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## Arabic Language Education Students' Perceptions of the Use of Artificial Intelligence (AI) in Arabic Language Learning

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### ABSTRACT

Advances in digital technology, particularly Artificial Intelligence (AI), have brought significant changes to the world of education, including language learning. The use of AI offers various benefits, such as access to a wide range of learning resources, instant feedback, and support for understanding material in a more interactive way. This study aims to examine the perceptions of students in the Arabic Language Education Program regarding the use of artificial intelligence in the Arabic language learning process. This study employs a quantitative approach using a survey method. Data were collected via a questionnaire distributed to Arabic Language Education students at a university. The research instrument is designed to measure several aspects of students' perceptions. AI is one of these instruments that has benefits in enhancing material comprehension. The effectiveness of AI in supporting Arabic language skills, and the potential challenges in its use. The research results indicate that the majority of students have a positive perception of the use of AI in Arabic language learning. Students believe that AI technology can assist in understanding vocabulary, grammar, as well as improve reading and writing skills in Arabic. Furthermore, the use of AI is also considered capable of enhancing learning motivation because it provides more flexible and interactive learning. However, some students also expressed concerns regarding reliance on technology and the potential reduction in direct interaction between instructors and students. Based on these findings, it can be concluded that artificial intelligence has great potential as a supportive medium in Arabic language learning at universities. However, its utilization needs to be balanced with appropriate pedagogical strategies so that the technology can be used optimally without diminishing the role

of educators in the learning process.. This study is expected to contribute to the development of technology-based learning innovations, particularly in the field of Arabic language education.

**Keywords:** Student Perceptions; Artificial Intelligence; Arabic Language Learning; Educational Technology.

## INTRODUCTION

The development of digital technology in the 21st century has brought significant changes in various fields of life, including education. One rapidly developing technological innovation is Artificial Intelligence (AI).. AI enables computer systems to mimic human cognitive abilities such as understanding language, analyzing data, and automatically providing recommendations or feedback. In the context of education, AI is beginning to be utilized to support the learning process through various applications such as intelligent tutoring systems, learning chatbots, and adaptive learning platforms that are capable of adjusting the material to the needs of students.. This technology is considered to have great potential for enhancing the effectiveness and efficiency of the learning process across various academic disciplines (Listiana, Sarah Tri Agustin dkk: 2025).

In language learning, particularly foreign languages, the presence of AI provides new opportunities for students to gain a more interactive and personalized learning experience.. AI can support the learning process through features such as automatic translation, grammar analysis, error correction, and simulation-based conversation practice. Various AI-based applications are even capable of providing immediate feedback on linguistic errors made by learners. This makes AI a promising learning tool for improving language skills such as reading, writing, listening, and speaking. In addition, students also utilize AI to assist in completing academic assignments and in finding additional learning resources more quickly and flexibly. (Kristjan-Julius Laak dan Jaan Aru: 2024).

In the context of Arabic language learning in higher education, the use of AI is beginning to attract the attention of researchers. Arabic, as a foreign language for the majority of Indonesian students, has a fairly high level of complexity, particularly in the aspects of grammar (nahwu and sharaf), vocabulary, and understanding of cultural context.. Therefore, the use of AI-based technology is seen as a way to help students understand the material more effectively. Several studies indicate that AI can serve as a tool to translate texts, practice pronunciation, and expand Arabic vocabulary. Additionally, students are utilizing AI to assist with academic assignments and to access supplementary learning resources more quickly and flexibly (Aunur S dan Khizanatul, 2025; Anggara et al., 2025; Anggara & Nashoih, 2025).

Previous research also shows that, in general, students have a positive perception of the use of AI in language learning. For example, research on the use of AI in English language learning indicates that students believe AI can help improve writing skills, correct grammar, and enrich vocabulary.. However,

several challenges were also identified, such as limitations in AI accuracy, reliance on technology, and the potential for reduced critical thinking skills if technology is overused (Humaira:2025).

