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The Use of Artificial Intelligence-Based Translation Tools for Language Department Students

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Abstract

This study explores the integration and use of Artificial Intelligence translation tools among university level language students engaged in Arabic-English and English-Arabic translation tasks. With the increasing availability and sophistication of AI-based translation tools such as Google Translate, DeepSeek, and ChatGPT, translation tasks are experiencing a revolutionary paradigm shift. Drawing on qualitative and quantitative data collected from undergraduate students at a Libyan university, this research investigates students' attitudes toward AI-based translation tools, their frequency and purpose of use, perceived benefits and limitations, and the implications for translation teaching and practices. The findings reveal a strong engagement with AI-based translation tools, primarily for vocabulary learning, initial text drafts, and understanding complex sentence structures. However, challenges such as overreliance, inaccurate cultural, literal, scientific or idiomatic rendering, and limited post-editing skills are also evident. The study highlights the urgent need for pedagogical strategies that integrate AI-based translation tools within a framework of critical literacy and human supervision and intervention.

INTRODUCTION

In today's world, Artificial Intelligence is becoming increasingly important in many fields of study and research, including education. Tools such as ChatGPT, DeepSeek, and Google Translate are now widely used in language learning and translation. These Artificial Intelligence tools are no longer just optional aids rather they become essential for many students in carrying out academic tasks such as reading texts, writing reports, preparing research, and translating materials (Budiningsih et al., 2024; Manshur et al., 2025). This growing reliance is noticeable among students in the Arabic and English language departments. As a result, important questions arise such as: How do these tools affect students' language and translation skills, do students understand the strengths and limits of these technologies. And are there any clear differences between how Arabic and English language students use them. This study explores a current fresh issue in Libyan

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higher education. While Artificial Intelligence tools are spreading so fast in universities around the world, there is little research on how students at the University of Zawia in Libya use them, especially for translation between Arabic and English (Baroud, 2024; Masitoh et al., 2024; Ritonga et al., 2024). This research aims to fill that gap by providing glimpses and insights into students' habits, challenges, and attitudes. The main goal of the study is to explore how students in the Arabic and English language departments at the University of Zawia are using AI-based translation tools. It aims to understand why students use these tools, which ones they prefer. The study also looks at how well students understand the risks of relying too much on machine translation, particularly when it comes to capturing the cultural and meaning-related (semantic) aspects of a text.

Translating between Arabic and English presents unique linguistic and cultural challenges. Arabic, as a Semitic language, has distinct grammatical structures, stylistic features, and deep cultural meanings. Scholars like Hatim & Mason, (2005) emphasize that translation between Arabic and English is not just about replacing words, but rather a complex process that involves cultural understanding and interpretation. However, in recent decades, translation practices have changed significantly due to the rapid development of artificial intelligence tools, especially machine translation systems. According to Castilho et al., (2017), tools such as Google Translate and DeepSeek have improved translation accuracy and have become widely used and accepted in educational context. These tools are now an important part of how students translate texts, understand content, and write, especially in foreign language settings.

Moreover, machine translation tools help students become more independent learners by giving them immediate feedback. This can increase their confidence in using language (Garcia, 2010; Tumbal et al., 2022). However, the benefits of using Artificial Intelligence tools depend on how students use them and whether they have enough language skills to judge and correct the outputs.

From a teaching perspective, Niño, (2009) argues that using machine translation in the classroom can help students become more aware of grammar and sentence structure, especially when they compare Artificial Intelligence-generated translations with human ones. Bowker & Buitrago, (2019) also encourages including (MT literacy) in language education. This means teaching students how to use machine translation critically rather than depending on it completely. Similarly, recent studies (Alsayd et al., 2025; Baround et al., 2024; Hamidah & Masuwd, 2024) point out that Artificial Intelligence tools can support better teaching strategies and curriculum design if they are used correctly in education.

In the Arab world, several studies have looked into students' use of machine translation. For instance, research shows that Saudi university students use Google Translate frequently, but still need to review and edit the translations for better accuracy (Alsalem, 2019; Pham et al., 2019). However, the use of Artificial Intelligence in Arabic-English translation faces serious challenges, such as word sense ambiguity, complex grammar (morphology), named entities, and a lack of rich language resources (Abdiguno et al., 2025; Almaaytah & Alzobidy, 2023). These issues affect translation quality, especially when moving between English and Arabic.

In Libya, research on this topic is still limited. Although many Libyan students use machine translation tools in their academic work, most have not received formal training in how to understand or evaluate these tools (Alkhaldi, 2024). This creates

a gap in both knowledge and skills that needs to be addressed, especially because of the cultural and religious importance of accurate translation in Libyan Muslim society. A poor translation could lead to misunderstandings or offensive meanings, especially in religious or sensitive texts (Abrahem Masuwd & Baroud, 2025; Riyadi et al., 2024). Artificial Intelligence systems may also carry cultural or linguistic biases, which can result in inappropriate or misleading translations, particularly in conservative societies.

