



## Exploring Students' Perceptions of Literary Translation through ChatGPT: A Case Study at the Faculty of Languages and Translation, University of Zawia, Libya

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### Abstract:

This study investigates students' experiences and attitudes towards the use of artificial intelligence (AI) tools in literary translation at the Faculty of Languages and Translation, University of Zawia, Libya. Sixty undergraduate students from English departments participated in a classroom-based experiment in which they translated literary texts using ChatGPT. Following the translation tasks, students completed a structured questionnaire designed to assess the usability, accuracy, and pedagogical value of AI-assisted translation. Descriptive analysis of the data revealed that while students found AI-tools effective for increasing translation speed and acquiring new vocabulary, they also expressed reservations about the tools' limitations in handling literary devices such as tone, metaphor, and cultural context. A majority of students are in favor of continued use of AI-tools under instructor guidance, recognizing their value as supplementary learning aids rather than replacements for human translators. The study highlights the need for critical integration of AI into translation pedagogy and encourages further research on balancing automation with interpretive and creative human input.

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### Introduction (مقدمة)

The integration of artificial intelligence (AI) into higher education institutions has changed how students interact with language, learning process, and technological advancements. In translation studies, AI-powered tools such as Google Translate and ChatGPT have become widely accessible and used by students. These tools are designed to process language with remarkable speed, fluency and accuracy to some extent. They often provide grammatically accurate translations for a variety of texts. However, when applied to literary translation, a practice which demands deep cultural knowledge, aesthetic sensitivity, and

interpretative insight, the limitations of AI tools become clear to educators and students alike. Literary translation is not a mechanical conversion of words from one language to another; it is an active and creative process that involves conveying the emotional, symbolic, religious and rhetorical dimensions of the original text into a different linguistic and cultural context.

## Method (منهج)

This study adopted a descriptive analytical approach to examine students' attitudes toward using artificial intelligence (AI) tools in literary translation. Conducted at the Faculty of Languages and Translation, University of Zawia, the research combined structured translation tasks with reflective post-task feedback to capture both quantitative and qualitative insights. Participants included undergraduate students from English departments who had prior exposure to ChatGPT. The research procedure involved two phases. First, students used an AI-tool (ChatGPT) to translate short literary texts, five in Arabic and five in English in five-week duration, emphasizing not only linguistic accuracy but also literary features such as metaphor, tone, and cultural nuance. Second, they completed a researcher-designed questionnaire consisting of Likert-scale items, evaluating ease of use, translation quality, and educational value. Data were analyzed descriptively using frequencies, means, and standard deviation which is counted per item (Agree = 5, Neutral = 3, Disagree = 1).

## Result (نتائج)

The present study aimed to explore students' experiences and attitudes toward using AI-tools for literary translation at the Faculty of Languages, University of Zawia. A total of 60 students (51 female, 9 male) participated in the experiment, all of whom had prior exposure to AI-tools such as Google Translate, ChatGPT, and similar platforms. Their responses were collected through a structured questionnaire and analyzed using descriptive statistics (mean and standard deviation) to determine central tendencies and response variability. Overall, the findings suggest that students had a generally positive experience using AI in literary translation tasks, though with noted concerns regarding creative and interpretive limitations.

