

The Degree of Arabic Language Teachers' Use of Artificial Intelligence Applications in Teaching Arabic at the Basic Education Level from the Perspective of Arabic Language Supervisors in the Sultanate of Oman

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Abstract

The study aimed to reveal the degree to which Arabic language teachers employ artificial intelligence applications in teaching Arabic in basic education schools from the perspective of Arabic language supervisors in the Sultanate of Oman. The researchers used a descriptive survey approach with a questionnaire consisting of three axes: Arabic language lesson planning skills, Arabic language lesson implementation skills, and Arabic language lesson evaluation skills. The questionnaire was administered to a random sample of (30) male and female Arabic language supervisors. The study results revealed that the degree of Arabic language teachers' use of artificial intelligence applications in the skills of (planning, implementing, and evaluating) Arabic language lessons was moderate (3.19, 3.23, and 2.82), respectively. In light of the study results, the researchers recommended training teachers on the use of emerging artificial intelligence applications and their use in teaching Arabic. In addition, they recommended raising awareness among educational staff about the importance of artificial intelligence in the educational process and its role in effectively achieving objectives.

Keywords

Arabic Language Teachers, Artificial Intelligence Applications, Basic Education, Arabic Language Supervisors

1. Introduction

The current era is witnessing remarkable development in most fields of knowledge. Several names have been given to this era, such as the “knowledge explosion” and the “science and knowledge revolution.” Therefore, the development of any country is measured not only by its knowledge but also by its ability to utilize information to serve its society and individuals.

History has witnessed major industrial revolutions all around the world, resulting in the emergence of industrial machines. This has led to radical changes in people’s lives, greatly facilitating their progress in every aspect of their lives. AI is one of the most important outcomes of the Fourth Industrial Revolution, as it has numerous uses in various fields, including military, industrial, educational, medical, and others (Al-Muslim, 2023).

Artificial Intelligence is a branch of computer science that aims to develop systems and programs capable of performing many tasks by simulating the intelligence processes of the human mind, so that the computer can analyze information, solve problems, and make decisions like human thinking (Aziz, 2023). AI encompasses various tools, including machine learning, neural networks, and natural language processing, and is being applied in fields such as medicine, education, and scientific research.

The educational process in the modern era is characterized by rapid change, with digital technologies becoming an integral part of educational strategies. AI represents a fundamental pillar of these technologies, contributing to the improvement of education quality and facilitating the learning process worldwide, particularly in the Sultanate of Oman, given the current era’s explosion of knowledge and technological advancements across various fields.

There is no doubt that Arabic language curricula should prioritize continuous development to strengthen the aesthetics of the Arabic language alongside the demands of artificial intelligence. This is in response to keeping pace with the rapid civilizational and technological progress observed worldwide, and to elevating the status of the Arabic language, which blends its aesthetic qualities with the beauty of knowledge (Bouganbou, 2022).

Since teaching the Arabic language involves various skills, Arabic language teachers need to be equipped with these skills to perform their duties effectively. Many research studies have emphasized the importance of training teachers and providing them with appropriate competencies, as well as diversifying the methods and tools used by primary-stage Arabic language teachers to ensure the success of the teaching and learning process (Asiri, 2021). Among the studies that addressed planning, implementation, and evaluation competencies is Al-Huwaiti’s (2019) study, which aimed to identify the necessary teaching competencies for Arabic language teachers in the primary stage in Tabuk city from the perspectives of educational supervisors and school principals. Additionally, Salman et al. (2021) sought to identify the competencies required for language teachers according to comprehensive quality standards.

Al-Daghman (2020) asserts that the focus on teaching competencies has driven educators to develop methods and strategies that contribute to enhancing the quality of the teaching process, taking the necessary measures to achieve the desired goals, and supporting teachers to deliver their lessons smoothly and to organize their thoughts, which, in turn, will reflect positively on students' performance and the overall educational process.

In addition to the above, the adequacy of planning is seen as a key element of the educational process, as it helps the teacher stay organized, avoid randomness, and achieve coherence and effectiveness in all parts of the lesson. Similarly, the implementation phase reflects the success of the teacher's planning by translating set goals into actual behaviors and activities, using a variety of teaching methods that engage learners. Evaluation also plays a crucial role in the teaching and learning process, providing the teacher with a clear indication of students' growth and progress toward achieving the intended goals, while also helping to identify weaknesses, diagnose issues, and find solutions (Al-Siyabi, 2018).

