

The impact of using smartphone applications on children's language skill development

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ABSTRACT:

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This study investigates the efficacy of smartphone applications in enhancing language skills encompassing listening, speaking, reading, and writing among learners. It seeks answers to two primary inquiries: firstly, the diverse utilization of smartphone applications for language skill development; secondly, the formulation of recommendations aimed at optimizing the integration of these applications into Arabic language instruction. Through empirical research, this exploration aims to unveil strategies, methodologies, and potential enhancements crucial for leveraging smartphone applications effectively within Arabic language pedagogy.

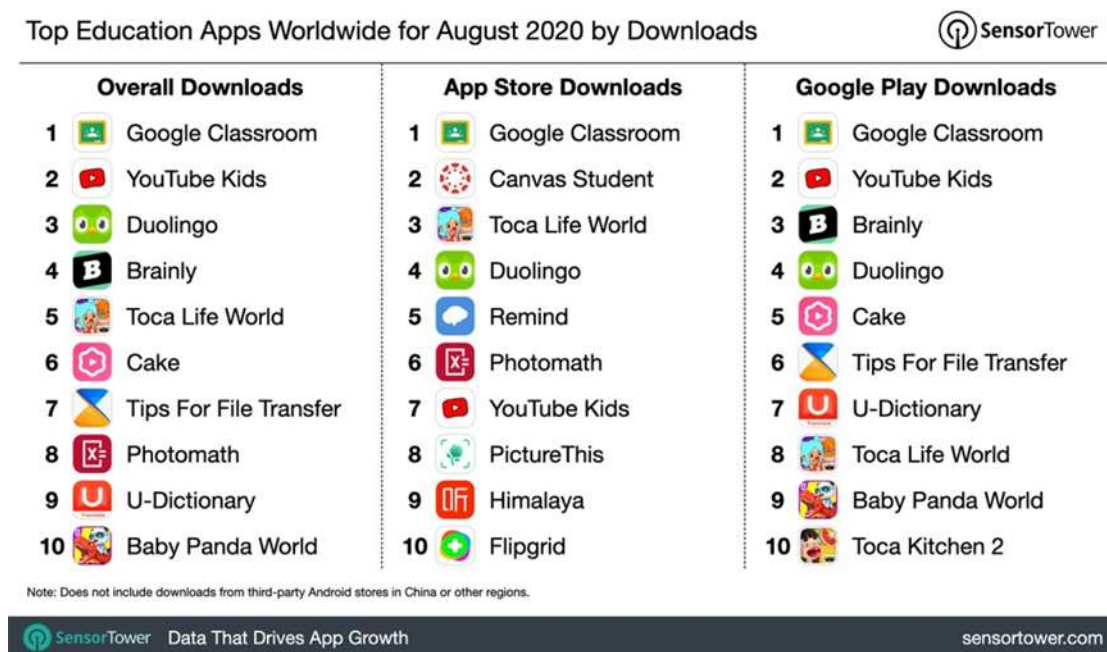
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Introduction:

Different electronic media have taken on an important role in education and teaching within the information society in light of the growing reliance on smartphones and their popularity and widespread use worldwide, as well as to keep up with the modern educational trends in using communication technology in the educational process. Smartphones are among the most significant of these media, especially for kids, thanks to their instructional software and applications. These programs combine play, entertainment, and learning, and are renowned for their diversity. Mobile learning offers convenience and efficacy, making it simple to utilize and gain access to knowledge. Additionally, as self-directed learning is a foundation of smartphone learning, it helps to accommodate individual diversity by catering to learners differing demands in terms of talents, skills, and interests.

Educational applications are the most popular, according to statistics related to the number of applications on the market and the most downloaded ones. During the first quarter of 2020, the Corona crisis and the general closure caused a significant trend towards educational applications, and according to the Sensor Tower report, 470 million educational applications were downloaded through the Apple App Store, while 466 million educational applications were downloaded through the Google Play App Store. Technavio indicated that the global educational applications market will witness an annual growth rate of 26% during 2020–2024.