### Section 1: Experience with AI Tools

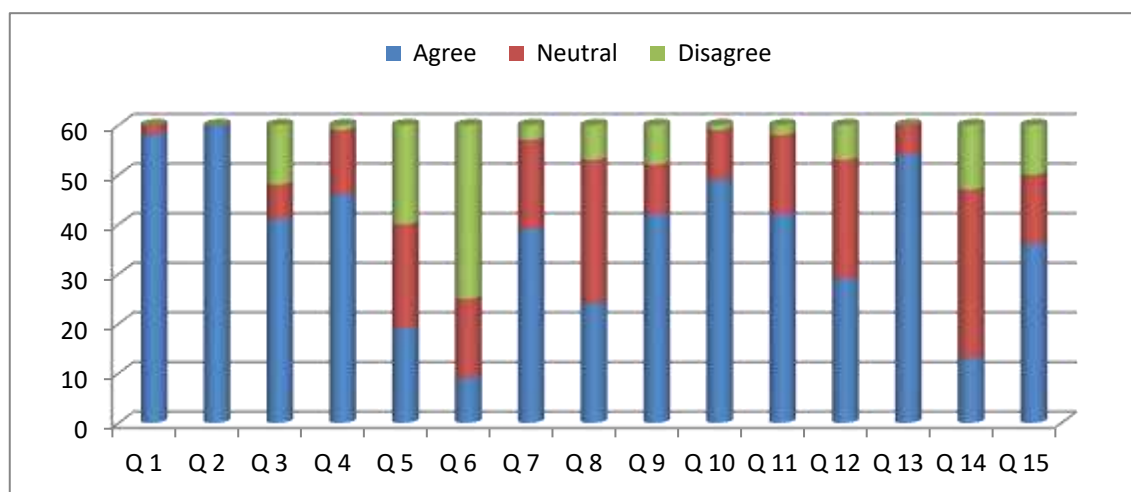


Figure 1. Experience with AI Tools

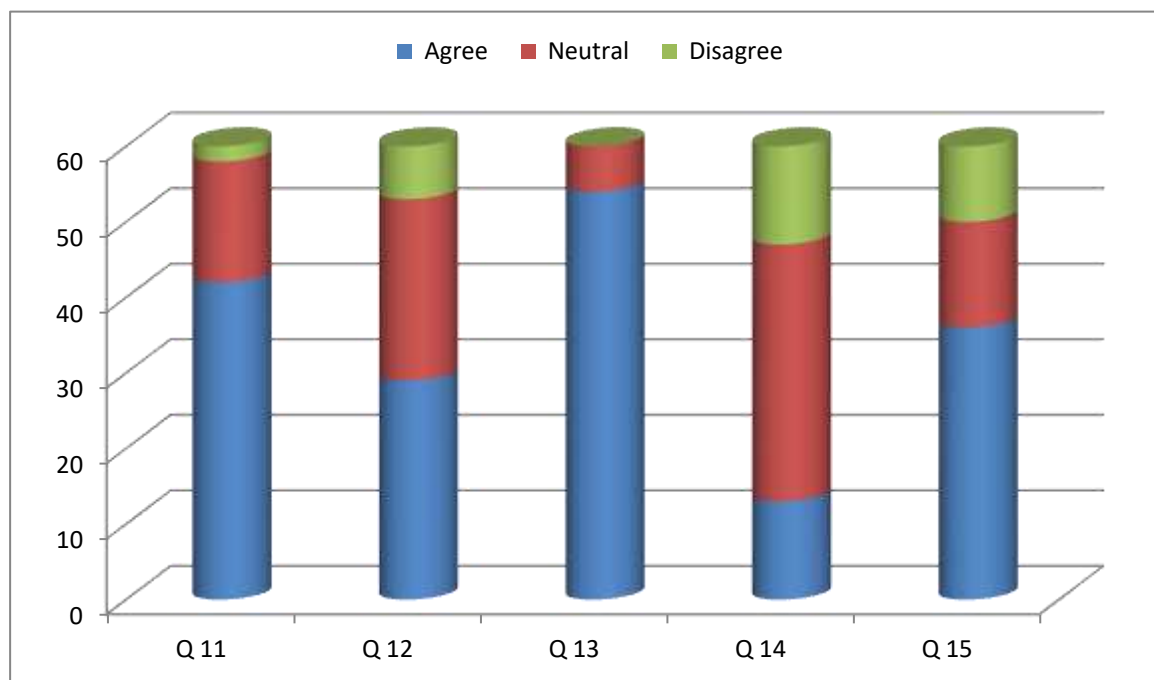
The results from Section 1 (see Figure 1 & Table 1) demonstrate that students found the AI tools easy to use ( $M = 4.93$ ,  $SD = 0.36$ ) and particularly effective in speeding up the translation process ( $M = 5.00$ ,  $SD = 0.00$ ). A majority also reported that AI helped them understand the

general meaning of literary texts ( $M = 4.50$ ,  $SD = 0.95$ ), although only about a third found the tools helpful in rendering poetic or symbolic expressions ( $M = 2.97$ ,  $SD = 1.63$ ). A significant number of students indicated the need for post-editing and correction of AI outputs ( $M = 4.20$ ,  $SD = 1.18$ ), while many observed that the AI failed to preserve essential literary features such as imagery, tone, and rhythm ( $M = 3.57$ ,  $SD = 1.33$ ). Encouragingly, AI tools were reported to foster critical engagement with language choices ( $M = 4.60$ ,  $SD = 0.89$ ) and to enrich learners' vocabulary through exposure to varied linguistic patterns ( $M = 4.13$ ,  $SD = 1.44$ ).

