Available on: https://jsshrs.ep-journals.org/ E-ISSN: 3051-3561, P-ISSN: 3051-3553

Journal of Social Science and Human Research Studies

Volume : 02 Issue : 08 August-2026

Suitability and Feasibility of the Arabic Morphology Course Teaching Through AI: A Descriptive Analysis

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Published Date: August 17, 2026 **Article DOI: 10.65150/EP-jsshrs/V2E8/2026-07**

ABSTRACT: The 21st century has witnessed rapid advancements in educational technology, particularly with the advent of Artificial Intelligence (AI). However, the application of AI technology in teaching Arabic language still left behind compared to other languages. One of the issues contributing to this situation is the distinct features of the Arabic language compared to major world languages, such as the use of letters, diacritics, and writing systems. This study was conducted to determine the suitability of using AI in teaching Arabic language course. It also aims to analyse students' perspectives on the feasibility of using AI in teaching this course at the university level. This study utilised a questionnaire instrument to gather empirical data from 105 respondents in the field of Arabic language at the Islamic Science University of Malaysia (USIM). SPSS version 29.0 software was used to analyse quantitative data from the survey. Subsequently, the study employed chi-square Pearson test to analyse the correlation between the suitability and feasibility of AI in teaching Arabic morphology course. The study found that the AI application in the teaching of Arabic morphology course is suitable and can be implemented according to the student point of views. Meanwhile, the chi-square Pearson test results demonstrated a significant correlation between the analysis of suitability and feasibility of teaching this course using AI. The study also suggested several aspects of Arabic morphology that are compatible with AI capabilities, such as providing materials for student presentations, exercises, and teaching main subtopics in this area.

KEYWORDS: Arabic morphology, artificial intelligent (AI), quantitative analysis, teaching suitability and feasibility, university students

1. INTRODUCTION

The emergence of the 21st century is adorned with rapid advancements in science and technology that aimed at simplifying human daily activities from various aspects (Salbihana *et al*., 2023). The invention of Internet at the end of the 20th century sparked the eruption of information and communication technology thereafter. Artificial intelligence (AI) technology which was developed based on the existence of the internet, has become a manifestation of rapid and continuous development of information technology in this era (Jahanzaib & Tarique, 2015). While the invention of the internet provides humans with fast and easy access to information, the creation of artificial intelligence (AI) offers more extensive assistance by taking over some human roles, especially those involving cognitive activities such as remembering, generating information, processing data, and producing new outputs based on previous information (Ni Luh Putu & Putu Trisna, 2020; Jahanzaib & Tarique, 2015).

Currently, the presence of AI has been widely benefited by users in all aspects of life (Annisa *et al*., 2022). However, AI application in the field of education particularly in teaching and learning processes, remains unclear. Education experts are still evaluating how compatibility can be established between AI technology and education to produce a skilled and knowledgeable society (Dignum, 2021). Therefore, some educators are concerned that the existence of AI could threaten human intellect, whether in the quality of teaching or to students themselves, as many cognitive tasks such as remembering, analysing, and making conclusions in learning are being taken over by AI (Saeful Fitriana, 2023). The concerns of these educators have a solid argument since AI in theory could produce a generation who is merely relies on technology for task outputs automatically using AI in effortless (Latifah, 2023). However, looking at the positive side, the presence of AI can assist students in various aspects that can be optimally utilised. For example, self-learning where students can grasp new concepts in learning without the need to physical meeting with lecturers at a specific location and time (Saeful Fitriana, 2023). Furthermore, AI can also enhance students' knowledge in their courses through continuous training and examinations generated by AI (Islamiyah et al., 2023; Muhammad & Herdi, 2022).

Meanwhile, the long history of teaching and learning methods for the Arabic language, inherited from ancient scholars and experts, rely on traditional methods based on the ability to remember, understand, and teacher-centred teaching methods such as lecturing techniques and

reliance on textbooks (Norazlin & Siti Rahaimah, 2019). However, based on the significant benefits of AI in language education, Arabic language teaching should be modified to leverage the presence of AI without compromising the original aim of language learning. According to Ayah (2023), the use of AI brings many benefits to students in obtaining new information and self-learning aspects.

