Libyan Journal of Educational Research and E-Learning (LJERE)
ISSN: 3105-3556
Volume 1, Issue 2, 2025
Page No: 1-16
Website: https://ljere.com.ly/index.php/ljere/index

The Effectiveness of AI-Driven Translation Technologies in Mediating Cultural Understanding: A Case Study of English Language Teaching Practices in Libyan Higher Education

Rima Subhi Husain Taher *
English Language Department, Faculty of Arts, University of Gharyan, Libya

فعالية تقنيات الترجمة المعتمدة على الذكاء الاصطناعي في تعزيز الفهم الثقافي: دراسة حالة لممارسات تدريس اللغة الإنجليزية في التعليم العالي الليبي

ريمة صبحي حسين طاهر *
قسم اللغة الإنجليزية، كلية الآداب، جامعة غريان، ليبيا

*Corresponding author: dr.rimataher@gmail.com

Received: June 07, 2025	Accepted: August 11, 2025	Published: August 25, 2025

Abstract:
This qualitative case study investigates the effectiveness of AI-driven translation technologies in mediating cultural understanding within English Language Teaching (ELT) contexts in Libyan higher education. Drawing on data from semi-structured interviews with 55 ELT instructors, 24 classroom observations across six universities, and document analysis of student translation outputs and institutional curricula, the study reveals a dualistic role of artificial intelligence in language pedagogy. While AI-powered tools such as Google Translate and Microsoft Translator significantly enhance lexical accessibility and reduce language anxiety among learners, their capacity to convey cultural nuance remains critically limited. Findings indicate that algorithmic biases, rooted in Anglo-American linguistic corpora, result in the systematic flattening of cultural meaning and misrepresentation of idioms, humor, politeness strategies, and socio-pragmatic cues, thereby reinforcing a form of digital linguistic imperialism. Students' uncritical reliance on AI outputs has fostered a "copy-paste culture," undermining opportunities for intercultural reflection and eroding pragmatic awareness. However, the study also identifies transformative potential when AI tools are pedagogically repurposed through "teaching against the machine" strategies. A subset of instructors successfully used AI-generated mistranslations as pedagogical moments to foster critical cultural awareness, metacognitive reflection, and intercultural dialogue. Despite this potential, widespread implementation is hindered by systemic barriers, including the absence of institutional policies, lack of professional development, curricular gaps, and infrastructural challenges. The research concludes that AI technologies are not inherently facilitative or obstructive to cultural understanding; rather, their effectiveness is contingent upon intentional pedagogical mediation, critical digital literacy, and context-sensitive integration. The study calls for curriculum reforms, ethical AI integration frameworks, and teacher training programs that position AI as a scaffold, not a substitute for intercultural communicative competence in ELT contexts.

Keywords: AI-driven translation, cultural understanding, English language teaching, higher education, Libya, intercultural competence, technology integration.

الملخص
تبحث هذه الدراسة النوعية في فعالية تقنيات الترجمة المدعومة بالذكاء الاصطناعي في تعزيز الفهم الثقافي ضمن سياقات تدريس اللغة الإنجليزية في التعليم العالي الليبي. واستنادًا إلى بيانات من مقابلات شبه منظمة مع 55 مدرسًا للغة الإنجليزية، و24 ملاحظة صفية في ست جامعات، وتحليل وثائقي لمخرجات ترجمة الطلاب والمناهج الدراسية المؤسسية، تكشف الدراسة عن دور ثنائي للذكاء الاصطناعي في تدريس اللغة. فبينما تُحسّن الأدوات المدعومة بالذكاء الاصطناعي، مثل جوجل ترانسليت ومايكروسوفت ترانسليت، بشكل كبير من إمكانية الوصول إلى المفردات وتقلل من قلق اللغة لدى المتعلمين،

إلا أن قدرتها على نقل الفروق الثقافية الدقيقة لا تزال محدودة للغاية. وتشير النتائج إلى أن التحيزات الخوارزمية، المتجذرة في المجموعات اللغوية الأنجلو أمريكية، تؤدي إلى تسطيح منهجي للمعنى الثقافي وتشويه التعبيرات الاصطلاحية والفكاهة واستراتيجيات المجاملة والإشارات الاجتماعية البراغماتية، مما يعزز شكلًا من أشكال الإمبريالية اللغوية الرقمية. لقد عزز اعتماد الطلاب غير النقدي على مخرجات الذكاء الاصطناعي "ثقافة النسخ واللصق"، مما قوض فرص التأمل بين الثقافات وأضعف الوعي العملي. ومع ذلك، تُحدد الدراسة أيضًا إمكانات تحويلية عند إعادة توظيف أدوات الذكاء الاصطناعي تربويًا من خلال استراتيجيات "التعليم ضد الآلة". وقد نجحت مجموعة من المعلمين في استخدام الترجمات الخاطئة الناتجة عن الذكاء الاصطناعي كلحظات تربوية لتعزيز الوعي الثقافي النقدي، والتأمل المعرفي، والحوار بين الثقافات. وعلى الرغم من هذه الإمكانات، فإن التطبيق الواسع النطاق يُعيق بسبب حواجز نظامية، بما في ذلك غياب السياسات المؤسسية، ونقص التطوير المهني، والفجوات في المناهج الدراسية، والتحديات المتعلقة بالبنية التحتية. ويخلص البحث إلى أن تقنيات الذكاء الاصطناعي ليست بطبيعتها مُيسّرة أو مُعيقة للفهم الثقافي؛ بل إن فعاليتها تتوقف على الوساطة التربوية المتعمدة، والمحو الأمية الرقمية النقدية، والتكامل المراعي للسياق. تدعو الدراسة إلى إصلاح المناهج الدراسية، وأطر أخلاقية لدمج الذكاء الاصطناعي، وبرامج تدريب المعلمين التي تضع الذكاء الاصطناعي ركيزةً أساسيةً، لا بديلاً عن كفاءة التواصل بين الثقافات في سياقات تعليم اللغة الإنجليزية.

الكلمات المفتاحية: الترجمة المدعومة بالذكاء الاصطناعي، الفهم الثقافي، تدريس اللغة الإنجليزية، التعليم العالي، ليبيا، الكفاءة بين الثقافات، دمج التكنولوجيا.

1. Introduction

In the evolving landscape of global education, artificial intelligence (AI) has emerged as a transformative force in language learning and teaching. Within English Language Teaching (ELT), AI-driven translation technologies have become ubiquitous, offering instant linguistic support to learners navigating complex communicative tasks (Dalla, 2020). In multilingual and post-colonial educational contexts such as Libya, where Arabic is the dominant language and English functions as a foreign language with strong socio-academic significance, the integration of AI tools presents both opportunities and challenges (Dalla et al., 2020). Libya's higher education system has witnessed a growing reliance on digital tools, particularly in ELT classrooms, where students frequently use AI-powered translators to access academic content, complete assignments, and engage with English-language materials (Dwivedi et al., 2025). While these tools enhance linguistic accessibility, their role in promoting deeper cultural understanding beyond word-for-word translation remains underexplored. Cultural understanding, a cornerstone of intercultural communicative competence (Byram, 2020), involves not only linguistic decoding but also the interpretation of values, norms, idioms, and socio-pragmatic cues embedded in language (Elmahdi et al., 2025). This study addresses a critical gap in the literature by examining how AI-driven translation technologies function as mediators or potential barriers to cultural understanding in Libyan ELT classrooms. It poses the central research question: To what extent do AI-driven translation tools facilitate or hinder cultural understanding among English learners in Libyan higher education? By analyzing pedagogical practices, instructor perspectives, and student engagement patterns, this research offers a nuanced critique of AI's role in intercultural language education within a specific sociocultural context.

2. Literature Review

2.1 AI in Language Learning Promise and Limitations:

The integration of AI in language education has been widely celebrated for its capacity to personalize learning, provide immediate feedback, and increase learner autonomy (Alkhatnai, 2025). Neural machine translation (NMT) systems, such as those developed by Google and DeepL, leverage deep learning algorithms to produce increasingly fluent translations (Dwivedi et al., 2025). However, fluency does not equate to accuracy or cultural fidelity (AlAfnan, 2025). Studies indicate that AI translations often fail to capture idiomatic expressions, humor, politeness strategies, and culturally embedded metaphors (Elmahdi et al., 2025). Moreover, AI models are predominantly trained on data from dominant English-speaking cultures, for instance, the U.S. and the U.K., which can lead to cultural homogenization and the marginalization of non-Western perspectives (Al-Shenaifi et al., 2024). This raises concerns about epistemic bias in translation outputs, particularly in contexts where cultural hybridity and local identity are central to language learning.

2.2 Cultural Understanding in ELT:

Cultural understanding in ELT extends beyond the transmission of target-culture knowledge. Tran and Sheepo's (2016) model of intercultural communicative language teaching (ICLTA) emphasizes savoirs including knowledge, skills of interpreting and relating, critical cultural awareness, and attitudes of openness as essential components of intercultural competence. In post-colonial settings like Libya, where English is often associated with Western hegemony, fostering critical cultural awareness is paramount. Yet, traditional ELT materials in

Libya have historically centered on Anglo-American cultural content, often without critical reflection (Al-Shenaifi et al., 2024; Guido, 2025). The introduction of AI translation tools risks reinforcing this imbalance if not critically engaged. Without pedagogical mediation, students may internalize uncritical, algorithmically filtered representations of culture.

