

Human vs. AI Assisted Translation of Research Abstracts in EFL Context

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Abstract

This study examines the linguistic and cultural issues in translating research abstracts by EFL students. It compares the human translation and the AI-assisted translation and analyses the differences that occur between the two modes. The study is conducted with six EFL students from the department of English at the University of Djilali Bounaama Khemis Miliana. Data were collected through two complementary phases. The first phase involved a detailed textual analysis of research abstracts translated by both the students and AI tools to examine differences in linguistic choices, stylistic preferences, and translation features. The second phase was devoted to follow-up semi-structured interviews conducted with the students to gain further insights into their translation practices with and without AI assistance. Data were analysed using textual analysis for the translated abstracts focusing on linguistic accuracy, coherence, and cultural transfer from one language to another. Semi-structured interviews were analysed through qualitative thematic analysis highlighting themes and patterns to uncover students' attitudes towards the use of AI tools in assisting translation tasks. The findings from this study highlighted key differences between human and AI-assisted translation in accuracy, styles, and cultural adaptation. The results showed that AI tools offer fast and accurate translations, but sometimes they create literal meanings, fail to address academic conventions and lack cultural nuance. In contrast, human translation is more time consuming but provides coherent translation that considers linguistic accuracy and cultural appropriateness. The study asserts the importance of human-AI collaboration in translation practices to achieve more accurate and contextually appropriate translations in academic settings.

Keywords; AI; Cultural Nuance; Linguistic Issues; Research Abstracts; Translation

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Introduction

Research abstracts are well structured academic texts that should explain the research's idea clearly and accurately. They function as a comprehensive overview of the theoretical framework, methodology, and results of a study. Research abstracts are the most important part in the study as the audience usually read it first in a paper, and this is why accuracy and clarity are important. In the EFL context in Algeria, master's students are usually asked to write the dissertation abstract in English, then translate it to Arabic and French to meet institutional requirements and at the same time to reach broader audiences. Translation process requires skill and technique to achieve effective academic communication. However, this process may pose challenges to EFL students in translating their abstracts especially that they are working with certain academic context with specific discipline terminology.

Recently, artificial intelligence (AI) has influenced translation practices by offering fast translation services. AI translation tools can provide a well-structured first draft translation of original passages with linguistic and grammatical fluency. However, AI translation tools may inaccurately translate certain terminologies or phrases that would introduce errors in the meaning of the original passage. Human translation in contrast usually provides accurate and keeps the meaning of the original passage maintaining the cultural norms of the context. Despite the growing relevance of AI in translation, only a little research has been conducted on how human and AI-assisted translations compare in the specific context of Algerian EFL students translating research abstracts into both French and Arabic. Furthermore, there is limited evidence on the types of linguistic and cultural issues that arise in abstracts translated by EFL students in Algeria.

The study aims to examine how EFL students at Djilali Bounaama University of Khemis Miliana translate research abstracts into French and Arabic with and without AI assistance. The study aims to compare the translation quality, accuracy and academic relevance of terminology in the human translated abstracts and AI translated ones. Given the limited number of participants and the qualitative nature of the investigation, the study is intended as a small-scale exploratory inquiry that seeks to provide preliminary insights into the use of AI-assisted and human translation of research abstracts in the Algerian EFL context.

The study asks the following research questions:

1. How does the quality of abstracts' translation into French and Arabic differ between manual translation and AI assisted translation?
2. What types of linguistic and cultural issues are common in manual vs. AI assisted translations?

1. Literature review

A research abstract is a concise, well-structured, and coherent summary of a study's content that enables an understanding of the research study without reading the full paper. Research abstracts are vital in academic communication because they are the first section of any study read by the audience. Therefore, translating research abstracts is important to reach a large audience. However, translating research abstracts requires linguistic accuracy and awareness of cultural conventions in both source and target languages. Effective and accurate translation requires linguistic proficiency in foreign languages besides deep cultural understanding (Budiharjo, 2024). There are many linguistic issues in translation that include lexical, morphological, syntactic, and semantic problems that appear due to the fundamental differences between the two languages (Imami et al., 2021). Therefore, achieving the perfect transfer between the original and target languages is challenging and requires significant efforts from translators to organize, substitute, and rearrange words in the translated version (Guerra, 2012). Language is deeply rooted in and related to cultural context. Abuisaac et al. (2023) pointed out that translation is not only about transferring the message from one language to another, but transferring the culture as well. This is particularly

challenging between linguistically and culturally distant languages such as English and Arabic (Mohammed & Al-Azzawi, 2025). Thus, the human translation process is time-consuming and the specific nature of some texts requires certain careful handling and consequently, many translators and academics rely on many AI tool to assist their translations with.