Figure n° 01: Represents the best educational applications that received the highest download rates in 2020 in the world:



Source: <https://sensortower.com/>

Providing smartphones for children is one of the external socio-economic factors of parenting. The results of research conducted by Fajariyah show that the intensity of the use of smartphones has a significant impact on the development of independence, language, and fine and gross movements. This is evidenced by the incomplete developmental tasks at each stage of the children's ages. The higher the intensity of the use of the device, the greater the opportunity for children to experience possible developmental deviations. (Nurmalina & Gusman, 2021, p. 1681)

1-Aims and Objectives:

The main purpose of this paper is to examine the usage of smartphone applications for teaching Arabic, a topic that is currently being discussed in the field of education. It throws light on how information technology and education intersect, highlighting how crucial it is to use smartphone applications to efficiently facilitate Arabic teaching and learning. Additionally, this study hopes to stimulate further research into the use of smartphone applications in language learning, including both native and non-native Arabic speakers as well as foreign language learners.

This study is intended as an exploratory investigation with a focus on the use of mobile devices and smartphone applications in teaching Arabic to children between the ages of 3-5. Its main objectives are to observe, describe, and analyze these applications' various attributes, including their names, audio and visual quality, interactivity, sound effects, calendar features, distractions (advertisements), service type, features, and restrictions. The study also intends to offer insightful suggestions to improve the efficient use of smartphone applications in Arabic language instruction.

2-Problem Statement:

This research paper focuses on introducing smartphone applications for teaching Arabic to children and identifying their role and effectiveness in teaching language skills (listening, speaking, reading, and writing). It aims to answer the following questions:

1. What are the characteristics of smartphone applications that focus on teaching language skills to children?
2. How do smartphone applications encourage the development of language skills?
3. To what extent do the creators of these applications effectively produce content that serves and achieves educational goals?

3-Limitations :

- Objective limitations: The study focuses on exploring the utilization of smartphone applications in the field of education.

- Qualitative limitations: The study specifically focuses on applications for teaching the Arabic language to children aged 3-5.
- Temporal limitations: The study was conducted during the period from September to November 2021.

4-Study population:

The study was limited to 12 selected electronic applications, chosen through a random sampling method from a pool of applications related to teaching Arabic language skills to children aged 3-5.

5-Research methods:

To achieve our desired aim we suggested using a content analysis method that was appropriate for analyzing the features of mobile applications and devices. This was done in order to categorize and assess the existing applications as well as to extract indicators that might be helpful for future application development. We used the following resources:

- Direct search to access and discover pertinent programs on the official Google Play Store for Android smartphones and the App Store platform for iOS devices.

6-Theoretical framework:

Smartphone applications are small programs designed to enhance the functionality of mobile phones, going beyond basic functions such as sending text messages and making calls. These applications are either pre-installed during the phone's manufacturing process or can be downloaded by users from app stores or distribution platforms, either for a fee or for free. Examples of these platforms include the App Store for iOS operating systems and Google Play for Android operating systems. Smartphone applications serve various purposes and can be used for a wide range of activities, providing users with additional features, services, and entertainment options (Prodhan & ABM , 2022)

7-Applications of Smartphone and Language Skills:

There are two types of smartphone applications: in-built applications and third-party applications, or smartphone applications (Apps). In-built applications are built-in applications or manufactured applications that are installed on a smartphone. These cannot be installed from outside sources. Furthermore, smartphone applications are third-party applications that can be downloaded and installed from different sources of storage, such as the Google Play Store, etc. They are also known as mobile apps; Millions of apps are available in stores; most of them are free. The findings of this review indicated that in-built applications were more frequently used than third-party applications. On the other hand, vocabulary, writing, listening, speaking, grammar,

reading, pronunciation, and spelling skills were targeted to employ the applications of a smartphone. (Prodhan & ABM , 2022)

In what ways does the use of mobile technology facilitate the acquisition and development of linguistic knowledge and Language Skills? In terms of the gained linguistic knowledge and skills, most of the reviewed papers examine vocabulary acquisition, listening and speaking skills, and language acquisition in more general terms. The review finds several suggestions for language learning benefits in the use of MALL, such as integrating mobile technology in both formal and informal contexts; the 'fun' moment when engaging learners in authentic learning contexts; the learners' contribution to the creation of the learning content; the use of mobile devices to support the practice of achieving listening and speaking skills effectively, etc. Often, the usefulness of mobile technology for vocabulary acquisition is measured by surveying learners' attitudes. There are also a number of studies attempting to analyze the outcome in terms of learners' language proficiency. However, as most studies are implemented within a short period of time and involve a small number of participants, results are yet inconclusive in this respect. (CHAKRAVARTHY & SUNITHA, 2020)

8-The applied study:

In this section of the research, we will define educational electronic applications—the sample of the study—and analyze their characteristics (application name, audio and visual quality, interactivity, sound effects, evaluation, distracting factors (advertisements), type of service, its services, features, and drawbacks).