2. PROBLEM STATEMENT

The emergence of AI in this era has a significant impact and creates a new dimension in the people lives all around the world. This is because AI can be applied in all aspects of life and can facilitate human daily affairs (Latifah, 2023). Experts predict that, AI in the future will continue to evolve, especially in main sectors of the world such as agriculture, manufacturing, services, healthcare, finance, including education (Zhu et al., 2017; Tirgul & Naik, 2016; Vincialrelli, 2015). Currently, the use of AI in education has been increasingly focused on and expanding over time (Khalatia & Romanyb, 2020). According to Saeful Fitriana (2023), many AI technology developers are increasingly focusing on creating AI applications to assist educators and students in following the teaching and learning process easily and effectively.

However, the use of AI in Arabic language education is still limited and faces various challenges compared to other major world languages, especially English (Latifah, 2023; Salbihana et al., 2023). Although AI is created to be compatible with all world languages, there are specific characteristics in certain languages that AI struggles to handle accurately, especially Arabic. This is because there are significant differences between Arabic and other languages that use the Latin alphabet and Roman script, making AI unable to manage the Arabic writing system accurately (Islamiyah et al., 2023; Annisa et al., 2022). These differences can be seen in aspects of the letter system, words, writing direction, line features, and word clusters (Siti Rahmah et al., 2022; Ramadani & Baroroh, 2020). Additionally, other elements in the Arabic language such as homonyms, word derivation variety, complex lexicographic features, and the diversity of explicit and implicit meanings for a word make it difficult for AI to process words accurately (Latifah, 2023).

Specifically, these unique characteristics of the Arabic language pose similar challenges in teaching Arabic morphology using AI. In fact, students studying this course still face difficulties in basic Arabic morphology concepts such as errors in identifying word forms and categories, let alone the robots that are not created with brain. For example, the words فَتَحَ and فَتْحٌ are from different word categories despite originating from the same root word, where the first is a verb and the second is a derivation. Although these two words can be distinguished through diacritic system, Arabic texts typically do not include diacritic except in the Quran and Hadith. Regarding differences in meanings, for example, the word بَيْت has a different meaning in the first context, 'house,' and in the second context, 'line of poetry' (Aisyah, 2018).

However, continuous improvements to AI have successfully reduced errors in processing Arabic words and texts (Ayah, 2023). This serves as a stronger justification for its use in Arabic language learning in general and specifically in Arabic morphology course. Therefore, this study attempts to assess students' perspectives on the suitability and feasibility of AI in teaching Arabic morphology courses at the university level.

3. LITERATURE REVIEW

3.1 Artificial Intelligence (Ai) In Education

Artificial Intelligence or AI refers to the ability of computer machines or robots to perform roles that are the same or nearly the same as humans (Shabbir & Anwer, 2015; Neisser et al., 1996). According to the European Commission (2020), AI is a combination of modern technologies that integrate data, algorithms, and computer sophistication. In other words, AI is used to develop robots capable of mimicking human characteristics, behaviour, learning from past experiences, sensing, making predictions, and understanding different situations through a vast amount of input data (Dignum, 2021; Al-Sa'id, 2019). The sophistication of AI at present is at a very high level with its abilities such as planning, scheduling, exploring, and presenting information; as well as the robotic capabilities that serve as guards, sensors, perception, actuators, and physical component integration (Dignum, 2021).

According to the views of Shabbir & Anwer (2015), AI has an ability to learn from past experiences like humans and thus help improve the standard of living from time to time. According to them, AI will be used more extensively in the future in almost all sectors such as finance, medicine and healthcare, customer service, education, defence, aerospace, and others (Shabbir & Anwer, 2015; Dignum, 2021). Meanwhile, Wong & Bressler (2016) add other sectors such as the music industry and gaming. In the financial sector, for example, AI greatly assists in human daily operations such as customer service, finance, sales and marketing, and financial management (Shabbir and Anwer, 2015).

In the education field, it is undeniable that AI plays a very important role, especially in the aspect of teaching and learning (PdPc) (Ayah, 2023). According to Al-Mahdi (2021), the adaptation of AI in the teaching process helps educators face current challenges in education. However, one of the popular topics in education is the extent to which the integrity of AI can be accountable for making decisions on behalf of humans (Dignum, 2021). In line with this question, Ayah (2023) reviews and states that we need proper guidelines that can show us the best methods on how to benefit AI in education. Education experts at the same time, are requested to identify boundaries on the use of AI to achieve the main objective of education without sacrificing the new generation that is surrounded by various forms of technology. According to him, the accountability and responsibility aspects of AI are not limited to the formulation of laws governing its use but are also related to the roles of society and institutions that utilise it (Dignum, 2021).