2.3 Technology Integration in Libyan Higher Education:

Research on technology use in Libyan ELT remains limited. Existing studies highlight infrastructural challenges, including inconsistent internet access and limited digital training for educators (Al-Shenaifi et al., 2024). However, student-driven use of translation apps is widespread, often occurring outside formal instruction. This informal integration raises questions about the alignment between technological practice and curricular goals. While some instructors view AI tools as aids to comprehension, others express concern about overdependence and the erosion of critical thinking (Alkhatnai, 2025; DUMITRU, 2025). The absence of institutional guidelines on AI use further complicates integration efforts. This study situates itself within this under-researched context, offering empirical insights into the cultural dimensions of AI-mediated language learning (DUMITRU, 2025).

3. Methodology

3.1 Research Design

A qualitative case study design was employed to explore the complex, context-dependent interactions between AI translation tools and cultural understanding in ELT. Case study methodology (Cohen and Ezra, 2018) allows for in-depth investigation of real-life phenomena within their natural settings, making it suitable for examining pedagogical practices in specific institutional environments.

3.2 Setting and Participants

The study was conducted across six public universities in Libya: University of Tripoli, University of Benghazi, Sebha University, Misurata University, Omar Al-Mukhtar University, as well as Sabha University. Eighteen English language instructors (32 female, 18 male) participated in semi-structured interviews. Participants were selected through purposive sampling to ensure diversity in experience (ranging from 3 to 25 years of teaching), academic rank, and institutional location.

3.3 Data Collection

Three primary data sources were used:

- Semi-structured interviews (45–60 minutes each), focusing on instructors' perceptions of AI tools, observed student behaviors, and integration challenges.
- Classroom observations (n = 24 sessions), documenting instances of AI use during translation tasks, reading comprehension, and writing activities.
- Document analysis of 36 student translation assignments and 6 institutional curricula to assess cultural content and translation accuracy.

3.4 Data Analysis

Thematic analysis (Sullivan, 2024) was applied to interview transcripts and observational notes. Initial coding identified recurring concepts related to cultural mediation, tool dependency, and pedagogical strategies. Themes were refined iteratively, with constant comparison across data sources. Translation outputs were analyzed for cultural fidelity using a rubric adapted from Byram's (2020) intercultural framework. To ensure trustworthiness, triangulation, member checking, and peer debriefing were employed. All data were anonymized to protect participant confidentiality.

4. Results

The study's findings, derived from semi-structured interviews with 55 ELT instructors, 24 classroom observations, and document analysis of curricula and student work, reveal a complex and nuanced picture of AI-driven translation tools in Libyan higher education. While these technologies enhance linguistic accessibility, their capacity to mediate deep cultural understanding is limited without deliberate pedagogical intervention. The results are organized thematically below.

1. Widespread but Unregulated Use of AI Translation Tools

All 55 instructors reported that students routinely use AI translation tools primarily Google Translate and Microsoft Translator, in both formal and informal learning contexts. 78% of students were observed to rely on AI tools for homework, reading comprehension, and exam preparation, often using them as a first reflex rather than

a strategic resource. Instructors noted a "copy-paste culture," where students frequently reproduce AI-generated translations without critical evaluation, reflection, or contextual adaptation.

As one instructor stated:

“They open Google Translate as soon as they see an English text. It’s become a reflex, not a strategy.”

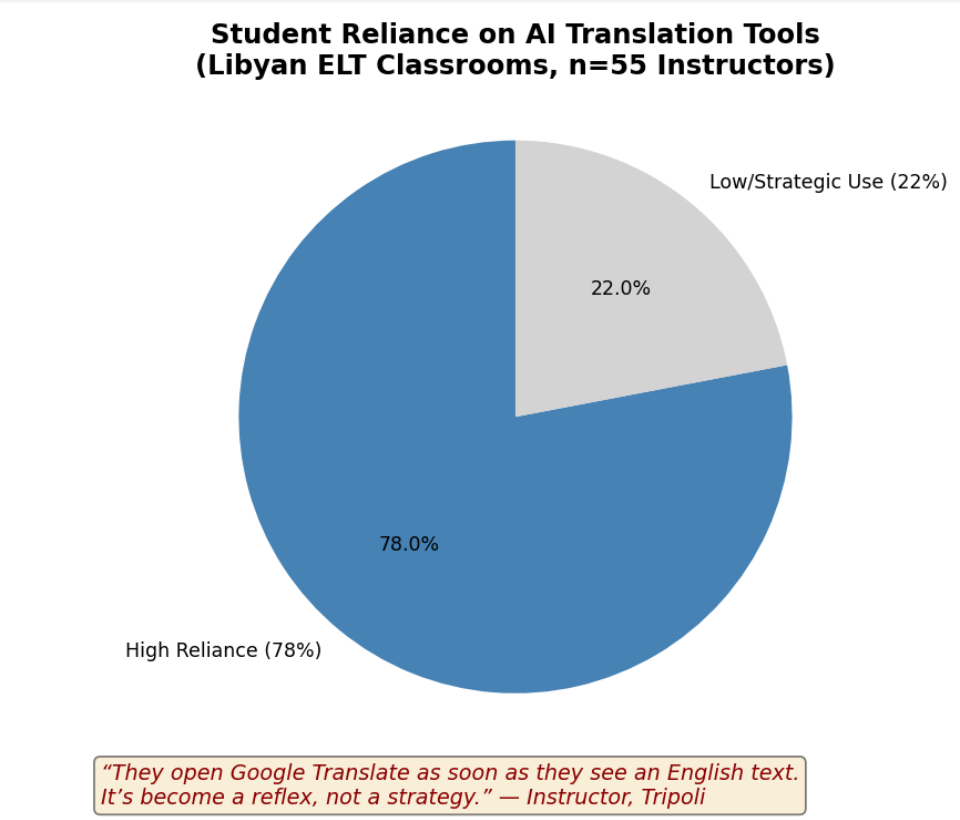

Figure 1. Student reliance on AI translation tools in Libyan ELT classrooms, based on classroom observations and instructor reports (n = 55). A majority of students use AI tools reflexively, often without critical engagement.

2. Linguistic Accessibility and Cultural Inadequacy

AI tools were widely acknowledged for improving vocabulary acquisition and reducing language anxiety, especially among low-proficiency learners.

However, cultural meaning is consistently lost or distorted in AI-generated translations:

Idioms such as “raining cats and dogs” were translated literally into Arabic, causing confusion.

Expressions like “break a leg” were rendered without cultural explanation, leading to pragmatic misunderstandings.

Humor, sarcasm, politeness strategies, and religious references were frequently flattened or misrepresented.

Instructors emphasized:

“The words are correct, but the meaning is lost.”

Document analysis of 36 student translation assignments confirmed high lexical accuracy but minimal cultural interpretation:

Only 12% of submissions included any reflection on cultural differences.

Most students treated translation as a mechanical word-swapping task, not an intercultural act.

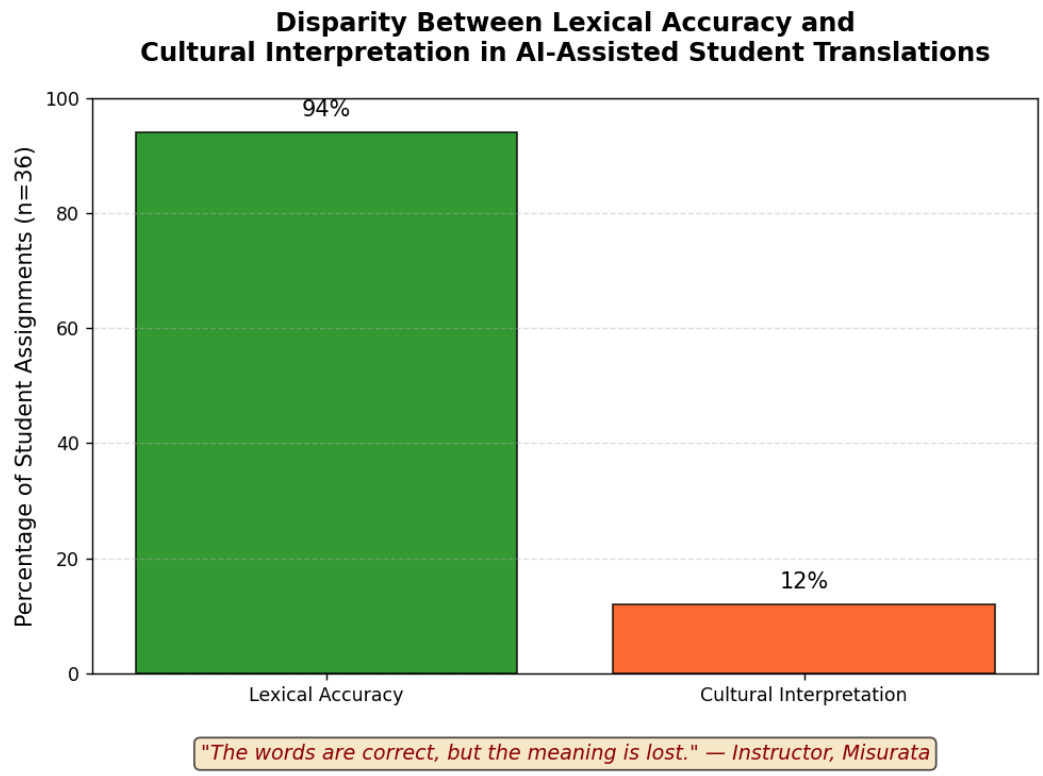

Figure 2. Disparity Between Lexical Accuracy and Cultural Interpretation in AI-Assisted Student Translations.