A-Fonemati Application: Fonemati is an interactive educational Arabic application designed to combine fun and learning. It was developed by educators to be the primary tool for developing early language skills in Fus-ha (Modern Standard Arabic) and building reading readiness and language awareness. The application is specifically designed for children aged 3–8 years old.



Fonemati is an ideal application that takes into consideration the child's interests and emotions, allowing them to experience fun adventures on four interactive imaginary islands. The child accompanies friendly characters like the parrot, the

worm, and the crocodile, spending joyful times filled with play and happiness that never end. The child enjoys a unique educational experience with over 600 different auditory, visual, and linguistic activities. They play, explore sounds and words, have fun with Nabhan and Mishkoul, and learn more as they analyze, segment, and blend. The fun increases with rhythm and speech categorization, allowing the child to learn while playing. They can collect a linguistic treasure trove of over 3,000 words, which is essential for their readiness to learn alphabet letters, ensuring their readiness for reading and making them stronger and more confident in school. This is the Fonemati application.

B-The "Arabic for Kids" app is designed to teach Arabic to children in an easy and simple way. The app includes letters and words that are spelled and pronounced in Fus-ha Arabic (Standard Arabic). It is an excellent educational program for children's initial learning steps. It starts with the alphabet, then moves on to Arabic numbers and words, with their pronunciation in audio. Children can also practice writing letters and numbers using colors within the app.



The "Arabic Language Learning for Kids" app includes all the letters, numbers, and commonly used words for learning the basics of the Arabic language. It is designed for children starting at the age of 4 and is suitable for children of school age.

C-The "Ataalam Al-Arabiya" app is developed by Al-Mufakkaroun Al-Saghir, a leading company in teaching Arabic to children. The company has been operating since 2005 and has created interactive educational platforms for learning Arabic in a seamless manner that combines fun and utility. This app includes hundreds of audio books, videos, educational flashcards, and entertaining educational games.

All these resources are created by experts in the field of Arabic language and are based on the international standards for teaching foreign languages, such as ACTFL.



This app helps hundreds of thousands of students around the world learn remotely through the internet in a safe manner.

D-Hijaiyah Arabic application is an educational app designed for learning the Arabic language, suitable for children and young learners. This app contains images and animations aimed at developing listening skills by introducing children to the names of animals, transportation, nature, days, and months.



E-Vocabulary App: This free app is very useful for learning basic words and vocabulary in the Arabic language, suitable for children and other age groups. The app is easy to use with a simple interface. It contains numbers, letters, and words in various categories such as animals, colors, drinks, food, fruits, vegetables, flags, professions, insects, kitchen, music, nature, public places, school, shapes, sports, clothing, and body.

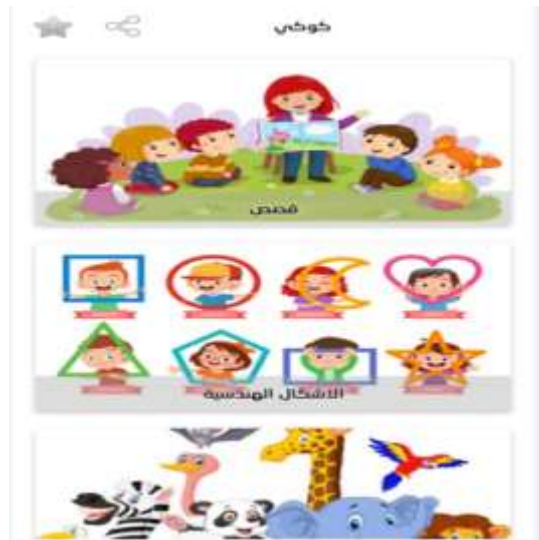


New words in various fields are added in each update of the application. It focuses on developing listening skills by enriching the child's vocabulary in areas relevant to their social environment.

F-The "Al-Qira'ia" (Reading) application is an interactive app that is supported by audio and visuals. It focuses on introducing children to the sounds within words, allowing them to make connections between sounds and letters. This helps them acquire phonetic knowledge and develop the ability to separate and blend sounds within words. The app is based on an interactive auditory approach that is suitable for early reading instruction for children.



G-The "Teaching Children Arabic with koki" application is a free educational and entertaining app that helps children learn popular animal pictures and their sounds. It also teaches them numbers and the alphabet in an engaging and simple way. The app includes interesting and updated audio stories. It focuses on developing listening skills through reading illustrated and audio stories, but it is in the Egyptian dialect rather than Modern Standard Arabic.



