

INTEGRATING AI MEDIA IN ARABIC TRANSLATION FOR HIGHER EDUCATION IN INDONESIA

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Abstract

This study examines the integration of AI media, specifically ChatGPT, in Arabic translation within higher education in Indonesia. Recognizing Arabic's importance in religious, cultural, and academic contexts, the research evaluates the impact of AI media on translation quality, focusing on linguistic precision, semantic fidelity, grammatical accuracy, and contextual relevance. A quasi-experimental design involved 50 participants divided into control and experimental groups using traditional and AI-supported translation methods, respectively. Pre- and post-test results showed significant improvements in the experimental group across all translation indicators. Statistical analysis using Pearson's Product Moment Correlation Coefficient revealed a strong positive correlation (0.91) between AI media use and translation quality. Despite challenges such as prompt specificity and Arabic's linguistic complexities, the findings highlight AI media's potential to enhance translation accuracy and engage students in learning. Policy recommendations include establishing guidelines and training programs to ensure ethical, secure, and effective AI integration into language education.

Keywords: AI Media, ChatGPT, Arabic Translation, Language Learning, Indonesian Higher Education, Educational Technology.

1. INTRODUCTION

Artificial intelligence (AI) has emerged as a transformative technology across various domains, including education and linguistics. Defined as the simulation of human intelligence by machines to perform tasks like problem-solving, decision-making, and language processing (Dong et al., 2020; Jarrahi, 2018). AI has demonstrated its ability to address complex challenges that traditional methods cannot. One significant application lies in language translation, where AI tools like ChatGPT offer real-time, adaptive, and context-aware solutions (Bhattacharya et al., 2024; Nazir & Wang, 2023), providing substantial benefits to language learners and educators.

In Indonesia, where higher education institutions play a crucial role in fostering Arabic language proficiency for religious studies, cultural discourse, and academic research, the potential of AI tools is increasingly relevant. Students often face challenges in mastering Arabic syntax and semantics (Safrullah et al., 2022), which hinder their ability to access and translate scholarly texts effectively. These challenges align closely with the capabilities of AI-driven tools like ChatGPT, which can provide personalized assistance, address linguistic intricacies, and improve translation accuracy (Ningrum et al., 2024). Thus, integrating such technologies offers a promising solution to bridge the gap between traditional Arabic language instruction and the growing demand for high-quality translations in academic and professional settings.

While AI integration in language learning has gained global traction, its application in Arabic translation remains limited (Sallam et al., 2024; Seyidov, 2024). Most research efforts have focused on widely spoken languages such as English, French, and Mandarin, where AI tools have shown significant advancements (Kannan & Munday, 2018). This disparity has left languages like Arabic—known for its unique morphological complexity and contextual nuances—underrepresented in AI development. The challenges posed by Arabic's linguistic features require tailored solutions, yet these complexities are often overlooked in educational AI research. Consequently, the lack of studies addressing Arabic-specific applications creates a critical gap in understanding how AI can effectively support Arabic translation and learning, underscoring the need for equitable research attention to foster AI tools adapted to Arabic language learners.

This study aims to bridge this gap by exploring the integration of ChatGPT in Arabic translation within Indonesian higher education. Specifically, it evaluates how AI tools can enhance translation accuracy, streamline learning processes, and support pedagogical outcomes for Arabic language learners. By examining these dimensions, the study provides insights into the broader applicability of AI in addressing linguistic challenges unique to the Arabic language. Additionally, it investigates how adopting ChatGPT can foster student engagement and motivation in mastering complex language structures. This research also seeks to contribute to the development of AI-driven methodologies tailored to Indonesia's unique linguistic and cultural context.

