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## EFFECTIVENESS OF THE DUOLINGO APP IN LEARNING THE ARABIC LANGUAGE: APPROACHES AND ANALYSIS

**Abstract.** *This article provides an in-depth analysis of the methods for assessing the effectiveness of using the Duolingo mobile application in the process of teaching Arabic. In particular, in the development of digital technologies, the features of educational applications based on gamification and interactive, interesting approaches to the development of students' language skills are highlighted. In addition, the learning outcomes, motivation, and activity of students using the Duolingo application and traditional teaching methods are compared using tests and data obtained from practical experience. This article contributes to enriching innovative strategies in Arabic language pedagogy and offers teachers scientifically based recommendations for more effective integration of technologies.*

**Keywords:** *Duolingo, gamification, Arabic, educator, student, learning, approach, digital technology, learning effectiveness, motivation, test, method, grammar, result, and more*

### INTRODUCTION

Arabic is one of the most important languages on an international scale, especially in countries where the Muslim population is large. In this case, good knowledge of the Arabic language is necessary not only for everyday communication but also for understanding religious and cultural texts. Communication skills are of particular importance for Arabic language learners: this ability develops speaking skills, increases self-confidence, helps to understand the peculiarities of Arabic culture, and serves as a foundation for other skills, such as listening, reading, and writing. (Koderi et al., 2023:13)

The central task of teaching Arabic is to bring students to a level where they can understand and apply the language both in the academic environment and in practical life. (Hijriyah, n.d.:17) At the same time, to improve the quality of teaching, it is necessary to use modern innovative teaching tools, especially educational films and audiovisual materials suitable for educational purposes, which will increase students' interest and make the educational process more effective. Arabic language teachers, as leaders, are responsible for selecting learning models that help students learn effectively and help them achieve the expected results. (Koderi, 2018:79-83) However, apparent difficulties arise in teaching Arabic: from difficulties in mastering grammatical rules to a lack of student motivation. The introduction of innovations is required so that students express a desire and interest in learning Arabic. (Hijriyah et al., 2022:243-244) Classroom management should be adapted to students' intellect and learning characteristics, meaning the educator should consider different learning methods of students. (Mahmudi et al., 2022:48) Along with technological advancements, there is a need to provide students with faster feedback, and it is necessary to use advanced assessment tools that help understand their progress and aspects that need improvement. (Nurhidayati et al., 2019:1-4).

Educational tools need to be developed to be interactive and innovative. A learning tool is a tool used by the educator and the student, which facilitates the learning process and serves to achieve learning objectives. (Koderi et al., 2020:268-273) In the modern education system, the use of technology-based learning tools plays an important role, as these tools bring the educational process closer to real life, develop it with innovative methods, and make it more effective. ICT (information and communication technologies) plays a central role in delivering educational content to students quickly, reliably, and with high efficiency. (Alfusanah et al., 2024:40) In the process of using digital educational tools, meeting the demands and needs of educators is of particular importance. They must have sufficient educational resources and digital resources, as well as undergo technological training and advanced training programs. This will allow them to successfully implement digital technologies in lessons and educational activities. (Meliyani et al., 2022:271) A highly qualified educator uses new modern media tools, as in today's era, almost all educational technologies are being developed in a digital application-based system. (Zamroni et al., 2023:44) Language learning applications,

such as Duolingo, have emerged as an attractive alternative to facilitating independent and interactive language learning. Several previous studies show that application-based learning can improve students' learning outcomes compared to traditional methods.

## MAIN PART

The «Android system» can have a very positive impact in the field of education. Since the development of information and communication technologies has created conveniences for devices operating on the Android system, it requires a high level of use of these capabilities as an innovative and creative learning tool. In addition, in teaching the Arabic language, there is a gamification<sup>1</sup> concept using game elements, which serves to increase students' learning experience and motivation. This approach is considered a learning innovation and can foster a positive attitude through educational games. Through game activity, students directly experience the learning, apply language skills in a more comfortable environment, and at the same time encourage social connection between them - this is an important factor in language learning. In general, gamification is considered an effective way to increase student engagement and help them better master Arabic. (Jasni et al., 2018:5)

Learning a foreign language through Duolingo provides students with a unique experience, since each learning system includes various methodological aspects - tracking progress, motivation, reflection, and vocabulary acquisition, which ensures the effectiveness of the learning process. Therefore, it is important to study the effectiveness of the Duolingo application in the context of teaching Arabic. Although several studies have been conducted on language learning using applications, there are still gaps in the literature regarding the use of the Duolingo application specifically for the Arabic language. In the digital age, the use of technologies in education is becoming increasingly relevant, the results of this study provide valuable recommendations for educators in developing more effective learning strategies.