AI has become an urgent necessity in the current era, as it contributes to achieving many educational goals, such as helping students actively engage in educational situations, increasing their motivation to learn, and assisting in solving educational problems while taking into consideration effective planning, design, and implementation within the learning environment (Al-Shahoumi, 2024; Zawacki-Richter et al., 2019). In light of Oman Vision 2040, educational institutions have been keen to interact with the National Program for AI and Advanced Digital Technologies, which aims to encourage the use of AI and advanced technologies in various key sectors such as education (Ministry of Transport, Communications and Information Technology, 2024).

There is no doubt that the applications of AI and its uses in education are modern topics and a rich area for research. That is due to its wide and diverse capabilities, along with the radical changes brought about by the AI technology revolution in the roles of both teachers and learners and their contribution to advancing education (Al-Ghamdi, 2024).

A review of educational studies reveals limited teachers' awareness and knowledge of how to effectively integrate AI applications into classrooms, despite the availability of advanced technologies. The question that arises is how Arabic language teachers can benefit from AI to improve students' skills, especially since the limited use of such technologies may negatively impact the quality of education. This necessitates careful and systematic analysis of the issue. Several studies have highlighted the necessity of integrating AI applications into teaching in general, and Arabic language instruction in particular. These studies also point to various obstacles that hinder teachers from effectively utilizing AI tools in subject instruction. For instance, Al-Subaie (2024) investigated the extent to which secondary school teachers in Riyadh employ AI applications in the teaching of Arabic, revealing limited usage due to multiple challenges. The results of the study concluded that there is a decrease in the utilization of AI applications in the skills

of planning, implementing, and evaluating Arabic language lessons. Additionally, there are obstacles that limit secondary school teachers' use of AI applications in teaching Arabic. [Al-Jadidiyah's \(2024\)](#) study sought to determine mathematics teachers' knowledge of AI concepts and applications and their attitudes toward AI in South Al-Batinah and Al-Dakhiliyah. Its results showed that mathematics teachers' attitudes toward employing AI applications were predominantly positive. [Shaheen's \(2022\)](#) study sought to understand the reality of the Arabic language in light of artificial intelligence, its most important fields, and monitor applications that operate with AI technology. The study concluded that there are multiple fields of AI and its benefits in teaching the Arabic language, as it contains applications that have proven effective in converting theoretical material into images and numbers that suit students. [Ramadan's \(2024\)](#) study aimed to explore and understand the use of AI in teaching the Arabic language. The study concluded that teachers hold positive expectations that AI can contribute to improving their performance and providing distinguished educational content for students, and accurate evaluation of student performance. As for students, AI improves their skills in the Arabic language, meets their individual needs, and provides interactive learning. In the context of educational administrations, AI has the potential to enhance school performance, improve the overall quality of education, and contribute to the advancement of Arabic language instruction. [Al-Dahshan \(2020\)](#) aimed to explore the relationship between the Arabic language and artificial intelligence. The study found that AI plays a significant role in supporting the Arabic language through automated learning, whether in written, audio, or sign forms, such as with robots. However, it also identified challenges in this relationship, notably the need to embrace a digital infrastructure for the Arabic language, rather than relying on traditional approaches. Additionally, a study by [Hassanin \(2024\)](#) sought to understand the requirements for integrating AI in education from the perspective of teachers. The results indicated that Arabic language teachers perceived the necessity of teaching requirements using an AI approach at a moderate level. Furthermore, their training needs to effectively employ AI in teaching the Arabic language were also rated as moderate.

Previous studies clearly indicate the impact of AI applications on Arabic language teaching. These studies often focus on how AI is used and what its most important applications are in facilitating and addressing the challenges of the process of teaching Arabic. Therefore, researchers aim to explore how AI applications are employed by Arabic language teachers in basic education, specifically in relation to the three teaching competencies: planning, implementation, and assessment.

2. Literature Review

2.1. The Concept of Artificial Intelligence

AI is a branch of computer science that aims to develop systems and programs that can simulate human intelligence. There are many definitions of artificial intelligence. [Khalifa \(2018\)](#) defined it as "the process of simulating human intelli-

gence using computer software that has complex algorithms to monitor human behavior and reactions in different situations, and is capable of learning, collecting and analyzing data, and making decisions” (p. 22).

AI is also defined as: “The field of science and technology that relies on sciences such as computer science, biology, psychology, linguistics, mathematics, and engineering. AI aims to understand the nature of human intelligence, simulate intelligent human behavior through computer programs, and provide computers capable of thinking, seeing, hearing, walking, speaking, and feeling” (Darar, 2019: p. 242).

The researcher believes that AI is computer technologies developed to perform several tasks that mimic human intelligence, such as thinking, problem-solving, and decision-making, to complete the tasks smoothly and successfully.