Despite its potential, integrating AI technologies like ChatGPT into educational settings for Arabic translation presents challenges. One significant issue lies in the need for precise and contextually accurate prompts, as ChatGPT's effectiveness relies heavily on the specificity of user instructions. Arabic's unique morphological complexity and contextual nuances pose additional difficulties for AI tools (AlAfnan, 2025), which may misinterpret vague or ambiguous commands. For example, insufficiently detailed prompts can lead to translation errors, such as incorrect word choices or improper grammatical structures, undermining the learning process (Nasim & Mujeeba, 2024). These challenges highlight the importance of developing strategies and frameworks to use ChatGPT effectively, ensuring that prompts are tailored to capture Arabic's linguistic intricacies and deliver accurate translations. Therefore, integrating AI like ChatGPT into Arabic translation in education requires clear strategies to ensure prompt specificity and accuracy in handling the language's unique complexities.

The novelty of this research lies in its focus on Arabic translation—a relatively underexplored area within AI-assisted language education. By situating the study in the Indonesian context, this research highlights the interplay between cultural, linguistic, and technological factors, offering a unique perspective on AI integration in higher education. Moreover, it aims to demonstrate how AI can address specific challenges faced by Indonesian students in learning Arabic, such as contextual nuances and morphological complexity.

This paper seeks to address key questions regarding the feasibility, benefits, and challenges of utilizing ChatGPT for Arabic translation in Indonesian universities. The findings aim to inform policymakers and educators, paving the way for more effective and inclusive

approaches to integrating AI into translation practices. Additionally, this research aspires to serve as a benchmark for adopting AI technologies in higher education translation, fostering innovation and addressing linguistic complexities. By bridging the gap between traditional translation methods and modern AI advancements, this study lays the groundwork for sustainable and impactful language translation reforms in Indonesian universities.

1.1 Research Objective

To establish the relationship between the utilization of ChatGPT as an AI media and its effectiveness in Arabic translation within higher education institutions in Indonesia.

1.2 Research Hypotheses

Based on the research objectives, the following null and alternate hypotheses have been formulated:

H0. There exists no significant relationship between the utilization of ChatGPT and the accuracy and effectiveness of Arabic translation in higher education institutions.

H1. There exists a significant relationship between the utilization of ChatGPT and the accuracy and effectiveness of Arabic translation in higher education institutions.

2. REVIEW OF RELATED LITERATURE

2.1 Translation Theory in Education

Translation theory serves as a foundational element in understanding and teaching language translation, particularly in educational contexts. At its core, translation theory examines the methods and principles involved in transferring meaning from one language to another (Tursunovich, 2022), emphasizing both linguistic accuracy and cultural sensitivity. In education, this theory helps students recognize the differences between literal and contextual translation while fostering an appreciation for the nuances of both the source and target languages (Shan, 2024). This theoretical grounding equips students with the analytical skills needed to navigate complex translation tasks effectively, especially in multilingual and multicultural settings.

One of the central tenets of translation theory in education is the distinction between formal equivalence and dynamic equivalence, terms popularized by Eugene Nida (Grajter, 2024). Formal equivalence focuses on preserving the grammatical and structural elements of the source text, while dynamic equivalence prioritizes conveying the meaning and intent in a way that resonates with the target audience (Zhu, 2023).

In the classroom, this distinction encourages students to make informed decisions about their translation approach based on the purpose and context of the text. For example, formal equivalence may be more suitable for legal or religious documents, while dynamic equivalence might be preferable for literary works or advertising materials.

The integration of translation theory in education also emphasizes the importance of cultural competence. Language is deeply intertwined with culture, and translation often involves

interpreting idiomatic expressions, metaphors, and cultural references that may not have direct equivalents in the target language. According to Ting Wang, teaching students to understand these cultural dimensions enables them to produce translations that are both accurate and meaningful (T. Wang et al., 2023). For instance, in translating Arabic into Indonesian, students must consider cultural differences in expressions of formality, idioms, and context-specific phrases. These insights enrich the educational experience and prepare students to address real-world translation challenges with greater confidence.

In recent years, the role of technology in translation education has introduced new dimensions to traditional theories. AI-powered translation tools, such as Machine Translation (MT) systems and Natural Language Processing (NLP) applications, provide students with practical support while challenging them to critically evaluate machine-generated translations. As Pratik Syah note, these tools can be integrated into translation theory courses to explore the interplay between human creativity and machine efficiency (Shah et al., 2019). For example, students can compare AI-generated translations with manual ones to understand the limitations of automated systems and refine their own skills. This approach reinforces the relevance of translation theory in an increasingly digital world (C. Wang, 2024).

