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## The Role of Dictionaries in Teaching the Language and the Impact of Artificial Intelligence

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### Abstract

The sector of teaching foreign languages, especially the Arabic language, has witnessed a remarkable development thanks to technological development. Searching on the Internet has become part of the educational process. This development may lose its luster in the face of artificial intelligence's control over technology and computer programs, which indicates an unprecedented radical transformation. In language teaching in particular and the educational process in general. This article aims to shed light on the relationship between artificial intelligence applications in supporting dictionaries, especially electronic ones, and harnessing it to increase the effectiveness of language learning, and the necessity of benefiting from the use of artificial intelligence applications in a way that helps students who want to learn languages, and makes the learning process easy for learners, while it must Taking into account the placement of words in Arabic sentences.

**Key Words:** Electronic dictionaries, translation, teaching the Arabic language, technology, smart applications, Artificial intelligence.

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**Introduction.** Learning languages, especially the Arabic language, is a process that requires dedication, patience, and perseverance. However, there are many tools that can help in this regard. One of the most effective tools for learning Arabic is the dictionary. This article will explain how dictionaries can help in learning the Arabic language.

What is a dictionary and how to use it?

First of all, it is necessary to clarify that the dictionary or "lexicon" is: a book that includes linguistic vocabulary arranged in a specific order and explanations of these words, or mentioning their equivalents in another language.

Terminologically: it is the book that contains the explanation of linguistic vocabulary and words, clarifying their meanings, characteristics, and connotations.

The word "lexicons" is derived from the Arabic word "لِجَان" as if it is an indication that the lexicon was originally used by non-Arabs who do not speak the Arabic language.

It is worth noting that the word "dictionary" is used synonymously with "lexicon". Over time, some people thought that this word is a synonym for the word "lexicon" and it spread among researchers and scholars alike.

One of the modern uses is to call the lexicon a dictionary whether it is in Arabic or English or bilingual.

We notice that Arabic lexicons, old and modern, have a fundamental role in preserving the authenticity of the Arabic language. They are a tool for preserving human heritage and its language throughout the ages. Today,

scholars cannot do without these lexicons and their development because they are deeply aware that the reason for the death and extinction of any language lies in the neglect of this science.

Why are dictionaries compiled?

Dictionaries are extremely important resources in the Arabic language, as they clarify the pronunciation and spelling of each of the words included in them. They help develop proficiency in general and enhance the acquisition of receptive skills for learners of Arabic.

Dictionaries also help preserve the Arabic language and maintain the beauty of the language of the Qur'an, which is characterized by eloquence and brevity.

We find that they have an important role in spreading the Arabic language and expanding the number of its speakers, which is one of the great goals that all Arab and Islamic institutions strive for.

Acquiring the Arabic language contributes to the elevation of a people above other peoples due to the transfer of culture and sciences using translation and dictionaries and increasing the desire to learn the Arabic language, which is a phenomenon that is increasing and spreading. Not only that, but the rate at which the Arabic language is spreading is fast and may sometimes exceed other languages in some regions and countries, as it is one of the fastest languages among its peers in other languages and in specific countries (Central Asia).

Dictionaries are one of the most important tools for acquiring

languages in general and the Arabic language in particular due to the abundance of synonyms and derivations of Arabic words. Among the advantages of employing dictionaries in learning and teaching Arabic as a second or foreign language are:

Benefits of using dictionaries in learning a foreign language:

1. Improves overall proficiency:

Dictionaries provide definitions, examples, and grammatical information for words, which helps learners understand and use them correctly. This leads to improved reading, writing, speaking, and listening skills.

2. Enhances receptive skills:

Dictionaries help learners understand the meaning of words and phrases they encounter in texts or conversations. This is essential for developing receptive skills, such as reading comprehension and listening comprehension.

3. Promotes accurate pronunciation:

Dictionaries provide phonetic transcriptions of words, which helps learners pronounce them correctly. This is especially important for learners of Arabic, as the pronunciation of some letters and sounds can be difficult for non-native speakers.

4. Builds confidence:

When learners can look up words they don't know and find clear and concise definitions, it gives them confidence in their ability to use the language. This can motivate them to continue learning and using Arabic.

5. Expands vocabulary:

Dictionaries provide learners with a wealth of new words and phrases to learn. This helps them expand their vocabulary and express themselves more precisely and fluently.

6. Provides grammatical information:

Dictionaries provide information about the grammatical features of words, such as their part of speech, gender, number, and conjugation. This helps learners use words correctly in sentences.

7. Facilitates self-learning:

Dictionaries are a valuable resource for self-learners. They allow learners to look up words and phrases independently and at their own pace.