2.2. AI Aims

AI has emerged as an applied computer science concerned with studying, understanding, and simulating human intelligence to create a new generation of intelligent computers capable of performing many tasks that require high capabilities, such as inference, deduction, and perception (Muqatil & Hosni, 2021).

The aims of AI include developing technologies that help improve human life, support human decisions, increase efficiency, and facilitate processes in various fields. Nath (2009) stated that AI aims to:

1. Understand the nature of human intelligence by creating computer programs that can simulate intelligent human behavior.
2. Process information in a way that is closer to the human way of solving problems through parallel processing, where several commands are executed at the same time.

Al-Ghamdi (2024) also believes that one of the goals of AI is to simulate the nature of human intelligence and methods of solving problems, making decisions, and performing other tasks.

2.3. The Importance of AI and Its Advantages in Education

AI is of great importance worldwide, especially in this era. It is used in various fields to improve performance and simplify processes. Therefore, it is a fundamental pillar for improving people’s lives and supporting innovation in many sectors.

The importance of AI in education lies in its advantages, as mentioned in Rizk’s (2021) study, which are as follows:

1. Explain the study material and provide feedback on the answers.
2. Enable students to find a lot of information more quickly and from one source.
3. Reducing the routine workload of teachers and administrators.
4. Save time and solve problems more efficiently.
5. Improving teachers’ professional competences while maintaining their essential role within the educational institution.

6. It helps students choose good questions, and it also provides them with an outlet.

It allows students' information to be collected and analyzed to help them improve their academic performance.

2.4. Types of AI

AI can be divided into several types that differ in terms of intelligence level, capabilities, and uses (Khalifa, 2018; Al-Tokhi, 2021; Al-Mahdi, 2023; Copeland, 2023) have divided AI into the following:

1. Narrow AI: This is the simplest type of AI and is programmed to perform specific functions within a specific environment. The machine lacks the ability to think. Examples include Google search, speech recognition, and image recognition programs.

2. Strong AI: This type of AI is characterized by the ability to collect and analyze information and utilize it for planning, inference, and prediction. This type is important in developing AI to make machines as intelligent as humans. Examples include self-driving smart cars, personal assistants, and smart chatbots.

3. Superintelligence: This represents a level of AI that exceeds human capabilities in all areas, including creativity, problem-solving, and decision-making. It has the ability to learn, plan, communicate automatically, and make judgments. Therefore, it is necessary to adhere to the ethics of AI regarding the relationship between humans and machines. It is still under experimentation and is viewed as a hypothetical case, such as in movies and science fiction books, where machines are able to control the world.

2.5. Use AI Applications in Education

There are many uses of AI applications in the educational process, which have been mentioned in much educational research and literature, such as: Al-Ghamdi (2024), Al-Subhi (2020), Shaaban (2021), Goksel and Bozkurt (2019), and Huang et al. (2014), which can be detailed as follows:

1. Intelligent chatbots: These are among the most important AI applications used in education. They are computer programs that intelligently simulate real-life conversation. Interaction between the user and the program occurs through text or voice messages.

2. Intelligent Tutoring Systems (ITS): One of the most common applications of AI in education, they provide step-by-step personalized educational lessons for each student across several topics in specific fields and are used to simulate individual human teaching.

3. Intelligent adaptive learning: Using computer algorithms based on learners' responses to questions to tailor the educational materials, offer learning activities that best suit learners' cognitive needs, and provide feedback.

4. Virtual Reality (VR) and Augmented Reality (AR): Virtual reality is an interactive computer simulation of actual reality that allows the user to experience dif-

ferent things. This technology helps learners develop their abilities and understand complex scientific concepts.

As for Augmented Reality (AR) technology, it is a synchronous technology that adds an information layer in multi-dimensional forms, transporting the learner into a two- or three-dimensional view of their surroundings, and providing learners with a range of educational experiences, such as simulating surgical operations.

5. AI-based educational robots: Robots that cultivate learners' innovative spirit and scientific ability, integrating human and interdisciplinary knowledge through machine learning.

6. Smart educational games: These are computer-programmed games that achieve a specific educational goal. They are characterized by excitement, challenge, imagination, and competition. They are designed to stimulate mental activity and increase concentration. Examples include the Kahoot app.

7. Smart assessment: Computer programs that assess higher-order thinking skills, grade homework, test language development levels, and perform complex tests automatically. Examples include Google Forms.

Naturally, the use of AI applications in the educational process is of great importance, and there are obstacles that limit the use of AI in education. The results highlighted by previous studies recommended the need to expand the use of AI applications and to create qualification programs to train male and female teachers to develop their experience and knowledge of how to use AI applications in teaching. Additionally, the study highlights the need to integrate these applications into educational curricula as one of the requirements of the Fourth Industrial Revolution and to provide factors such as establishing infrastructure that suits AI applications in educational institutions (Al-Saawi, 2024; Al-Subaie, 2024; Al-Dahli & Qutb, 2024; Al-Muslim, 2023).