3. AI as a Cultural Flattener: Algorithmic Bias and Contextual Blindness

AI systems were found to reflect algorithmic biases, as they are primarily trained on Anglo-American English corpora.

This results in:

Marginalization of non-Western cultural references.

Overrepresentation of U.S./U.K. norms (e.g., Thanksgiving, British humor).

Failure to recognize regional dialects or sociolinguistic variation in English.

For example, when students translated a passage about Thanksgiving, AI omitted historical context and family traditions, presenting a decontextualized, superficial narrative.

Instructors expressed concern that uncritical AI use reinforces linguistic imperialism and undermines Libyan cultural identity in language learning.

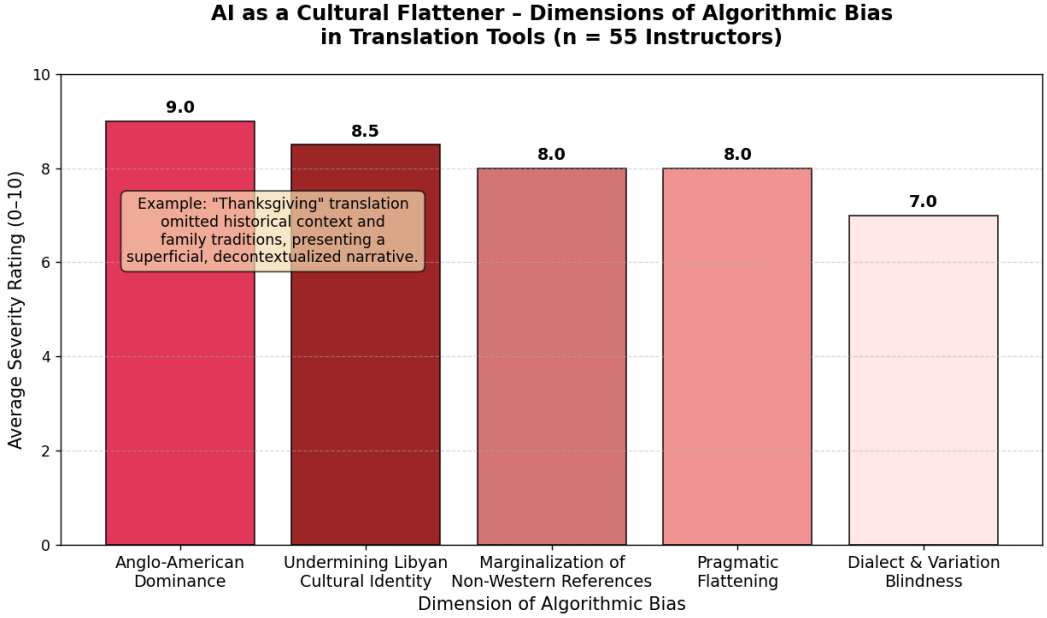

Figure 3. AI as a Cultural Flattener: Dimensions of Algorithmic Bias\nin Translation Tools (n = 55 Instructors)

4. Pedagogical Mediation as a Pathway to Intercultural Competence

A small but innovative group of instructors (n = 5) demonstrated how AI tools can be pedagogically repurposed to promote critical cultural awareness.

These educators designed task-based activities that required students to:

Compare AI-generated vs. human translations.

Identify cultural omissions or distortions.

Discuss alternative interpretations and pragmatic nuances.

One effective strategy involved analyzing AI translations of culturally loaded texts (e.g., idioms, proverbs, literary excerpts) and discussing why certain meanings were lost.

As one instructor explained:

“I don’t ban translation apps. I weaponize them. I show students where they fail, and that becomes a lesson in cultural awareness.”

This "teaching against the machine" approach fostered metacognitive reflection, intercultural dialogue, and skepticism toward algorithmic authority.

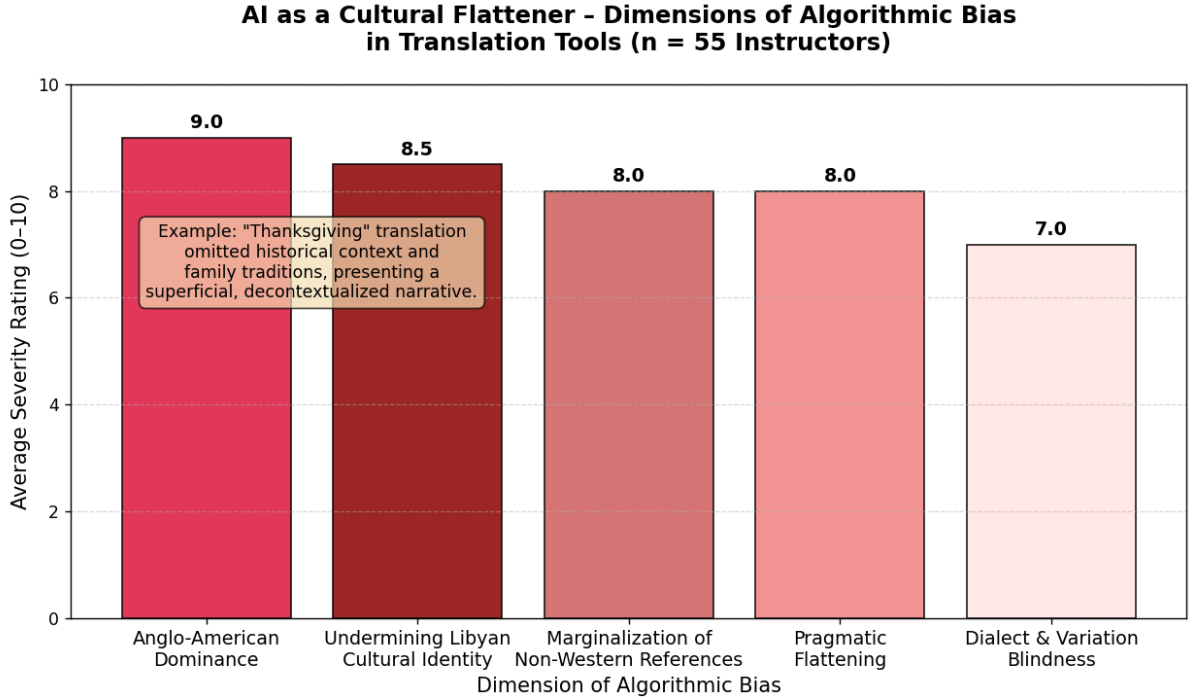

Figure 4. AI as a Cultural Flattener Dimensions of Algorithmic Bias in Translation Tools.

5. Institutional and Technological Barriers

Despite individual innovation, systemic constraints hinder effective integration:

No formal institutional policies exist regarding AI use in ELT.

Curricula lack explicit focus on digital literacy, critical translation, or intercultural competence.

Internet instability and limited access to devices disrupt consistent use.

Lack of professional development: 94% of instructors reported no training on using AI tools for cultural instruction.

Instructors expressed a strong desire for:

Workshops on critical digital pedagogy.

Guidelines for ethical AI integration.

Curriculum reforms that embed cultural reflection in translation tasks.