3.2 AI Application In Arabic Language Teaching

Dignum (2021) suggests that AI elements be incorporated into the curriculum of social science courses both theoretically and practically. According to Muhammad & Herdi (2022), the presence of AI at present offers wide opportunities in education in terms of pedagogical advancements and teaching approaches to make them more effective. The swift evolution of technology shows to the world of education that the current younger generation has responded to these developments over the time. This is due to the current students are exposed to and have extensive access to technological advancements, especially through gadgets such as smartphones and tablets. Therefore, teaching techniques need to align with the current situation by empowering the use of technology (Badariah & Nurfaradilla, 2021). They are more interested in teaching methods

using gadgets and technology applications that they are familiar with (Noradilah & Wei Sieng, 2019). Studies conducted by Muhammad & Herdi (2022) and Noradilah & Wei Sieng (2019) found that teaching techniques need to consider and incorporate technology in education.

This situation is not much different in the context of teaching the Arabic language. Language teaching, generally, can be divided into two main objectives: first, teaching language skills, and second, teaching language knowledge or language sciences (Yuslina et al., 2023). The teaching of language skills has a clear objective, which is the mastery of language skills such as listening, speaking, reading, and writing (Lorena, 2015). Meanwhile, language knowledge teaching aims to enhance students' understanding of language science itself, such as morphology, syntax, rhetoric, linguistics, literature, phonetics, and others (Muhammad Afiq & Hakim, 2018). Regardless of the language learning objectives, the use of AI is suitable to be practiced with different approaches. For language skills learning, students can engage in self-learning without the need for human intermediaries using AI, listen to literary texts without human voice recordings, and choose desired texts using AI (Ayah, 2023). Conversely, in learning language science, there are several AI applications related to grammar explanations, language editing and revision, as well as translation tools (Ayah, 2023). At the university level, language science disciplines are typically studied by students with specialised area of study while language skills are learned by students from various specialisation.

According to Osman (2023), Arabic language teaching, whether for the purpose of acquiring language skills or mastering language science, both are possible for incorporating with AI elements, similarly, to teaching of other world languages. A study conducted by Muhammad & Herdi (2023), says that the use of AI in teaching English linguistic course has successfully enhanced students' understanding, provided personalized learning experiences, and helped teachers develop effective curricula. The same benefits can be obtained if AI is implemented in teaching Arabic language science.

In conclusion, the use of AI in teaching Arabic language offers its own benefits and advantages. However, authorities or lecturers need to first identify the aspects of language teaching suitable for using AI to achieve the original language learning objectives. For example, the goal of teaching writing skills in language learning is to improve students' ability to compose words and construct sentences according to the desired idea sequence. Therefore, full use of AI in generating sentences does not help students improve their writing skills because there is no cognitive ability of the students involved in creating those sentences.

3.3 AI Application In Arabic Morphology Teaching

Arabic grammar (Arabic morphology) is one of the branches of Arabic grammar, in addition to grammar (syntax). Arabic grammar is divided into two main disciplines: syntax, which examines the correct way of constructing sentences, while Arabic morphology examines the way words are formed (Mohd Zaini, 2012). Arabic morphology discusses the formation of words in the form of verbs and nouns and their derivatives. The uniqueness of Arabic morphology compared to other languages is that the formation of words in Arabic is based on specific patterns (*wazan*) that control the form and method of constructing a word (Muhammad Afiq & Hakim, 2018). With the patterns governing the form of words in Arabic, users can easily identify the origin of a word and its category.

Teaching Arabic morphology at the university level for Arabic language specialisation students is taught separately from grammar. This is because the discussions and focus of these two disciplines are extensive and have significant differences. However, according to ancient Arab scholars, these two disciplines were originally combined under Arabic grammar before being separated as they developed further (Mohd Zaini, 2012). This can be observed in classical Arabic grammar books, which typically combine both disciplines under one title. Arabic morphology specifically focuses on discussing the variations in word forms derived from a root word based on specific patterns, changes in verbs through affixation and their meanings, types of verbs, types of nouns, and noun derivations based on specific meanings (Muhammad Afiq & Hakim, 2018; Alwashilah, 1986).

