

Utilization of Artificial Intelligence in Arabic Language Learning: Analysis of the Kitabai.research.nu.id Platform

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Abstract

The industrial revolution 4.0 requires humans to live side by side with technology in all fields, including teaching. The form of this technology can be seen from the emergence of artificial intelligence (AI) which is artificial intelligence that works by imitating the capabilities of the human brain. The objectives of this study are (1) to determine the role of AI kitabai.research.nu.id. in the field of Arabic language teaching; (2) to analyze the impact of the emergence of AI kitabai.research.nu.id. in the field of Arabic language teaching and; (3) to explain the influence of AI kitabai.research.nu.id. in the world of teaching. This researcher uses a qualitative research design with a descriptive research type. The primary data in this study is in the form of AI launched by PBNU to analyze the grammar of Arabic texts (<https://kitabai.research.nu.id>). While the secondary data from this study includes journals, theses, books that are relevant both online and offline categories to support the research. In collecting data, the researcher uses documentation techniques with the following steps (1) searching for data through previous research; (2) reading and observing previous research; (3) recording data related to the research; and (4) documenting data with analysis conducted by researchers. AI kitabai.research.nu.id is currently the only AI that focuses on the Arabic language field so that it indirectly has a big role in Arabic language learning. The positive impacts generated by AI are helping personalization, making learning more interesting and increasing access. While the negative impacts generated are containing bias, dependency, misinformation and security of personal information.



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INTRODUCTION

The Industrial Revolution 4.0 has pushed humans to coexist with technology in various aspects of life, including education. According to Sima et al. (2020) and Sahara et al. (2023), this change is an inevitable demand of the times. One concrete manifestation of this progress is the emergence of artificial intelligence (AI), which mimics the capabilities of the human brain through transformer neural networks, enabling AI to understand context and produce human-like text (Diantama, 2023). However, as stated by Supriadi et al. (2022), the emergence of AI has also generated pros and cons among academics, primarily due to concerns that it could reduce critical thinking skills and hinder the development of students' cognitive skills. On the other hand, Erajaya (2023) states that AI can actually bring significant benefits to education, such as increasing

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efficiency, supporting more personalized learning, and providing individual assistance to students. Therefore, the use of AI should be carried out wisely by strengthening pedagogical approaches to optimize its benefits.

Several previous studies have discussed artificial intelligence, including research on the use of AI in education related to the implementation, impact, and influence of AI in education (Kennedy, 2023; Putra et al., 2024; Rifky, 2024; Sandy et al., 2023; Zahra Salsabilla et al., 2023). There is also research on AI in the field of learning, such as research on the effectiveness of using AI in English learning (Abimanto & Mahendro, 2023; Muarif et al., 2023; Syahira et al., 2023). Then there is research on the impact of AI in Islamic religious learning (Fauziyati, 2024). Furthermore, research on AI in Arabic language learning conducted (Iman et al., 2022; Rohmawaty et al., 2024) related to the role, exploration of opportunities, and challenges of an AI-based Arabic language curriculum. The difference between the research that has been conducted and the research that will be conducted below is related to the focus of studying AI in the form of kitabai.research.nu.id, where previous research has not discussed it in terms of its role, impact and influence in the field of Arabic language and its teaching.

This research aims to complement studies that have previously focused more on the implementation of Artificial Intelligence (AI) in learning, by highlighting in more depth the role and impact of this technology in the context of Arabic language teaching. Specifically, the objectives of this research are: (1) to determine the role of AI on the kitabai.research.nu.id platform in supporting the Arabic language learning process; (2) to analyze the impact of the presence of AI on kitabai.research.nu.id on the effectiveness and efficiency of Arabic language teaching; and (3) to explain the influence of the presence of AI on changes in Arabic language teaching patterns and methods in general. The benefits of this research are expected to provide theoretical contributions to the development of technology-based linguistics and education studies, as well as provide practical references for educators, technology developers, and educational institutions in utilizing AI platforms to improve the quality of adaptive and innovative Arabic language teaching in the digital era.