**Table 1. Descriptive Statistics of Student Responses to Experience with AI Tools**

NO	Item	Agree (n) (%)	Neutral (n) (%)	Disagree (n) (%)	Mean	SD
1.	The AI tool was easy to use.	58 96.7%	2 3.3%	0 0.0%	4.93	0.36
2.	The translation process was faster with AI tools.	60 100.0%	0 0.0%	0 0.0%	5.00	0.00
3.	I understood how to operate the tool without help.	41 68.3%	7 11.7%	12 20.0%	3.97	1.63
4.	The AI helped me understand the general meaning of the text.	46 76.7%	13 21.7%	1 1.7%	4.50	0.95
5.	The tool was helpful with poetic or symbolic expressions.	19 31.7%	21 35.0%	20 33.3%	2.97	1.63
6.	The AI translation lacked emotional or cultural depth.	9 15.0%	16 26.7%	35 58.3%	2.13	1.49
7.	I had to edit or correct many parts of the translation.	39 65.0%	18 30.0%	3 5.0%	4.20	1.18
8.	The AI translation missed important literary features.	24 40.0%	29 48.3%	7 11.7%	3.57	1.33
9.	I learned new expressions or vocabulary from AI-generated text.	42 70.0%	10 16.7%	8 13.3%	4.13	1.44
10.	AI tools made me think critically about language choices.	49 81.7%	10 16.7%	1 1.7%	4.60	0.89
11.	AI tools are useful for learning how to translate literary texts.	42 70.0%	16 26.7%	2 3.3%	4.33	1.08
12.	AI should be a support tool, not a replacement.	29 48.3%	24 40.0%	7 11.7%	3.73	1.38
13.	I will continue using AI tools in literary translation.	54 90.0%	6 10.0%	0 0.0%	4.80	0.61
14.	Over-reliance on AI might hinder my development.	13 21.7%	34 56.7%	13 21.7%	3.00	1.33
15.	Lecturers should guide students in using AI properly.	36 60.0%	14 23.3%	10 16.7%	3.87	1.53

## Section 2: General Attitudes Toward AI



**Figure 1. General Attitudes Toward AI**

As shown in Figure 2 & Table 2, the responses in Section 2 reflect a cautiously optimistic outlook. Most students agreed that AI tools are useful for learning how to translate literary texts ( $M = 4.33$ ,  $SD = 1.08$ ) and expressed willingness to continue using them in the future ( $M = 4.80$ ,  $SD = 0.61$ ). However, responses were more divided regarding the developmental risks of over-reliance on AI ( $M = 3.00$ ,  $SD = 1.33$ ) and the proposition that AI should serve strictly as a supplementary, not replacement, tool for human translators ( $M = 3.73$ ,  $SD = 1.38$ ). Strong support was noted for the integration of instructor guidance in AI-assisted translation learning ( $M = 3.87$ ,  $SD = 1.53$ ).

**Table 1. Descriptive Statistics of Student Responses to General Attitudes Toward AI**

NO	Item	Agree (n) (%)	Neutral (n) (%)	Disagree (n) (%)	Mean	SD
16.	AI tools are useful for learning how to translate literary texts.	42 70.0%	16 26.7%	2 3.3%	4.33	1.08
17.	AI should be a support tool, not a replacement.	29 48.3%	24 40.0%	7 11.7%	3.73	1.38
18.	I will continue using AI tools in literary translation.	54 90.0%	6 10.0%	0 0.0%	4.80	0.61
19.	Over-reliance on AI might hinder my development.	13 21.7%	34 56.7%	13 21.7%	3.00	1.33
20.	Lecturers should guide students in using AI properly.	36 60.0%	14 23.3%	10 16.7%	3.87	1.53



## Discussion (مناقشة)

The findings of this study reveal a complex and evolving landscape in which artificial intelligence (AI) is increasingly integrated into the pedagogical practices of literary translation. The overall student response suggests cautious optimism, marked by enthusiasm for the efficiency and accessibility of AI tools, alongside concern for their limitations in handling nuanced literary content. Stylistics and translation are closely linked through their shared focus on linguistic detail and authorial choices, which shape reader interpretation and convey subtle elements like attitude, ideology, or narrative perspective. (Boase-Beier, 2023; Budiningsih et al., 2024; Pallawagau et al., 2025; Ayad et al., 2025).