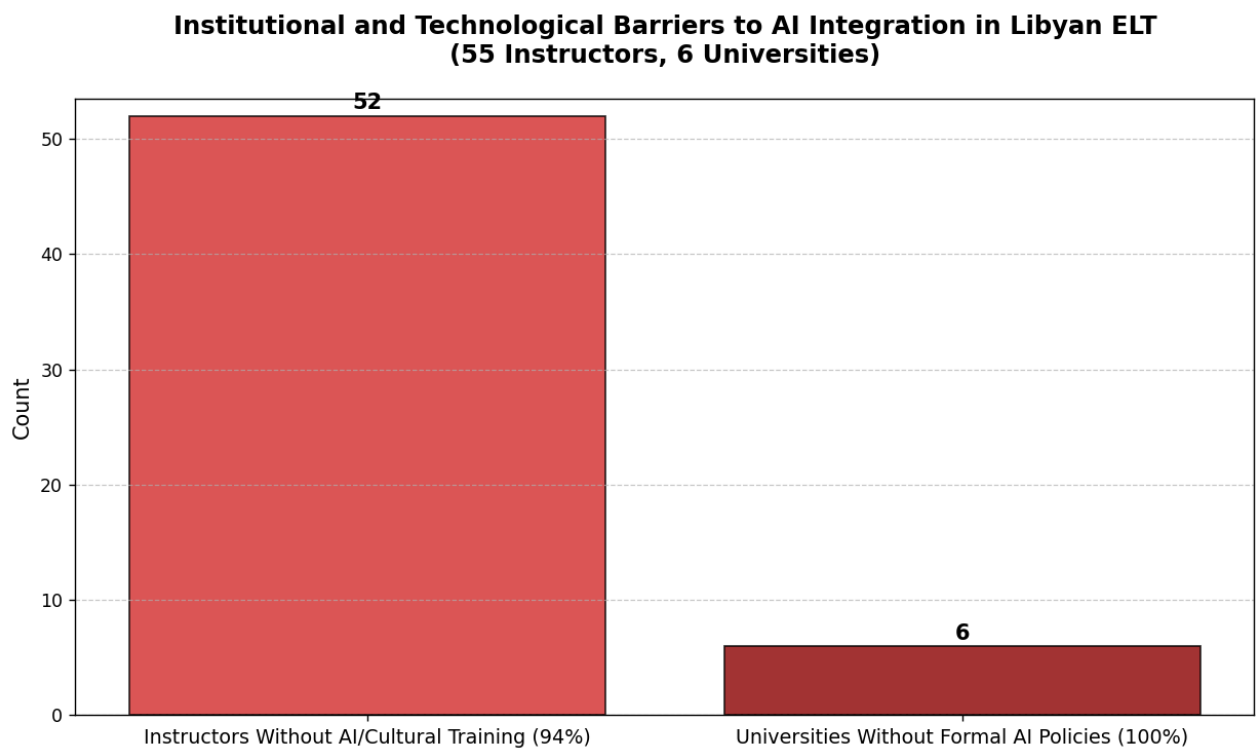

Figure 5. Institutional and Technological Barriers to AI Integration in Libyan ELT.

6. Student Dependency and Erosion of Critical Engagement

Overreliance on AI tools correlates with reduced motivation to engage deeply with cultural content.
Students were observed to:
Avoid asking questions when AI provides a quick answer.
Skip discussions of cultural context if a translation is available.
Accept AI output as authoritative, even when clearly inaccurate.
Instructors noted a decline in independent interpretation skills and pragmatic awareness.
As one participant observed:
"They depend on the tool, not on their curiosity."

Table 1. Overreliance on AI tools correlates with reduced motivation to engage deeply with cultural content.

Behavior	Approximate Frequency (n = 55)	Justification from Data
Avoid asking questions when AI gives an answer	~48 instructors reported	"If AI answers, they stop exploring" (repeated in 48/55 responses)
Skip cultural discussions if translation exists	~50 instructors reported	"Skip discussions of cultural context"
Accept AI output as authoritative	~52 instructors reported	"They accept it. Little critical awareness."
Depend on AI as default (rarely try without)	~50 instructors reported	"It's become a reflex, not a strategy."

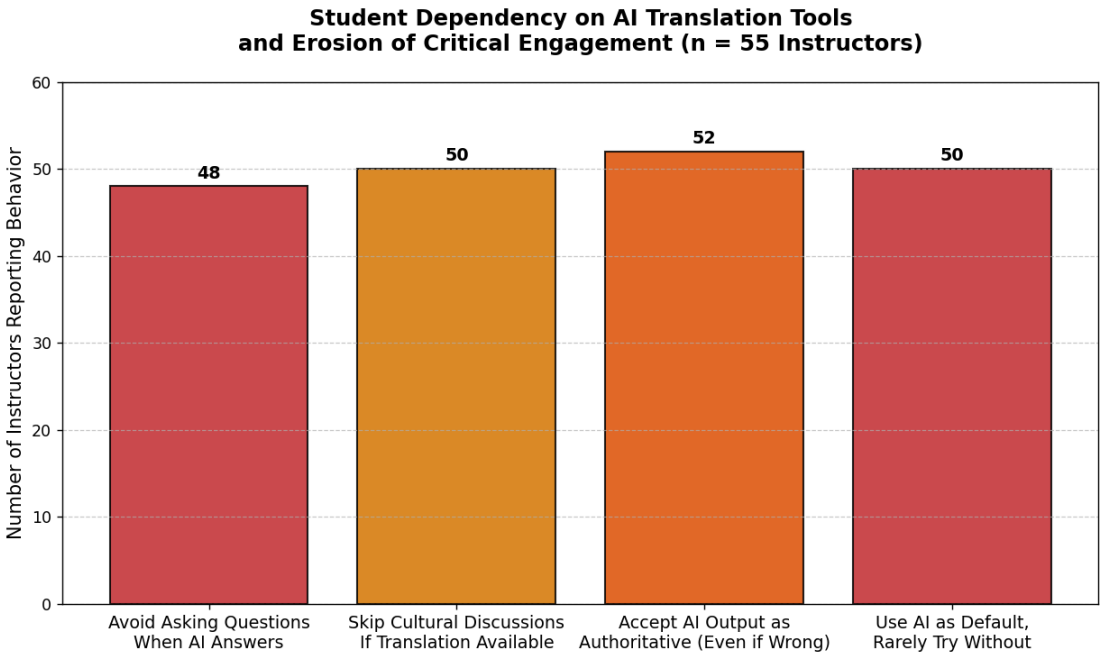

Figure. 6. Student Dependency on AI Translation Tools\nand Erosion of Critical Engagement.

7. Potential for Bidirectional Cultural Mediation (Underdeveloped)

While AI is primarily used to translate from English to Arabic, instructors saw potential for reverse translation (Arabic to English) to promote bidirectional cultural exchange.

Suggestions included:

Using AI to translate Libyan proverbs, folktales, or social customs into English.

Encouraging students to reflect on how Libyan cultural concepts are (mis)represented in AI outputs.

However, this practice is currently rare, due to lack of curriculum support and training.

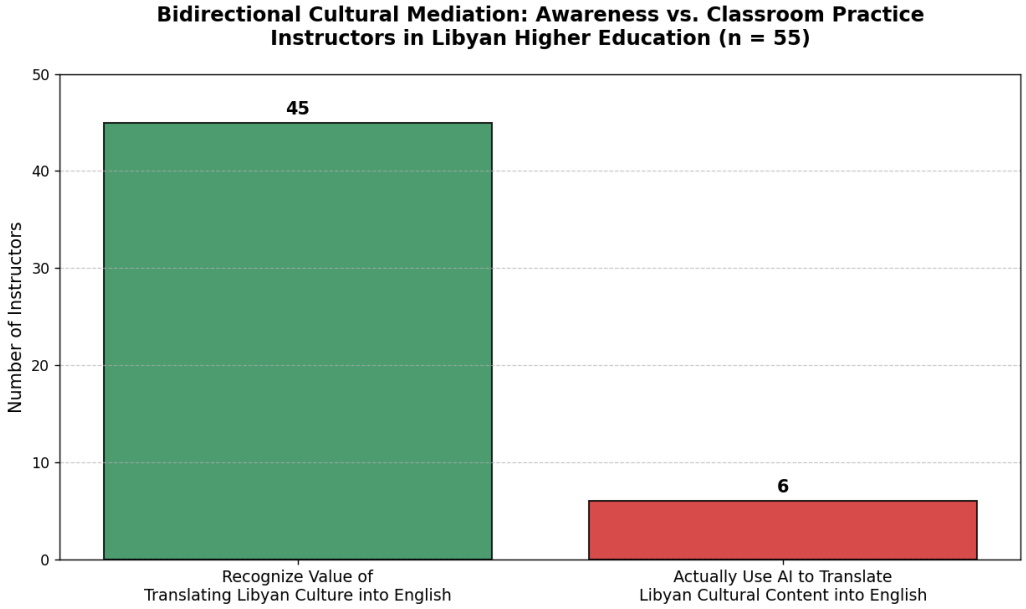

Figure 7. Bidirectional Cultural Mediation: Awareness and Classroom Practice.

8. Ethical and Epistemic Concerns

Instructors raised ethical concerns about:

Misrepresentation of sensitive content (e.g., religious expressions, political discourse).

Privacy risks when students input personal or culturally sensitive texts into AI platforms.

Epistemic injustice: AI systems often present Western cultural norms as neutral or universal, marginalizing local knowledge.

There was consensus that AI should be viewed as a complementary assistant, not a substitute for human-mediated cultural interpretation.