«How effective is learning Arabic using the Duolingo application compared to traditional methods?!»

The purpose of this study is to study and analyze the difference between the use of the Duolingo application and traditional teaching methods, in terms of learning outcomes, motivation, and student activity.

<sup>1</sup> Gamification - the process of simplifying systems by making them game-specific

Educational tools play an important role in the educational process, especially in increasing the effectiveness and interactivity of teaching. (Yusuf, 2021:4-5) With advancements in technology, various media, such as mobile apps, interactive videos, and e-learning platforms are very useful in applying interesting teaching methods. Properly chosen teaching aids help students better understand the material, increase motivation, and further simplify the learning process. (Helty et al., 2024:1-2)

In the digital age, there are various conveniences and opportunities for teaching Arabic. (Sukarya et al., 2022:3941-3943) Information technology is changing people's way of learning and how they understand information, providing more flexible and interactive learning. (Helty et al., 2024:11) Now, students can learn Arabic through online digital platforms that offer rich and diverse resources. (Mulia et al., 2023:7-8) However, access to technology and difficulties in adapting to new technologies, especially in areas with insufficient technological infrastructure, are still issues requiring attention. (Sukarya et al., 2022:6) Duolingo is one of the most popular and effective foreign language learning applications, especially for beginners. (Ritonga et al., 2022:3) This application uses a gamification approach, that is, it adds game elements to the learning process, which makes it interesting for users. (Ahmad et al., 2023:5) Duolingo offers various modules covering vocabulary, grammar, and pronunciation skills, all presented in an interactive format. (Febriani, 2022:8) Using the Duolingo app in Arabic language teaching offers several advantages. This application facilitates independent learning, providing students with the opportunity to learn at any time and in any place.

The use of the Duolingo application in the context of teaching Arabic has shown positive results. (Febriani, 2022:3) Extensive research confirms that students using Duolingo experience significant improvement in vocabulary acquisition and pronunciation skills. For optimal results, it is important for educators to integrate this application with traditional teaching methods. Thus, Duolingo serves not only as an auxiliary tool, but also as an integral part of a more holistic learning strategy.

Through the Duolingo application, students can improve their Arabic language skills, especially vocabulary and grammar, through interactive exercises, which help them memorize new words faster. The gamification approach in Duolingo can increase student motivation through game elements - points and challenges, and at the same time make the learning process more interesting. By supporting independent learning,

Duolingo helps students develop a habit of learning at their own pace, which increases their deeper understanding of the material and long-term memorization. Duolingo, integrated with traditional teaching methods, allows for a deeper understanding of the Arabic language. In general, Duolingo is considered an effective tool in supporting language learning in the digital age.

### 1. Basic Duolingo features

a) Gamification, or Duolingo, uses game elements to make learning more engaging. Users can increase learning motivation by completing challenges, scoring points, and unlocking new levels.

b) Interactive learning, i.e., the application offers audio and visual-based exercises that allow users to learn by listening, reading, and grinding. This improves the ability to understand and speak the new language.

c) The step-by-step learning approach, that is, the learning material begins at the base level - alphabet and simple vocabulary, and gradually moves to a more complex level. This makes it easier for beginner users to understand the language. (Rejeki & Muhajir, 2020:5-6)

d) Quick feedback, meaning users receive feedback immediately after completing the exercise, which helps them understand their mistakes and quickly improve their language skills.

e) Learning personalization, that is, this application allows users to choose the materials they want to learn, which ensures freedom and flexibility in the learning process.