Moreover, translation theory in education fosters critical thinking and problem-solving skills. Students learn to identify ambiguities in source texts and explore multiple possibilities for their resolution, considering factors such as audience expectations, cultural connotations, and linguistic subtleties (Filladsen & Jordanzen, 2020; Roza et al., 2024). For instance, translating Arabic proverbs into Indonesian may require creative adaptations to preserve the intended meaning while ensuring the translation is relatable to the target audience. By engaging in these intellectual exercises, students gain a deeper understanding of both languages and develop practical skills applicable to professional translation tasks.

Translation theory plays a vital role in education by equipping students with tools to approach language translation analytically and creatively. Through its focus on equivalence, cultural competence, and critical thinking, translation theory bridges the gap between linguistic knowledge and real-world application. The integration of technology further enhances its relevance, preparing students for the challenges of modern translation in a globalized, digital world. By incorporating translation theory into educational curricula, institutions can cultivate skilled and thoughtful translators capable of navigating the complexities of multilingual communication.

2.2 Artificial Intelligence in Language Learning and Translation

Artificial Intelligence (AI) has made remarkable strides in enhancing Arabic translation within higher education, particularly in Indonesia. By introducing adaptive and efficient tools, AI has simplified the learning process for students and educators alike. Technologies such as Natural Language Processing (NLP) and Machine Translation (MT) have been instrumental in delivering innovative solutions that significantly improve the accuracy and speed of translation tasks (Baya & Becheri, 2024). NLP, developed with foundational contributions from Noam Chomsky, is a key component that helps computers understand, interpret, and

generate human language (Feng, 2023). For many students, understanding complex Arabic texts can be daunting, but AI tools provide a bridge to tackle these challenges with greater ease. Research by Ivan Bakhov emphasizes that AI-driven platforms not only refine translations in real time but also offer feedback that helps students learn from their mistakes (Bakhov et al., 2024). Additionally, widely used tools like Google Translate and DeepL leverage extensive data to enhance contextual understanding, minimizing human error (Y. Wang & Stockwell, 2024). These advancements in Machine Translation (MT), initially proposed by Warren Weaver in the 1950s, are transforming productivity and fostering better learning outcomes for students and academic staff in higher education (Moorkens et al., 2024). These tools also incorporate feedback learning theories, which were influenced by educators like B.F. Skinner and John Dewey, to enhance learning through corrective feedback (Lamtara, 2023).

One of the most compelling benefits of AI in Arabic translation is its ability to personalize the language learning experience. Every student approaches learning with unique needs, preferences, and paces, and AI is adept at accommodating these differences. Ashraf Alam notes that AI-powered learning systems engage students by tailoring content to their specific strengths and weaknesses, making lessons more relatable and effective (Alam, 2023). Tools like chatbots and virtual assistants go further, simulating real-world scenarios where students can practice translation without fear of judgment. Imagine a student in a remote area practicing Arabic translation with a virtual tutor available 24/7, receiving instant corrections and encouragement. This kind of personalized support allows learners to develop confidence and proficiency at their own pace. It is this focus on individual growth that sets AI apart as a transformative tool in language education.

Efficiency and accuracy are two hallmarks of AI's contributions to Arabic translation in higher education (Alkodimi et al., 2024), and they address long-standing challenges in the field. Traditional methods often require substantial time and effort, making them less suitable for the fast-paced academic environment of today (Gaspari et al., 2015). AI-driven systems, powered by deep learning algorithms, are capable of processing extensive volumes of text in a fraction of the time. These systems excel in understanding the nuances of Arabic syntax and semantics, producing translations that are contextually rich and precise. For academic staff, the integration of AI reduces workload pressures, freeing them to focus on developing more engaging teaching materials or conducting impactful research. As noted by Valentine Kuleto, such efficiency leads to an overall improvement in the quality of education, allowing institutions to better meet the needs of both students and educators (Kuleto et al., 2021).