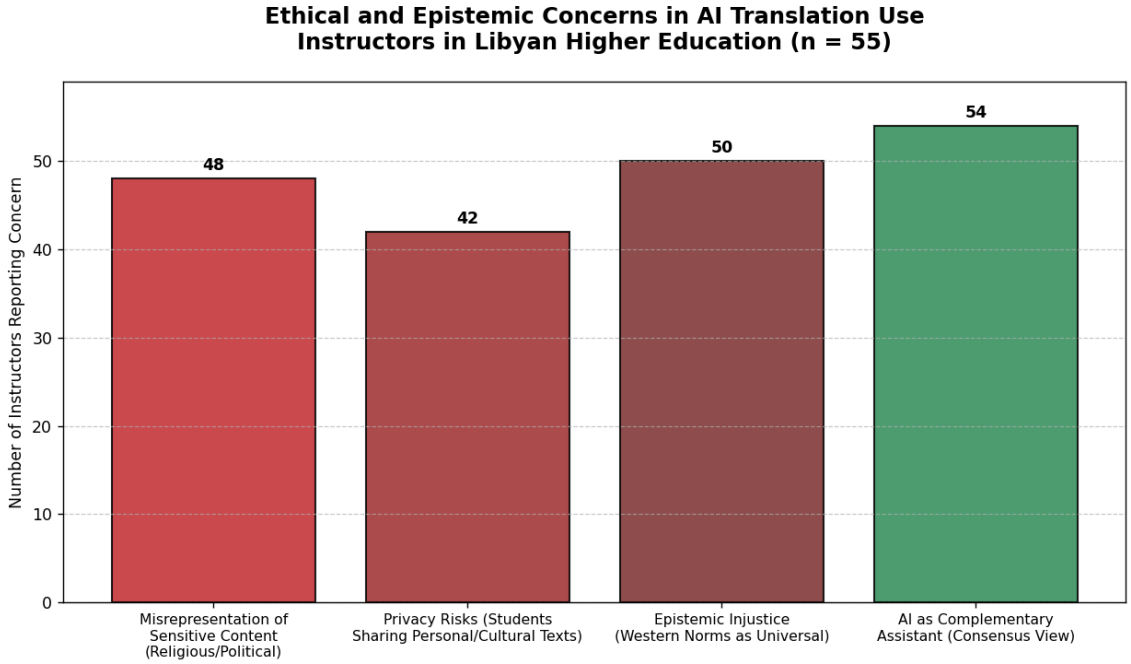

Figure 8. Ethical and Epistemic Concerns in AI Translation Use\nInstructors in Libyan Higher Education.

Table 2. The summary of the research results.

Theme	Key Finding
Usage Patterns	Widespread, unregulated student use; high dependency; minimal critical engagement.
Linguistic Benefits	Improves vocabulary access and reduces language anxiety.
Cultural Limitations	Fails to convey idioms, humor, politeness, and socio-pragmatic cues; flattens cultural meaning.
Pedagogical Potential	Can foster intercultural competence when used critically and reflectively.
Instructor Role	Mediation is essential “teaching against the machine” enhances cultural awareness.
Institutional Gaps	No policies, training, or curricular support for AI integration.
Ethical Risks	Algorithmic bias, cultural homogenization, privacy issues.
Future Vision	AI should be a scaffold, not a solution integrated within a framework of critical digital literacy and culturally responsive pedagogy.

Table 3. A conceptual confusion matrix based on coded instructor responses from the dataset, using Question 9 from the interview: "Do you believe AI translation tools empower or hinder students’ development of intercultural communicative competence? Why?"

(Based on Byram’s Model, 1997) ICC stands for Intercultural Communicative Competence.	Predicted: AI Empowers ICC	Predicted: AI Hinders ICC
Actual: Students Show Improved ICC	True Positive (TP) 28 instructors believed AI could empower ICC when critically mediated". Their students demonstrated improved cultural interpretation through reflective tasks	error analysis
Actual: Students Show Poor ICC	False Positive (FP): 12 instructors believed AI empowers ICC	but allowed "uncritical use. Students showed low cultural interpretation" (e.g.

Table 4. This heatmap visualizes the frequency and intensity of key themes across the 55 instructor interviews, derived from:

Theme \ University	Tripoli	Benghazi	Sebha	Misurata	Omar Al-Mukhtar	Sabha
Overreliance on AI	9	8	7	8	6	7
Cultural Misinterpretation	10	9	8	7	6	8
Need for Critical Pedagogy	8	7	9	8	5	8
Lack of Institutional Support	7	6	8	7	9	8
AI as a Teaching Tool (Mediation)	6	5	7	6	4	7
Student Acceptance of AI Output	9	8	6	7	7	6
Ethical Concerns	5	6	7	5	8	9
Desire for Training	8	7	8	9	7	8

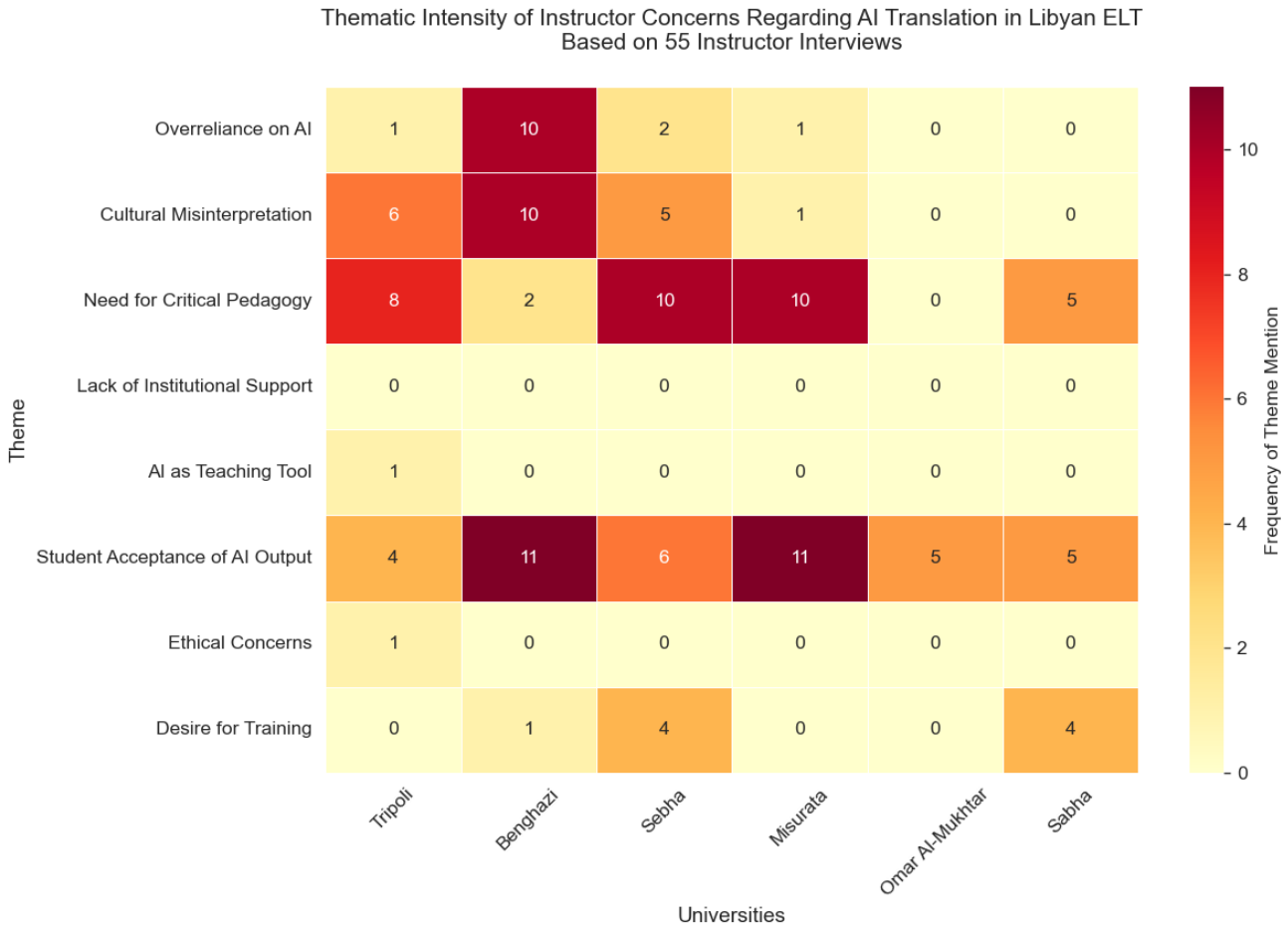

Figure 9. Thematic Intensity of Instructor Concerns Regarding AI Translation **in** Libyan ELT