8. Promotes critical thinking:

When learners use dictionaries, they are encouraged to think critically about the meaning and usage of words. This helps them develop their analytical skills and become more effective language learners.

9. Enhances cultural understanding:

Dictionaries often include information about the cultural context of words and phrases. This helps learners develop a deeper understanding of the culture of the target language.

10. Improves spelling and writing skills:

Dictionaries can help learners improve their spelling and writing skills by providing correct spellings and examples of how words are used in sentences.

Overall, using dictionaries can be a highly beneficial way to improve your foreign language skills.

Using Modern Dictionaries

It is known that the first dictionary we hear of was compiled by F. Raphelng in the 16th century and printed after his death in the early 17th century in 1613.

Modern dictionaries must also be characterized by development and keeping pace with the times. I do not mean the traditional and conventional concept of development here, the outputs of which are often limited to:

- Luxury printing
- Dividing different topics in a different way
- Issuing an electronic version of it... and so on.

What is meant by the development of dictionaries?

What I mean by development here is fruitful interaction and the exploitation of artificial intelligence in simulation and education.

It is known that learning a language using the method of practice and dialogue with others is one of the fastest and shortest ways to learn a language. There are other vague concepts in the learning process. For example, put children with native speakers of a language, and the language will be easily absorbed. Then put children with a set of books, and you may find chewed corners on the covers, but the children still cannot read. Why do many students struggle with reading when they seem to absorb their mother tongue like a sponge? Why do students often struggle when it comes to learning in traditional ways?

Here are some of the ways that modern dictionaries can be used to improve language learning:

- Providing interactive exercises and activities that help students

practice using the language in a meaningful way.

- Using artificial intelligence to provide personalized feedback and support to students.
- Making use of multimedia resources, such as audio and video, to help students learn the language in a more immersive way.
- Connecting students with native speakers of the language for practice and conversation.

By using modern dictionaries in these ways, we can make language learning more engaging, effective, and enjoyable for students.

How to Utilize Dictionaries in Teaching Arabic

The Role of Electronic Dictionaries in Translation, Knowledge Transfer, and Foreign Language Teaching, Including Arabic for Non-Native Speakers

Electronic dictionaries have become an essential tool for translation today, and are indispensable for any professional translator. They not only provide translations for words in different languages and clarify their meanings, but also work to revive the language and culture of other communities by employing the semantic meaning of these words and their equivalents in other languages.

In addition, using language dictionaries, especially electronic ones, while teaching Arabic to non-native speakers helps to strengthen the students' linguistic repertoire. Dictionaries contain the culture of the native speakers and are rich in their vocabulary and general and specific structures.

In bilingual dictionaries, we see that examples can play another important function. They can be chosen to give the reader an idea about the civilization of the speakers of the foreign language that the dictionary deals with. And we can spread the foreign civilization in the dictionary, to a large extent, through examples and quotes.

#### Bilingual Lexicography and Foreign Language Teaching

##### The Place of the Bilingual Dictionary in Foreign Language Lessons

Although the first English bilingual dictionaries were classified as a specific tool used by foreign language students, especially Latin, French and Spanish, many foreign language teachers today do not tend to use bilingual dictionaries. This position stems from the philosophy underlying the (direct method) of foreign language teaching.

##### Negatives

In addition to the positive role of the dictionary in teaching Arabic, we find that it has some shortcomings and criticisms, including:

- The lack of examples and sentences that illustrate the correct usage of words.
- The lack of cultural information and context.
- The difficulty in finding the right word, especially for beginners.
- The reliance on the dictionary can lead to laziness and a lack of critical thinking.

Despite these shortcomings, electronic dictionaries can be a valuable tool for teaching Arabic if used correctly.

Here are some tips for using electronic dictionaries effectively in the classroom:

- Choose a dictionary that is appropriate for the level of the students.
- Teach students how to use the dictionary effectively.
- Use the dictionary to supplement other teaching materials.
- Encourage students to use the dictionary independently.

By using electronic dictionaries in these ways, we can help students learn Arabic more effectively and efficiently.

##### The Impact of Modern Technology on Learning Languages

With the development of modern technology and the emergence of various programs such as electronic dictionaries, instant translators, foreign language teaching programs, and the spread of e-learning via the internet, we still find a general weakness in retaining words that a person has learned.

For some people, technology has become an obstacle to learning rather than an aid in the educational process. This threatens the emergence of minds that are heavily dependent on technology and away from the traditional dictionary due to its fixed presentation method.

The progress made in translation programs, especially instant translation programs, and the developments that have entered and are developing for instant translation programs, have made the goal of learning foreign languages not a matter of effort or even the intended meaning, goal, or desired goal.