Although various studies have examined the use of AI in language learning, most research still focuses on English or Indonesian and places more emphasis on the technological implementation aspects in learning in general.. Research specifically examining Arabic language education students' perceptions of AI use remains relatively limited, particularly in the context of higher education institutions in Indonesia. Furthermore, much of the existing research still employs a simple descriptive approach and has not yet comprehensively explored how students view the benefits, challenges, and pedagogical implications of using AI in Arabic language learning.

Thus, there is a research gap that needs to be further examined, namely the lack of empirical studies that specifically analyze the perceptions of Arabic Language Education students regarding the utilization of artificial intelligence in the learning process. Understanding students' perceptions becomes important because it can provide an overview of the level of acceptance, effectiveness, and potential development of AI technology in Arabic language learning at universities. In addition, this study is also expected to contribute to the development of technology-based learning strategies that are more adaptive to students' needs in the digital era..

Given this background, This study aims to analyze the perceptions of students in the Arabic Language Education Study Program regarding the utilization of artificial intelligence (AI) in Arabic language learning. This study is expected to provide an empirical overview of how students view the role of AI as a learning tool and to identify the opportunities and challenges that arise in its implementation within the higher education setting.

## LITERATURE REVIEW

### ***2.1 The Concept of Artificial Intelligence in Education***

Artificial Intelligence (AI) is one of the technological innovations that has developed rapidly over the past few decades and has had a significant impact in various fields, including education. AI is generally defined as a computer system designed to mimic human cognitive abilities such as understanding language, analyzing data, making decisions, and providing recommendations automatically. In the context of education, AI is used to support the learning process through various systems such as intelligent tutoring systems, adaptive learning, learning data analysis, as well as automated assessment systems.

The development of AI in education is also closely related to the advancement of Natural Language Processing (NLP) technology, which enables machines to understand and process human language. This technology allows for various language learning applications that can provide automatic feedback on linguistic errors and offer interactive language exercises for learners (Woo, J. H., & Choi, H. 2021).

In recent years, the integration of AI in education has increasingly developed alongside the emergence of large language model technologies and data-based digital learning systems. Research on educators' perceptions of AI shows that the majority of educational staff hold positive views on the use of AI as a learning aid, although there are still various challenges such as technological readiness, digital literacy, and the ethics of using such technology (Ghimire, A., Prather, J., & Edwards, J. 2024) .

Thus, AI functions not only as a technological tool but also as part of the transformation of the education system that promotes more personalized, adaptive, and digitally-based learning.

## ***2.2 The Utilization of AI in Language Learning***

In the field of language learning, AI has opened new opportunities for the development of more innovative learning methods. AI technology enables language learning to be conducted in a more personalized manner through adaptive learning systems that can adjust the material according to the learner's level of ability and needs.

Various studies indicate that AI is capable of enhancing learner engagement through features such as language error analysis, simulation-based conversation exercises, and instant feedback on language assignments. AI-based learning systems can also utilize learning data to identify learners' weaknesses and strengths, thereby making the learning process more effective (Woo, J. H., & Choi, H. 2021).

In the study of Computer Assisted Language Learning (CALL), AI technology is considered an advanced development in the use of computer technology in language learning. This technology allows for more interactive language learning because AI can provide immediate responses to students' learning activities.

Furthermore, recent research shows that the use of AI in language learning can increase learning motivation as well as reduce anxiety in using a foreign language. With AI-based practice systems, learners can practice the language independently without feeling afraid of making mistakes in front of others (Anggara & Nashoih, 2025; Anggara et al., 2025).

## ***2.3 Students' Perception of the Utilization of AI in Arabic Language Learning***

Students' perceptions of learning technology are one of the important factors that influence the success of technology implementation in education. Positive perceptions of technology can increase learning motivation and encourage students to make optimal use of the technology in the learning process.

Research on students' perceptions of the use of AI in Arabic language learning shows that the majority of students have a positive view of the technology. Students consider that AI can help them understand learning materials more quickly, especially in terms of text translation, grammar analysis, and searching for academic references (Amadi, Aunur Shabur Maajid, dan Khizanatul Hikmah. 2024).