Recently, the field of translation has witnessed a shift in translation practices with the introduction of translation machines and AI-assisted translation. The development of automation translation tools offers good alternative to human translators mainly AI translation (Yang, 2022). AI can provide faster, more consistent, and more accurate translations, improve efficiency, and offer quality-control features such as intelligent proofreading (Sun, 2024). With such developments in the field of translation, translators should adjust to this shift in translation practices and embrace the new translation tools to ensure their continued relevance in the evolving landscape of translation (Esenyi et al., 2023). Platforms like Google Gemini, ChatGPT, and Claude offer high-quality translations that consider linguistic accuracy and technical nuances (Ferrag & Bentounsi, 2024). ChatGPT is considered an important AI tool that students and translators rely on for their translations. According to Sutanto et al. (2024) ChatGPT can improve the quality of translation, overcome cultural gaps, and assist with proofreading. This is why ChatGPT is widely used by students and academics to translate learning and research materials and to proofread and check grammar (Ferrag & Bentounsi, 2024). Additionally, ChatGPT overcomes cultural gaps within original sources in the target language (Ferrag & Bentounsi, 2024).

Despite the great advancements achieved in the field of translation thanks to AI, it still struggles with complex sentence structures, idiomatic expressions, and context-sensitive language (Wei, 2024). AI often lacks the creativity and cultural depth of human translators and can produce errors that undermine the intended meaning (Budiharjo, 2024). Excessive reliance on AI may also negatively affect the students' translation abilities (Budiharjo, 2024). Moreover, AI translation frequently requires post-editing by human translators to meet academic standards, especially for domain-specific content (Budiharjo, 2024). Besides cultural and contextual depth remains an area where human expertise is irreplaceable.

There are several studies that have compared the human translation to AI translation performance. For instance, Moneus and Sahari (2024) compared the quality of translation between human translators and AI in a legal context. The findings showed that while AI can produce competent translations in the field of legal translation, especially from Arabic to English, human translators perform better when translating from English into Arabic due to their expertise and ability to handle linguistic nuances and cultural contexts (Budiharjo, 2024). Another study by Awadh (2024) investigated the differences between human practitioners' translation and the AI translation of scientific texts. The study suggested that human translators should rely on AI tools for their translations for faster and more accurate result. The study also suggested that AI databases should be updated on regular bases to meet the current needs. Furthermore, the study recommended a human-AI partnership that to facilitate the translation process and make information accessible to everyone across linguistic barriers. Other research studies highlight that AI does not replace human translators but can complement their work when used as a tool. Recommendations from these studies include fostering human-AI collaboration, updating AI databases with specialized terminology, and training translators to integrate technology into their workflows (Dai, 2024; Benmansour & Youcef, 2023; Lihua, 2022).

While existing studies address linguistic and cultural issues in translation and compare manual and AI-assisted approaches, none focus specifically on research abstract translation into both French and Arabic in the Algerian EFL context. There is a study by Napitupulu (2017) that analysed the Indonesian English abstract translation in view of translation errors by Google translate, and another study by (Khasanah & Sujatmiko, 2022) that looked at the abstract translation of non-English department students

at UPY. Both studies are within the Indonesian context and did not cover the AI translation of research abstracts aspect. This gap positions the current research to contribute new insights into translation studies and the effective integration of AI in multilingual academic environments.

2. Research Methodology

This study is qualitative combining comparative textual analysis with semi-structured interviews with six EFL students from the department of English, Djilali Bounaama University of Khemis Miliana. Integrating these two approaches allows the examination of linguistic and cultural issues that arise from the students' translation versus AI assisted translation and the challenges that EFL students face during the translation process using both methods.

