments to ensure objectivity.	16,67	33,33	41,67	8,33	0
9	I understand that AI cannot always capture implicit meanings in a text, and I can adjust the translation accordingly.	50,00	41,67	8,33	0	0
10	I feel that my critical analysis skills have improved after using AI in the translation process.	25,00	41,67	33,33	0	0

The data reveals that a significant portion of respondents actively compare AI-generated translations with other sources, with 50% strongly agreeing and 25% agreeing, while the remaining 25% are neutral. Similarly, 33.33% strongly agree and 41.67% agree that they can identify the strengths and weaknesses of AI-generated translations based on translation theories they have learned. When reviewing AI-generated translations for accuracy and contextual appropriateness, 41.67% strongly agree, 33.33% agree, and 25% remain neutral.

Regarding the ability to analyze translation strategies, 25% strongly agree, 33.33% agree, and 41.67% are neutral about assessing AI's use of appropriate strategies. While 50% agree and 50% are neutral about recognizing syntactic or semantic errors in AI-generated translations, only 16.67% strongly agree and 33.33% agree that they can identify and adjust biases in AI translations, with 8.33% disagreeing. A notable response appears in the statement about reliance on AI, where 58.33% are neutral, 25% disagree, and only 16.66% (8.33% strongly agree, 8.33% agree) indicate a preference for AI over their own translation skills.

Awareness of potential cultural or ideological biases in AI-generated translations is relatively high, with 58.33% strongly agreeing and 25% agreeing. Similarly, 50% strongly agree and 41.67% agree that AI cannot always capture implicit meanings, requiring manual adjustments. Finally, 25% strongly agree, 41.67% agree, and 33.33% remain neutral on whether using AI has improved their critical analysis skills. Overall, the responses indicate that while students demonstrate awareness of AI translation limitations, many remain neutral regarding their ability to analyze AI outputs critically and tend to rely on AI rather than their own skills. This suggests the need for further training in critical evaluation, bias detection, and translation accuracy when working with AI tools.

The data questionnaire above is supported by the statements given by the respondents.

"Yes, that's right, students' ability to sort, evaluate, and compare information and translation results from machine translation or AI is very important, because sometimes AI translations can be very strange, such as translations using deep L "" State University of Malang "" translated into "" Poor State University "". That's where the student's job is to re-analyze the translation using AI so that there is no misunderstanding. And also AI is lacking in translating in cultural aspects such as "" I like to eat uduk rice in the morning

"" AI translates the word into "" I like to eat Mixed rice in the morning "" this is where the student's job is to analyze the word and can change it into "" I like to eat uduk rice, a fragrant coconut rice dish, in the morning. "" -Respondent 1

The interview response highlights students' critical role in evaluating and refining AI-generated translations, particularly in sorting, evaluating, and comparing information to ensure accuracy and contextual appropriateness. The respondent provides two concrete examples of machine translation errors, illustrating how AI can misinterpret certain terms, leading to inaccuracies and potential misunderstandings.

First, the example of "State University of Malang" being mistranslated as "Poor State University" demonstrates AI's literal and sometimes flawed interpretation of words. This issue likely arises from AI's failure to recognize proper nouns and its contextual limitations in differentiating between a name and an adjective. Without human intervention, such errors could cause miscommunication and misrepresentation of official institutions. Second, the "uduk rice" example highlights AI's difficulty in translating culturally specific terms. The AI translation "Mixed rice" fails to capture the authenticity and cultural nuance of the original term. The student's proposed revision "I like to eat uduk rice, a fragrant coconut rice dish, in the morning" exemplifies the importance of adding contextual explanations when translating culturally embedded words. This aligns with the principles of translation studies, particularly domestication and foreignization strategies, where translators must decide whether to adapt a term for target readers or retain its cultural uniqueness with added clarification.

This interview response reinforces the idea that AI is a useful tool, but not a replacement for human judgment in translation. It underscores the need for students to develop critical analysis skills, including evaluating AI-generated translations, recognizing errors, and making necessary adjustments to preserve meaning and cultural integrity. Meta-language awareness plays a key role in ensuring that AI translations remain accurate, contextually appropriate, and free from misinterpretation.

Then, other respondents stated that:

"I think it is very important. Because based on my experience, AI or other translation machines are sometimes inaccurate. So we have to be able to sort and choose which one is correct. Because we also need to convey the results of the information with our own understanding, not just copying it. Now, by being able to compare the translation results from various sources, we can choose which one is most appropriate for us. And also this method can train our critical thinking and not just trust technology. Because technology can also be the beginning of destruction in the long run. (Example: our assignments that should have gotten good grades were not accepted by the lecturer because they were purely using AI without being corrected first, well that becomes a difficulty for us)." -Respondent 2

The respondent's remarks make it clear that it's important to be mindful of AI-generated translations. It also makes it clear that AI can be a useful tool, but it's not always right. They understand that it is important to filter and evaluate translations to find the best and most useful output. This is a basic part of information literacy: students need to actively study and improve AI-generated content instead of just accepting it as is. The answer further points out that translation is not just duplicating words; it involves a thorough understanding and personal interpretation to make sure the translation is correct and fits the context.