H-The "Journey of the Letters" application is a free, fun, and educational app filled with games, stories, and songs that focus on early reading and writing skills, including alphabet recognition and phonological awareness. The app is designed for young children in preschool, kindergarten, and first grade, and it was developed in collaboration with early childhood and Arabic language experts.

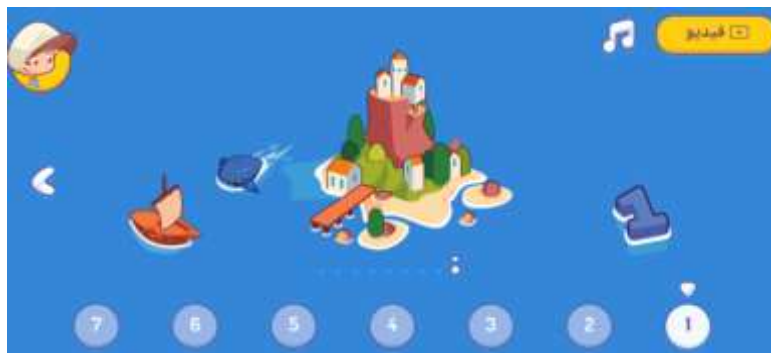
I-The "Language Learning for Kids" app is an interactive educational application aimed at teaching Arabic, English, and Spanish alphabets, as well as writing Arabic, English, and Spanish letters. It also teaches numbers and introduces children to animals in a fun and entertaining way, encouraging them to learn.



The app includes audio and visual teaching of Arabic, English, and Spanish languages. It teaches children the alphabet using interactive movements and guides them on how to write Arabic, English, and Spanish letters by hand. It also provides fun challenges for learning Arabic letters for children.

J-The "Alif Ba" app for children relies on an entertaining approach to help them learn the alphabet through stories and interactive activities. It offers the following features: teaching the alphabet to children, teaching Arabic words and sentences

through songs, stories, and children's games, the "Sindbad Al Arabi" series, Arabic games, and it uses an entertaining method that combines the child's love for play with learning through repetition.



K-The "Learn Pronunciation, Reading, and Writing" app is easy to use and suitable for children in the early stages of learning. It enhances the child's intelligence and improves their perception and learning speed. The child can learn to write letters by tracing the dots and listening to the teacher's correct pronunciation of the letter and numbers. The app for learning reading, writing, and pronunciation stands out with several features compared to other apps aimed at teaching children:

The app is interactive with the child, as if there is a present teacher constantly.

It uses a simple, easy, and enjoyable approach that captures the child's attention to learning.

It includes multiple sections to enhance the child's skills.

It teaches words and their correct pronunciation, linking the word to the corresponding image to easily engage the child's understanding



L-The "Learn with Me" app is an interactive educational app that aims to teach the Arabic language to children in a fun and entertaining way, motivating them to learn. The app includes audio and visual components for teaching Arabic. It covers basic vocabulary for children through pictures of vegetables, fruits, food, clothing,

animals, and birds, along with their pronunciation. Consequently, it helps children develop their speaking skills. The app is suitable for teaching early vocabulary to preschoolers, kindergarten children, and children with special needs.



9-Data Analysis: Through downloading the study sample applications, examining them, and attempting to uncover their features and drawbacks, we sought to find answers to the initial research question: "To what extent do these applications succeed in creating effective content that serves and achieves educational goals?" The following data was obtained and will be analyzed

Table 1: Language Skills Covered in Electronic Applications

app	listening	speaking	reading	writing
Fonimaty	*		*	*
Arabic for Kids	*			*
Ataalam Al-Arabiya	*		*	
Hijaiyah E Arabic	*			
Vocabulary	*			
Al-Qira'ia	*		*	*
Journey of the Letters"	*		*	*
Language Learning for Kids	*			*
"Alif B for children	*		*	*
Learn Pronunciation,	*			*
Reading, and Writing				
Learn with Me	*			

Based on the data provided in Table 1, it is evident that the focus on developing listening skills in educational applications reached 100%. This is achieved by exposing children to a variety of sounds, letters, words, and sentences in an interactive and enjoyable manner, contributing to the development of both auditory and visual discrimination skills. However, speaking skills were not employed in any of the studied applications, resulting in a 0% rate. This can be attributed to the fact that modern technology has not yet fully integrated the interaction between a child's spoken language and a smartphone.