The participants of this study were six first and second year master students of English at Djilali Bounaama University of Khemis Miliana. A purposive sampling strategy was employed to select participants who have prior experience in writing research abstracts and had received formal instruction in translation through the translation module in their third year. These characteristics made them specifically suitable for exploring the linguistic and cultural challenges related to the translation of research abstracts. The sample size is consistent with qualitative research where the aim is to collect rich and detailed insights and perceptions rather than statistical generalization. This allows deep textual analysis and in-depth thematic exploration.

The first phase of the data collection process involves asking participants to translate an abstract from English to French and then to Arabic using manual translation then translate the same abstract using AI. The students were provided with a research abstract from Zahaf (2024). The students were then asked to translate the abstracts into French then into Arabic manually. The students were allowed to use dictionaries at this stage. The students then were asked to translate the abstract into French and Arabic using AI tools which allows the comparison between the two versions.

The second phase of the data collection process is conducting semi-structured interviews with the research participants. These interviews aim to explore the participants' experiences during the translation tasks, which would provide more insights into the topic.

The research participants were given an information sheet that explains the whole process of the research. A signed consent form was obtained from the research participants who agreed to take part in the study. The participation in this study is voluntary and no harm was caused to the research participants.

3. Findings

The first phase of data collection for this study was to provide the research participants with an abstract to translate into French and Arabic manually and then using AI tools. The research participants provided 24 versions of the translated abstracts as follows:

Table 1: Translated abstracts

Translation type	Target language: Arabic	Target language: French
Manual translation	6	6
AI-assisted translation	6	6

The translations were examined for accuracy, coherence, linguistic precision, cultural fidelity, and academic relevance.

3.1 Textual analysis

3.1.1 Textual analysis of the French translated version using AI

According to the findings, the AI translated version appears to be accurate and academically formal, for example: “mémoire de master, revue de littérature, normes de citation”. The sentences also are well-structured and coherent, for example: “afin de faciliter l’analyse thématique, générer des codes et construire des thèmes”. However, AI translation, on the other hand, used longer and more redundant expressions than necessary for a French abstract. One explanation is that AI relies on literal translation when rendering English phrases into French, for example: “une analyse thématique qualitative a été utilisée pour fournir des éclairages supplémentaire sur la méthode d’analyse des données”. Moreover, AI, based on the findings from this study, seems to keep the English sentence structure; that is different from the French sentence structure; making it sound correct, but it is not academically correct in the French language. For example: the following sentence “tous les participants à la recherche étaient a un mois de la soumission de leur mémoire” mirrors the English syntax: “all of the participants were one month away from submission”, while the correct sentence structure in French should be as follows: “tous les participants se trouvaient à un mois de la remise de leur mémoire”.

3.1.2 Textual analysis of the French human translation

The findings from this research showed that the French translation of the abstract by the research participants is simple, coherent, and structured. The research participants used short and clear sentences and slightly simpler terminologies compared to those used by AI, for example: “règles de citation”. However, there are minor issues in the students’ translations that include small grammatical mistakes and occasional loss of nuance. For example, there are agreement errors involving singular and plural forms of certain terms “choisi/choisis, type/types”. There is also the use of some expressions that do not academically represent the real meaning of the words in the target language (French). For example, there is a confusing repetition of the terminologies “travail” and “dissertation” while the authentic translation of these terminologies is “mémoire de master”.

3.1.3 Textual analysis of the Arabic translated version using AI

The findings from this research showed that there is a high level of accuracy in the AI-generated Arabic version of the abstract, especially in conveying technical terminology, such as: *مراجعة* and *ارشادات التوثيق*. However, AI sometimes generates the English sentence structure in Arabic translations, which produces long literal sentences unfamiliar in Arabic syntax, such as: *كانوا على بعد شهر واحد فقط من موعد تسليم*. Therefore, although AI ensures accuracy and consistency, it still needs refinement by a human translator.