Teaching morphology with these features is seen to have a significant impact if AI can be applied. This is because AI can automatically analyse various word variations in terms of meaning based on morphological patterns and word formation methods (Ayah, 2023; Abdul Ghani, 2019). According to Muhammad & Herdi (2022), specific AI applications such as Intelligent Tutoring Systems (ITS), Voice Assistants, Personalized Learning, Virtual Mentors, Smart Content, Automatic Assessment, and Educational Games can be implemented in teaching Arabic morphology. For example, the Smart Content application, which can make predictions based on past experiences and inputs, is suitable for word formation exercises based on patterns for students. Meanwhile, Automatic Assessment helps teachers conduct quizzes and tests more effectively and practically via online. Voice Assistant applications help students to learn independently about pronunciation differences in words that have the same spelling but different patterns. For example, the word تحدث can be pronounced as tahduthu (happening), tahaddatha (speaking), tuhaddithu (talking about), and tahadduth (conversation).

According to Dignum (2021), some of the general advantages of AI include fostering critical thinking among students, problem-solving skills, and group collaboration. Therefore, the suitability of AI for this course is not limited to teaching aspects but also in generating student activities, whether individual or group-based, and providing training exercises with answers (Alam, 2021). The use of AI in this aspect has a positive impact on students learning Arabic morphology independently with minimal monitoring from teachers (Ayah, 2023). Teachers only need to monitor student learning activities from a distance or virtually (Muhammad & Herdi, 2022). Teaching topics such as affixes and their changes, changes in letters in words (Iclal and Ibdal), derivational construction (*Musytaqqat*), and other forms of nouns and verbs can be processed and adapted with developed AI applications.

3.4 Issues and Challenges in Arabic Language Teaching Using AI

Although there are many advantages of AI in teaching Arabic language as discussed before, there are several challenges and issues that are debated among language education experts. Some of them are:

1. Full internet access is crucial to ensure the smooth use of AI during teaching. Therefore, universities need to ensure that internet access on campus and in residential colleges is always at its optimum level.

2. The use of AI in teaching requires thorough preparation and a lot of initial work. This is because module developers need to upload a lot of data and build algorithms that can only be done by experts. This process is important so that AI can provide accurate responses during teaching based on the input data provided (Al-'Usaily, 2023).
3. The application of AI in teaching Arabic language is still not perfect, and there are some pronunciation errors, especially in the use of AI in teaching Arabic speech. According to Saeful Fitriana (2023), there are currently at least 30% pronunciation errors in Arabic letters that need to be corrected in Arabic language.
4. AI does not have the ability to interpret or explain a situation influenced by the environment and current circumstances. The explanations that AI can provide depend solely on the type and size of data inputted earlier.
5. AI does not have the ability to distinguish between what is correct and what is the most correct, as well as between what is harmful and more harmful. When dealing with students from diverse backgrounds, AI cannot provide the appropriate response to each student based on their different backgrounds.
6. Optimizing the use of AI in education requires users to be proficient in this technology. Studies show that the current education system is unable to produce enough educational technology experts who understand the systems being used (Dignum, 2021).

4. OBJECTIVE OF THE STUDY

This study was conducted with the following objectives in mind:

1. To determine the level of suitability of using AI in teaching the Arabic morphology course at the university level.
2. To analyse the feasibility of using AI in teaching the Arabic morphology course at the university level.

5. METHODOLOGY

This study analyses descriptive quantitative data using a survey instrument distributed through questionnaires to first year students of the Bachelor of Arabic Language with Communication program at the Universiti Sains Islam Malaysia (USIM). The survey employed a simple sampling technique distributed to 105 respondents out of a population of 140 students who have taken Applied Morphology I course and are currently attending Applied Morphology II. According to Krejcie & Morgan (1970), a minimum of 103 respondents is required for a population size of 140 to be generalized. The questionnaire was divided into 4 parts: Part A (Sample Demographics), Part B (Suitability of AI with Arabic Morphology learning), Part C (Feasibility of AI in teaching Arabic Morphology), and Part D (suggestions for AI usage in Arabic Morphology course). Questions in Part A and B are closed-ended, where Part B has 'Yes' or 'No' answers, while Part C is in a 5-point Likert scale format. According to Noradilah & Lai Wei (2019), closed-ended survey questions facilitate researchers in controlling respondents' answer formats and subsequently aligning the data analysis process smoothly. Questions in Part D is semi-open-ended, where respondents are free to choose multiple suitable answers from 8 listed options.