This research is based on several key assumptions. First, the AI kitabai.research.nu.id is still not widely known to the general public because its function is limited to Arabic grammatical analysis, unlike other more popular AIs with general functionalities. Second, this AI has a positive impact on the learning process, especially for students, because it is able to help them understand the structure and grammatical rules of Arabic, which are known to be complex and challenging. Third, kitabai.research.nu.id is one of the first AI platforms specifically developed for the field of Arabic language teaching. Until now, most AI technology has been more focused on general information processing and global languages like English, so the presence of kitabai.research.nu.id is an important step in supporting innovation in Arabic language learning that is more adaptive to the development of digital technology.

METHOD

Methods are essential components of research because they determine the accuracy of data collection, processing, and analysis. Accuracy in selecting methods significantly impacts the validity of research results (Lim, 2024). In this context, methods encompass the type of research, data sources, data collection and processing techniques, and analysis techniques and their steps (Islam, 2020). Firmansyah et al. (2021) state that a research method is a method or procedure chosen systematically to answer the research problem formulation. This research uses a qualitative approach. According to Darmalaksana (2020), qualitative methods are methods that focus on observation, as well as describing and analyzing phenomena in depth. Therefore, this method is considered the most appropriate in explaining the role of AI in Arabic language teaching, especially in examining reflections on the implementation and utilization of AI. The results of the analysis are then compiled into a detailed and comprehensive narrative.

This research utilizes two types of data sources: primary and secondary data. Primary data was obtained directly from the AI platform kitabai.research.nu.id, developed by the Nahdlatul Ulama Executive Board (PBNU). This platform was chosen because of its innovative approach to analyzing Arabic text grammar based on artificial intelligence, which is considered to offer a new and adaptive learning method (Cheong et al., 2023). Meanwhile, secondary data comes from various supporting literature, such as scientific journals, theses, books, and online articles. Bouzioti (2023) states that secondary data can strengthen theoretical analysis and provide a more comprehensive conceptual foundation for research. For data collection, this study used the documentation method. According to Bowen (2009), documentation allows researchers to systematically examine various written sources. The stages involved include searching for relevant literature, critical reading, recording important information, and documenting data for reflective analysis.

To analyze the collected data, researchers implemented systematic steps to produce valid and accountable conclusions. Elo et al. (2014) emphasized the importance of systematics in qualitative data analysis to ensure credible and meaningful results. The initial step was to process all the data obtained, then select relevant data for further analysis, as Naeem et al. (2023) suggested that researchers sort the data most relevant to the study's focus. Next, the data was identified based on categories, such as findings from the AI kitabai.research.nu.id and supporting theories from secondary literature sources. Faizin (2020) stated that analyzing the data narratively and descriptively will help produce a comprehensive understanding. Afterward, the entire data and analysis results were re-examined to ensure consistency and accuracy, as stated by Cole (2023). The final step was to formulate conclusions that reflect the focus and formulation of the research problem objectively and scientifically.

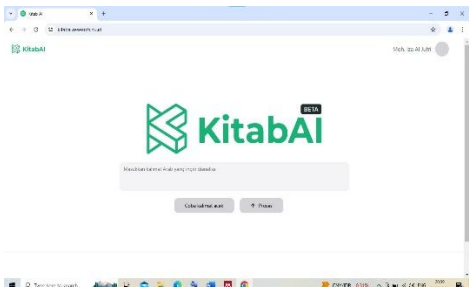
RESULTS AND DISCUSSION

Results

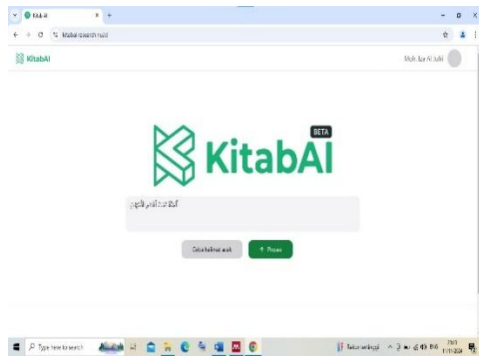
Using the AI book in Learning

The use of kitabAI in learning is a significant innovation in the digital era, particularly in the context of Arabic language education. As an artificial intelligence-based platform developed by PBNU, kitabAI is designed to assist in the automatic and accurate grammatical analysis of Arabic texts. Its presence offers a new alternative in the teaching and learning process, which previously relied on manual and conventional methods. By utilizing this technology, students can more easily understand language structure, i'rab patterns, and Arabic syntactic rules, which have previously been considered complex. Therefore, kitabAI is a strategic tool in increasing the effectiveness and efficiency of Arabic language learning.