However, several studies also indicate that the use of AI in language learning still faces various challenges. Some of these include students' limited digital literacy, the potential for dependence on technology, and concerns regarding the accuracy of information generated by AI systems. Therefore, the use of AI in language learning needs to be balanced with supervision and guidance from lecturers so that the technology can be optimally utilized in the learning process.

## 2.4 Hypotheses / Research Framework

This study uses a conceptual model that illustrates the relationship between AI utilization variables and students' perceptions in Arabic language learning.

Variable	Indicator	Description
Utilization of AI (X)	Ease of use	The ease for students in accessing and using AI
	Availability of learning features	Translation features, grammar analysis, language exercises
	Learning interactivity	AI is capable of providing automatic feedback
Student Perception (Y)	Learning motivation	Students' interest in studying Arabic
	Understanding of the material	The ability to understand vocabulary and grammar
	Learning effectiveness	Ease of understanding material through AI
AI Challenge (Z)	Dependence on technology	The potential of students relies too much on AI
	Language accuracy	The accuracy of AI in providing language explanations

## METHOD

### Research Design and Participants

This study uses a quantitative approach with a survey method to analyze students' perceptions of the utilization of artificial intelligence (AI) in Arabic language learning. The quantitative approach was chosen because this research aims to obtain a systematic and measurable overview of students' attitudes, views, and experiences in using AI technology as a supporting medium for learning.. The survey method allows researchers to efficiently collect data from a number of respondents through a questionnaire instrument that is designed in a structured manner.

### Instruments

The population in this study consists of all students of the Arabic Language Education Study Program at a university in Indonesia who are familiar with or use AI technology in their academic activities. This

population includes students from various cohorts who are currently enrolled in active courses. Regarding the sampling technique, purposive sampling is used, which is a method of determining samples by considering certain criteria that are relevant to the research objectives. The criteria used in this study are students who have used or utilized AI-based applications in learning activities, such as automatic translators, writing assistants, or AI-based learning platforms. The sample size in this study is adjusted to the needs of quantitative data analysis and the accessibility of respondents.

Data collection was conducted by distributing an online questionnaire via a digital survey platform. The research instrument consisted of a closed-ended questionnaire designed using a Likert scale with five response categories: strongly agree, agree, undecided, disagree, and strongly disagree. The questionnaire is designed to measure several indicators of student perceptions, including: (1) the ease of using AI technology in Arabic language learning, (2) the benefits of AI in assisting the understanding of material, (3) the effectiveness of AI in improving Arabic language skills, (4) the influence of AI on students' learning motivation, and (5) obstacles or challenges faced in using AI. Before being used in research, the questionnaire instrument is first tested for validity and reliability to ensure that each question item is capable of measuring the researched variables accurately and consistently.

### ***Data Analysis***

The data analysis technique used in this study was descriptive statistical analysis. The data obtained from the questionnaire were then processed using statistical software to calculate the percentage, mean, and frequency distribution of each research indicator. The results of the analysis were then presented in tables and graphs for easier understanding. Descriptive analysis was used to describe trends in students' perceptions regarding the use of AI in language learning.

In addition, the analysis results were interpreted by linking the research findings to theories related to educational technology and technology-based language learning. Through this approach, the researcher was able to provide a more comprehensive explanation of how students view the use of AI and the factors that influence their perceptions of this technology.

By employing this research method, it is hoped that this study will provide a clear empirical picture of Arabic Language Education students' perceptions regarding the use of artificial intelligence in the learning process, so that the research findings can serve as a basis for consideration in the development of technology-based learning strategies in higher education settings.