METHODS

This study uses quantitative research with a descriptive and analytical approach, which is more suitable for educational research (Engkizar et al., 2023; 2024, 2025; Guspita, 2025; Iskandar et al., 2023; Khairunisa et al., 2025; Putra et al., 2020; Salih, 2020). This method allows for an objective analysis of how students in the Arabic and English departments at University of Zawia use AI translation tools. It focuses on their opinions, behaviors, and attitudes related to these tools. To collect data, a structured online questionnaire with multiple-choice responses was used. The questionnaire was carefully designed to cover a wide range of topics similar with the research objectives. It included questions about how often students use Artificial Intelligence translation tools, which tools they use most, why they use them, and what kinds of texts they usually translate (Baround et al., 2024; Engkizar et al., 2023; Tlili et al., 2023).

The study sample included 100 students from both the Arabic and English departments during the 2024-2025 academic year. Participants were selected from both departments to ensure equal representation and to capture a broad range of experiences related to Artificial Intelligence use the questionnaire was distributed through university platforms and student groups using Google Forms, making it easy for students to access. All responses were kept confidential, and no personal information was collected. Finally, the collected data was analyzed using percentages. These results were explained in detail to show their importance and relevance.

RESULT AND DISCUSSION

Demographic characteristics of the participants

Of the 100 respondents, 74% were female (n = 74), and 26% were male (n = 26). This gender imbalance reflects a common trend in language departments, where female enrollment typically surpasses male enrollment. The predominance of female participants may influence preferences in digital tool adoption, as previous research has identified gender-based differences in technology use and attitudes.

Regarding specialization, a majority of students (80%) were enrolled in English language programs (n = 80), while only 20% studied Arabic language (n = 20). This distribution aligns with the focus of the study, as English language majors are likely to engage more actively in translation tasks that involve English-Arabic and Arabic-English translation, and may thus have more exposure to AI-powered translation tools such as Google Translate or DeepSeek. This concentration also suggests that most respondents have direct academic engagement with English, further validating the relevance of Artificial Intelligence translation technologies to their academic routines.

Participants came from various academic levels. The largest group (47%) were second-year students (semesters 3-4), followed by third-year students (28%,

semesters 5-6), and final-year students (23%, semesters 7-8). Only 2% were in their first year (semesters 1-2). This distribution suggests that the sample predominantly comprises students with at least one year of experience in translation studies, implying familiarity with both the theoretical and practical aspects of translation and related technologies. The minimal representation of first-year students may reflect their limited engagement with translation tasks at early curricular stages, which typically emphasize foundational language skills.

When asked to self-assess their translation knowledge, 15% rated themselves as excellent, 44% as very good, 37% as good, and only 4% as poor. These self-evaluations indicate a generally high level of confidence in translation skills among respondents. Students with such confidence are more likely to engage critically with Artificial Intelligence tools, using them to support rather than substitute their translation efforts. This confidence may also reflect instructional approaches that balance theoretical grounding with practical application in translation education.

Table 1. Demographic characteristics of the participants

Category	Sub-category	n	%
Gender	Female	74	74%
	Male	26	26%
Specialization	English Language	80	80%
	Arabic Language	20	20%
Academic Level	First Year (Semesters 1–2)	2	2%
	Second Year (Semesters 3–4)	47	47%
	Third Year (Semesters 5–6)	28	28%
	Final Year (Semesters 7–8)	23	23%
Self-Assessed Translation Knowledge	Excellent	15	15%
	Very Good	44	44%
	Good	37	37%
	Poor	4	4%

These demographic and academic characteristics provide a foundational understanding of the typical user profile for AI-powered translation tools within the language student population. The prevalence of intermediate to advanced learners with high self-rated translation competence situates the analysis of Artificial Intelligence tool usage within a context of academic maturity. Additionally, the predominance of English majors enhances the relevance of the study to English-Arabic translation practices, where digital translation assistance is particularly pertinent.

Use of Artificial Intelligence translation tools (general usage prevalence)

The results reveal an overwhelmingly high adoption rate of Artificial Intelligence translation programs among the respondents. A total of 98% (n = 98) reported that they have used Artificial Intelligence based translation tools, while only 2% (n = 2) indicated that they have never used such tools. This result supports prior research by Niño, (2009), which found that students often rely on machine translation for tasks requiring comprehensive understanding rather than isolated word translation. The reliance on paragraph-level translation suggests an evolving confidence in the performance of Artificial Intelligence tools in handling more complex textual structures, perhaps influenced by recent advances in neural machine translation technologies (Bahdanau et al., 2015).

Types of Artificial Intelligence tools used

When asked which AI translation tools they use, ChatGPT emerged as the

most widely adopted, used by all 98 respondents (100%). This was followed by Google Translate (59%), DeepSeek (18%), and Microsoft Translator (3%). The dominance of ChatGPT suggests a shift toward more advanced, context-aware generative AI tools that go beyond simple phrase-by-phrase translation, offering users the ability to engage in interactive clarification and revision processes. Google Translate, while still widely used, may be more associated with quick and accessible translation of isolated words or phrases (Lopez, 2008). The limited use of Microsoft Translator and DeepSeek may be attributed to lower awareness, perceived reliability, or language support limitations.