The findings were analysed using Statistical Package for Social Sciences (SPSS) 29.0 software. Mean analysis was conducted on the suitability and feasibility of AI in teaching Arabic Morphology course at the university level. A more specific study was done to assess the differences between the data from Part B (Suitability) and Part C (Feasibility) for selected questions using the Chi-square Spearman Correlation test. It aims to analyse the correlation of respondents' answers between the suitability and feasibility of AI in the Arabic Morphology course. This study also studied respondents' viewpoints in Part D regarding the aspects and subtopics of Arabic Morphology that are most suitable for AI implementation based on the nature of the course. Data in this section were presented in the form of frequency of selected answers and percentages.

6. FINDINGS

This section presents the analysis findings from the distributed survey instrument and is presented descriptively, as well as the correlation test results between related constructs. This study also briefly analyses respondents' views on the aspects of Arabic Morphology course that are suitable for the implementation of AI technology in teaching and learning process at the university level.

Table 1: Descriptive analysis of demographic data

Question	Category	Frequency	Percentage
Gender	Lelaki	30	28.6
	Wanita	75	71.4
Highest Qualification	STAM	73	65.9
	STPM	23	21.9
	Diploma	9	8.6
Duration of Arabic Language Study	1-3 years	4	3.8
	4-6 years	38	36.2
	7-9 years	34	32.4
	More than 9 years	29	27.6

Table 1 above shows the descriptive analysis of respondents' demographic data from Part A of the survey. The table indicates that in terms of gender, the female category is more numerous with 75 respondents (71.4%) compared to males with 30 (28.6%). Similarly, in terms of the highest level of education, respondents with the highest STAM qualification dominate with 73 (69.5%), compared to STPM with 23 (21.9%) and Diploma

with 9 (8.6%). Regarding the duration of Arabic language studies, the 4-6 years category has the highest number with 38 (36.2%), followed by 7-9 years with 34 (32.4%), more than 9 years with 29 (27.6%), and 1-3 years 4 (3.8%).

Table 2: Mean of descriptive analysis for suitability of Arabic morphology course teaching through AI

Question	Answer				Mean
	Yes	Percentage	No	Percentage	
Q1	96	91.4	9	8.6	1.09
Q2	59	56.2	46	43.8	1.44
Q3	87	82.9	18	17.1	1.17
Q4	97	92.4	8	7.6	1.08
Q5	94	89.5	11	10.5	1.10
Q6	101	96.2	4	3.8	1.04
Q7	90	85.7	15	14.3	1.14
Q8	86	81.9	19	18.1	1.18
Q9	92	87.6	13	12.4	1.12
Q10	90	85.7	15	14.3	1.14

Table 2 presents the findings of the descriptive analysis on the suitability of using AI for the Arabic Morphology course in Part B of the survey. The table shows that question 6, which is 'the use of AI helps to improve students' language skills,' had the highest number of respondents answering 'yes' with 96.2% with a mean of 1.04. Similarly, for question 7, analysing views on its suitability for teaching Arabic Morphology, 85.7% or a mean of 1.14 agreed with the question. The lowest mean was in question 2, 'do respondents have sufficient knowledge to use AI in learning,' with only 59 or 56.2% with a mean of 1.44. This indicates that although majority of respondents agree on the benefits and suitability of using AI in learning, nearly half of the respondents do not have sufficient knowledge to use it.