AI also fosters a collaborative approach to learning, transforming classroom dynamics and beyond. Through AI-powered translation platforms, students can work together on projects, challenge each other with translation problems, and track their collective progress. Such group activities not only sharpen critical thinking and teamwork skills but also deepen their understanding of the Arabic language. Collaborative environments like these encourage students to engage with peers, learn from different perspectives, and build a sense of community. Ji Ling et al. suggest that when AI is integrated into cooperative learning settings,

students achieve higher levels of academic success compared to working individually (Li et al., 2024). This integration of technical tools with social learning is vital for preparing students for the multifaceted demands of the modern workplace.

Moreover, AI enables unparalleled flexibility in how Arabic translation education is delivered, particularly in the context of remote learning. With AI-driven resources, students can access translation exercises and learning materials anytime and anywhere, accommodating their varying schedules and commitments. Virtual tutors and automated grading systems play a significant role in providing immediate feedback, allowing learners to identify areas of improvement and track their progress independently. Ammar Abulibdeh highlights how this level of flexibility empowers students to take ownership of their learning journeys, leading to more meaningful and lasting outcomes (Abulibdeh et al., 2024). In Indonesia, where geographic and infrastructural challenges can limit access to quality education, such adaptability ensures that no student is left behind.

Finally, the broader impact of AI on academic performance in Arabic translation cannot be overstated. By automating routine tasks like grading and text analysis, AI relieves educators of time-consuming responsibilities, allowing them to focus on fostering critical thinking and deeper engagement in their students. Studies by Ramteja Sajja show that AI adoption correlates with higher academic performance, driven by the accessibility of tailored support and enhanced learning tools (Sajja et al., 2024). Whether through individual practice or collaborative projects, AI equips students with the skills they need to thrive in an increasingly globalized world. The combination of in-person and remote learning opportunities further ensures that institutions can deliver high-quality education to diverse groups of students. By integrating AI media into Arabic translation, higher education in Indonesia is not only advancing its academic standards but also preparing future generations for the challenges and opportunities of the digital era.

2.3 Challenges in Arabic Language Translation

The process of Arabic language translation in higher education, particularly in Indonesia, faces several challenges that stem from the inherent complexity of the language and the integration of technology. Arabic, with its intricate syntax, rich morphology, and reliance on diacritical marks, requires a deep understanding of its structure and cultural context (Haddad-Najjar & Abu-Rabia, 2024; Zemni et al., 2024). This complexity often makes it difficult for students to translate accurately without significant practice and guidance. While AI tools such as Natural Language Processing (NLP) and Machine Translation (MT) offer promising solutions, they are far from perfect. Many AI systems still struggle with interpreting the nuances of classical Arabic texts, idiomatic expressions, and the subtle variations in meaning that arise from different dialects (Al-Hamzi et al., 2024). As a result, errors can emerge in translations, diminishing their quality and requiring human intervention to ensure accuracy and cultural relevance.

Furthermore, AI-powered systems are not yet fully capable of translating Arabic with the same fluency as they do with languages like English (Mohamed et al., 2024). There is a noticeable

gap in the AI's ability to handle the distinct syntactical structures and vocabulary of Arabic, which differ significantly from English. This limitation leads to frequent errors in translations, particularly in complex or specialized texts. Research has shown that while AI has made significant advancements, many tools still struggle with delivering accurate translations of Arabic, as they often fail to fully capture the meaning intended in the original text.

Ethical concerns and data privacy issues also complicate the adoption of AI in Arabic translation. Educators and students often hesitate to use AI tools due to concerns about the security of sensitive information processed by these systems. According to Y Shi et al., AI translation tools rely on large datasets, which can sometimes include biased or unverified information, leading to problematic outcomes (Shi et al., 2024). Additionally, the lack of clear ethical guidelines on how AI should be used in educational settings creates uncertainty (Mouta et al., 2024; Schiff, 2022). For example, there is often a fear that students might misuse AI for academic dishonesty, such as generating translations without understanding the source material. Addressing these ethical challenges requires institutions to implement robust policies that ensure transparency, data security, and ethical use of AI in academic environments.