Figure 1 briefly illustrates the applications of AI used in education:

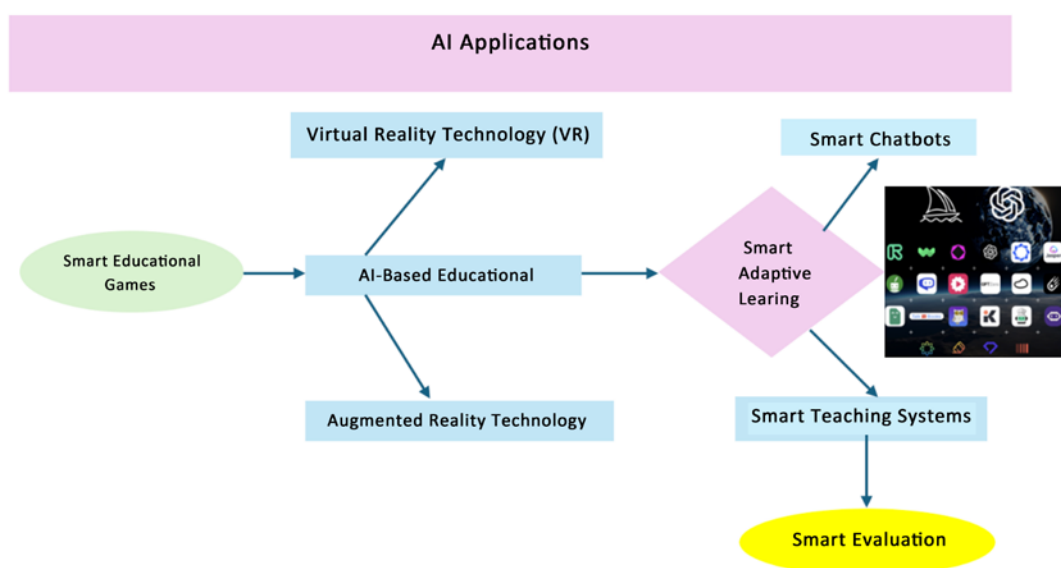


Figure 1. Applications of AI in education.

2.6. Using AI Applications in the Teaching of the Arabic Language

AI is one of the technologies that has played a significant role in developing the use of the Arabic language in many fields, particularly regarding the challenges it faces in natural language processing due to its linguistic specificity in terms of word formation, parsing, and derivation.

The impact of AI in enhancing Arabic language education is clear in how it can revolutionize the way Arabic is taught by providing interactive materials, automated educational programs, and practical curricula that support learners based on their needs and levels (Fitriana, 2023).

Ramadan (2024) stated that AI can be used to create interactive educational applications that help learners learn Arabic grammar and vocabulary and provide immediate feedback on their linguistic performance. Thus, this will contribute to making the process of learning the Arabic language more meaningful and interactive for students.

The Arabic language teacher has many advantages, such as their varied professional performance and extensive experience in their field of specialization, which enable them to deal with their professional responsibilities effectively, keep up with developments that benefit them, and seek to obtain various new tools that help them in their educational practices (Hajji, 2025).

In light of the above, specialists in the field of Arabic language education have confirmed that AI and its applications play a tangible role in serving the Arabic language by activating linguistic planning, reforming the language structure, sounds, and functions, in addition to standardizing writing and its rules, building dictionaries, and preserving and enriching the Arabic vocabulary. They also recommended the necessity of training Arabic language teachers in the skills of using AI applications (Al-Talouhi, 2023; Abdul Qadir & Al-Saadi, 2025).

The use of AI applications in teaching the Arabic language is an important step in improving the educational process. By using voice recognition and pronunciation analysis technologies, students can develop their linguistic abilities and improve their pronunciation. It also helps in learning grammatical rules through practical applications that enhance understanding and provide a comprehensive explanation of the rules with practical application. It also contributes to improving listening skills through exercises based on text listening and audio simulation, so that students can understand vocal expressions and how to apply them in different contexts (Aisha, 2025).

“Teaching and Learning Arabic: Visions and Practical Experiences” is a seminar that was held by the Ministry of Education from April 22 to 24, 2024. The seminar resulted in a set of recommendations, including activating AI applications and empowering teachers by offering training programs for Arabic language teachers to improve the technical skills needed to deal with AI applications that support Arabic language teaching.