Table 1. Use of AI books in learning

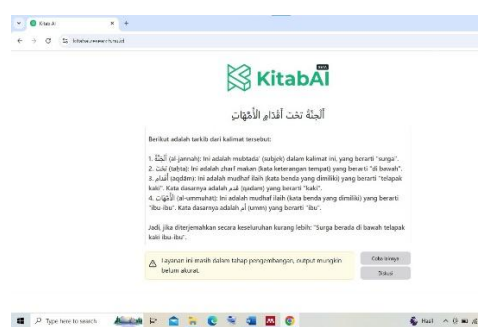
No	Picture	Explanation
1		The first step for users is to visit the kitabai.research.nu.id website and log in. To log in, users must create an account and password, then follow the instructions until they receive a notification via email. After verifying the email, users can log in with the password they created.

2



In this display, users can enter the Arabic word or sentence they wish to analyze. They can also click on a random sentence, and different sentences will automatically appear. Then, click "Process." An explanation of the analysis of the Arabic word or sentence specified by the user will appear.

3



After knowing the results of the analysis of Arabic words or sentences through KitabAI, users can also write complaints or questions by clicking the "discussion" section as shown in the image above.

Based on the previous description, kitabai.research.nu.id, as an artificial intelligence (AI) platform, offers easy access and broad application, encompassing students, college students, and educators. Its simple interface and ability to quickly analyze grammatical structures make this platform a practical and efficient learning medium. This advantage supports the Arabic language learning process, particularly in understanding the complex aspects of grammar and grammar. However, this convenience needs to be viewed critically. Rapid access to information does not necessarily equate to in-depth conceptual understanding. In the educational context, interaction between teachers and students remains crucial for fostering reasoning, discussion, and reflection, which cannot be replaced by technology. Therefore, AI like kitabai.research.nu.id should be positioned as a tool that enriches the learning process, not as a substitute. Its effectiveness depends heavily on appropriate integration strategies within the curriculum and a learning approach that balances technology and human interaction.

Positive and Negative Impacts of Using AI kitabai.reserach.nu.id

The use of AI on kitabai.research.nu.id in Arabic language learning brings both benefits and challenges. Positively, it personalizes learning, increases student engagement, and broadens access to Arabic language resources. The platform also prioritizes user data security, ensuring privacy is maintained. However, several concerns require attention. These include the risk of bias in AI-generated analysis, which can mislead learners if not critically reviewed. There's also the danger of over-reliance on technology, potentially weakening learners' independent thinking and language skills. Additionally, the AI may occasionally produce inaccurate or contextually inappropriate content. Therefore, while AI offers valuable support in Arabic language education, it should be used with proper guidance and critical oversight, ensuring it complements rather than replaces the essential role of educators. Balanced use will maximize benefits while minimizing potential drawbacks.

Table 2. Positive and Negative Impacts of Using AI kitabai.reserach.nu.id

No	Positive impact	Negative impact
1	Helping personalize learning	Potential for bias
2	Making the learning process more engaging	Creates dependency
3	Increasing access to learning resources	Risk of conveying incorrect information
4	Maintaining the security of users' personal information	Uncertainty about data validity

Based on the findings in Table 2, it can be concluded that kitabai.research.nu.id, as an AI-based platform, has great potential to support Arabic language learning, particularly in grammatical aspects. Its ability to analyze sentence structure and provide grammatical information quickly makes it a highly useful tool. However, the use of this technology still requires strong pedagogical oversight and guidance. Excessive reliance on AI without critical consideration can impact students' analytical and conceptual thinking skills. Students may become accustomed to accepting the system's results without undergoing a deep understanding process. Therefore, educators have a crucial role to ensure that AI is used proportionally, as a tool that supports active learning, not as a substitute for interaction, discussion, and reflection in the learning process. Therefore, AI's effectiveness will be achieved if it is wisely integrated into the learning context.