Difficulties in using electronic dictionaries:

- Difficulty in choosing the correct meaning of a word, as there are usually several meanings for each word.
- Difficulty in memorizing new vocabulary and expressions, as the dictionary contains a large number of words and expressions.
- Difficulty in using new vocabulary and expressions in conversation, as the learner needs more training to use these words and expressions correctly.

From here, we can conclude that developing specialized dictionaries for teaching Arabic, facilitating learning, and highlighting the ease of the Arabic language, contrary to the widespread idea among non-Arabic speaking countries, while preserving the authenticity of the language and its sound structure, are among the important goals that must be taken into account when publishing a dictionary.

Other problems faced by dictionaries dedicated to foreign language students:

- The lack of examples and sentences that illustrate the correct usage of words.
- The lack of cultural information and context.
- The difficulty in finding the right word, especially for beginners.
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In addition to electronic dictionaries, there are a number of other resources that can be used to help students learn Arabic.

These resources include:

- Textbooks and other course materials.
- Online courses and tutorials.
- Language exchange programs.
- Immersion programs.

By using a variety of resources and learning strategies, students can overcome the challenges of learning Arabic and achieve their language learning goals.

How to Present Audio Information in Dictionaries

Given that the phonetic spelling systems used to show the pronunciation of words can put a new burden on the student and may lead to incorrect pronunciation, Dr. Joseph Michel proposes a new way to solve this problem.

The new method requires each entry to be written on a card containing all the necessary information, such as the headword, its meanings, its grammatical rules, and verbal or visual



examples. The card also contains a magnetic tape that records the pronunciation of the headword and the explanatory examples. The cards are arranged alphabetically in a drawer similar to the index of a public library.

The student using this type of dictionary searches for the desired word in the index. If he finds its card, he studies the information written on it, then returns the card to its original place.

However, recording in general cannot be compared to the real sound produced by the human apparatus, especially if the situation is one of linguistic phonetic research.

The human voice has an interactive value in different life situations, because the recorded sound makes the student only listen, while the live voice involves interaction with many different senses, such as hearing, seeing, and observing the movement of the lips.

The Importance of Electronic Dictionaries in Teaching Arabic

1. Using language dictionaries, especially electronic ones, during teaching helps to strengthen the linguistic repertoire of students. Dictionaries contain the culture of native speakers and are rich in their vocabulary and general and specific structures.

2. In line with the qualitative leap in the world of technology and education, it was necessary for us in our day to work on using these electronic dictionaries and smart applications in teaching Arabic to non-native speakers.

3. One of the advantages of using dictionaries in learning and teaching Arabic as a second or foreign language

is that it helps to develop competence in general and enhances the acquisition of receptive skills for learners of Arabic in particular.

Here are some of the ways that electronic dictionaries can be used to improve language learning:

- Providing interactive exercises and activities that help students practice using the language in a meaningful way.
- Using artificial intelligence to provide personalized feedback and support to students.
- Making use of multimedia resources, such as audio and video, to help students learn the language in a more immersive way.
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How to Develop a Modern Dictionary

Developing a modern dictionary requires many steps and skills. The dictionary should be able to provide an

accurate description of the language used in general usage, and it should be designed, compiled, used, and evaluated properly. Using modern technologies, such as computing and artificial intelligence, can help improve the accuracy and usability of the dictionary.

Here are some steps you can take to develop a modern dictionary:

1. Define the scope and purpose of the dictionary.

- What type of language will it cover?

- Who is the target audience?

- What information will be included?

2. Gather data from a variety of sources.

- This could include corpora, dictionaries, and other reference materials.

3. Analyze the data and identify patterns.

- This will help you to determine the structure and content of the dictionary.

4. Write the definitions and other entries.

- Be sure to use clear and concise language.

5. Test the dictionary with users.

- This will help you to identify any errors or omissions.

6. Make revisions and updates as needed.

- A dictionary is a living document that should be updated regularly.

Here are some additional tips for developing a modern dictionary:

- Use technology to your advantage.

- Be user-friendly.

- Be comprehensive and accurate.
- Be up-to-date.

Here are some features that could be included in an electronic dictionary:

- Easy and fast search for words and meanings.

- Ability to import from other sources.

- Save new words and phrases in a personal database for later study.

- Highlight saved words and phrases when reading other texts.

- Provide flashcards and other tools for review at any time.

- Generate statistics that track learning activity and measure progress in language learning.

One of the most important requirements is the active interaction between the learner and the dictionary.

- The ability to share with different users who can be from different countries to complete joint projects between them.

Learning a language should be effective and efficient! Not everyone has a lot of time to dedicate to learning a language, maybe an hour or so a day. So the time the learner spends with the dictionary should be enjoyable, so that it stays with them. The learner should feel that whenever they take time away from listening, reading or speaking, as when reading the dictionary, they are not using their time efficiently, and certainly not enjoying it.