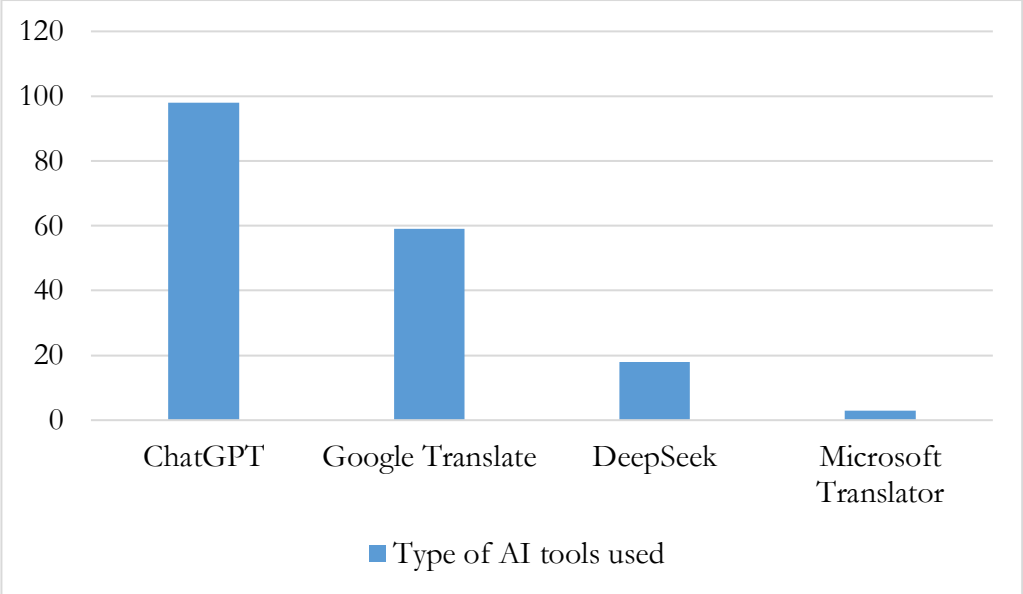

Diagram 1. Types of Artificial Intelligence tools used

Primary motivations for use

Students cited various motivations for using Artificial Intelligence translation programs. The most common reasons were lower cost compared to human translators (28%), need to translate long texts (26%), ease of use (25%), and speed and efficiency (21%). These findings highlight the practical considerations that influence students' reliance on Artificial Intelligence, particularly the economic and time-saving advantages of such tools. The preference for cost-effective translation aligns with the economic realities of students, who may lack access to professional translation services (Busthomi et al., 2024; Elihami et al., 2024; Firdaus et al., 2025; Luhuringbudi et al., 2025). The need to handle long or complex texts also reflects the demands of academic programs where students are often expected to read or produce bilingual academic content.

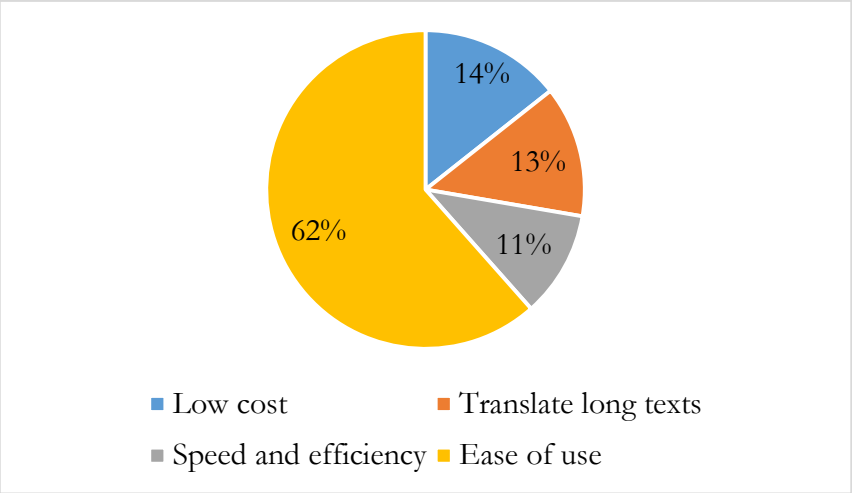

Diagram 2. Primary motivations for use

Purposes of use

In terms of use cases, Artificial Intelligence translation tools are most commonly employed for academic translation purposes (62%), including tasks such as translating journal articles, research papers, and textbooks. A significant number of respondents also use these tools to improve personal translation skills (52%), which suggests that students perceive Artificial Intelligence as not only a functional utility but also a learning aid. Other reported uses include general translation needs (33%) and professional translation tasks such as reports or formal documentation (20%). These results reflect the multifunctional role of Artificial Intelligence tools in supporting both curricular and extracurricular translation activities.