Benefits of AI kitabai.research.nu.id in Arabic Language Teaching

The AI application kitabai.research.nu.id has significantly enhanced the quality of Arabic language teaching. It functions not only as an automatic grammar analysis tool but also as a strategic resource for developing learning materials, quizzes, and grammar explanations. Its capability to quickly address linguistic challenges makes it highly beneficial for both teachers and students. Additionally, the platform's user-friendly interface and flexible access allow for seamless integration into various learning environments. These features support personalized and adaptive learning, aligning well with the needs of modern education. In the digital era, kitabai.research.nu.id stands out as a practical and innovative solution for improving Arabic language proficiency. However, its effectiveness is maximized when used alongside active teacher guidance, ensuring balanced and meaningful learning experiences that foster both linguistic accuracy and critical thinking skills.

Table 3. Benefits of AI kitabai.research.nu.id in Learning

No.	Findings	Explanation
1	Supports automatic Arabic grammar analysis	The AI on kitabai.research.nu.id helps analyze sentences, including grammar and grammar, and provides comprehensive explanations of i'rab.
2	Becomes an effective and efficient learning tool	This platform makes it easier for teachers and students to quickly and accurately develop materials, quizzes, and grammatical explanations.
3	Improves the quality and effectiveness of the learning process	The use of AI has been proven to improve student understanding and accelerate the evaluation process and identify learning needs.
4	Provides broader and more flexible access and learning solutions	The AI provides a search feature for solutions to Arabic linguistic problems, including meaning, sentence structure, and grammatical application.

Although kitabai.research.nu.id makes a significant contribution to supporting Arabic language learning, its use must be accompanied by the active role of educators as the primary facilitators of the learning process. This technology is designed as a tool, not as a substitute for teachers. Educators play a crucial role in guiding, directing, and ensuring that the learning process remains reflective and meaningful. While AI can assist in analyzing grammatical structures and providing quick solutions, without proper guidance, learning may lose its depth. Excessive use of AI without supervision may lead students to become passive and overly dependent on automated outputs, ultimately weakening their critical and analytical thinking skills. Therefore, the teacher's presence remains vital in creating a learning environment that is not only informative but also educational and transformative.

The integration of AI technology such as kitabai.research.nu.id into the education system must be carried out wisely and proportionally. In the context of Arabic language education, AI use should be tailored to learners' needs while still considering contextual pedagogical aspects. Teachers are not only knowledge transmitters but also guardians of human values within the learning process. Human interaction is essential in fostering empathy, cultural understanding, and effective communication skills. Thus, collaboration between advanced technology and the human touch in

education is key to creating a balanced, effective, and relevant learning experience in today's digital age. Ideal education does not solely rely on technological advancement but upholds the human essence in teaching and learning interactions.

Discussion

The Role of AI in Arabic Language Teaching at kitabai.research.nu.id

In the context of Arabic language teaching, several experts have stated that the use of technology lags behind that of other foreign languages such as English, Korean, or Mandarin. Daşkan et al. (2022) highlighted that limited technology integration contributes to low student interest and learning outcomes. Hromova (2019) added that students tend to be more interested in other foreign languages, both in terms of motivation and language skill mastery. This poses a serious challenge for Arabic language educators to increase learning motivation and equalize student academic achievement. Sugiarto et al. (2024) argue that efforts to update learning methods and approaches are crucial to address this situation. Furthermore, Sarah et al. (2024) emphasize that Arabic, as the language of the Qur'an and Islam, should receive more attention through innovative strategies, such as AI integration, to make learning more contextual, modern, and in line with the characteristics of today's learners.