By reviewing the above-mentioned theoretical aspects of the study, which dealt with the concept of artificial intelligence, its objectives and importance in educa-

tion, its types, the most important applications and uses in the educational process, and the role of AI in teaching the Arabic language, the efforts of the Ministry of Education in the Sultanate are tangible in training and qualifying teachers on teaching competencies in planning, implementation, and evaluation, whether through numerous courses and workshops conducted by Ministry employees during field visits, or through bulletins and guidelines issued to teachers. To keep up with the technological era, the Sultanate is making great efforts to overcome the challenges teachers face in order to employ AI applications in the educational process. The efforts are exemplified by conferences, workshops, guides, and programs related to this field. Despite this, there remains a major challenge in how to employ these applications and the necessary resources to use them during teaching. This requires intensifying efforts and striving to meet this challenge. The researchers noted, through reviewing previous studies that examined the employment of AI applications in teaching competencies, that the current study corresponded with them in terms of the methodology and tool used, which was represented by the descriptive approach. The questionnaire was used as a tool, such as in the studies of Al-Subaie (2024), Al-Khaibari (2020), and Al-Sunni et al. (2024), but it differed from them in the sample, as the previous studies took teachers as a sample, while the current study took supervisors as the sample for the study.

3. Artificial Intelligence Tools Used in the Study

Several studies have identified the most prominent artificial intelligence tools used in Omani schools, including Al-Shahoumi's (2024) study. The most frequently used tools are listed below:

1. Image generation and creation: **Canva**.
2. Simplifying concepts, information, and translation: **ChatGPT**.
3. Content summarization: **Bing Chat**.
4. Image generation and creation: **Bing**.
5. Answering questions: **Google Bard**.
6. Article writing and text generation: **You.com**.

Given the large number of AI tools used in education, as revealed by numerous studies, this study focuses on a select group of tools used within the study sample that can be employed in teaching Arabic in basic education schools. These tools are:

1. Generative AI tools: **Gemini, Copilot, ChatGPT**.
2. Smart content production tools and image and video generation tools: **Canva AI**.
3. Language and speech processing tools: **Speech-to-Text, ElevenLabs**.
4. Assessment and interaction tools: **Quizizz, Kahoot**.

4. Problem of the Study

The problem of the study was to reveal the degree of Arabic language teachers' use of educational applications based on AI technologies in teaching the Arabic language in basic education schools from the perspectives of Arabic language su-

pervisors in the Sultanate of Oman, by answering the following question:

What is the degree to which Arabic language teachers in basic education utilize AI applications in teaching competencies—namely planning, implementing, and assessment of Arabic language instruction?

5. Importance of the Study

The importance of this study lies in several aspects:

1. Directing the attention of curriculum designers to the importance of using AI applications in education in general, and in Arabic language teaching in particular, given their proven effectiveness in developing learners' self-learning skills.
2. Contributes to highlighting the needs for training and technical support for using AI applications.
3. The current study helps decision-makers to clearly identify AI applications and the skills needed to employ them, which will ease the path to providing the support needed for Arabic language teachers.

6. Terms of the Study

6.1. AI Applications

Al-Anzi (2024) defines AI applications as: "Software and tools used to provide diverse educational content, evaluate students' performance, and provide personalized guidance based on their individual needs. These applications include smart learning tools, natural language processors, and interactive teaching systems" (Ali et al., 2024).

The researchers define it as a list of smart tools and software, such as interactive chat, qualitative learning, electronic tests and their tools, and electronic games and competitions that are used by Arabic language teachers in the teaching competencies of planning, implementation, and evaluation for Arabic language lessons.

6.2. Supervisor of Arabic Language

An educational officer at the General Directorate of the Ministry of Education, affiliated with the Directorate of Education in the governorate, supervises schools. He is assigned a set of supervisory and instructional tasks to ensure the quality of education in the Arabic language.

7. Method

7.1. Design of the Study

This study employed a descriptive approach by analyzing quantitative data to achieve its objective, which is to explore supervisors' perceptions of the degree to which Arabic language teachers employ AI applications in teaching competencies related to Arabic language instruction.

7.2. Participants

The study population consists of all Arabic language supervisors distributed

across the education directorates in the various governorates of the Sultanate, numbering (68) supervisors, according to the statistics of the Educational Statistics Yearbook for the year (2023/2024). The study sample consisted of (30) supervisors from the education directorates in the various governorates of the Sultanate of Oman; the response rate was (100%). These are (Muscat Governorate, Al Batinah, Al Dakhiliyah, Al Sharqiyah, Al Dhahirah, and Dhofar), and they were selected randomly. Participants were selected using simple random sampling. The procedure was as follows:

1. A list was prepared of eligible members of the study population.
2. Members were numbered sequentially from 1 to 68.
3. Thirty (30) randomly selected, non-duplicate numbers, without regard to gender, were chosen from among the representative numbers of the population.
4. After completing the random selection and reviewing the sample characteristics, it was found that the sample consisted of 14 males (47%) and 16 females (53%), bringing the total number of participants in the study to 30. The following table illustrates the distribution of the sample.