One of the most significant findings in this study was the students' overwhelming agreement that AI tools accelerated the translation process and were generally easy to use. This aligns with studies such as Klimova et al. (2023) and Dorothy (2017), who emphasized that AI-based translation software can enhance workflow efficiency and lower entry barriers for novice translators. The results also resonate with many studies which highlighted the transformative potential of AI in higher education, particularly in language learning (Baroud et al., 2024; Hilman et al., 2024; Almajri et al., 2025).

However, students were more critical when it came to AI's ability to interpret and reproduce the poetic, metaphorical, and symbolic richness of literary texts. These results support critiques by scholars, who contend that machine translation tools struggle with capturing tone, rhythm, and emotion, core features of literary discourse. The relatively low mean scores for these aspects underscore the limitations of current AI technologies when confronted with interpretative complexity (Toral & Way, 2015; Ichwan et al., 2024; Abraham & Baroud, 2025). Interestingly, students indicated that using AI tools prompted them to reflect critically on language choices and learn new vocabulary, thus highlighting the pedagogical affordances of AI-assisted translation. This reflects the insights of Garcia and Pena (2011), who viewed AI translation as a valuable learning scaffold rather than a passive tool. Moreover, students' willingness to continue using AI tools for translation despite their shortcomings mirrors the findings of Zawacki-Richter et al. (2019), and Hajjiah et al., (2025) suggesting that digital literacy and familiarity with AI contribute to greater learner autonomy and confidence.

An area of concern highlighted by this study was the need for pedagogical guidance in AI tool usage. A significant proportion of students expressed that lecturers should play a role in helping them use AI tools properly. Studies underscore the need for safeguards and careful evaluation of AI tools, implicitly calling for teacher involvement to ensure proper use. The students' request for lecturer guidance reinforces this point, emphasizing that without pedagogical support, learners may misuse or misinterpret AI-generated outputs, especially in nuanced tasks like literary translation (Özdere, 2023; Hamidah & Masuwd, 2024; Masuwd et al., 2024; Ruslan et al., 2024). Without this, there is a risk of misapplication or over-reliance, which could hinder deeper learning and critical thinking.

Furthermore, while most students appreciated AI's practical value, they were divided on whether over-reliance could negatively affect their development as translators. This aligns with the findings of recent research on AI-assisted literary translation, which demonstrated that while students using AI tools outperformed their peers in both translation and back translation tasks, concerns remain regarding the depth, reliability, and appropriateness of AI-generated translations for literary texts (Alkodimi et al., 2024; Baroud, 2024; Kasheem et al., 2025; Alsayd et al., 2025).

The present study reinforces this tension; students acknowledge the effectiveness of AI in improving surface-level accuracy and efficiency, but also express caution about its limitations in fostering deeper translational competence and stylistic sensitivity. This supports the broader discourse that while AI can be a valuable asset in translation education, it must be employed with pedagogical foresight to avoid diminishing learners' critical and interpretive skills (Alouzi, 2024; Hasibuan et al., 2024; Masoud et al., 2025; Husayn et al., 2025; Baroud & Aljarmi, 2025). The positive student perception regarding vocabulary development also corresponds with findings by Nykyporets et al. (2024) and Wei-Xun et al. (2024) who noted that AI tools often expose students to novel lexical and syntactic structures, thereby enriching their linguistic competence.

Finally, the cultural and emotional limitations of AI-generated translations underscore the continued necessity of human involvement in literary translation. As underlined by Castilho et al. (2018), AI is unlikely to replicate the interpretive sensitivity and aesthetic judgment that human translators bring to the task (Alzletni et al., 2025; Manshur et al., 2025; Masuwd, 2025; Alriteemi et al., 2025). The students' awareness of these limitations is an encouraging sign of digital maturity, aligning with recent calls for critical digital pedagogy in translation education (Cronin, 2025).