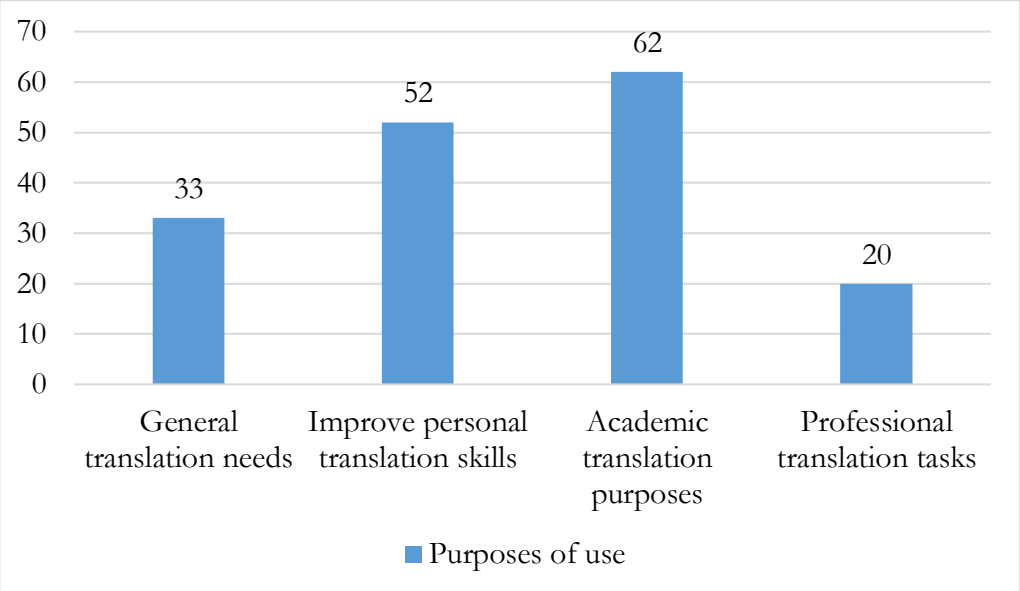

Diagram 3. Purposes of use

Reliance vs critical engagement

A key question concerned the depth of students' interaction with AI-generated output. Only 12% reported relying entirely on AI-generated translations without review. Meanwhile, 22% stated that they review only grammatical or linguistic errors,

and the majority (66%) indicated that they edit and refine the translated texts to ensure accuracy. This high level of critical engagement is a positive indicator of digital literacy, suggesting that students are aware of the limitations of Artificial Intelligence and exercise human judgment in the revision process. As Bowker & Buitrago, (2019) emphasizes, effective translation training today must integrate both technological proficiency and critical language awareness.

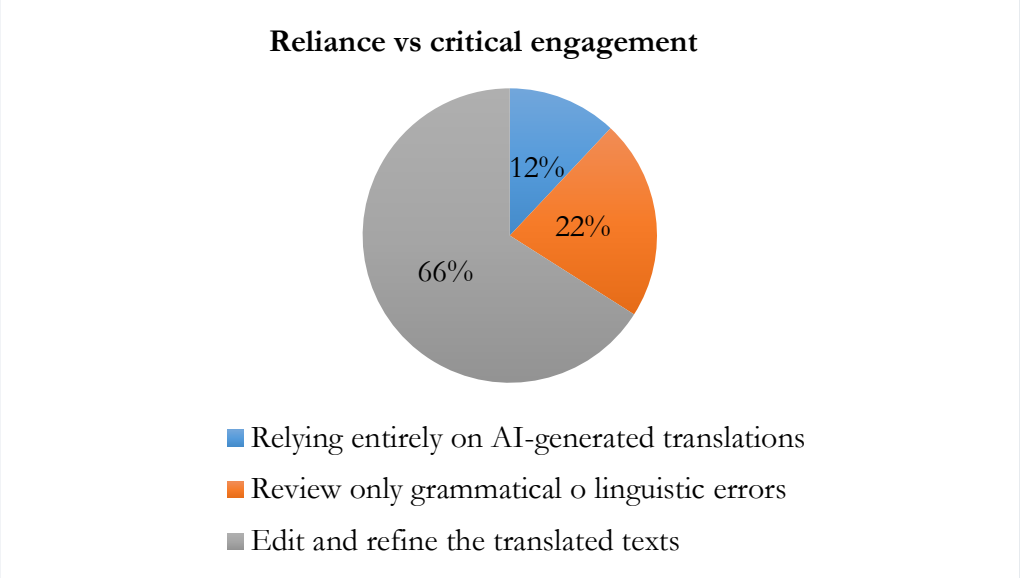

Diagram 4. Reliance vs critical engagement

Frequency of use

Regarding frequency, 85% of students use Artificial Intelligence translation programs daily, while 10% use them several times a week, 3% several times a month, and only 2% rarely. The daily reliance on Artificial Intelligence tools signifies a deep integration of machine translation into students' daily academic and linguistic routines. This consistent use likely reflects both the accessibility of Artificial Intelligence tools and the high volume of translation tasks that language students are expected to perform throughout their studies.