f) Community-based learning, i.e., Duolingo, has features that allow users to communicate and learn with each other, which supports collaborative learning. (Yusuf, 2021:7)

g) Convenience, that is, this app is available on various devices (mobile and computer) and allows users to learn at any time and in any place without time or place restrictions. (Ritonga et al., 2022:4)

h) Progress analysis, Duolingo, provides users with statistics and graphs to help track their progress in language learning. (Febriani, 2022:9)

i) The context-based learning technique, that is, the materials to be taught are presented visually with the appropriate context, which helps users understand the actual use of the learned words and phrases. (Yusuf, 2021:11)

j) Specialized skills training, i.e., Duolingo offers exercises focused on specific skills, such as speaking, listening, reading, and writing, which help users fully develop their language skills.

## **2. Andragogical<sup>2</sup> Practical learning outcomes (implications)**

1. Duolingo is ideal for andragogic training, as it supports:

a) Independent learning: Adult users can independently read and customize materials according to their needs.

b) Developing critical thinking skills: Through content interaction and exploration, users can develop critical thinking skills.

c) Using technologies in education: Duolingo integrates technologies into the learning process, which fully meets the needs of today's adult learners. (Yusuf, 2021:14)

## **3. Duolingo Disadvantages**

a) Using the literal translation method. The application apparently relies on a method of literal translation, which can cause difficulties and confusion for users in correctly understanding the true context of phrases or lexical units. (Ritonga et al., 2022:2)

b) Insufficient attention to speaking skills. Despite the availability of speech exercises, blind users note that the application does not provide sufficient opportunities for practicing speaking skills in an effective form, which is especially important in learning languages that require active communication. (Yusuf, 2021:6)

c) Limited social interaction. Although the application contains elements of community, social communication is not as intensive as in a physical learning environment, as a result of which the experience of collaborative learning may be weakened.

d) High dependence on technology. Users unfamiliar with the technology may experience difficulties in effectively using the application, which can hinder their learning process.

e) Lack of a formal assessment system. Duolingo does not provide a formal assessment system for a comprehensive assessment of users' level of mastery, which may be important for some students.

## **4. Advantages of Duolingo**

a) Interesting and interactive learning. Duolingo uses gamification elements, which makes the learning process more attractive and interesting and can increase user motivation.

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<sup>2</sup>The term «andragogy,» unlike pedagogy, refers to adult education and discusses the management, development, and guidance of a mature individual through education. Therefore, an adult educator is called an andragogue.

b) Easy and flexible access. The application is available on various devices (mobile applications and computers) and allows users to learn at any time and from any place, which fully corresponds to their convenience.

c) Step-by-step learning approach. The presented material begins at the initial level and gradually becomes more complex, which helps users systematically master the language.

d) Quick feedback. Users receive feedback immediately after completing the exercise, which allows them to understand errors and quickly improve their language skills.

e) Comprehensive development of language skills. Duolingo offers exercises encompassing various language skills, such as speaking, listening, reading, and writing, which help users develop their abilities comprehensively.

f) Personalized learning adaptation. Users have the freedom to choose materials of their choice, which allows them to focus on areas that best suit their needs.

g) Social-based learning. The application allows users to communicate with other students, which can support collaborative learning and experience sharing.

h) Precise analysis of the dynamics of assimilation. Duolingo shows progress in the learning process through statistics and graphs, which helps users track their progress and can increase learning motivation. (Yusuf, 2021:9)

i) Using technologies in language learning. Duolingo integrates technologies into the learning process, which fully meets the needs of language learning in the modern digital age.

j) Opportunity for independent learning. Duolingo supports self-learning, giving users freedom of learning at their own pace and time, which is very important for adult learners. (Febriani, 2022:7)

The use of Duolingo as an interactive learning tool makes an important contribution to a significant increase in the level of students' understanding of the Arabic language and stimulates their motivation for independent learning.

The analysis of the main results and conclusions of the conducted research can be clearly seen in the table below. The data presented in the table statistically confirm the effectiveness of using the Duolingo application in improving students' Arabic language skills.