Table 3: Descriptive analysis for feasibility of Arabic morphology course teaching through AI

Question	Mean	Median	SD
Q1	3.58	4.00	0.852
Q2	3.68	4.00	1.005
Q3	2.90	3.00	1.192
Q4	3.97	4.00	0.826
Q5	3.46	3.00	0.866
Q6	3.46	3.00	1.010
Q7	2.98	3.00	0.930
Q8	3.52	4.00	0.952
Q9	3.82	4.00	0.731
Q10	4.31	4.00	0.764

Table 3 describes the findings of the descriptive analysis on the feasibility of teaching Arabic Morphology using AI in Part C of the survey. The table shows that the question 10 which is, 'The university should provide guidelines for the use of AI in learning to prevent misuse,' recorded the highest mean with 4.31 and SD 0.764. On the other hand, question 3 recorded the lowest mean, which is 2.90 and SD 1.192. For other questions related to the feasibility of using AI in teaching Arabic Morphology, responses tended towards 'agree' and 'strongly agree' because most means were close to 4.0 or 3.5, such as question 4, which states 'the use of AI is not only used to complete assignments but also to obtain additional information.' Meanwhile, low means mainly refer to negative statements like in Q7, which states 'The use of AI brings more harm to students than benefits,' where more respondents disagreed. The findings from this analysis indicate that while AI is appropriate and can be implemented in teaching Arabic morphology, they are very concerned about guidelines for its use to prevent the misuse of AI solely for achieving excellent results in an unethical manner.

Table 4: Correlation using chi-square Pearson for suitability with feasibility of Arabic morphology course teaching through AI (B7-C4)

Question	C4		
B7	AI helps provide additional information related to Arabic Morphology.		
AI is suitable to be implemented in teaching Arabic Morphology	Value	df	Asymptiotic significance (2-sided)
	11.489[a]	3	0.009

Table 4 shows the significant correlation values between section B (suitability) and section C (feasibility). The table demonstrates that there is a clear relationship between question B7 and C4 with a significant value of <0.05, namely 0.009. This indicates that there is a significant correlation between the suitability and feasibility of AI in teaching Arabic Morphology.

Table 5: Correlation using chi-square Pearson for suitability with feasibility of Arabic morphology course teaching through AI (B7-C10)

Question	C10		
B7	The university should provide guidelines for the use of AI to prevent misuse		
AI is suitable to be implemented in teaching Arabic morphology	Value	df	Asymptiotic significance (2-sided)
	13.570[a]	3	0.004

Table 5 above shows the significant correlation values between section B (suitability) and section C (feasibility). The table demonstrates that there is a clear relationship between question B7 and C10 with a significant value of <0.05, namely 0.004. This indicates a significant correlation between the suitability and feasibility of AI in teaching Arabic morphology. However, this implementation must be accompanied by clear procedures and guidelines to prevent misuse by both students and teachers.

Table 6: Correlation using chi-square Pearson for suitability with feasibility of Arabic morphology course teaching through AI (B9-C4)

Soalan	C4		
B9	AI helps provide additional information related to Arabic morphology.		
Lecturers should explore the use of AI in teaching Arabic Morphology	Value	df	Asymptiotic significance (2-sided)
	8.349[a]	3	0.039

Table 6 above shows the significant correlation values between section B (suitability) and section C (feasibility). The table demonstrates that there is a clear relationship between question B9 and C4 with a significant value of <0.05, namely 0.039. This indicates a significant correlation between the suitability and feasibility of AI in teaching Arabic morphology. Lecturers need to be prepared to explore the use of AI as one of its advantages is providing additional information to students.

Table 7: Correlation using chi-square Pearson for suitability with feasibility of Arabic morphology course teaching through AI (B9-C8)

Question	C8		
B9	Teaching methods need to be changed to be in line with AI		
Lecturers should explore the use of AI in teaching Arabic Morphology	Value	df	Asymptiotic significance (2-sided)
	9.911[a]	4	0.042

Table 7 above shows the significant correlation values between section B (suitability) and section C (feasibility). The table demonstrates that there is a clear relationship between question B9 and C8 with a significant value of <0.05, namely 0.042. This indicates a significant correlation between the suitability and feasibility of AI in teaching Arabic morphology. It can be realized with the readiness of lecturers to explore its use and be willing to adapt teaching methods to align with AI technology.