Furthermore, the response underscores the role of AI in developing critical thinking skills. By comparing translations from various sources, students are encouraged to question, analyze, and make informed decisions, which strengthens their ability to engage with linguistic and contextual nuances. This is in line with the principles of translation studies, where translators must evaluate multiple possibilities before selecting the most suitable equivalent. However, the respondent also expresses concern over the potential negative consequences of over-reliance on AI, particularly in academic settings. The example of assignments being rejected due to uncritical AI usage highlights ethical issues and the need for students to apply meta-language awareness when utilizing AI for academic and professional purposes. This perspective reinforces the idea that technology should be a supportive tool rather than a substitute for human judgment and expertise.

Moreover, this perspective is supported by other respondents:

"Yes, this skill is very important for students to have because machine translators or AI often provide literal translations that do not consider cultural context, idioms, or implied meanings. Students are expected to evaluate the translation results to avoid mistakes in conveying the original meaning accurately. Then the information provided by AI also needs to be checked again from various sources because AI can help in finding

information, but the results given are not in the original source such as research articles because I have when searching for the original text in journal article searches such as google scholar or sinta, the journal article does not exist and if there is a different title and name of the researcher, of course this is the duty of students to be more careful in taking research articles that are more valid. And also if students often compare the results of AI translation with other translation machines, of course, it can improve students' understanding of language structure, grammar, and nuances of meaning. So, students also need to have these skills so that they are not just passive users of technology, but can also use it wisely to support learning. It is better for us to control technology than for us to be controlled by technology.” -Respondent 3

The response from Respondent 3 emphasizes the importance of critical evaluation and validation when using AI-generated translations and information. One of the key concerns raised is that AI translations often lack cultural awareness, fail to interpret idiomatic expressions, and may not accurately capture implied meanings. This aligns with well-established translation theories, such as Nida's dynamic equivalence, which highlights the necessity of conveying meaning naturally rather than adhering to literal word-for-word translations. The respondent acknowledges that students must actively analyze and refine AI-generated translations to avoid misinterpretations and maintain accuracy in communication.

Another significant issue discussed is the reliability of AI-generated information. The respondent points out that AI can provide helpful insights, but it does not always cite accurate or verifiable sources. This highlights a critical challenge in information literacy, where students need to cross-check AI-generated content with reputable sources like peer-reviewed journal articles. The mention of fabricated references or incorrect citations serves as a warning that AI, particularly language models, can sometimes generate hallucinated data, reinforcing the necessity for students to develop strong research and source-evaluation skills.

Additionally, the respondent highlights the educational benefits of comparing AI-generated translations with other translation tools. This practice can enhance students' understanding of language structure, grammar, and meaning nuances, making it a valuable exercise in language learning and translation training. The final statement, “It is better for us to control technology than for us to be controlled by technology,” serves as a strong reminder of the need for responsible AI usage. Rather than becoming passive users, students should develop active engagement strategies to critically assess and refine AI outputs. This is to ensuring that technology remains a supportive tool rather than an unquestioned authority. This response reinforces the importance of meta-language awareness and critical analysis in AI-assisted translation, encouraging students to approach AI-generated content with both curiosity and scepticism.

5. Discussion

The findings align with the provided statements regarding AI's impact on translation, particularly in enhancing efficiency, personalization, professional adaptation, and global communication. AI translation models, as stated by Jiang (2023) and Wei (2020), utilize deep learning and pre-trained database to process large volumes of text efficiently, reducing reliance on human translators. The findings support this claim, as students and professionals increasingly use AI to accelerate translation tasks. However, this finding extends the discussion by highlighting the need for verification, as AI-generated translations may contain inaccuracies or fabricated citations, especially in academic contexts. This reinforces the idea that AI should serve as an assistive tool rather than a complete replacement for human translators.

The statements also emphasize user-centered design in AI-driven translation, allowing for personalization and improved contextual accuracy (Zhang et al., 2022). The findings confirm that AI enhances linguistic awareness by exposing students to multiple translation tools. However, while AI adapts to user-generated input, the findings underscore the importance of critical thinking, as machine translations often struggle with cultural nuances, idioms, and implied meanings. This aspect, though not explicitly mentioned in the statements, is crucial in translation studies and aligns with discourse analysis approaches that stress the significance of context in translation.