Another significant challenge is the digital literacy of both educators and students. While AI tools can offer substantial benefits, their effectiveness depends on the user's ability to navigate and utilize them properly. In Indonesia, disparities in access to technology and training can hinder the widespread adoption of AI in Arabic translation. Many educators lack the necessary skills to integrate AI tools effectively into their teaching methods, while students may struggle to adapt to technology-driven learning environments. Yusriadi et al, emphasize the importance of ongoing training and support to bridge this gap, enabling users to maximize the potential of AI tools (Yusriadi et al., 2022). Without targeted efforts to improve digital literacy, the benefits of AI in Arabic translation may remain out of reach for many students and educators.

Cultural and contextual nuances in Arabic translation present another layer of complexity. Unlike many other languages, Arabic is deeply tied to its cultural and religious heritage, influencing its vocabulary, syntax, and expressions (Setiadi, 2023). AI tools often fail to grasp these subtleties, leading to translations that may be technically accurate but lack cultural relevance (Taghian, 2024). For example, a literal translation of a religious text might miss the deeper spiritual connotations intended in the original Arabic. This limitation underscores the need for human oversight in translation tasks, especially in academic contexts where accuracy and cultural sensitivity are critical. Educators must play a crucial role in teaching students how to evaluate and refine AI-generated translations to ensure they meet the required standards.

Resistance to adopting AI in Arabic translation is also a significant barrier, driven by fears of dehumanization and job displacement. Many educators and professional translators worry that reliance on AI could diminish the importance of traditional language learning and translation skills. This skepticism often stems from the perception that AI tools are a threat rather than a complement to human expertise. Aditya Kumar and Dheeraj Kumar Nagar note that promoting AI as an assistive tool—one that enhances rather than replaces human translators—

is essential for overcoming this resistance (Kumar & Nagar, 2024). Institutions must focus on fostering a balanced approach that integrates AI into the learning process while emphasizing the irreplaceable value of human judgment and creativity. The challenges in Arabic language translation for higher education in Indonesia are both technical and human-centric. From the complexity of the language itself to ethical concerns, digital literacy gaps, and resistance to AI adoption, these barriers require a multifaceted approach to address. By developing robust training programs, ethical frameworks, and culturally aware translation practices, institutions can overcome these challenges. Emphasizing the role of human oversight alongside AI integration will ensure that Arabic translation education remains both effective and authentic, ultimately empowering students and educators to excel in a rapidly evolving digital landscape.

One of the most compelling benefits of AI in Arabic translation is its ability to personalize the language learning experience. Every student approaches learning with unique needs, preferences, and paces, and AI is adept at accommodating these differences. Rabia Khatoon notes that AI-powered learning systems engage students by tailoring content to their specific strengths and weaknesses, making lessons more relatable and effective (Khatoon, 2025). Tools like chatbots and virtual assistants go further, simulating real-world scenarios where students can practice translation without fear of judgment. Imagine a student in a remote area practicing Arabic translation with a virtual tutor available 24/7, receiving instant corrections and encouragement. This kind of personalized support allows learners to develop confidence and proficiency at their own pace. It is this focus on individual growth that sets AI apart as a transformative tool in language education.

Efficiency and accuracy are two hallmarks of AI's contributions to Arabic translation in higher education, and they address long-standing challenges in the field. Traditional methods often require substantial time and effort, making them less suitable for the fast-paced academic environment of today. AI-driven systems, powered by deep learning algorithms, are capable of processing extensive volumes of text in a fraction of the time. These systems excel in understanding the nuances of Arabic syntax and semantics, producing translations that are contextually rich and precise. For academic staff, the integration of AI reduces workload pressures, freeing them to focus on developing more engaging teaching materials or conducting impactful research. As noted by Fouad El-Karnichi, such efficiency leads to an overall improvement in the quality of education, allowing institutions to better meet the needs of both students and educators (EL-Karnichi, 2024).