	<b>Research results</b>
<b><i>Duolingo gamification: English students in learning in increasing motivation The role of the application (2021)</i></b>	Duolingo is effective as a language learning platform for beginners, and this effectiveness is based primarily on a game-based (mechanistic) approach, as it makes the learning process more attractive and interesting. However, for older students with a high level of competence, the application is not yet optimal in terms of developing speaking skills. Duolingo’s andragogical principles and additional features need further development to fully meet the needs of advanced learners in self-learning contexts.
<b><i>Duolingo: In andragogical education Arabic spoken language learn skills platform (2022)</i></b>	Using the Duolingo application significantly increased the level of mastery of Arabic vocabulary by high school students. This application provides a more interactive and engaging learning method compared to traditional memorization-based methods. According to the results of the study, the average score on the post-test increased from 74.7 points to 97.5 points on the post-test, and the results of statistical analysis confirm the high degree of reliability of this increase. It has been proven that Duolingo is effective in improving students’ academic achievements and serves to make the learning process more attractive and interactive.
<b><i>Using Duolingo Apps to Enhance Arabic Vocabulary (2022)</i></b>	The use of the Duolingo application significantly increased the level of students’ assimilation of Arabic vocabulary and their independence in learning. App to learners through the «play-learn» approach provides the opportunity for independent learning, which fully corresponds to modern educational needs. According to the research results, the average indicator increased from 82.5% to 90.8% in the post-test, and the motivation and independence of students increased from 71% to 80%. Duolingo is an independent learning platform that has been proven to be an effective tool in supporting education and improving learning outcomes.
<b><i>The impact of the Duolingo media application on increasing the level of assimilation of Arabic vocabulary by 8th-grade students (2023)</i></b>	Using the Duolingo application significantly increases students’ motivation to learn Arabic. The app provides features such as score netting, promotion, ranking table, and rewards, encouraging readers to study more actively and compete more competitively. According to the research results, the use of Duolingo makes the learning process interactive and attractive, increasing student participation. Even though the level of motivation varies among students, the application is generally interesting. And has been proven to be effective in creating an innovative learning experience.

The analyzed studies show that technologies, in particular mobile applications such as Duolingo, can improve the quality of language learning through such features as quick feedback, learning tailored to the individual abilities of the student, and flexibility of learning anywhere and at any time. Duolingo provides performance as a personalized and interactive learning-based gamification app. In addition, several studies have compared the results of the use of technology and traditional methods, which is useful in comparing the effectiveness of Duolingo with classical approaches to teaching Arabic. From this point of view, Duolingo is considered a supplement to existing teaching methods. As for problematic situations, inequality in access to technologies in specific educational environments and user adaptation difficulties are important issues. Therefore, it is necessary to take into account similar obstacles that may arise during the use of the Duolingo application in schools or regions with limited technological infrastructure.

### CONSLICION

In general, it can be said that mobile applications such as Duolingo have high potential in improving the effectiveness of learning Arabic. At the same time, the study recommends evaluating the application as a complementary tool to existing teaching methods, keeping in mind the problems associated with infrastructure constraints and adaptation to new technologies. The use of the Duolingo application in the process of learning Arabic contributes positively to improving students' language skills. Thanks to its gamification-based approach, the application creates an interactive, flexible, and engaging learning environment, significantly increasing student motivation and active participation in lessons. Duolingo not only serves as an auxiliary tool enriching traditional teaching methods, but also provides an experience of independent and personalized learning. The Duolingo application has significant advantages in increasing motivation and vocabulary, and its application also has several difficulties: inequality in access to technologies, as well as limitations in the deep development of speaking skills. Therefore, to obtain the most optimal result from the Duolingo application, it is advisable to use it in combination with other teaching methods - such as traditional textbooks, group discussions, real conversation practices, and additional digital resources.

This article recommends educators strategically integrate technologies into the curriculum and emphasizes the need for broader study of the effectiveness of mobile

applications such as Duolingo in different educational environments, age groups, and cultural contexts in the future. The correct and balanced use of digital tools serves to further increase the effectiveness of modern language education. Thus, Duolingo not only enriches current educational practices but also creates a solid foundation for future innovative approaches.

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