8. Data Collection

The study developed a questionnaire instrument to collect data. The items in the data collection instrument were inspired by the pertinent literature. The questionnaire consisted of 26 items. Items were grouped into three dimensions: planning, implementation, and assessment. This questionnaire was constructed according to the following steps:

1. Reviewing educational literature and previous studies such as [Al-Subaie \(2024\)](#), [Al-Sunni et al. \(2024\)](#), [Al-Ayyar and Al-Balushi \(2024\)](#), and [Al-Khaibari \(2020\)](#), which dealt with the extent to which Arabic language supervisors employ AI applications in teaching the Arabic language with feedback in the basic education stage.
2. Preparing the scale for answering the questionnaire items, which is a five-point Likert scale that measures supervisors' perceptions of the degree to which Arabic language teachers employ AI applications in teaching Arabic at the basic education stage, which are: "strongly agree" and was given a score of "5", "agree" and was given a score of "4", "neutral" and was given a score of "3", "disagree" and was given a score of "2", and "strongly disagree" and was given a score of "1".

9. Data Analysis

To answer the research questions, we adopted a 5-point scale representing the levels of mean scores, as shown in [Table 1](#).

Descriptive statistics, including means and standard deviations, were used to illustrate the degree of Arabic language teachers' use of educational applications based on AI technologies in teaching the Arabic language from the Arabic language supervisors' perspectives in the Sultanate of Oman. Data were analyzed using SPSS software.

Table 1. Levels of mean scores.

Means Scores	Levels
1 - less than 1.8	very low
1.8 - less than 2.6	low
2.6 - less than 3.4	medium
3.4 - less than 4.2	high

10. Validity and Reliability

The initial version of the questionnaire was presented to a panel of experts specialized in curricula and methods of teaching at the College of Education, Sultan Qaboos University, and Educational Technology at the Ministry of Education, in order to ensure its validity based on specific criteria, including the linguistic accuracy of the statements, their relevance to the study's purpose, and their alignment with its objectives. Based on their feedback and suggestions, which included deleting some items, adding new ones, and modifying certain formulations, the questionnaire was revised and finalized to consist of (26) items.

To ensure the reliability of the questionnaire, the internal consistency method was used for the questionnaire items according to Cronbach's alpha, which reached (0.96), which is a good consistency coefficient for the study. Thus, the questionnaire in its final form became applicable, and accordingly, it was distributed to Arabic language supervisors in the first semester of the 2024/2025 academic year. The data were then entered into the computer, and the results were extracted, analyzed, and interpreted, as shown in **Table 2**.

Table 2. Cronbach's alpha reliability coefficients for planning, implementing, and assessment skills, and the overall instrument.

Teaching Competencies	Number of Items	Cronbach's alpha coefficient
Planning	8	0.916
Implementing	8	0.889
Assessment	10	0.938
Total	26	0.965

11. Results and Discussion

The research question investigated the extent to which Arabic language teachers in basic education utilize AI applications in teaching competencies—namely planning, implementing, and assessment of Arabic language instruction. To answer this question, the frequencies, percentages, mean scores, and standard deviations for each Arabic language competency were calculated, as shown in **Table 3**.

Table 3. Arithmetic means and standard deviations of the degree to which Arabic language teachers employ AI applications in Arabic language teaching competencies.

Teaching Competencies	Mean	ST. D	Level of Utilization	Rank
Planning	3.19	1.14	Medium	2
Implementing	3.23	1.06	Medium	1
Assessment	2.96	1.15	Medium	3
Total	3.12	1.11		

Table 3 shows that the arithmetic means of the study sample's responses to the axes of Arabic language teaching competencies ranged between (2.96) and (3.23), indicating a medium level of planning competencies. The total mean for implementation, evaluation, and other competencies was (3.12), reflecting an average level of availability. The level of teaching competencies among Arabic language teachers in this study may be related to their awareness and knowledge of AI applications, which was found to be moderate. Additionally, the educational environment's lack of emphasis on employing AI applications was evident, affecting teachers' tendencies to acquire these skills. Despite this, AI can enhance students' self-learning, increase effectiveness in the educational process, and support students' abilities to be creative and innovative. This aligns with the findings of [Al-Ayyar and Al-Balushi \(2024\)](#).