3.1.4 Textual analysis of the Arabic human translation

Within the translated abstracts examined in this study, the human translation of the abstract appears to demonstrate clearer language, accurate translations, and respects the conventions of the Algerian academic discourse, example can be: *قواعد التوثيق* and *رسائل الماجستير*. The sentence structure is well formulated to avoid redundancy, for example, the following sentence *كل المشاركين في البحث على بعد شهر واحد* is stylistically correct and sounds more natural than the AI’s translation: *كانوا على بعد شهر واحد فقط من موعد تسليم الأطروحة*. Besides, the human Arabic translation demonstrates clarity, coherence, and cultural adaptation to the Algerian academic context. Still, there are some interpretive additions to the Arabic translations by the students that they used to explain or assert on certain ideas, for example using the expression *صورة أوضح* to help explain the idea to the readers although it have no equivalence in the original passage.

3.2 Qualitative thematic analysis

Theme 1: Role of multilingual backgrounds in shaping translation practices

The research participants described their linguistic backgrounds as multilingual. All participants speak and write Arabic, French, and English, with some highlighting additional competencies in Spanish and German. Arabic is identified as the mother tongue (L1), French as the first foreign language (L2), and English as the second foreign language (L3).

The linguistic repertoires of the research participants influenced the translation strategies based on their familiarity with specific languages. This explains why the research participants outperformed AI in translating the research abstract as demonstrated in the previous textual analysis section.

Excerpt 1: “I grew up speaking Arabic as my first language... studied French... English I started later... I’d rate myself as advanced in reading and writing, but slightly less fluent in speaking”.

Excerpt 2: “I am multilingual... Spanish, German, and some Slavic languages... Arabic is the symbol of the Algerian state”.

Excerpt 3: “I grew up speaking Arabic as my first language... I’d rate myself as advanced in reading and writing [English], but slightly less fluent in speaking”.

Excerpt 4: “Arabic is my native language... I’d put myself at an upper-intermediate level in English”.

Theme 2: Using AI tools in translation

The findings from this research showed that the research participants used AI tools to translate or to assist with their translations. Google Translate, DeepL, and ChatGPT were the most common AI tools used to support the participants’ translations. The findings also showed that AI is a time-saving tool, especially for translating first drafts.

Excerpt 5: “I use [AI tools] fairly often, especially when working on academic texts or technical writing”.

Excerpt 6: “I started by reading the text carefully, then I used AI tools to generate an initial translation. After that, I revised the text”.

However, not all of the research participants relied on AI tools for translation, one research participant thought that AI kills creativity in transferring ideas from the original language to the target language, and preferred to rely on their personal skills.

Excerpt 7: “Personally, I don’t see any benefit from translation using artificial intelligence, as it kills the will and the spirit of initiative”.

Therefore, AI is a translation tool that can be partially relied upon in translation, but it remains insufficient for polishing academic texts within specific linguistic and cultural contexts. Thus, it requires human post-editing and proofreading.

Excerpt 8: “AI was quite useful as a support tool... I wouldn’t say it replaced the translation process, it was more like a starting point or a second opinion”.

Excerpt 9: “It’s useful for making a quick draft... but I wouldn’t trust it for a final academic abstract”.

Theme 3: Human post-editing of AI-assisted translation

The research participants asserted that post-editing of AI-assisted translation is crucial. They restructured long, complex sentences and adapted specific terminology related to particular linguistic and cultural contexts. Their translations were guided by personal skills learned during their translation modules, and they used dictionaries and background knowledge to edit the AI version.

Excerpt 10: “If the AI produced something grammatically correct, clear, and captured the idea well, I kept it. But whenever the output felt awkward... I rewrote it”.

Excerpt 11: “Sometimes my instinct told me the sentence didn’t sound natural, so I rephrased it”.

Excerpt 12: “My choices were guided by a mix of intuition, dictionaries, and what I’ve learned in translation and academic writing courses”.

Excerpt 13: “Sometimes my instinct told me the sentence didn’t sound natural... other times I used dictionaries or checked similar abstracts online”.

Theme 4: Deficiencies in AI outputs

According to the research findings, AI sometimes failed to maintain an academic tone when moving from the original language to the target language. The research participants identified several deficiencies including structuring formal language within an academic context, as well as issues with meaning, cohesion, and idiomatic expressions.

Excerpt 14: “The AI often defaulted to informal or semi-formal language... ‘this paper talks about’ instead of ‘this study examines”.