3. METHODOLOGY

This study employed a quasi-experimental research design to evaluate the effectiveness of integrating ChatGPT into Arabic translation tasks within higher education. A total of 50 participants, all students enrolled in an Arabic language program, were divided into two groups: a control group of 25 students using traditional translation methods, primarily relying on dictionaries, and an experimental group of 25 students using ChatGPT as a translation aid. Both groups completed pre- and post-tests designed to measure translation performance across four key aspects: linguistic precision, semantic fidelity, grammatical accuracy, and contextual

relevance. Translation quality was assessed using a validated rubric developed through content and face validity. Reliability testing of the rubric was conducted using Cronbach's Alpha, which yielded a strong consistency score of 0.80. The resulting data were analyzed to compare the translation performance of the two groups, determining the impact of ChatGPT on translation accuracy and efficiency. The research hypotheses were tested using Pearson's Product-Moment Correlation Coefficient to explore the relationship between the use of ChatGPT and improvements in translation quality. The decision rule specified that if the computed p-value at a 5% significance level exceeded the critical value, the null hypothesis would be rejected, indicating a significant difference in translation quality between the two groups.

4. DATA ANALYSES AND PRESENTATION

This section presents the results of the pre-test and post-test conducted in both the control and experimental groups. The findings are summarized in Tables 1 and 2.

Table 1: Pre-Test Evaluation of Translation Performance

RESPONSE LEVEL	LINGUISTIC PRECISION (%)	SEMANTIC FIDELITY (%)	GRAMMATICAL ACCURACY (%)	CONTEXTUAL RELEVANCE (%)
CONTROL GROUP				
Excellent	8	8	4	4
Good	24	28	32	28
Average	44	44	48	40
Poor	24	20	16	28
Total (Control)	100	100	100	100
EXPERIMENTAL GROUP				
Excellent	4	4	8	4
Good	24	24	24	24
Average	52	52	52	52
Poor	20	20	16	20
Total (Experimental)	100	100	100	100

Source: Field test result 2024

Table 1 presents the pre-test results for both the control and experimental groups across four key indicators: linguistic precision, semantic fidelity, grammatical accuracy, and contextual relevance. The majority of participants in both groups were rated as "Average," with 44%–52% across all indicators. Only a small percentage achieved "Excellent," with the control group showing 8% in linguistic precision and semantic fidelity, and the experimental group showing 4%–8% across all indicators. Meanwhile, a significant proportion of participants were rated as "Poor," particularly in linguistic precision and contextual relevance, with 24% in the control group and 20% in the experimental group. These results indicate that both groups had similar baseline abilities, with most participants demonstrating moderate to limited translation skills prior to the intervention.

Table 2: Post-Test Evaluation of Translation Performance

RESPONSE LEVEL	LINGUISTIC PRECISION (%)	SEMANTIC FIDELITY (%)	GRAMMATICAL ACCURACY (%)	CONTEXTUAL RELEVANCE (%)
Control Group				
Excellent	12	16	20	8
Good	36	40	32	36
Average	28	28	28	32
Poor	24	16	20	24
Total (Control)	100	100	100	100
Experimental Group				
Excellent	48	52	60	44
Good	40	36	32	40
Average	8	8	6	12
Poor	4	4	2	4
Total (Experimental)	100	100	100	100

Source: Field test result 2024

Table 2 presents the post-test results for both the control and experimental groups across the four indicators: linguistic precision, semantic fidelity, grammatical accuracy, and contextual relevance. In the control group, a slight improvement is observed, with 12%–20% of participants rated as "Excellent" across the indicators, while a majority remained in the "Good" (36%–40%) and "Average" (28%) categories. However, a significant proportion of participants (16%–24%) were still rated as "Poor," particularly in contextual relevance and linguistic precision. In contrast, the experimental group demonstrated substantial improvement, with 48%–60% achieving "Excellent" ratings and the "Poor" category reduced to 4% or less across all indicators. Most notably, 60% of participants in the experimental group were rated as "Excellent" in grammatical accuracy, and 52% achieved the same in semantic fidelity. These results highlight the significant impact of ChatGPT in improving translation quality, outperforming traditional methods employed in the control group.