This result concurs with their study, which showed that competencies in implementation and evaluation had average availability degrees of (2.76, 2.77, and 2.61), respectively. Similarly, [Al-Azuri and Al-Farani \(2023\)](#) found that the overall mean for planning, implementation, and evaluation competencies was (1.64) out of 3, indicating an average level. Conversely, studies by [Al-Mas'ad and Al-Farani \(2023\)](#) indicated that the overall competency levels were average. Meanwhile, research by [Al-Subaie \(2024\)](#), [Al-Khaibari \(2020\)](#), and [Hindi \(2020\)](#) revealed a low level of application of AI in planning, implementation, and evaluation competencies. On the other hand, [Waqquad et al. \(2024\)](#) reported that the averages in these areas were at a high level. Below are the results for each competency.

11.1. Planning Competency

To assess the level of employing AI applications in planning competency, means and standard deviations for each statement in this domain were calculated, as shown in **Table 4**.

Table 4. Arithmetic means and standard deviations of planning competency items.

NO.	Item	Mean	St. D	Level of Utilization	Rank
1	Preparing the classroom environment to employ AI applications in teaching the Arabic language.	3.30	1.05	Medium	5
2	Using AI applications to prepare semester study plans for the Arabic language curriculum (Microsoft Copilot).	2.73	1.20	Medium	7

Continued

3	Using AI applications in selecting Arabic language teaching strategies.	3.36	1.15	Medium	3
4	Using AI applications in the planning phase of Arabic language lessons (Gemini).	3.56	1.07	High	2
5	Using AI applications to obtain students' data related to the subject.	2.80	1.32	Medium	6
6	Using AI applications in designing and selecting appropriate methods for language lessons.	3.33	1.15	Medium	4
7	Designing interactive e-learning activities using AI applications to enhance Arabic language learning (Canva AI).	3.73	1.11	High	1
8	Using AI applications to determine the objectives of the language lesson and its expected outcomes.	2.73	1.11	Medium	7
Total		3.19	1.14	Medium	

Table 4 shows that the arithmetic means of the study sample's responses to the phrases in the field of cognitive competencies for e-learning ranged between (2.73 - 3.56) with an average availability level for all competency phrases. The seventh phrase came in first place, which reads "Designing interactive e-learning activities using AI applications to enhance learning of the Arabic language," with an arithmetic mean of (3.73). This may be due to the lack of experience of Arabic language teachers in designing interactive activities due to not receiving sufficient training and the lack of sufficient awareness of how to employ AI applications in a manner consistent with the specified educational objectives. Despite the advantages of interactive activities in helping students interact, making learning more attractive, saving time and effort, and providing quick feedback to students, their design requires sufficient experience in planning and technology, which poses a major challenge for some teachers. The second and eighth statements came in last place, which stated as follows: "Using AI applications in preparing semester study plans for the Arabic language curriculum" and "Using AI applications in determining the objectives of the language lesson and its expected outcomes," with an arithmetic mean of (2.73). This may be attributed to the limited knowledge of Arabic language teachers in employing AI applications in lesson planning, especially in creating educational tools, preparing attractive educational media for the language lesson, as well as in preparing the lesson plan and determining appropriate behavioral objectives for it, in addition to their lack of knowledge in determining appropriate teaching strategies for lesson topics.

The arithmetic mean of the phrases all together was (3.19) with a medium availability level. This may be attributed to the Arabic language teachers' reliance on traditional methods in preparing the lesson plan, determining its objectives, and also in choosing appropriate means during teaching the Arabic language, in addition to their lack of knowledge of the concept of AI in the educational process, and their lack of knowledge of employing AI applications in the process of preparing for the language lesson.

11.2. Implementing Competency

Table 5. Arithmetic means and standard deviations of implementation competency items.

NO.	Item	Mean	St. D	Level of Utilization	Rank
9	Using AI applications to explain the content of the language lesson.	3.48	1.12	High	2
10	Using AI applications through practical examples in teaching the Arabic language.	3.36	0.99	Medium	4
11	Activate the digital content of the lesson alongside the textbook.	3.13	1.04	Medium	5
12	Using AI applications to convert written texts into audio files (Eleven Labs).	3.43	1.04	Medium	3
13	Using interactive chat technology to answer students' inquiries (chatbot).	3.50	0.90	High	1
14	Using AI-based virtual environments to explain language activities to students (Google Classroom).	2.86	1.22	Medium	7
15	Practical training for students on employing AI techniques in a manner consistent with the language lesson content.	3.03	1.06	Medium	6
16	Using a robot chat GPT to provide enrichment information for the language lesson content.	3.03	1.11	Medium	6
Total		3.23	1.06	Medium	