The development of reading skills reached 41%, which can be attributed to the age group of the learners and their limited knowledge of the alphabet. Nonetheless, through electronic applications, children in the 3-5 age range can learn to recognize and differentiate between the shapes and movements of letters.

The utilization of writing skills reached 58%, as educational applications focus on linking listening and reading skills to the limited writing skill at this age stage, which mainly involves writing letters with their respective movements.

App	Sound Quality	Image Quality	Interactivity	Sound effects	Evaluation	Factors of Distraction	Service
Fonimaty	Good	Good	Interactive	Available	4.3	unavailable	paid
Arabic for Kids	Good	Good	Non-interactive	unavailable	3.4	Available	free
Ataalam Al-Arabiya	Good	Good	Interactive	Available	/	unavailable	paid
Hijaiyah Arabic	Bad	Good	Non-interactive	unavailable	3.3	Available	free
Vocabulary	Good	Good	Non-interactive	unavailable	/	unavailable	free
Al-Qira'ia	Good	medium	Interactive	unavailable	4.9	Available	free
Teaching children the Arabic language with koki	Good	Good	Non-interactive	unavailable	/	unavailable	free
Journey of the Letters"	Good	Good	Interactive	Available	4.9	unavailable	free

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Language Learning for Kids		Good	Interactive	Available	4.4	Available	free
"Alif B for children	Good	Good	Interactive	Available	4.3	unavailab le	paid
Learn Pronunciatio n, Reading, and Writing		mediu m	Interactive	unavailabl e	4.8	unavailab le	free
Learn with Me	Good	Good	Interactive	unavailabl e	/	Available	free

Based on the data provided in Table 2, it is evident that the focus on sound quality in educational applications reached 91%. This indicates that most applications prioritize clear and high-quality sound as it is crucial for language learning skills, especially for children. The clearer and more distinct the sound, the higher the auditory discrimination skills.

As for image quality, it reached 83%, which is a significant and important percentage. Clear images contribute to presenting the shape of letters and words effectively, aiding in their memorization and retention. Additionally, it enhances visual discrimination skills, which are essential for learning reading and writing. Clear images also provide elements of enjoyment and excitement through colors and shapes that attract the child's attention and increase their engagement.

Interactivity reached 58%, which is an average percentage. Interactivity is an important element in electronic applications, as it provides suitable learning patterns for children, facilitates linguistic assessment and evaluation, enables self-directed learning, and diversifies active learning strategies.

Sound effects, mainly music, reached 50%. The importance of sound effects may vary among researchers, as some believe that they enhance effectiveness and enjoyment, while others argue that they may be distracting for children.

The percentage of reviewing and evaluating educational applications, typically done by parents, ranged from good to average. Often, ratings decrease due to slow loading times or occasional difficulties.

Distractions in the form of advertisements reached 41%. This is attributed to the product owner's desire to generate profit, but it negatively impacts the quality and ease of use of the application.

The percentage of free services reached 75%, which is a high percentage that allows access to the applications for learners.

11-Conclusion

Based on the study's sampling, collection, and analysis of data, as well as the identification of its characteristics and the duration of language skills utilization, several points have been deduced that confirm the effectiveness of these applications in children's language learning. These points include:

- Providing the child with new linguistic vocabulary, facilitating its memorization, retrieval, and retention for a longer period of time.
- Developing and strengthening children's auditory awareness through interactive sound methods.
- Focusing on developing visual discrimination skills through colors and shapes.
- Language learning apps provide interactive and engaging activities that capture the attention and interest of children. This heightened engagement can contribute to better language acquisition and retention.
- Language learning apps offer a wide range of accessible learning materials, including vocabulary exercises, pronunciation practice, and interactive games. These materials are designed to be user-friendly and cater to different learning styles.
- Many language learning apps incorporate multimedia elements such as audio, visuals, and interactive features. This multimodal approach helps children comprehend and retain language concepts more effectively by engaging multiple senses.
- Some language learning apps provide personalized learning experiences by adapting to the child's proficiency level and progress. This individualized approach ensures that the child receives targeted instruction and challenges suitable for their specific language learning needs.

12-Suggestions

- Creating interactive electronic curricula to facilitate their use in smartphone applications, aiming to enhance language learning experiences.
- Providing measurement and assessment applications for Arabic language learners that are characterized by credibility, ensuring accurate and high-quality measurement of learning outcomes.
- Selecting appropriate learning patterns using smartphone applications for various educational situations.

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