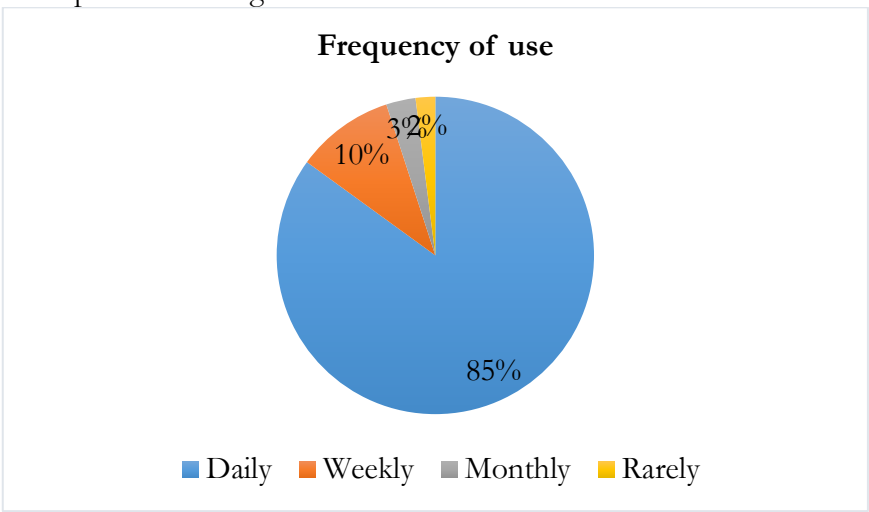

Diagram 5. Frequency of use

The findings of this section confirm that AI-based translation tools have

become indispensable resources for language students. Their utility spans from practical translation execution to personal skill development, with ChatGPT notably occupying a central role due to its versatility and perceived reliability. While students appreciate the efficiency and affordability of such tools, they also recognize the need for human oversight, particularly in ensuring semantic accuracy, cultural nuance, and stylistic appropriateness.

These patterns underscore the importance of incorporating Artificial Intelligence literacy into translation curricula, helping students not only use these tools effectively but also critically evaluate and refine their outputs. The high frequency of use suggests that Artificial Intelligence is no longer a peripheral tool but a central component of language learning and translation pedagogy, necessitating institutional strategies for guided and ethical use.

Translation accuracy and challenges

Perceived accuracy of Artificial Intelligence translations

The findings indicate that a majority of students (68%) consider Artificial Intelligence translations to be "somewhat accurate," while 27% find them "very accurate" and only 5% deem them "inaccurate." These results highlight a generally positive perception of Artificial Intelligence performance, with most students acknowledging the tools' usefulness in producing intelligible translations, albeit with limitations. This aligns with prior studies which show that while Artificial Intelligence tools have improved significantly in fluency and grammaticality, their performance in domain-specific and nuanced texts remains imperfect (Briva-Iglesias et al., 2023).

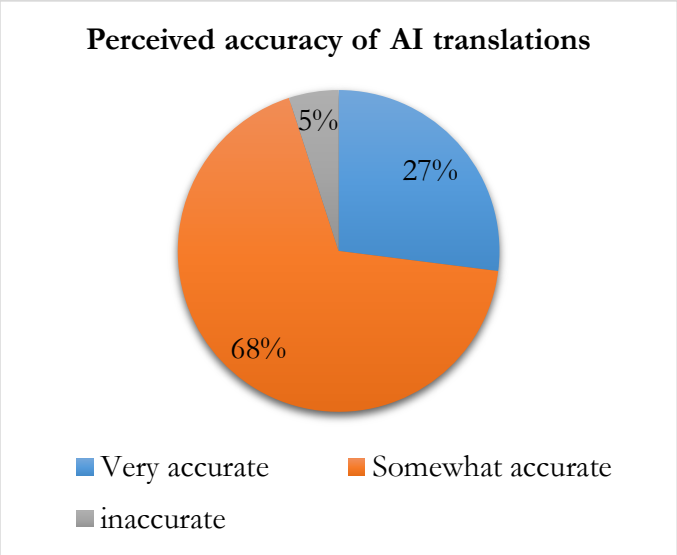

Diagram 6. Perceived accuracy of Artificial Intelligence translations

Common errors encountered

Students were also asked about the types of errors they most frequently encounter. The most commonly reported issue was "literal and unnatural translations" (47%), followed by "inaccuracy in specialized terminology" (26%), "poor understanding of cultural and religious context" (25%), and a minimal percentage (2%) noting grammatical and linguistic mistakes.