According to Hajar and Qohar (2024), the AI kitabai.research.nu.id is presented as an innovative solution to support Arabic language learning, particularly in grammatical aspects or nahwu. This platform, as explained by Cholidah and Muid (2024), is designed to automatically analyze Arabic sentence structure and explain grammatical elements such as muftada, khabar, fi'il, and isim, with reference to changes in i'rab or final harakat that determine the function of words in sentences. Rohmawaty et al. (2024) assessed the presence of this technology is very helpful for learners, especially in reading Arabic texts without harakat and understanding the meaning of words correctly. Arabic is known to have many words whose meanings change depending on the harakat. For example, Aceng et al. (2024) explain that the word 'ilm can mean "knowing" ('alima), "known" ('ulima), or "flag" ('alamun). With features like this, AI becomes an important tool in facilitating understanding, especially for beginner students.

Rachmayanti and Alatas (2023) emphasized that the use of AI in learning, particularly in teaching Arabic, cannot be implemented instantly without teacher guidance. Although platforms such as kitabai.research.nu.id have provided grammatical analysis and vocabulary assistance features, the teacher's role remains essential in explaining complex grammatical terms and vocabulary that may be unfamiliar to students (Raudatul, 2023). Asy'ari (2018) stated that Arabic has a unique linguistic structure and requires in-depth explanation so that students do not merely receive information passively but are able to understand it conceptually. In this regard, according to Respati (2024), AI acts as a tool that complements the learning process, not replaces the role of the teacher. Rahman et al. (2023) added that collaboration between teachers and AI can create more interactive, responsive, and relevant learning to meet the needs of students in the digital era.

Based on the above description, it can be concluded that the use of AI at kitabai.research.nu.id has made a significant contribution to Arabic language teaching, particularly in grammatical aspects, which have long been a major challenge. This technology addresses the limitations of technology integration in Arabic language learning, which lags behind the teaching of other foreign languages. This AI is able to help students understand sentence structure, word meaning, and changes in meaning based on harakat, which are crucial for mastering Arabic. However, experts agree that AI cannot completely replace the role of teachers. Instead, the teacher's role remains crucial in providing in-depth explanations, contextualizing material, and providing support throughout the learning process. With the right collaboration between technology and pedagogy, Arabic language learning can become more engaging, interactive, and effective, and able to address the challenges of the times through a modern approach that is relevant to the needs of today's learners.

The Impact of the Presence of AI kitabai.research.nu.id on Arabic Language Teaching

Advances in information technology are driving increased professionalism in educators and bringing various artificial intelligence (AI) applications into the classroom. Pan (2024) believes that AI opens up opportunities for teachers to design more effective learning. One such innovation is kitabai.research.nu.id, a platform that analyzes Arabic grammar. According to Fajriati et al. (2024), this AI supports personalized learning, enabling students to study independently outside of the classroom. However, Mahendra et al. (2024) emphasize the importance of teachers' role in guiding the interpretation of texts through basic books such as Nahwu Wadhih and Jurumiyah to prevent misinterpretation. Meanwhile, Wijayanto (2024) states that AI integration also increases interest in learning Arabic through interactive activities based on social media trends. Furthermore, kitabai.research.nu.id expands access to learning, as it can be used by various groups for fast translation, vocabulary searches, and sentence structure studies.

Despite its numerous benefits, the use of AI in Arabic language teaching, such as through the kitabai.research.nu.id platform, still carries a number of risks that require vigilance. Misnawati (2023) cautions that the use of AI in learning is not free from potential negative impacts that must be anticipated. One such concern is highlighted by Nazer, Al-Mekhlafi, and Al-Saqqaf (2023), who believe that AI algorithmic systems can produce biased or inaccurate analyses because they do not always refer to a valid data corpus. Therefore, Saputra, Kurniawan, and Hidayat (2023) emphasize the importance of teachers' role in conducting manual verification to ensure the accuracy of information. Furthermore, Manalu, Siregar, and Lubis (2024) worry that excessive reliance on AI could reduce students' creativity and critical thinking skills because they become accustomed to receiving instant answers. Gligorea et al. (2023) also note that because this platform is still in its development stage, errors in word analysis and sentence structure are still possible and need to be corrected through direct learning. Equally important, Mahendra et al. (2024) highlighted the issue of personal data security, considering that users are asked to enter email addresses and passwords, which can potentially be misused if not managed properly.