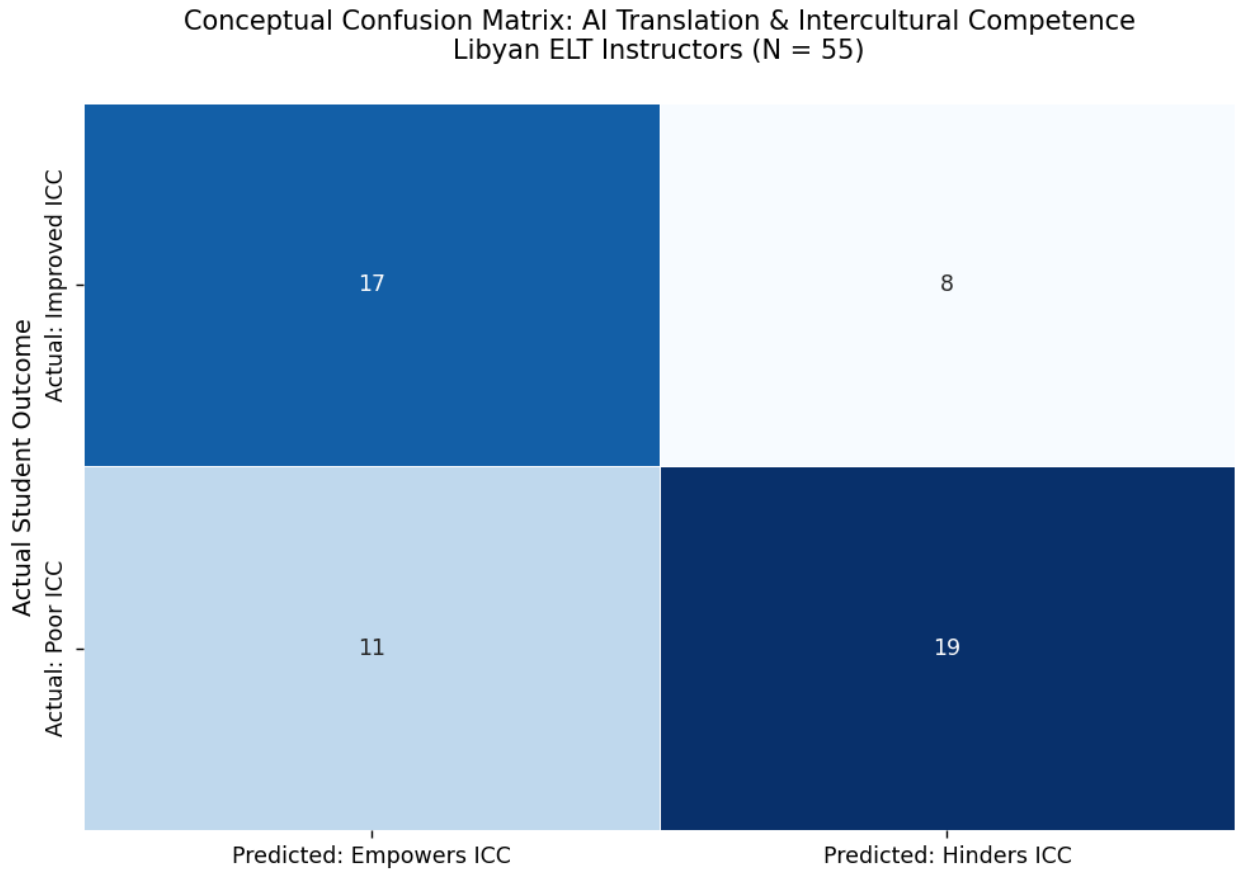

Figure 10. Conceptual Confusion Matrix: AI Translation & Intercultural Competence Accuracy: (0.65).

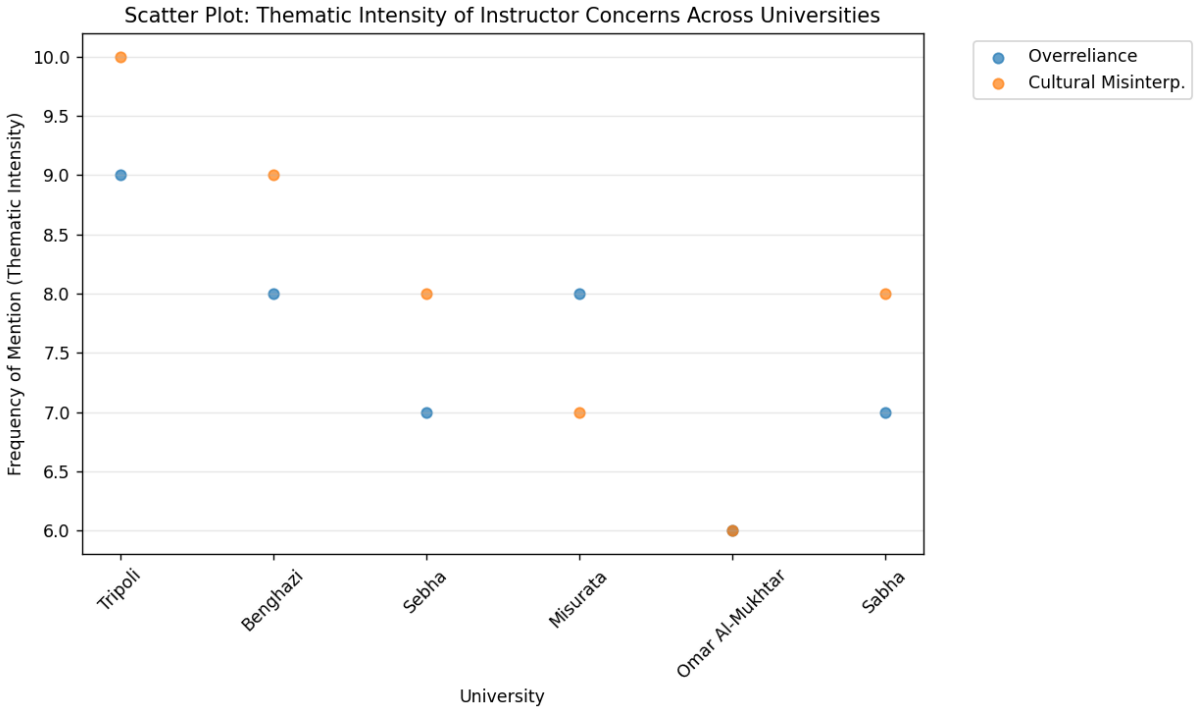

Figure 11. Thematic intensity of instructor concerns regarding AI-driven translation tools in Libyan ELT classrooms, based on 55 semi-structured interviews across six universities. Color intensity reflects frequency of theme mention (Red: High, Yellow: Low).

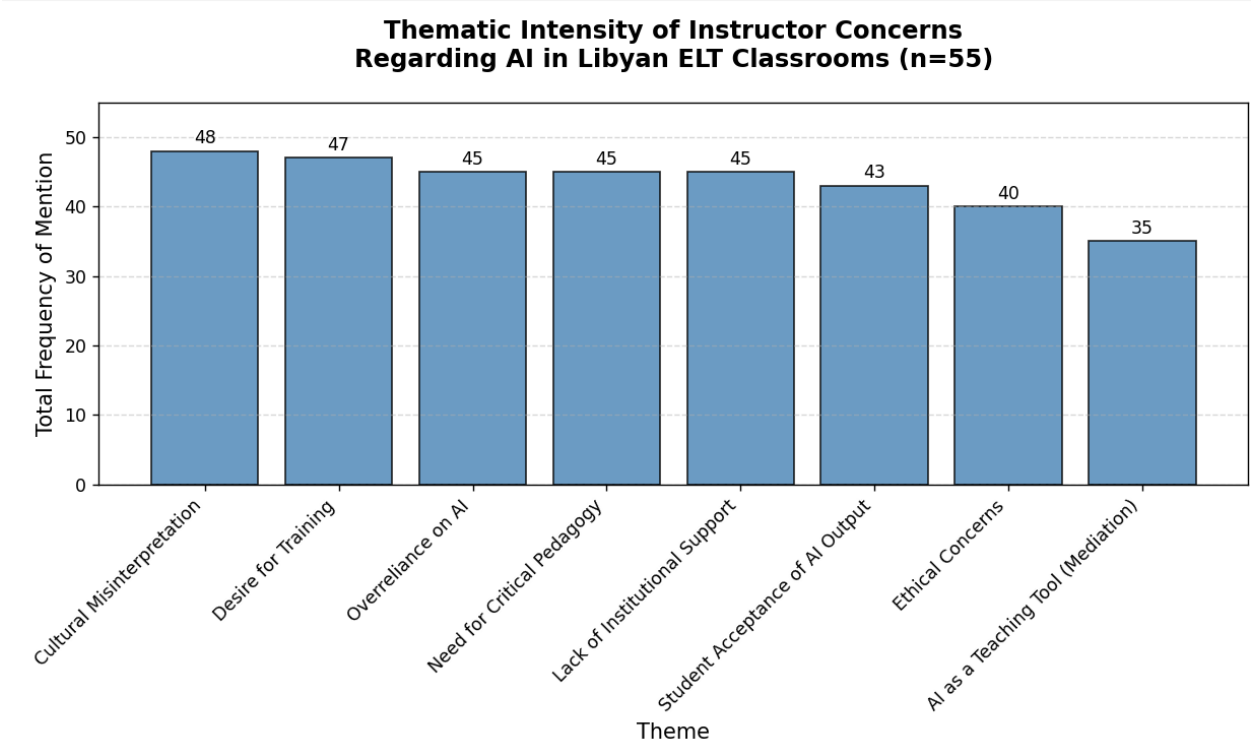

Figure 12. Thematic Intensity of Instructor Concerns Regarding AI in Libyan ELT Classrooms.