Table 8: Analysis of Arabic morphology learning aspects that are suitable for AI

No	Arabic Morphology learning aspects	Frequency	Percentage
1	Preparation for presentation materials	81	77.1
2	Quizes	80	76.1
3	Written assignment	48	45.7
4	Concept of prefix and suffix in Arabic word	56	53.3
5	Word derivation Derivasi	54	51.4
6	Concept of *wazan*	70	66.6
7	Word change characteristics (word changes, diacritic and deletion)	63	60
8	Root word	71	67.6

Table 8 above shows a descriptive analysis of respondents' views on the teaching aspects or subtopics of Arabic morphology that are suitable for the application of AI. The table proves that AI is most suitable for use in providing materials for student presentations, with a frequency of 81 out of 105 respondents (77.1%), followed by quiz implementation with 80 (76.1%), recognizing root words with 71 (67.6%), learning pattern concepts with 70 (66.6%), and finally, preparing written assignments with 48 respondents (45.7%). This proves that AI is suitable for use in both routine teaching activities such as teaching the concepts of patterns and root words, self-learning activities such as searching for additional information in preparing presentation materials, and testing activities such as quiz implementation.

7. DISCUSSSION

The findings of this study prove that majority of respondents agree that AI is suitable for implementation in Arabic morphology courses, with 90 respondents or 85.7% agreeing with the given statement. Furthermore, even more respondents, 101 or 96.2%, state that the use of AI can enhance students' language skills. These findings align with the views of experts such as Osman (2023) and Ayah (2023), who highlighted the advantages of using AI in teaching Arabic language in general or in specific courses like Arabic morphology. However, it was found that universities need to increase maximum exposure to students regarding the use of AI because only almost half of respondents have knowledge about its use in learning, with only 59 or 56.2% admitting knowing on how to use it.

The discussion above also corresponds to the findings in Table 3, which agree that while implementing AI in Arabic morphology instruction is appropriate, universities must provide comprehensive procedures and guidelines for AI usage to prevent misuse by students and conflicts with the main objectives of the course. In previous discussions, it was mentioned that Ayah (2023) suggests the need for guidelines on the best practices for utilizing AI. Furthermore, Dignum (2021) emphasizes that we not only require specific guidelines but also need to consider the roles of society and institutions using AI.

Regarding feasibility, majority of respondents agree or strongly agree that AI can be implemented in Arabic morphology. Further analysis in section D of the survey reveals the appropriate learning aspects of Arabic morphology that can be integrated with AI technology, such as providing presentation materials by students, conducting exercises like quizzes, teaching subtopics like pattern (*wazan*) concepts in Arabic morphology, root words, and specific features in Arabic words like letter changes, line changes, letter removal, and others. To facilitate the learning process using AI, students should adapt their learning methods to align with the benefits of AI that can be utilised. Respondents also believe that the benefits of AI can be used not only to complete tasks but also to acquire additional information and self-learning, approaching a minimum agreement score of 3.52. In this context, Badariah & Nurfaradilla (2021) emphasize the need for teaching techniques to adapt to current circumstances, such as using technology.

The chi-square Pearson correlation test also shows a significant correlation between the suitability and feasibility of AI in teaching Arabic morphology course. The findings suggest that the success of implementing AI technology in teaching Arabic language and specifically Arabic morphology course depends on the cooperation and commitment of both students and teachers. For teachers, they need to be ready to explore and adapt teaching and learning methods incorporating AI elements. Additionally, universities must play a role in enhancing stakeholders' knowledge of AI usage in education by providing skill enhancement workshops and AI knowledge workshops, as well as formulating guidelines to align with the objectives of technology implementation in education.

8. CONCLUSION

Generally, although the existence of AI is seen as potentially replacing human roles, Ayah (2023) believes that human touch is still necessary to complete tasks perfectly. This is because there are still several weaknesses in AI that need to be addressed by improving its intelligence level, especially in terms of emotions and pragmatics, so that it can provide responses according to the appropriate environment. However, there are many other advantages that AI possesses compared to humans that can be utilised, such as consistent responses to the same issue even if raised repeatedly. This is different from the weakness of humans who have the characteristic of forgetfulness when asked at different times.

The implementation of AI in Arabic language education is seen as capable of opening new dimensions in technology approaches in line with current changes. In Arabic linguistics, there are many aspects of teaching that are suitable for incorporating AI elements. It is a current demand in the age of scientific and technological advancement that cannot be avoided. All parties involved, especially educators and students, need to have a new shift to explore and improve the methods and techniques of this course without compromising the main objective of teaching that course. Researchers suggest that future studies delve deeper into sub-topics in Arabic linguistics that are in line with the capabilities of the latest AI technology.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest

FUNDING STATEMENT

No funding was received for this research

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