Thus, kitabai.research.nu.id is considered to have great potential in improving the quality of Arabic language learning, particularly in understanding grammatical aspects that have been considered complex. Khusniya and Syafi'i (2024) argue that this platform is able to simplify grammatical concepts, making them easier for students to understand. This aligns with Syafriati's (2024) view that the presence of AI can be an effective tool to facilitate the learning process, increase student interest, and expand access to information. However, Assefa (2024) emphasizes that the successful integration of AI in learning still depends on strong pedagogical support. Teachers must continue to play a central role in guiding the use of AI to prevent misuse or dependence. McKnight et al. (2016) also emphasize the importance of balancing technology with conventional approaches that prioritize discussion, reflection, and in-depth understanding. Furthermore, validation of information generated by AI needs to be carried out carefully, and students must be equipped with digital literacy and an understanding of academic ethics. With a wise approach, AI can be a complement that enriches the learning process without replacing the role of humans in education.

Based on the above description, it can be concluded that the presence of kitabai.research.nu.id as an artificial intelligence-based platform has had a positive impact on Arabic language teaching, particularly in grammatical aspects that have previously been considered difficult. This platform supports personalized learning, expands access to information, and increases student interest through a more interactive and contextual approach. However, several experts warn that the use of AI is not without risks, such as the potential for analytical bias, dependency that reduces student creativity, and threats to data security. Therefore, the role of teachers remains crucial as pedagogical facilitators who ensure the wise and proportional use of AI. A balance between technology and conventional approaches such as in-depth discussion and reflection needs to be maintained, and students must be equipped with digital literacy and academic ethics. With proper integration, AI can complement the learning process without replacing the role of humans in education.

The Impact of AI kitabai.research.nu.id in the World of Teaching

Artificial intelligence (AI) applications cannot fundamentally surpass human intelligence. Wang (2021) stated that the human ability to think critically, reason, and make decisions remains a key advantage that cannot be replaced by machines. Fui-Hoon Nah, Eschenbrenner, and Telaprolu (2023) added that humans have the capacity to design, develop, and program technology to address complex learning challenges. Similarly, Kamalov et al. (2023) cite the wise saying that technology will not replace teachers, but great teachers will utilize technology—a view that is highly relevant in the current era of education, which is increasingly entrenched in digital advancements. One form of technology that supports learning is kitabai.research.nu.id, an AI platform designed to analyze Arabic grammar, both in terms of grammar and sharaf. According to Almufarreh and Arshad (2023), this platform makes a significant contribution to automatically understanding sentence structure. Wachid (2024) assessed that kitabai is able to identify the elements of i'rab and explain the grammatical function of each word in the context of a sentence, thus greatly helping the Arabic language teaching and learning process more efficiently.

Furthermore, kitabai.research.nu.id is part of a technological innovation that supports digital transformation in education, particularly in Arabic language teaching. Alenezi (2023) argues that the presence of AI-based platforms like this is a concrete manifestation of digitalization that accelerates access to learning materials practically, without having to always rely on conventional sources. Similarly, Dhawan (2020) emphasizes that digital technology enables the learning process to be more flexible and efficient, for both educators and students. According to Lin, Huang, and Lu (2023), the use of AI in education allows teachers to adapt learning methods based on individual students' needs and abilities, thus making learning more personalized and effective. Nadira, Azhari, and Farhan (2024) also note that efficiency in the evaluation process increases thanks to AI's ability to help teachers systematically design quizzes, exercises, or questions based on Arabic grammatical structures. Furthermore, Mahendra et al. (2024) emphasize that the application of AI technology in education generally has a positive impact on improving the quality, effectiveness, and attractiveness of the learning process. Therefore, kitabai.research.nu.id is an important instrument in supporting digital, sustainable, and adaptive education to current developments.