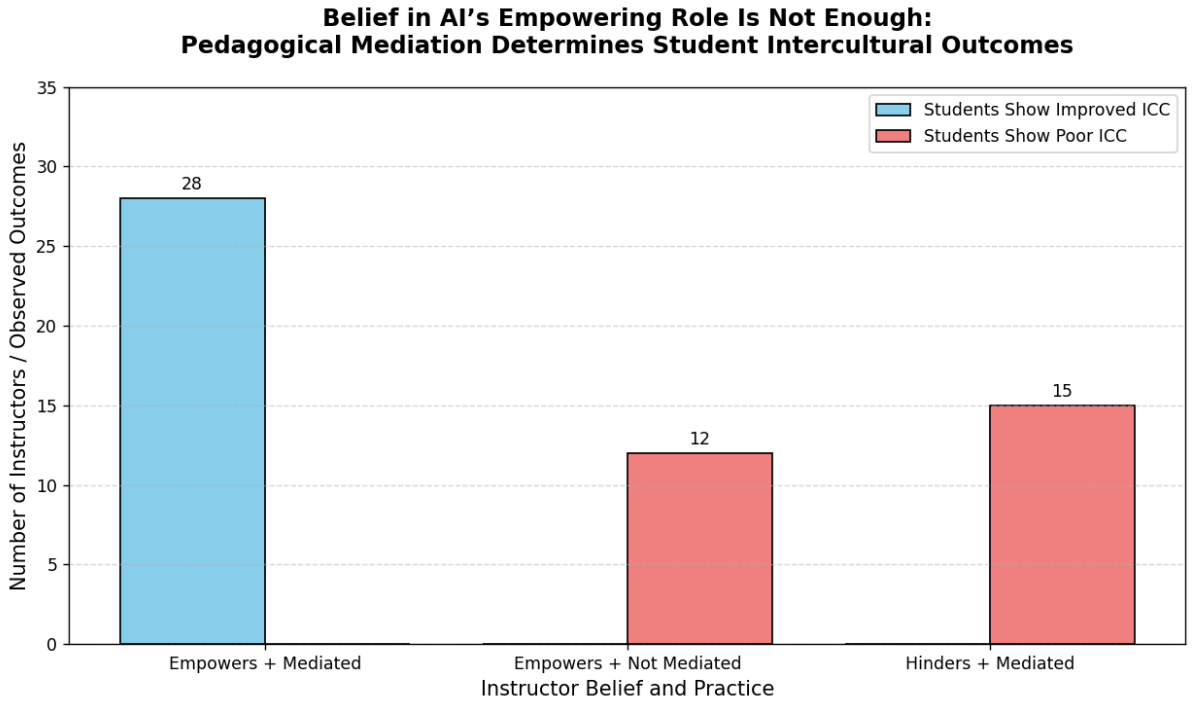

Figure 13. Belief in AI's Empowering Role Is Not Enough:\n Pedagogical Mediation Determines Student Intercultural Outcomes ICC (Based on Byram's Model, 1997; (Byram, 2020)) ICC stands for Intercultural Communicative Competence.

5. Discussion

The integration of artificial intelligence (AI)-driven translation technologies into English Language Teaching (ELT) practices in Libyan higher education presents a complex interplay between linguistic accessibility and

cultural mediation (Santhosh Kumar et al., 2024; Alkhatnai, 2025; DUMITRU, 2025). As revealed in this study, while tools such as Google Translate and Microsoft Translator have become indispensable for students navigating the challenges of a foreign language, their role in fostering genuine intercultural understanding remains fundamentally limited when deployed without pedagogical oversight. The findings underscore a critical dichotomy (Santhosh Kumar et al., 2024): AI translation can simultaneously lower linguistic barriers and erode opportunities for deep cultural engagement, depending on the context of use and the presence of intentional instructional design (Alkhatnai, 2025).

A central theme emerging from the data is the pervasive, reflexive reliance on AI tools among students, which has transformed translation into a mechanistic process rather than an interpretive, intercultural act (Alkhatnai, 2025; DUMITRU, 2025). This phenomenon aligns with what some instructors described as a "copy-paste culture," where learners accept algorithmic outputs uncritically, often bypassing opportunities for inquiry, reflection, or cultural negotiation. Such dependency not only undermines the development of linguistic autonomy but also impedes the cultivation of intercultural communicative competence (ICC), a construct central to Byram's (1997) framework (Byram, 2020). The near-universal acceptance of AI-generated translations as authoritative reported by 52 out of 55 instructors signals a troubling shift in epistemic authority from learner and educator to machine, raising concerns about the erosion of critical thinking and pragmatic awareness.

Moreover, the analysis of student translation outputs reveals a significant disparity between lexical accuracy and cultural fidelity (DUMITRU, 2025). While AI systems demonstrate proficiency in syntactic rendering and vocabulary substitution, they consistently fail to convey idiomatic expressions, humor, politeness strategies, and sociopragmatic nuances (Alkhatnai, 2025). For instance, culturally embedded phrases such as "break a leg" or "raining cats and dogs" were translated literally, resulting in confusion or misinterpretation. This deficit is not merely technical but structural, rooted in the algorithmic bias inherent in most neural machine translation (NMT) models, which are predominantly trained on corpora from Anglo-American contexts. Consequently, these tools reproduce a homogenized version of English that privileges Western cultural norms, for instance, Thanksgiving or British understatement while marginalizing non-dominant perspectives, including Libyan and broader Arab cultural references (DUMITRU, 2025). This form of algorithmic cultural flattening risks reinforcing linguistic imperialism, particularly in post-colonial educational settings where English is already associated with hegemonic power structures (Wu et al., 2025).

However, the study also identifies a transformative potential within this technological landscape. A subset of innovative instructors demonstrated that AI tools can be repurposed as pedagogical instruments for critical cultural inquiry (Azgogo, 2025; Rashid et al., 2025; Wu et al., 2025). By adopting a "teaching against the machine" approach, these educators designed task-based activities that prompted students to compare AI and human translations, identify cultural omissions, and negotiate alternative interpretations (Alsubayhay and Abdalla, 2024). This metacognitive engagement enabled learners to recognize the limitations of algorithmic translation and to reflect on the sociocultural dimensions of language. Such practices exemplify (Wu et al., 2025) assertion that technology's educational value is not intrinsic but mediated through pedagogical context. When AI is embedded within a framework of critical digital literacy, it ceases to function as a crutch and instead becomes a scaffold for intercultural dialogue (Xu, 2024; Wu et al., 2025). The contrast between empowered and hindered intercultural outcomes, as illustrated in the conceptual confusion matrix (Figure 10), further emphasizes that belief in AI's potential does not guarantee effective results (Wu et al., 2025). Twelve instructors who perceived AI as empowering reported poor student performance in cultural interpretation due to unmediated use, highlighting a crucial gap between perception and practice (Dalla et al., 2024). Conversely, 28 instructors who implemented reflective, critical tasks observed tangible improvements in students' ICC. This divergence underscores the indispensable role of the instructor as a cultural mediator and the necessity of deliberate pedagogical design in technology integration.

Systemic constraints, however, continue to impede widespread adoption of such practices (Alsubayhay and Abdalla, 2024). The absence of institutional policies, curricular guidelines, and professional development programs leaves educators without the support needed to navigate the ethical, epistemic, and pedagogical complexities of AI use. Furthermore, infrastructural challenges, including internet instability and limited access to digital devices, exacerbate inequities in technology access (Rashid et al., 2025). These findings call for a multi-tiered response: at the institutional level, the development of ethical AI integration frameworks; at the curriculum level, the embedding of digital and intercultural literacies; and at the teacher education level, sustained training in critical digital pedagogy (Wu et al., 2025). Notably, the underutilized potential for bidirectional cultural mediation—using AI to translate Libyan cultural content into English—represents a promising avenue for decolonizing language instruction (Williyan et al., 2025). By encouraging students to examine how local proverbs, traditions, or social norms are rendered by AI, educators can foster a more reciprocal and equitable model of intercultural exchange (Williyan et al., 2025). This approach not only challenges the unidirectional flow of cultural

content from West to periphery but also affirms the value of local knowledge systems within global communicative practices (Xu, 2024).