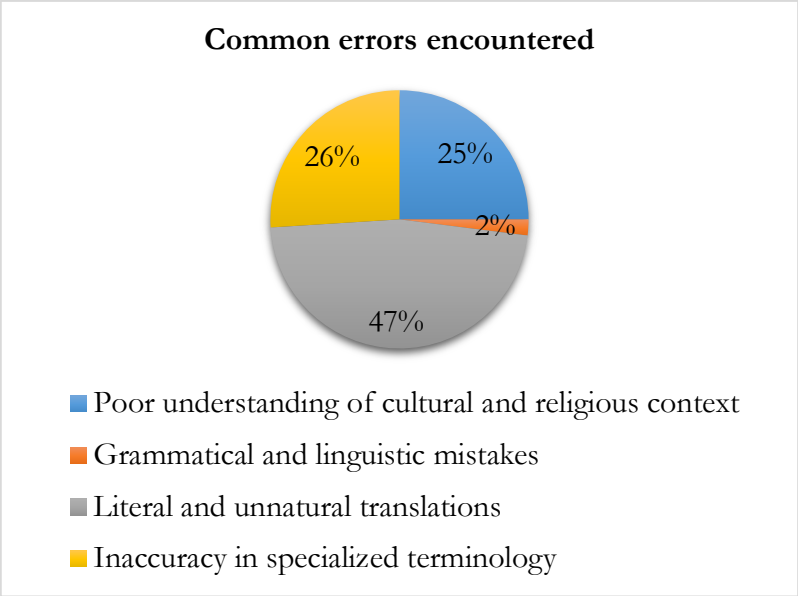

Diagram 7. Common errors encountered

Students observed that while Artificial Intelligence tools often produce grammatically correct sentences, the translations may fail to reflect the intended meaning, especially in texts containing idiomatic expressions, cultural references, Islamic terminologies or nuanced terminology. Mostly, religious, legal, scientific and literary aspects of language need human correction since the understanding and the interpretation of these aspects varies according to the translator, the context and the audience (Abishev et al., 2025; Baroud & Aljarmi, 2025; Kasheem et al., 2025). This shortcoming highlights the tools' limitations in semantic and pragmatic comprehension. Also, it is noted difficulty which the students in translating verse Quran. These verse is full of meanings which needs human interpretation and direction (Abdulghani et al., 2024; Alzletni et al., 2025; Ichwan et al., 2024). These findings support those of Niño, (2009), who emphasized the unreliability of machine translation for context-dependent and culturally embedded content. For students, such inaccuracies can lead to misunderstandings and the propagation of erroneous language use, particularly when the verse output is accepted uncritically.

Expectations of Artificial Intelligence as a replacement for human translators

When asked whether verse could eventually replace human translators, a significant majority (65%) responded that verse might be able to do so "but only with human revision." Meanwhile, 27% believed that verse could "completely replace" human translators, and only 8% rejected the reliability of verse altogether. These findings reflect a growing confidence in the technological evolution of verse, while also recognizing its current dependence on human oversight to ensure fidelity and appropriateness.

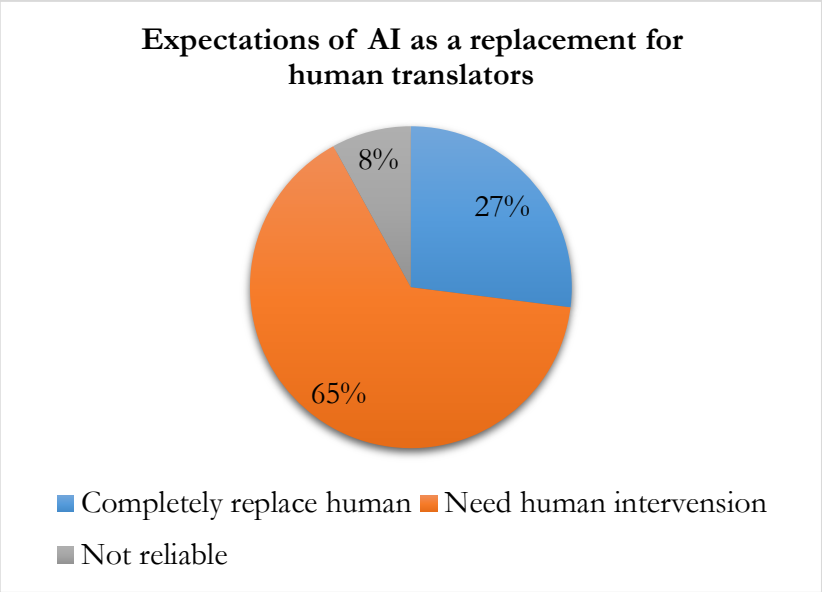

Diagram 8. Expectations of Artificial Intelligence as a replacement for human translators

Satisfaction levels with Artificial Intelligence tools

Satisfaction levels correspond closely to perceived accuracy. 66% of students reported being "somewhat satisfied" with Artificial Intelligence translation tools, 30% were "very satisfied," and only 4% were "not satisfied." This distribution suggests that while Artificial Intelligence tools meet students' basic translation needs, there remains room for improvement, particularly in tasks requiring stylistic finesse, contextual nuance, or field-specific precision. The high satisfaction may also reflect students' appreciation of Artificial Intelligence tools' accessibility, speed, and convenience, factors often cited as crucial in educational settings (Bowker & Buitrago, 2019).