## **FINDINGS**

The following are the results of a descriptive analysis based on the Likert scale regarding students' perceptions of the use of AI in Arabic language learning

Table 1

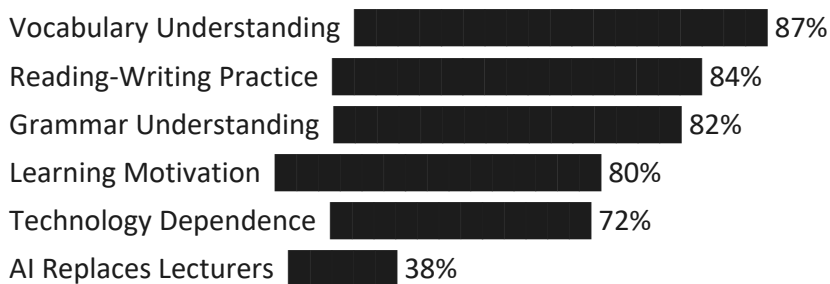
Indicator	Mean	Approval Percentage	Category
AI makes it easier to understand Arabic vocabulary	4.35	87%	Very Good
AI helps understand grammar (nahwu-sharaf)	4.12	82%	Good
AI helps with reading and writing practice	4.20	84%	Good
AI can replace the role of lecturers	2.40	38%	Low
AI causes technological dependency	3.60	72%	Quite High

From the table, it can be seen that the majority of students have a positive perception of the use of AI in learning Arabic. The highest average value (mean) is found in the indicator of ease in understanding Arabic vocabulary and texts through AI.

### *Student Perception Chart on the Use of AI*

The following chart shows the level of students' perception of several aspects of AI use in Arabic language learning

Students' Perception of AI



The chart shows that the aspect most perceived as beneficial by students is AI's ability to assist in understanding Arabic vocabulary and texts. Conversely, students do not agree that AI can completely replace the role of lecturers in the learning process.

## **DISCUSSION**

### *An Overview of Students' Perceptions of the Use of AI in Arabic Language Learning*

The research results indicate that the majority of students in the Arabic Language Education Study Program have a positive perception of the utilization of artificial intelligence (AI) in the Arabic language learning process. Based on the questionnaire analysis results, the majority of respondents stated that AI technology can help them understand learning materials more quickly and flexibly. This is evident from the high percentage of "agree" and "strongly agree" responses on terms of the ease of use of technology, the effectiveness of learning, and increased motivation to learn.

Students believe that AI can provide a wider variety of learning resources compared to conventional teaching methods. AI technology allows students to instantly access explanations regarding Arabic vocabulary, sentence structure, and grammar. In addition, AI also provides access to self-directed language practice through conversation features, automatic translation, and language error analysis.

These findings are consistent with research showing that AI is capable of creating a more adaptive and personalized language learning environment. AI technology can provide immediate feedback, help identify language errors, and offer learning materials tailored to learners' needs.

In the context of Arabic language learning, this research indicates that students are beginning to see AI as an alternative learning medium that can complement the traditional learning methods conducted in the classroom..

### ***The Use of AI in Improving Arabic Language Skills***

Based on the research findings, students' use of AI is most prevalent in activities related to improving language skills (maharah lughawiyah). Students use AI to help them understand vocabulary (mufradat), improve sentence structure (tarkib), and understand Arabic grammar, such as nahwu and sharaf.

In language learning, mastering the four main skills, namely reading (maharah al-qira'ah), writing (maharah al-kitabah), listening (maharah al-istima'), and speaking (maharah al-kalam), constitutes the primary goal of language education.. Books on Arabic language teaching methodology, such as those by Mahmud Kamil al-Naqah and Rusydi Ahmad Thu'aimah, explain that success in learning Arabic is greatly influenced by the use of teaching materials and methods capable of developing these four skills in a balanced manner.

In this study, students reported that AI is very helpful in improving their Arabic reading and writing skills. Through AI, students can translate Arabic texts, ask for explanations of sentence structure, and obtain examples of word usage in various sentence contexts. This helps students understand Arabic texts that were previously considered difficult.

This finding is in line with research on the use of AI in language learning, which shows that AI technology can enhance learner engagement as well as improve vocabulary skills and writing abilities through automated feedback systems..

In addition, AI technology can also be used as a tool for conversation practice through simulated dialogues. Some AI applications allow students to practice speaking the target language without fear of making mistakes. This can help reduce the anxiety associated with learning a foreign language that students often experience.

### ***AI as a Tool for Adaptive Learning in Arabic Language Education***

One of the key findings of this study is that students view AI as an adaptive and flexible learning tool. AI technology enables students to learn anytime and anywhere without being entirely dependent on in-class lectures.