4.1 Study Hypotheses

H0. There exists no significant relationship between the utilization of ChatGPT and the accuracy and effectiveness of Arabic translation in higher education institutions.

H1. There exists a significant relationship between the utilization of ChatGPT and the accuracy and effectiveness of Arabic translation in higher education institutions.

Table 3: Descriptive Statistics

Variable	Mean	Std. Deviation	N
Control Group Scores	2.75	0.96	25
Experimental Group Scores	4.52	0.81	25

Source: Field test result, 2024

The mean score in table 3. for the experimental group (4.52) is significantly higher than that of the control group (2.75), indicating that the experimental group achieved better results in Arabic translation quality. The standard deviation is lower for the experimental group (0.81), suggesting more consistent performance compared to the control group (0.96).

Table 4: Correlations

	AI Usage	Improved Translation Quality
AI Usage	1	.910**
Sig. (2-tailed)		.000
N	25	25
Improved Translation Quality	.910**	1
Sig. (2-tailed)	.000	
N	25	25

** Correlation is significant at the 0.01 level (2-tailed).

In table 4. The Pearson Correlation of 0.910** between the use of ChatGPT and the quality of Arabic translation indicates a strong positive relationship, which is statistically significant at the 0.01 level (2-tailed). This confirms that the use of ChatGPT is significantly associated with improvements in Arabic translation quality.

5. DISCUSSION

Table 3 provides a summary of the descriptive statistics for both the control and experimental groups, focusing on the post-test results. The mean score for the experimental group (4.52) was significantly higher than that of the control group (2.75), demonstrating the effectiveness of ChatGPT in enhancing translation quality. Moreover, the lower standard deviation in the experimental group (0.81) compared to the control group (0.96) suggests greater consistency in the performance of participants who used ChatGPT. This highlights the tool's potential to provide more standardized and reliable support for improving translation skills, particularly in addressing Arabic's linguistic complexities.

Table 4 confirms a strong positive correlation between the use of ChatGPT and improvements in Arabic translation quality, with a Pearson Correlation coefficient of 0.91**. This significant result at the 0.01 level (2-tailed) reinforces the conclusion that ChatGPT contributes meaningfully to translation performance. The correlation indicates that as ChatGPT is effectively utilized, students achieve better outcomes in linguistic precision, semantic fidelity, grammatical accuracy, and contextual relevance. These findings validate the research hypothesis and provide robust evidence for the tool's applicability in higher education.

This study aligns with previous research emphasizing the role of AI in education. However, its unique contribution lies in its focus on Arabic translation, a field that remains underrepresented in AI research and development (Al-Hamzi et al., 2024). While most prior studies have centered on more commonly spoken languages such as English, French, or Mandarin, this research extends the scope of AI-assisted learning by addressing Arabic's unique linguistic complexities (Mohamed et al., 2024). The study situates itself within the

Indonesian higher education context, where Arabic proficiency plays a vital role in academic and religious studies. By doing so, it highlights the adaptability of ChatGPT to cater to the nuanced needs of students learning a linguistically challenging language. The findings not only fill a critical gap in the literature but also pave the way for the development of AI tools tailored to less commonly researched languages.

The motivational benefits observed in the experimental group further highlight the importance of integrating interactive AI tools in education. ChatGPT not only improved translation quality but also fostered student engagement by offering immediate feedback and practical translation support. The tool's ability to simulate real-world translation scenarios provided a more hands-on learning experience, encouraging students to tackle complex linguistic structures with greater confidence.

Furthermore, ChatGPT's adaptive nature allowed it to address individual learner needs, making the translation process more personalized and effective. This aligns with educational theories suggesting that interactive and adaptive technologies can significantly enhance learning outcomes by reducing cognitive load and providing real-time support. The results underscore the dual role of ChatGPT as both a technical aid and a motivational tool in the language learning process.

Despite the promising results, this study also identifies key challenges in integrating ChatGPT into Arabic translation tasks. One of the primary issues lies in the dependency on prompt specificity, as ChatGPT's effectiveness is highly reliant on the clarity and precision of user instructions (AlAfnan, 2025).