Specifically, kitabai.research.nu.id makes a significant contribution to Arabic language teaching, particularly in grammatical aspects, which are often challenging for students. Sutinalvi, Harahap, Lubis, and Nasution (2024) stated that this platform helps overcome students' difficulties in understanding the rules of grammar and grammar through a more interactive approach. Sumarno et al. (2024) added that kitabai is designed to support teachers in compiling lesson materials, designing relevant questions or quizzes, and simplifying grammatical concepts for easier understanding by students. Furthermore, this platform is capable of automatically analyzing word and sentence structures, making it easier for students to recognize the grammatical position and function of a word within a sentence context. These features, according to the researchers, not only increase the effectiveness of learning but also enrich students' digital learning experiences. However, the existence of this AI is not intended to replace the role of classical books such as Jurumiyah or Nahwu Wadhih, which remain the main references. On the other hand, AI like kitabai.research.nu.id functions as a complement that strengthens the learning process more efficiently and contextually.

From the above explanation, it can be concluded that the presence of kitabai.research.nu.id as an artificial intelligence platform has a positive impact on Arabic language teaching, particularly in grammatical aspects such as nahwu and sharaf, which are often obstacles for students. This technology makes it easier for teachers to compile materials, design questions, and simplify grammatical concepts, as well as helping students understand the structure and function of words in sentences automatically. Experts emphasize that although AI provides efficiency and flexibility, the role of teachers remains central in guiding and directing the learning process so as not to rely entirely on machines. Kitabai.research.nu.id is also considered to support the continuous

digitalization of education by increasing access, interest, and effectiveness of learning. Thus, this platform functions as a complement that strengthens modern and contextual Arabic language learning, without replacing classical sources or the role of humans in forming deep conceptual understanding.

CONCLUSION

The AI platform kitabai.research.nu.id is currently the only artificial intelligence platform specifically focused on Arabic. Its existence makes a significant contribution to supporting the learning process, particularly in understanding Arabic grammar such as nahwu and sharaf. Positively, this AI can help personalize learning according to students' abilities, make the learning process more engaging, and increase access to learning materials and information. However, the use of this AI also has the potential for negative impacts, including the emergence of information bias, technology dependence, the possibility of analytical errors, and issues with personal data security. Functionally, kitabai.research.nu.id provides various conveniences in Arabic language education, such as compiling materials and questions, explaining grammatical concepts, analyzing sentence structure, and assisting in understanding word meanings. Thus, this AI can be a valuable tool in learning, as long as its use is accompanied by an appropriate and critical pedagogical approach.

The study of the use of AI in Arabic language teaching, particularly through the kitabai.research.nu.id platform, has significant theoretical and practical implications. Theoretically, this research enriches the body of knowledge in the field of language education, particularly in understanding the role and influence of artificial intelligence in the process of learning Arabic grammar. This research also provides a conceptual contribution by explaining how technology can be pedagogically integrated into conventional teaching systems. Meanwhile, practically, the results of this study can serve as a reference for educators to innovate teaching methods that are more relevant to the needs of the times. Teachers are encouraged to improve their digital literacy and adopt AI technology as an interactive learning medium. Furthermore, this research also provides direct benefits for students in improving their ability to understand Arabic grammar more easily, quickly, and accurately through an adaptive digital approach.

This study has several limitations that need to be acknowledged. The focus of the study is still limited to the use of the AI kitabai.research.nu.id in the general context of Arabic language learning, without an in-depth examination of technical aspects such as the accuracy of grammatical analysis or effectiveness in specific learning applications such as nahwu and sharaf. Furthermore, the qualitative, documentation-based approach in this study is not fully capable of describing the full direct experience of users. Therefore, it is recommended that future research expand the scope of the study, both in terms of learning innovation, educational digitalization, and technical evaluation of the AI's performance in more specific teaching contexts. Further research could also use a mixed methods approach to combine qualitative and quantitative data, resulting in a more comprehensive analysis of the use of AI in Arabic language education.

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AUTHOR CONTRIBUTION STATEMENT

BNA contributed as a conceptualizer, as well as collecting, analyzing, and interpreting the data; MIAJ Abdul drafted the article and revised it critically. All authors agree to be accountable for all aspects of this work.

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