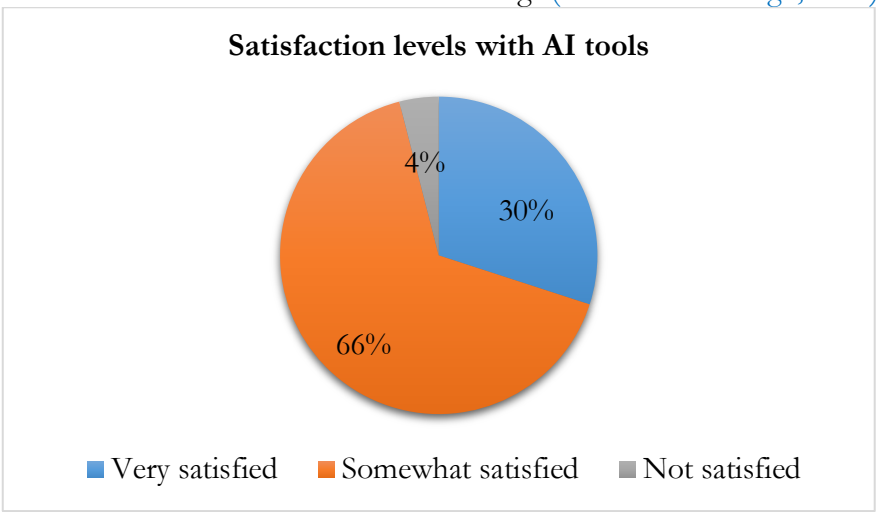

Diagram 9. Satisfaction levels with Artificial Intelligence tools

Perceived limitations by field

When evaluating the fields where Artificial Intelligence translation is least effective, literary translation was identified as the most problematic area (42%), followed by technical translation (23%), medical and scientific (18%), and legal translation (17%). The difficulty in literary translation is unsurprising, given the

genre's reliance on metaphor, cultural resonance, and stylistic creativity, which are difficult for Artificial Intelligence to replicate effectively (Venuti, 2018). Similarly, specialized fields like Islamic legal, economical translation and medical translation require absolute terminological accuracy and an understanding of complex discourse structures, where minor mistranslations can lead to significant consequences (Harahap et al., 2024; Mustakim et al., 2024; Primarni et al., 2025).

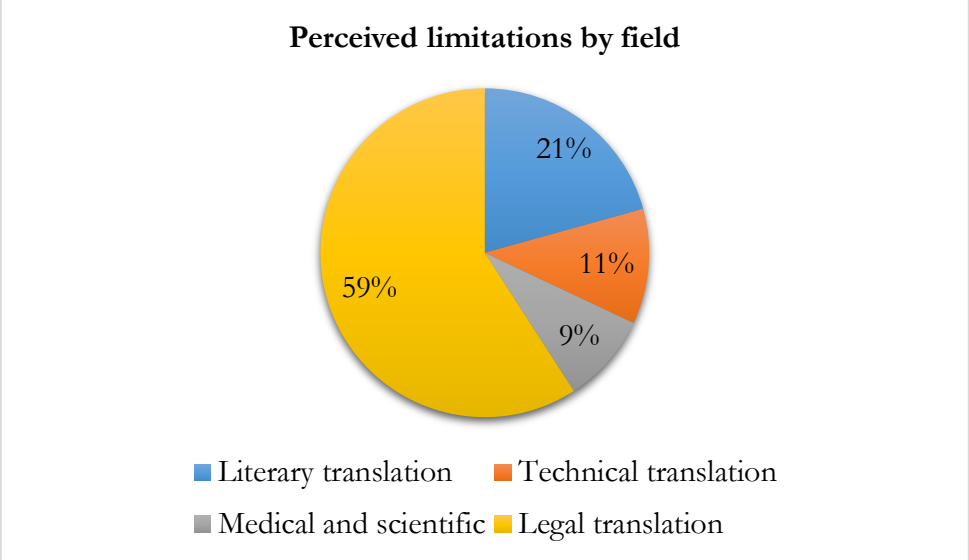

Diagram 10. Perceived limitations by field

Overall, the findings underscore a qualified acceptance of Artificial Intelligence translation among language students: while these tools are valued for their efficiency and accessibility, their limitations are well recognized. Students demonstrate a discerning approach, employing Artificial Intelligence for initial drafts or general comprehension, but maintaining an awareness of the need for human post-editing to ensure communicative and cultural adequacy.

The most significant challenges are literalism, lack of cultural awareness, and terminological imprecision, which point to the persistent gap between human and machine capabilities in translation, especially in languages like Arabic that pose unique challenges due to diglossia, morphological richness, and syntactic variation. These findings affirm the need for pedagogical strategies that train students not only to use Artificial Intelligence tools effectively but also to critically assess and revise their outputs in context.

Future expectations and development

Desired Improvements in Artificial Intelligence translation tools

Students expressed clear expectations regarding future improvements in Artificial Intelligence translation programs. The most frequently cited area of desired development was "improved understanding of cultural and linguistic contexts" (43%), followed by "better accuracy in specialized terminology" (31%), "better handling of long and complex texts" (22%), and to a much lesser extent, "More natural and fluent translation styles" (4%).