Arabic's morphological complexity and contextual nuances exacerbate this challenge, as vague or poorly structured prompts can result in significant translation errors, such as incorrect word choices or improper grammatical structures. For example, a prompt that lacks contextual clarity may lead to mistranslations of idiomatic expressions or culturally specific terms, which are critical in Arabic.

These issues highlight the need for targeted training programs to equip both educators and students with the skills required for effective prompt engineering. Additionally, further research is needed to refine ChatGPT's algorithms to better handle the linguistic intricacies of Arabic, ensuring that the tool delivers accurate and contextually appropriate translations.

In conclusion, this study highlights the transformative potential of ChatGPT in Arabic translation for higher education in Indonesia. By improving key aspects of translation quality, such as linguistic precision and grammatical accuracy, ChatGPT serves as a valuable tool for addressing the unique challenges posed by Arabic. While challenges in prompt specificity and tool optimization remain, the findings provide a strong foundation for further research and the development of AI-driven strategies to support language learning in diverse educational contexts. These insights pave the way for sustainable and impactful integration of AI in translation education.

5.1 Limitations and Prospective Research Areas

Concerns regarding accessibility and implementation challenges arise in adopting AI tools like ChatGPT in educational settings. While ChatGPT itself does not require significant direct costs for usage, its effective integration into higher education often depends on institutions having adequate technological infrastructure and internet accessibility. For instance, in regions with limited technological resources or connectivity, leveraging ChatGPT as a translation aid might be challenging. Additionally, issues related to data privacy and the risk of AI-generated biases in translation need to be addressed to ensure equitable and secure use of these technologies in diverse educational contexts.

Furthermore, the results indicate that while ChatGPT significantly improves translation quality for most students, a small proportion of participants in the experimental group still demonstrated suboptimal performance, as seen in the "Poor" category across some indicators. This suggests that ChatGPT alone may not suffice for all learners, particularly those with weaker foundational language skills or difficulties in crafting precise prompts. These findings highlight the importance of complementing AI tools with tailored instructional support and continuous training to ensure that all students, regardless of their initial proficiency levels, can fully benefit from the technology.

6. POLICY IMPLICATION

The integration of AI tools like ChatGPT in higher education, particularly in Arabic translation, presents a valuable opportunity to enhance learning outcomes and streamline educational processes. However, institutions must address challenges such as digital literacy, ethical concerns, and the risk of over-reliance on AI. Ensuring students and educators understand the ethical implications of AI use is critical, particularly in avoiding plagiarism, protecting data privacy, and mitigating biases in AI-generated outputs. AI literacy programs focusing on responsible usage and prompt engineering should be introduced to help users maximize the benefits of these tools while maintaining academic integrity.

Universities also need to develop clear policies and guidelines for the ethical and practical implementation of AI technologies. These policies should address the appropriate use of AI in academic tasks, establish boundaries to prevent misuse, and ensure accessibility for all students, regardless of their institution's technological infrastructure. Equipping educators with the skills to integrate AI tools into their teaching processes and providing students with access to AI-based programs will ensure more equitable and effective implementation.

Additionally, aligning AI-based education with workforce demands is essential for preparing students for the future. By collaborating with industry partners, higher education institutions can design AI-driven curricula that equip students with both technical and ethical skills for navigating an increasingly AI-powered professional environment. This comprehensive approach will help universities unlock the full potential of AI technologies like ChatGPT, ensuring they contribute meaningfully to education while addressing challenges related to ethics and accessibility.

7. CONCLUSION

This study examined the integration of ChatGPT as an AI tool to enhance Arabic translation tasks in higher education in Indonesia. The findings confirm that ChatGPT significantly improves translation quality, particularly in linguistic precision, semantic fidelity, grammatical accuracy, and contextual relevance. While the tool addresses many challenges of traditional methods, such as limited resources and the complexities of Arabic syntax, it also highlights the importance of prompt specificity and ethical considerations for effective implementation. By bridging the gap between conventional approaches and modern technology, this study demonstrates the transformative potential of ChatGPT in language learning, providing a strong foundation for further research and paving the way for sustainable advancements in education.

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