## Conclusion (خاتمة)

The findings of this study underscore the evolving role of artificial intelligence in literary translation education. While students appreciated the convenience and speed provided by AI tools, they remained critically aware of their limitations in capturing the emotional and stylistic subtleties essential to literary texts. This dual awareness suggests that students are not passive consumers of technology but are capable of engaging with AI tools thoughtfully and reflectively. The study also revealed a strong desire for pedagogical support, with many students advocating for structured guidance from lecturers in navigating the benefits and boundaries of AI-assisted translation. Ultimately, AI tools offer promising opportunities for enhancing translation learning when used as part of a balanced, human-centered educational framework. The integration of these tools should not replace traditional instruction but rather complement it by fostering digital literacy, critical thinking, and linguistic exploration.



## Bibliography (مراجع)

- Alkodimi, K. A., Alqahtani, O. A., & Al-Wasy, B. Q. (Trans.). (2024). Human-AI collaboration in translation and back translation of literary texts. *Journal of Social Studies*, 30(2), 173–192. <https://doi.org/10.20428/jss.v30i2.2404>
- Abraham Masuwd, M. ., & Baroud, N. . (2025). EXPLORING CULTURAL, POLITICAL, AND SOCIOECONOMIC INFLUENCES ON COLLECTIVE PSYCHOLOGICAL RESILIENCE IN LIBYA. *Jurnal Ilmu Psikologi Dan Kesehatan (SIKONTAN)*, 3(4), 163–176. <https://doi.org/10.47353/sikontan.v3i4.2784>
- Almajri, S., Baroud, N., Alouzi, K. M., & Kasheem, A. (2025). Islamic psychology: An integrative approach to human behavior and mental well-being. *Bulletin of Islamic Research*, 3(4), 687–704. <https://doi.org/10.69526/bir.v3i4.353>
- Almaktary, H. (2025). Reflections on translating poetry through ChatGPT: Insights from Arabic, English, and French. *Journal of English Studies in Arabia Felix*, 4(1), 1–12. <https://doi.org/10.56540/jesaf.v4i1.108>
- Alouzi, K. M. (2024). Assessment of requirements for the creation of course materials for English as a second language for students majoring in subjects other than English. *Majalah Journal of English*