This concept of adaptive learning aligns with advancements in modern educational technology, which emphasize student-centered learning. AI is capable of tailoring learning materials to individual learners' abilities, thereby making the learning process more effective.

Several studies in the field of language education indicate that AI is capable of creating more personalized learning experiences through the use of adaptive learning algorithms. This technology enables learning systems to tailor content to users' skill levels, learning styles, and needs.

In the context of Arabic language learning, this approach is very important because the level of students' ability to understand Arabic is usually very diverse. Some students already have a foundation in Arabic since high school, while others have only begun learning it upon entering college..

Through AI technology, students can study the material at their own pace. For example, beginners can request simple explanations of grammar, while more advanced students can request more complex sentence examples.

### ***Challenges and Limitations of Using AI in Arabic Language Learning***

Although most students have a positive perception of AI use, this study also identified several challenges associated with its implementation. One of the students' main concerns is the potential for developing a dependency on technology.

Some students stated that excessive use of AI could diminish critical thinking skills and independent learning. When students become accustomed to receiving instant answers from AI, they tend no longer to conduct their own analysis or information searches.

In addition, students also noted that AI sometimes provides inaccurate translations or explanations of Arabic. This is particularly true for texts with complex linguistic structures or those containing specific cultural elements.

Previous research has also shown that while AI offers many advantages in language learning, this technology cannot fully replace the role of teachers. AI is more effective when used as a learning tool than as a substitute for teachers.

In the study of Computer Assisted Language Learning (CALL), experts emphasize that learning technology must be used in balance with human interaction. Teachers continue to play a vital role in providing conceptual explanations, pedagogical guidance, and fostering students' learning habits.

### ***Implications of AI Use for the Development of Arabic Language Learning***

The results of this study provide several important implications for the development of Arabic language learning in higher education. First, the use of AI technology can be one of the innovative strategies to improve the quality of Arabic language learning.. Instructors can utilize AI as a learning aid, for example in grammar exercises, text analysis, and Arabic conversation simulations.

Second, the integration of AI into learning must be accompanied by adequate digital literacy. Students need to be equipped with the ability to use technology critically and responsibly so that they do not rely entirely on AI in the learning process.

Third, the Arabic language curriculum in higher education needs to adapt to advancements in educational technology. The integration of digital technologies such as AI can help create learning that is more innovative, interactive, and relevant to the needs of today's digital generation (Anggara et al., 2025; Anggara & Nashoih, 2025)..

In recent years, bibliometric studies on the development of AI research in language education have shown that the use of AI technology in language learning continues to increase.. This suggests that the integration of AI into language education is a global trend that will continue to grow in the future.

Thus, the utilization of AI in Arabic language learning is not only a technological innovation, but also part of the transformation of language education in the digital era.

## CONCLUSION

Based on the results of the research and discussion that have been conducted, it can be concluded that students of the Arabic Language Education Study Program have a positive tendency towards the utilization of artificial intelligence (AI) in Arabic language learning. Students believe that AI technology can serve as an effective learning tool to help them understand Arabic language material, particularly in the areas of vocabulary (mufradat), grammar (nahwu and sharaf), and reading skills and writing. The presence of AI also provides easier access to a wider range of learning resources that are more flexible and interactive, thereby boosting students' motivation to learn.

In addition to providing benefits in the learning process, AI also serves as a supportive tool that can help students receive quick and accurate feedback on the language errors they make. This enables students to learn independently and tailor their learning process to their individual needs.

However, this study also found that the use of AI in Arabic language learning still faces several challenges, such as the potential dependence on technology and the limitations of AI's accuracy in understanding complex language contexts. Therefore, the use of AI in Arabic language learning needs to be balanced with the active role of lecturers as learning facilitators so that the technology can be utilized optimally and continue to support the development of students' critical thinking skills. Thus, the integration of AI

in Arabic language learning can become an important innovation in improving the quality of language education in the digital era.

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## CONFLICT OF INTEREST STATEMENT

The author(s) declare no conflict of interest with respect to the research, authorship, or publication of this article.

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