Excerpt 15: “AI output... issues with meaning and cohesion... especially idioms”.

Excerpt 16: “AI sometimes didn’t use the formal tone needed in academic French or misinterpreted idioms in Arabic”.

The research participants also highlighted that AI often failed to capture cultural nuances and academic register, especially in Arabic.

Excerpt 17: “AI sometimes produced sentences that sounded too casual for academic writing”.

Excerpt 18: “AI does not respect some of the religious boundaries of Arab countries”.

On the other hand, AI translations into French were generally smoother than into Arabic

Excerpt 19: “With Arabic, the AI struggled more with word order, cohesion, and register”.

Excerpt 20: “Translating into French is much easier for AI than into Arabic”.

Excerpt 21: “AI usually performs better when translating into French... with Arabic, it struggled more with word order, cohesion, and register”.

Excerpt 22: “French is much easier... whereas translating to Arabic represents a challenge for AI because of the complexity of the Arabic language”.

Excerpt 23: “AI is generally more accurate for French... for Arabic, I usually have to fix more grammar, agreement, and style issues”.

This finding was supported by the textual analysis of the research abstracts translated by the research participants in the previous section.

Theme 5: AI as a pedagogical tool

The research participants emphasized the importance of training in AI use as a translation tool. They suggested that teaching how to use AI in translation should be integrated in the translation courses that they study as EFL students. This would help them to sharpen their editing and post-editing skills and develop their translation strategies.

Excerpt 24: “I’d like them to focus on critical use — how to evaluate AI suggestions, when to accept them, and when to reject them”.

Excerpt 25: “Teacher should let students use both their own translation and the AI translation, then critically analyze the differences”.

Excerpt 26: “Give side-by-side AI and human translations, focus on post-editing, and train students to spot AI’s common mistakes”.

Excerpt 27: “Teachers should show us how to combine AI with our own skills... practical exercises in post-editing”.

Excerpt 28: “Workshops where we compare human-only, AI-only, and post-edited translations could highlight the translator’s role”.

3.3 Comparison of the findings

The findings from the textual analysis and semi-structured interviews are summarized, compared, and presented in table 2 bellow. As this study is based on small purposive sampling of six research participants from a single institution, the findings reflect the experiences and translations of the participants involved in this study only and cannot be generalized to other populations or educational contexts.

Table 2: Comparison of the findings

Translation issues	Human translation	AI translation
Linguistic accuracy	Highly accurate and respects grammar and sentence structure. Spotted mistakes are stylistic.	Accurate in general but it mirrors the original language structure.
Cultural nuance	Considers cultural sensitivity and context.	Limited cultural sensitivity due to producing literal meanings.
Academic context	Maintains academic tone and considers terminology for specific disciplines.	Sometimes missing the academic context and uses informal phrasing.
Speed and efficiency	Time consuming: requires time to read the original text, understand it, and then translate it.	Very fast, can produce full drafts instantly, but requires human post-editing.

4. Discussion

The current study aimed to examine the quality of research abstracts translated by EFL students at Djilali Bounaama Khemis Miliana University, using AI and manual translation. The study also aimed to identify the linguistic and cultural issues that arose from the process. The findings from this study showed that EFL students use AI assistance in translating research abstracts. Tools like Google Translate, DeepL, and ChatGPT were widely used by them. This finding aligns with the research by (Ferrag & Bentounsi (2024) who claimed that ChatGPT is extensively used by students and teachers to translate learning and research materials. According to the findings, AI proved to be a fast and time-saving translation tool that students could rely on for their translations. This finding aligned with Sun (2024) and Awadh (2024) who identified AI as a translation tool that provides fast and accurate translations. However, the findings showed that AI can produce initial drafts only, and human proofreading is required. This result reinforces earlier claims by Budiharjo (2024) that, in order to meet academic standards, AI translation requires human post-editing.

Although great advancements have been made in AI assisted translation, the findings from this study showed that there were some deficiencies identified in AI performances during the translation process. This supports Budiharjo's (2024) claims that AI can produce mistakes that deliver a different meaning from the original text. Such difficulties can be classified into linguistic issues and cultural and contextual issues. This finding uphold the claim by Wei (2024) that AI encounters issues in translation that are related to complex sentences, idiomatic expressions, and language for specific contexts.