- Studies*, 2(1), 19–34. <https://doi.org/10.69965/mjes.v2i1.105>
- Alriteemi, A., Masuwd, M., Masoud, M., Alsayd, A., Aboujanah, Y., Alrumayh, S., & Ayad, N. (2025). The geography of place in the Qur'anic narrative: A hermeneutical study of the story of Moses and Al-Khidr through the lenses of philosophical symbolism and pedagogical perception. *Tebuireng: Journal of Islamic Studies and Society*, 6(1), 119–138. <https://doi.org/10.33752/tjiss.v6i1.9813>
- Alsayd, A., Masoud, M., Abdullah, M., Alzletni, N., Maati, A., Barka, A., & Baroud, N. (2025). Postgraduate students' usage patterns, perceptions, and attitudes toward artificial intelligence applications in learning: A case study of the University of Zawia, Libya. *Journal of Education and Teacher Training Innovation*, 3(1), 1–24. <https://doi.org/10.61227/jetti.v3i1.149>
- Alzletni, N., Albshkar, H., Ayad, N., Alsayd, A., & Alouzi, K. (2025). Al-Syi'r al-Shufi al-Mu'ashir: Dirasah lughawiyah dalaliyah liqasha'id mukhtarah li al-Syaikh Muhammad al-Mahjub Hasan al-Libiy. *International Journal of Da'wah and Islamic Contemporary Issues*, 1(1), 37–47. <https://journal.itqanpreneurs.com/index.php/ijdici/article/view/100>
- Ayad, N., Masuwd, M. A., & Alrumayh, S. (2025). From riba to zakat: An analytical study of Islamic economic principles and their distinction from conventional economics. *Bulletin of Islamic Research*, 3(4), 733–752. <https://doi.org/10.69526/bir.v3i4.358>
- Baroud, N. (2024). A systematic comparison of students' attitudes toward practical work in chemistry department, Faculty of Education, Zawia - University of Zawia. *IJCER (International Journal of Chemistry Education Research)*, 8(2), 137–143. <https://doi.org/10.20885/ijcer.vol8.iss2.art7>
- Baroud, N., & Aljarmi, A. (2025). Enhancing students' understanding of hybridization in organic compounds through a flipped classroom approach combined with game-based learning. *Jurnal Pijar MIPA*, 20(3), 387–393. <https://doi.org/10.29303/jpm.v20i3.8725>
- Baroud, N., Alouzi, K., Elfzzani, Z., Ayad, N., & Albshkar, H. (2024). Educators' perspectives on using (AI) as a content creation tool in Libyan higher education: A case study of the University of Zawia. *JERIT: Journal of Educational Research and Innovation Technology*, 1(2), 61–70. <https://doi.org/10.34125/jerit.v1i2.12>
- Boase-Beier, J. (2023). Stylistics and translation. In M. Burke (Ed.), *The Routledge handbook of stylistics* (pp. 420–435). Routledge.
- Budiningsih, I., Oktapiani, M., Rijanto, W., & Masuwd, M. A. (2024). Comparative analysis of creative assignments, participatory collaborative learning, and students' satisfaction in digital & non-digital learning media. *Jurnal Pendidikan Progresif*, 14(3), 1900–1913. <http://dx.doi.org/10.23960/jpp.v14.i3.2024129>
- Castilho, S., Doherty, S., Gaspari, F., & Moorkens, J. (2018). Approaches to human and machine translation quality assessment. In J. Moorkens, S. Castilho, F. Gaspari, & S. Doherty (Eds.), *Translation quality assessment* (pp. 59–86). Cham: Springer. [https://doi.org/10.1007/978-3-319-91241-7\\_2](https://doi.org/10.1007/978-3-319-91241-7_2)
- Cronin, M. (2025). Translation and machinic ecologies. In *Writing forward* (pp. 84–100). London: Routledge.
- Garcia, I., & Pena, M. I. (2011). Machine translation-assisted language learning: Writing for beginners. *Computer Assisted Language Learning*, 24(5), 471–487. <https://doi.org/10.1080/09588221.2011.582687>
- Hajjiah, A., Nasution, M., Hasibuan, N. A. P., Hilda, L., & Baroud, N. Y. (2025). Fostering critical thinking through socio-scientific issue-based problem-based learning in stoichiometry instruction. *JTK (Jurnal Tadris Kimiya)*, 10(1), 35–44. <https://doi.org/10.15575/jtk.v10i1.43992>
- Hamidah, N., & Masuwd, M. A. (2024). An examination of English instruction in a classroom that includes students with diverse needs: A detailed analysis. *Majapahit Journal of English Studies*, 1(2), 116–130. <https://doi.org/10.69965/mjes.v1i2.83>
- Hasibuan, A., Nasution, I. F. A., & Masuwd, M. (2024). Tarekat in the digital age: Transforming spirituality for the age of technology. *Religia*, 27(1), 13–30. <https://doi.org/10.28918/religia.v27i1.2306>
- Hilman, C., Ishom, M., Sarkawi, S., & Alouzi, K. M. (2024). Adoption of mobile-assisted language learning in improving college students' English listening skills. *International Journal of Teaching and Learning*, 2(10), 2711–2722.