Furthermore, AI-powered translation tools have transformed professional work by automating repetitive tasks, enabling translators to focus on higher-order linguistic and creative tasks (Wang, 2023). The findings support this perspective, as students use AI for initial translations before refining them manually. However, the findings highlight a critical gap not addressed in the statements, AI's limitations in formal academic translations, where inaccuracies in research citations pose significant challenges. While the statements acknowledge grammatical inconsistencies (Li et al., 2023), the findings extend this by emphasizing the risks of AI-generated misinformation in academic work.

AI also plays a crucial role in global communication by overcoming language barriers and facilitating cross-cultural exchange (Zhou, 2024). The findings align with this view but present a more nuanced perspective by emphasizing that AI translations often require human intervention to ensure cultural appropriateness. While

the statements suggest AI's adaptability to different languages and dialects, the findings highlight that students must actively verify translations for coherence and accuracy. This supports the Skopos Theory, which stresses that translations should serve specific user needs rather than be accepted passively.

Finally, the statements discuss AI's vulnerabilities, including adversarial attacks affecting translation quality (Chertkov et al., 2024). While the findings do not address cybersecurity concerns, they introduce another crucial limitation, AI's tendency to produce misleading or contextually inappropriate translations. This underscores the necessity for students and professionals to critically engage with AI rather than blindly trust its outputs.

In other matters, the findings align with these statements, particularly regarding the limitations of AI translation in handling cultural nuances, implicit meanings, and complex linguistic structures. As noted by Popel et al., (2020) and Mohamed et al., (2024), AI struggles with culturally rich content, often leading to inaccuracies in translation. The findings reinforce this by highlighting that students and professionals frequently encounter errors when using AI for texts that involve idiomatic expressions, humor, or culturally embedded references. While AI excels in translating standard and technical content, the findings confirm that it lacks the deep contextual understanding that human translators possess. This limitation underscores the importance of human intervention in refining AI-generated translations, especially in disciplines requiring cultural sensitivity.

Furthermore, the challenge AI faces in interpreting emotional subtleties and complex sentence structures, as discussed by Abu-Rayyas (2023) and Al Sawi & Allam (2024), is also reflected in this findings. You have observed that AI-generated translations can misinterpret tone and intent, leading to overly literal or contextually inappropriate renderings. This aligns with research showing that AI translation often oversimplifies texts that require deeper interpretative skills. The findings further emphasize that, while AI can serve as a useful tool, it does not replace the need for linguistic expertise, particularly in academic writing and professional translation. The reliance on AI for intricate translations without human oversight could result in miscommunication, making it imperative for users to critically evaluate its outputs.

Moreover, the findings also resonate with concerns about communication equity and inclusion, as mentioned by (Zaki & Ahmed, 2024). The reliance on AI in translation can either bridge or widen linguistic gaps, depending on its accuracy. The results show that AI can make things easier to use, but it might not always work well for those who are excluded if the translations it makes are wrong. This highlights the ethical considerations of AI-driven translation, particularly in contexts where accurate translations are vital, such as legal, medical, or humanitarian fields. The need for critical analysis skills when using AI is an important point in the findings, reinforcing the argument that AI users must be information-literate to identify biases and contextual errors. Lastly, AI has made advances in translation, but the results show that human knowledge is still needed to make sure that communication is clear, accurate, and culturally appropriate.

6. Conclusion

In conclusion, AI translation systems have changed the field for the better by making it more efficient, accessible, and personalized. However, they still have big problems when it comes to dealing with cultural differences, hidden meanings, and complicated language structures. AI is great at quickly processing vast amounts of material and giving standard translations, but it cannot fully understand the subtleties of context and culture, which shows that human skill is still needed. The results show that AI can be a useful tool, but it should not be the only tool that you use for jobs that need a thorough understanding of language, especially in academic, professional, and cross-cultural communication. Without careful oversight, AI-generated translations risk misinterpretation, reducing their effectiveness in conveying accurate meaning across different languages and contexts.

The implications of these findings suggest that while AI can bridge linguistic gaps, its limitations may also contribute to communication barriers if users do not critically evaluate its outputs. This notes the importance of integrating AI with human expertise to ensure high-quality translations, particularly in fields where precision is crucial, such as legal, medical, and diplomatic translations. Furthermore, information literacy and AI competency should be prioritized in educational and professional settings to equip users with the necessary skills to assess and refine AI-generated content. Future research should focus on improving AI's ability to understand cultural and contextual nuances while also exploring hybrid models that combine AI efficiency with human interpretative skills. Additionally, AI developers should work toward minimizing biases in translation algorithms to ensure more inclusive and accurate translations for diverse linguistic communities.

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