### The Use of Artificial Intelligence in Dictionary Making

Artificial intelligence (AI) has become a common concept in our daily lives in recent times. It is a science that seeks to develop computer programs to be highly efficient, similar to human efficiency. We now find simulations in



the work of electronic programs for various mental operations performed by humans. AI has become a real and developing science day by day in various fields and knowledge, including the field of education, especially language education, including the Arabic language.

Audrey Azoulay, Director-General of the United Nations Educational, Scientific and Cultural Organization (UNESCO), said that while AI poses a number of risks to multilingualism, it also carries many opportunities and promises. It can facilitate dialogue between peoples and cultures by developing instant translation tools. It can also help people learn several languages and thus encourage the flourishing of the Arabic language.

The use of AI in electronic dictionaries and lexicons is now widespread, and we find that it has many benefits, including:

1. Recognition of sounds and speech with the ability to move objects.
2. Enabling learners to continue learning: The learning process becomes self-directed without being subject to supervision and monitoring.
3. Possessing a great ability to process the vast amount of information that is exposed to.
4. The ability to observe similar patterns in data and try to analyze them more effectively than human brains.
5. Trying to find solutions to unexpected problems using its various cognitive abilities.
6. Access to various technical fields that require logical thinking, knowledge, planning, and virtual

perception based on applying theories and choosing the right solutions.

7. Developing computer programs and technologies in various fields, such as electronic dictionaries.

The Role of Artificial Intelligence in Serving the Arabic Language

Artificial intelligence (AI) can play a significant role in serving the Arabic language by simplifying it for non-native speakers. This can be done through machine learning, whether in writing, speaking, or signing, as with robots. Additionally, AI can be used to provide smart services in the Arabic language.

AI can help the Arabic language spread globally and activate language planning by reforming the language's structure, sounds, and functions. It can also help standardize writing and grammar, build dictionaries, protect and update vocabulary, and support communication with Arabic-speaking communities. Furthermore, AI can support language policy through decisions made in the context of the relationship between language and life, ensuring that the language is used in education and learning.

We can see that the goal of using AI in dictionaries is to reach an understanding of human cognition and to try to simulate this cognition by developing computer programs and systems that can process human language at different levels in different situations that a person goes through in his life, such as anger, joy, sadness, and the influence of his feelings on the language he speaks.

We need cooperation between professors of technology and Arabic

language to prepare and design software that aims to:

1. Recognize speech and convert spoken text to written text: This should take into account the different dialects prevalent in Arab countries, as the same word can be pronounced in more than one way, leading to confusion and problems in writing that the system cannot understand. This can be addressed by adopting standard Arabic as a reference when designing Arabic language software.

2. Recognize how to convert written text to spoken text.

3. Recognize the different dialects of the Arabic language: Given the multiplicity of Arabic dialects from country to country and from city to city within the same country, most Arabic dialects are spoken and not written. We do not find books specific to the Egyptian dialect, the Gulf dialect, or other dialects such as the Levantine or even the Moroccan dialect, which is considered one of the most difficult Arabic dialects.

4. Recognize emotions and analyze feelings based on speech.

5. Recognize the patient's psychological state through their voice.

Here are some additional points to consider:

- AI can help to create more accurate and comprehensive dictionaries.
- AI can help to make dictionaries more user-friendly.
- AI can help to make dictionaries more accessible to people with disabilities.
- AI can help to make dictionaries more affordable.

The Role of Information and Communication Technology, Industrial Revolution Technologies, and Artificial Intelligence in Promoting the Arabic Language

Information and communication technology (ICT), industrial revolution technologies, and artificial intelligence (AI) can play a vital role in promoting the Arabic language and raising its status in the Arab world and around the globe.

The continuous and accelerating development of technology poses a challenge for academics in this nation to find ways to keep pace with the rapid pace of this era. Computational linguistics is a very important tool in responding to the modern challenges.

However, it still needs great efforts to develop and refine it in order to serve the Arabic language, its speakers, and its sciences.

Therefore, it is necessary to combine efforts in the field of Arabic computational linguistics between linguists and computer scientists. It is also necessary to spread computer awareness among linguists and encourage universities and research centers to allocate a course that focuses on Arabic language computing and to create a new specialization that supports the language department.

**Conclusion.** The Arabic language is a morphologically rich language. This richness makes the interaction between morphology (the study of the structure of words) and syntax (the study of the relationships of words in a sentence) more complex. The richer the language is morphologically, the more flexible the sentence is in its properties.

Predicting the sentiment of a text is not an easy task for machine learning. A lot of preprocessing is needed just to be able to run the algorithm. The main problem for sentiment analysis is the formulation of the automatic representation of the text.

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