- Husayn, E., Alrumayh, S., Kasheem, M., Ibrahim, D., Alouzi, K., Shalghoum, N., & Almajri, S. (2025). The impact of artificial intelligence on knowledge management: Faculty perspectives from the University of Zawia's Faculties of Economics, Management, and Law. *Journal of Education and Teacher Training Innovation*, 3(1), 52–66. <https://doi.org/10.61227/jetti.v3i1.163>
- Ichwan, M. N., Ulama'i, A. H. A., Masuwad, M. A., & Abdulghani, N. A. (2024). Sufism and Quranic interpretation: Bridging spirituality, culture, and political discourse in Muslim societies. *Ulumuna*, 28(2), 655–680. <https://doi.org/10.20414/uji.v28i2.1082>
- Kasheem, A., Baroud, N., & Almajri, S. K. (2025). The role of emotional intelligence in enhancing teacher-student relationships in rural schools. *SIBATIK Journal: Jurnal Ilmiah Bidang Sosial, Ekonomi, Budaya, Teknologi, dan Pendidikan*, 4(8), 1693–1704.
- Kenny, D. (Ed.). (2017). *Human issues in translation technology*. London & New York: Routledge.
- Klimova, B., Pikhart, M., Delorme Benites, A., Lehr, C., & Sanchez-Stockhammer, C. (2023). Neural machine translation in foreign language teaching and learning: A systematic review. *Education and Information Technologies*, 28(1), 663–682. <https://doi.org/10.1007/s10639-022-11194-2>
- Manapbayeva, Z., Zaurbekova, G., Ayazbekova, K., Kazezova, A., & Pirmanova, K. (2024). AI in literary translation: ChatGPT-4 vs. professional human translation of Abai's poem 'Spring'. *Procedia Computer Science*, 251, 526–531. <https://doi.org/10.1016/j.procs.2024.11.143>
- Manshur, U., Hadi, N., & Masuwad, M. A. (2025). Classical cooperative learning model for reading classic literature: Enhancing student independence through self-regulation. *Izdihar: Journal of Arabic Language Teaching, Linguistics, and Literature*, 8(1), 105–120. <https://doi.org/10.22219/jiz.v8i1.36829>
- Masoud, M., Alsayd, A., & Kasheem, M. (2025). Global trends and challenges in teacher training: A bibliometric analysis (2019–2024). *Bulletin of Islamic Research*, 3(4), 705–732. <https://doi.org/10.69526/bir.v3i4.356>
- Masuwad, M. A. (2025). Hadith, law, and orientalism: A critical study of Joseph Schacht's theoretical contributions. *Ad-Dawl: Jurnal Islamic Studies*, 1(1), 10–24.
- Masuwad, M., Sumanik, E. D., Sarkawi, S., & Bani Amer, M. A. (2024). Measuring foreign language anxiety: Concerning students' motivation and their self-perception. *International Journal of Teaching and Learning*, 2(8), 2087–2099.
- Nykyporets, S. S., Pradivlyanny, M. H., Boiko, Y. V., Chopliak, V. V., & Kukharchuk, H. V. (2024). Innovative techniques in vocabulary acquisition for foreign language learning: The impact of artificial intelligence. *Супільство та національні інтереси*, 5(5), 113–127.
- Obeidat, M., & Jaradat, M. (2024). Artificial intelligence accuracy in translating resistance literature from Arabic into English: Google Translate and ChatGPT as a model. *Research Journal in Advanced Humanities*, 5(2). <https://doi.org/10.58256/9yz4dx79>
- Özdere, M. (2023). The integration of artificial intelligence in English education: Opportunities and challenges. *Language Education and Technology*, 3(2).
- Pallawagau, B., Masuwad, M. A., Alsayd, A. D., Albshkar, H. A., & Alzletni, N. S. (2025). Nasruddin Umar's love curriculum and its relation to Arabic language teaching: Socio-linguistic and semantic studies/منهج الحب عند نصر الدين عمر وعلاقته بتعليم اللغة العربية: دراسات اجتماعية لغوية ودلالية. *Ijaz Arabi Journal of Arabic Learning*, 8(2). <https://doi.org/10.18860/ijazarabi.v8i2.32264>
- Ruslan, R., Faijah, N., Luthfiyah, L., & Alouzi, K. M. (2024). Facing the independent curriculum: Teacher challenges and strategies in the evaluation of Islamic religious education learning. *Jurnal At-Tarbiyat: Jurnal Pendidikan Islam*, 7(2). <https://doi.org/10.37758/jat.v7i2.861>
- Toral, A., & Way, A. (2015). Machine-assisted translation of literary text: A case study. *Translation Spaces*, 4(2), 240–267.
- Wei-Xun, L., & Jia-Ying, Z. (2024). Impact of AI-driven language learning apps on vocabulary acquisition among English learners. *Research Studies in English Language Teaching and Learning*, 2(1), 1–11.
- Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education—Where are the educators? *International Journal of Educational Technology in Higher Education*, 16(1), 1–27. <https://doi.org/10.1186/s41239-019-0171-0>