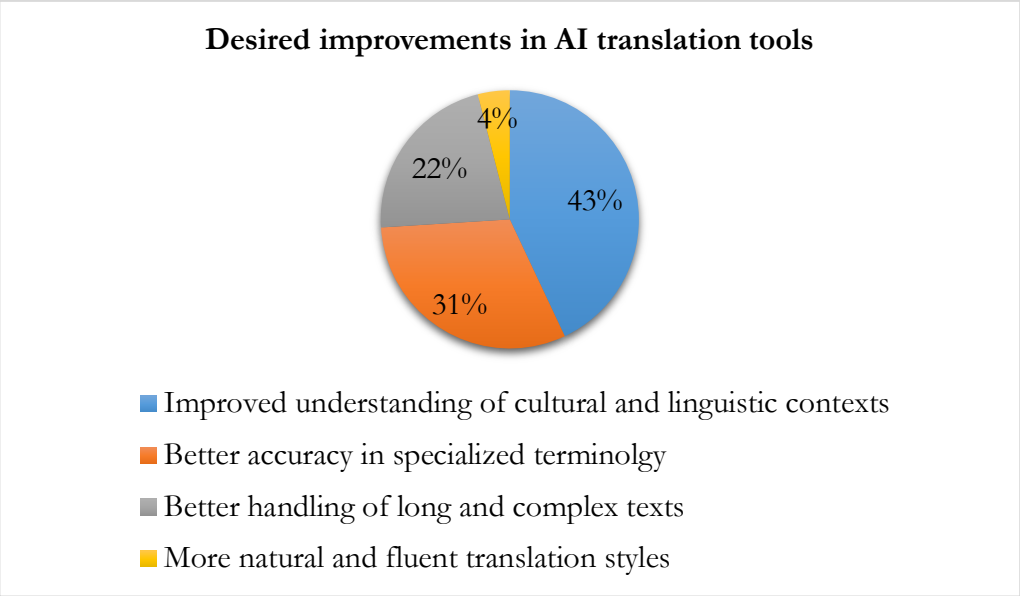

Diagram 11. Desired Improvements in Artificial Intelligence Translation Tools

These results reflect users' awareness of the persistent semantic and pragmatic limitations of Artificial Intelligence translation systems, especially in relation to cross-cultural equivalence and terminological precision. While Artificial Intelligence models such as Google Translate and ChatGPT have advanced in fluency and grammatical correctness (Bahdanau et al., 2015; Baround et al., 2024), users remain concerned about the fidelity and appropriateness of translations in specialized or nuanced contexts. The findings reinforce previous observations by Bowker & Buitrago, (2019) that current machine translation systems struggle most when confronted with content that requires deep contextualization, cultural sensitivity, or field-specific vocabulary.

Artificial Intelligence as a supportive tool, not a replacement

In addressing the question of whether combining Artificial Intelligence with human translators can enhance translation quality, 92% of students agreed that "Artificial Intelligence can be a useful tool for human translators," while only 8% believed that reliance on Artificial Intelligence may reduce translation quality. These results confirm the emergence of a collaborative model of translation in which human translators leverage Artificial Intelligence for efficiency and initial drafts but remain essential for review, contextual adaptation, and semantic validation.

This perception aligns with the "augmented translation" paradigm advocated by Garcia, (2010), which conceptualizes the translator not as a replaced agent but as a critical post-editor and language expert who refines and contextualizes machine output. In pedagogical terms, this trend reflects the need to train students in machine translation literacy, empowering them to evaluate and enhance machine-generated texts with cultural, rhetorical, and professional adequacy.

The student responses in this section suggest that users are optimistic yet realistic about the development of Artificial Intelligence tools. Their insights signal a demand not just for algorithmic improvement, but for qualitative integration with human expertise. These views offer essential guidance for both translation studies curricula and future Artificial Intelligence design, emphasizing that true translation accuracy extends beyond syntax to include discourse, pragmatics, and cultural resonance.

CONCLUSION

The proliferation of AI-powered translation tools is reshaping how language students engage with bilingual texts, particularly in linguistically and culturally complex pairs such as Arabic and English. This study demonstrates that while Artificial Intelligence tools are widely used and valued for their speed, accessibility, and initial processing capabilities, their effective integration into academic translation practices remains uneven. Students often lack sufficient training in post-editing and critical evaluation, leading to an overdependence on machine-generated texts. These findings suggest a pressing need to reorient translation pedagogy toward a hybrid model that improve the efficiencies of Artificial Intelligence without compromising linguistic nuance and cultural fidelity. Educators should emphasize the importance of human oversight, contextual awareness, and ethical considerations in the use of Artificial Intelligence tools. By doing so, students can develop as reflective practitioners capable of using technology to augment, not replace, their translational judgment and intercultural competence.

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Author contribution

Dafallah Ibrahim, Yousuf Aboujanah, Khuloud Alouzi1: Data curation, Writing-Original draft preparation, Writing-Reviewing and Editing, **Hajer Albshkar, Mohieddin Masoud**: Visualization, Supervision, Formal analysis, **Sumaia Almajri:** Conceptualization, Methodology, Validation, Supervision, Software.

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Conflict of interest

The authors declare that this research was conducted without any conflict of interest in the research.

Ethical clearance

The research company has agreed to carry out the research and is willing if the results of this research are published.

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