The linguistic issues identified in the findings are related to mirroring the original language's structure when translating into the target language, which may affect the cohesion and flow of the sentence. AI also uses informal phrasing within an academic context. The cultural and contextual issues identified in the study are related to translating the literal meaning of sentences rather than the real meaning behind them. In addition, some sentences were sometimes taken out of the academic context. There was also an issue identified in the study in translating the real meaning of idiomatic expressions and technical terminology.

The findings showed that translating research abstracts into French is smoother than into Arabic. This is maybe due to the complicated nature of the Arabic languages, or because the students master Arabic, which is their mother tongue, more than French, which makes it easier for them to identify the different structural mistakes made by AI. Academic tone was also missed sometimes in AI translations because of literal translation, unlike human translation, where academic tone was considered and maintained because of the students' awareness of the academic context of the research abstract which they translated. These findings mirror those of Moneus and Sahari (2024) who indicated that AI translation from Arabic to English is accurately produced, while human translation is perfectly performed from English to Arabic due to translators' expertise in handling linguistic nuances and cultural contexts. Comparing AI to manual translation, the findings from this study showed that human translation of the abstract into French and into Arabic is clear, coherent, structured, accurate, and respects the conventions of the Algerian academic discourse. Although the process of translating research abstracts may take some time, it proved to be effective and resulted on high-quality translation that respects the context of cultural and linguistic aspects.

The findings also suggest that AI should be adopted as a pedagogical tool. Teaching the students how to use AI as a translation tool would help them improve the quality of their translated research abstracts. However, it is important also to teach the students how to use AI as an assistant for translating research abstracts and not to rely on it completely, because the findings from this study showed that it is very important to post-edit AI translated versions. This would positively affect the editing and proofreading

skills of the students. Therefore, integrating AI as a translation tool with the students' translation skills would enhance the translation practices of students. These findings are supported by Awadh (2024) who asserts the importance of human-AI partnership, as well as Dai (2024), Benmansour and Youcef (2023), and Lihua (2022), who insisted on fostering human-AI collaboration.

Conclusion

This study investigated the linguistic and cultural issues that emerge in the translation of research abstracts by EFL students using AI assistance and manual translation. The analysis of translated abstracts by the research participants was followed by semi-structured interviews, which brought insights into the study and highlighted the differences in both translation approaches. The findings from this small-scale exploratory study suggest that AI translation offers speed and consistency when translating research abstracts, although it struggles with some linguistic issues and cultural nuances. In contrast, despite human translation is being slower, the participating students produced translations that are more accurate, coherent, and respects cultural and academic contexts. Yet, these observations should be interpreted within the context of the study and should not be generalized beyond the participants involved. The study contributes to the previous body of knowledge by confirming the existing previous studies, which emphasizes the crucial role of human translation in delivering the real meaning of culture and the correct structure of language. The study also aligns with previous research that claims that AI serves as a significant translation tool that ensures accuracy and rapid initial drafts.

The research offers recommendations for students, teachers, and higher education institutions. Students are encouraged to use AI translation tools to translate their research abstracts for their master's dissertations or to translate learning materials. However, they should use them as an aid rather than a replacement as post-editing and proofreading are always required. Teachers should teach students how to carefully use AI tools in translation to ensure accuracy and academic fidelity. Furthermore, higher education institutions should integrate AI as a pedagogical tool in the curricula and run workshops for teachers and students that emphasize the importance of AI in developing the translation practices.

Finally, this research is qualitative, with a restricted sample of six research participants from the Department of English, Djilali Bounaama University of Khemis Miliana. Conducting similar research with a larger sample from different higher education institutions and different fields may bring different results. Moreover, the focus of this research was on translating research abstracts only. Focusing on other academic texts may bring different views and insights into the study that may reveal other linguistic and cultural challenges. Furthermore, the AI translation tools are in a consecutive cycle of development. Consequently, the findings presented from this study reflect the current state of AI tools, as new updates may appear in the near future. Finally, the results should be viewed as exploratory insights rather than definitive conclusions regarding the comparative performance of human and AI-assisted translation.

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