Table 5 shows that the arithmetic means of the study sample's responses to the competency statements are as follows: The implementation ranged between (3.50 - 2.86), with an average level of availability across all items in the field. The thirteenth phrase received the highest score, which stated, "Using interactive chat technology to answer students' inquiries," with an arithmetic mean of (3.50). This may be due to the lack of sufficient knowledge in using interactive chat applications such as ChatGPT or other similar applications effectively, and the lack of training programs that enable teachers to use these tools appropriately. Also, some schools or educational institutions have poor internet connectivity to run this type of application. Some teachers may think that using interactive chat technology may reduce direct interaction between them and students, so they avoid using it. The fourteenth, "Using virtual environments based on AI to explain language activities to students," ranked last among all the phrases with an arithmetic mean of (2.86). This may be attributed to the lack of familiarity of some Arabic language teachers with using virtual environments due to a lack of technical experience, which makes it difficult to apply them in implementation. Furthermore, using virtual environments to design interactive activities requires teachers to possess expertise not only in teaching competencies and the educational domain but also in technology, a reality that poses a significant challenge for many educators.

The arithmetic mean of the whole phrases was (3.23) with an average availability level. This may be attributed to the fact that Arabic language teachers possess an average level of the technological skills necessary to use AI applications and

their lack of familiarity, alongside their lack of sufficient experience in employing technology in education, which requires holding training workshops on employing AI applications and benefiting from them in the future.

11.3. Assessment Competency

Arithmetic means and standard deviations were used for each phrase of the third field, and **Table 6** shows this in order to reach the level of employing AI applications among Arabic language supervisors in the primary education stage.

Table 6. Arithmetic means and standard deviations of assessment competency.

NO.	Item	Mean	St. D	Level of Utilization	Rank
17	Using AI applications to automate student grades.	2.53	1.10	low	8
18	Activating educational language games that are based on suspense, challenge, and competition related to the subject matter (Kahoot).	2.73	1.20	Medium	6
19	Using AI applications to analyze students' answers.	3.36	1.15	Medium	3
20	Using AI applications to provide feedback to students (Chat GPT).	3.43	1.12	High	2
21	Encouraging students to find technical solutions to employ AI applications to solve educational problems related to language skills.	3.63	1.04	High	1
22	Designing diagnostic tests using AI applications to identify students linguistic strengths and weaknesses (Quizizz).	2.73	1.15	Medium	6
23	Using AI applications to electronically monitor tests designed for remote students.	2.80	1.24	Medium	5
24	Using interactive chatbot technologies to address students' low language skills.	2.80	1.09	Medium	5
25	Using AI applications to help students make appropriate educational decisions.	2.90	1.29	Medium	4
26	Using expert systems to design assessment questions that are appropriate to students' language level.	2.70	1.08	Medium	7
Total		2.96	1.15	Medium	

Table 6 shows that the arithmetic means of the study sample's responses to the evaluation adequacy field statements ranged between (2.53 - 3.63), with a medium availability level for all field statements except for the twenty-first statement, "Encouraging students to find technical solutions to employ AI applications to solve educational problems related to language skills.", which came in first place with an arithmetic mean of (3.63) and a high availability level. This may be due to the feedback provided by teachers to students via AI and their direct communication with students. Moreover, there is a culture among Arabic language teachers regarding the importance of using artificial intelligence applications in teaching Arabic. The seventeenth statement, "Using AI applications to automate student grades." shows the lowest score with an arithmetic mean of (2.53) and a low availability level. This may be due to the lack of adequate training for teachers in using

them. Furthermore, adapting specialized AI programs to automate student grades requires extensive preparation, workshops, and intensive capabilities from teachers to master this skill, and its absence leads to their reliance on traditional methods. Moreover, the use of automated AI grading applications requires strong technical support and a robust infrastructure to facilitate this process easily. This result is consistent with Al-Subaie's (2024) study.

The arithmetic mean of the combined statements was (2.96), indicating a moderate level of availability. This could be because this axis shows that teachers rely on traditional assessment methods that focus on memorization and recall, and they do not properly incorporate AI applications into the educational process. Additionally, some teachers are unaware that certain applications analyze students' results and provide feedback, and that identifying linguistic strengths and weaknesses is considered an AI application, especially when using the Microsoft Form application.

Recommendations

We think that it is necessary to provide Arabic teachers with technical support to use AI tools and applications. In addition, the program for in-service Arabic language teachers in the Ministry of Education, which provides schools with teachers, should work on preparing supportive guides for them, enabling them to interact easily with various AI applications. There should be utilization of appropriate AI applications in Arabic language curricula.

Finally, there is a need to conduct similar research studies that examine other specializations in AI applications in Arabic language curricula.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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