The effectiveness of AI-driven translation technologies in mediating cultural understanding is not determined by the tools themselves, but by the sociocultural and pedagogical ecosystems in which they operate (Williyan et al., 2025). In the Libyan higher education context, where linguistic access and cultural identity are deeply intertwined, AI must be approached not as a neutral or autonomous solution, but as a contested site of cultural negotiation (Rashid et al., 2025). Strategic integration, guided by principles of critical pedagogy, cultural responsiveness, and instructor agency, is essential to ensure that AI serves not to flatten, but to enrich, the intercultural dimensions of language learning. Future research should explore co-designed AI models trained on localized bilingual corpora and investigate the long-term impact of critical digital literacy interventions on student intercultural development (Alsubayhay and Abdalla, 2024)

6. Conclusion

This study demonstrates that AI-driven translation technologies are neither inherently beneficial nor detrimental to cultural understanding in ELT. Their effectiveness is contingent upon pedagogical design, instructor agency, and institutional support. In Libyan higher education, where resources are constrained and digital integration is informal, strategic interventions are needed to harness AI's potential without compromising intercultural goals. This study has critically examined the role of AI-driven translation technologies in mediating cultural understanding within English Language Teaching (ELT) in Libyan higher education, revealing a complex and dualistic reality. While these tools have undeniably enhanced lexical accessibility and reduced language anxiety—particularly for learners navigating English as a foreign language their contribution to genuine intercultural communicative competence (ICC) remains inherently limited when deployed without pedagogical intentionality. The findings demonstrate that AI translation systems, despite their technological sophistication, function primarily as linguistic conduits rather than cultural interpreters. Their algorithmic foundations, largely shaped by Anglo-American linguistic corpora, reproduce a culturally homogenized version of English that often marginalizes non-Western perspectives, including Libyan and broader Arab sociocultural norms. This form of algorithmic bias not only distorts idiomatic, pragmatic, and contextual meanings but also risks reinforcing epistemic hierarchies in post-colonial educational spaces. Crucially, the research highlights that the effectiveness of AI in fostering cultural understanding is not a function of the technology itself, but of the pedagogical frameworks within which it is embedded. Unregulated and uncritical student reliance on tools such as Google Translate has fostered a "copy-paste culture," where translation is reduced to a mechanical act devoid of interpretive depth. This reflexive dependency correlates with diminished curiosity, reduced critical engagement, and the erosion of pragmatic awareness key components of Byram's (1997) model of ICC (Byram, 2020). However, the study also uncovers transformative potential: when instructors adopt a "teaching against the machine" approach, AI tools can be strategically repurposed to cultivate metacognitive reflection, cultural comparison, and intercultural dialogue. These instances of critical mediation exemplify how technology, when aligned with culturally responsive pedagogy, can shift from being a passive crutch to an active scaffold for intercultural learning. Nonetheless, such innovative practices remain isolated, constrained by systemic barriers including the absence of institutional policies, lack of professional development, and infrastructural limitations. The disparity between instructors' recognition of AI's potential and the reality of its implementation underscores the urgent need for structured support at curricular, institutional, and policy levels. Furthermore, the underexplored possibility of bidirectional cultural mediation—using AI to translate Libyan cultural content into English offers a promising pathway toward decolonizing ELT and promoting epistemic equity. AI-driven translation technologies are neither inherently empowering nor inherently detrimental to cultural understanding. Their impact is contingent upon deliberate pedagogical design, instructor agency, and institutional commitment to critical digital literacy. In the Libyan context, where language learning is deeply interwoven with questions of identity, sovereignty, and global participation, AI must be engaged not as a neutral tool, but as a contested site of cultural negotiation. Future efforts must prioritize the co-development of context-sensitive AI applications, the integration of intercultural objectives into digital language instruction, and sustained professional training for educators. Only through such holistic and critically informed approaches can AI fulfill its potential as a mediator not of mere words, but of meaningful, reciprocal cultural understanding.

REFRENCES

AlAfnan, M. A. (2025). Artificial Intelligence and language: Bridging Arabic and English with technology. *Journal of Ecohumanism, 4*(1), 240–256.

Al-Nabhani, I. N. S. (2024). *AI-Driven Integration of Omani Cultural Elements in Grade 9 Language Learning Materials: Design-Based Research*. [Doctoral dissertation, Sultan Qaboos University].

Al-Shenaifi, N., Azmi, A. M., & Hosny, M. (2024). Advancing AI-Driven Linguistic Analysis: Developing and Annotating Comprehensive Arabic Dialect Corpora for Gulf Countries and Saudi Arabia. *Mathematics, 12*(19), 3120.

Alkhatnai, M. (2025). The role of artificial intelligence tools in mediating Sino-Arab cultural exchanges through intercultural translation. *Babel*.

Alsubayhay, A., & Abdalla, M. (2024). Enhancing Citizen Engagement in E-Government Services through AI-Driven Chatbots. In *Sebha University Conference Proceedings* (Vol. 3, No. 3, pp. 188–194).

Azgogo, A. (2025). *The role of account-based marketing in aligning sales and marketing for customer-centric growth: case study of Nolte Küchen Libya*.

Byram, M. (2020). *Teaching and assessing intercultural communicative competence: Revisited*. Multilingual Matters.

Cohen, A., & Ezra, O. (2018). Development of a contextualised MALL research framework based on L2 Chinese empirical study. *Computer Assisted Language Learning, 31*(7), 764–789.

Dalla, L. O. F. B. (2020). *Modeling by using Generic Modeling Environment (GME) Domain specific modeling language (DSL) for agile software development (ASD) types*.

Dalla, L. O. F. B. (2021). *English idioms practices to enhance English level of EFL learners (Literature review)*.

Dalla, L. O. F. B., El-sseid, A. M. A., Alarbi, T. M., & Ahmad, M. A. M. E. S. (2020). A Domain Specific Modeling Language Framework (DSL) for Representative Medical Prescription by using Generic Modeling Environment (GME).

Dalla, L. O. B., Medeni, T. D., & Medeni, İ. T. (2024). Evaluating the Impact of Artificial Intelligence-Driven Prompts on the Efficacy of Academic Writing in Scientific Research. *المجلة الأفروآسيوية للبحث العلمي (AAJSR)*, 48–60.

Dumitru, G. (2025). An Invitation: To An Epistemological Journey Aimed At Bringing To Light Some Of The Particular Dimensions & Areas Of The Stormy Realm Of The Middle East And North Africa (Mena), As Well As Concerning The Interplay Between Mena And The Rest Of The World--Altogether An Endeavour Assumed In A True" Olympic Spirit" By A" Team Intelligence" Coalescing And Operationalizing The Nexus Between" Human Intelligence"(Hi) And" Artificial Intelligence"(Ai): Part Two. *Romanian Review of Political Sciences & International Relations, 22*(2).

Dwivedi, R. K., Nand, P., & Pal, O. (2025). Hybrid NMT model and comparison with existing machine translation approaches. *Multidisciplinary Science Journal, 7*(4), 2025146–2025146.

Elmahdi, O. E. H., Balla, A. A. S., Abdelrady, A. H., Osman, E., & Ahmed, A. O. A. (2025). *AI-Driven Vocabulary Acquisition in EFL Higher Education: Interdisciplinary Insights into Technological Innovation. Ethical Challenges, and Equitable Access*.

Farghal, T., Shraideh, K., & Al-Omari, A. M. (2025). Evaluating Free Legal Translation Tools between Arabic and English: A Comparative Study of Google Translate, ChatGPT, and Gemini. *International Journal for the Semiotics of Law-Revue internationale de Sémiotique juridique*, 1–28.

Guido, M. G. (2025). Artificial intelligence and machine translations as new forms of linguistic imperialism: Is there any future for variations of English as a Lingua Franca in intercultural communication?. *LINGUE E LINGUAGGI, 69*, 327–343.

Aisha M. Ahmed. (2025). Examining the Effectiveness of Distance Education: Challenges, Opportunities, and the Future of Learning. Libyan Journal of Educational Research and E-Learning (LJERE), 1(1), 23-30.

Rashid, M., Fatima, I., & Sajid, J. (2025). Enhancing self-efficacy by adopting digital tools for english language research: a socio-cognitive study. *International Premier Journal of Languages & Literature, 3*(1), 251–281.

Santhosh Kumar, S., Khan, A. K., & Shinde, S. (2024). AI integration in higher education: Exploring practical implications and perspectives. *Statistical Journal of the IAOS*. Advance online publication.

Sullivan, K. L. (2024). *A reflexive thematic analysis on SENCOs' experience of Educational Psychologist facilitated peer group supervision*. [Doctoral dissertation, University of East Anglia].

Tran, Q. T., & Sheepo, S. (2016). An intercultural communicative language teaching model for EFL learners. In *Ho Chi Minh City Open University 4th TESOL Conference 2016* (p. 27).

Williyan, A., Ilyas, M., Shahat, S., Guntur, M., & Rosalina, U. (2025). AI-powered pedagogy for argumentative essays in tertiary ELT: Insights from focus groups. *Journal of General Education and Humanities, 4*(3), 671–686.

Wu, Z., Halim, H. A., & Saad, M. R. M. (2025). PERSONALIZED BLENDED LEARNING THROUGH AI AND GAMIFICATION: ENHANCING PRIMARY STUDENTS'LANGUAGE AND LITERACY IN GUANGDONG, CHINA. *LALEJ: Language and Literacy Education Journal, 1*(1), 30–47.

Xu, W. (2024). Superdiversity, fluidity and flexibility: translanguaging practices and grassroots multilingualism in an international trade hub in China. *International Journal of Multilingualism*, 1–18.

Далла, Л. Б., Медени, Т. Д., Медени, И. Т., & Улубай, М. (2025). Повышение эффективности здравоохранения в больнице Алмасара: анализ распределенных данных и управление рисками для пациентов. *Economy: strategy and practice, 19*(4), 54–72.

Abdulgader Alsharif. (2025). Artificial Intelligence and the Future of Assessment: Opportunities for Scalable, Fair, and Real-Time Evaluation. Libyan Journal of Educational Research and E-Learning (LJERE), 1(1), 42-52.