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Media Technology and Motivation for Arabic Learning: A Review of the Literature at a Child's Age

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Abstract

Despite the importance of early language acquisition, many educational practices still rely on conventional rote memorization, which often fails to engage young learners. Psychologically, children in the concrete operational stage require visual and interactive stimulation to build interest, especially when learning a foreign language perceived as complex, such as Arabic. To address this challenge, this research aims to analyze the use of technological media to enhance motivation to learn Arabic among children. The method employed in this study is a Systematic Literature Review (SLR), with primary data sourced from the SINTA and Scopus databases within the 2021–2026 timeframe. The PRISMA protocol was used to select journal articles relevant to the inclusion criteria, focusing on subjects aged 7–12 years and indicators of learning motivation. The results indicate that technological media such as educational games, animated videos, and interactive audiovisual applications effectively meet children's developmental needs in both cognitive and affective domains. These tools provide cognitive scaffolding that transforms abstract linguistic concepts into observable experiences. Consequently, the use of such technology has been shown to increase student engagement and enthusiasm significantly compared to traditional methods. The conclusion emphasizes that selecting technological media aligned with developmental psychology is a key factor in the successful early internalization of Arabic.

Keywords: Technological Media, Learning Motivation, Arabic Language, Child Developmental Psychology, Literature Study.

Introduction

Learning Arabic in childhood presents unique psychological challenges compared to learning it in adulthood. From a developmental psychology perspective, elementary school children reach the concrete operational stage between ages 7 and 12. In this phase, children tend to understand information more easily when it is presented through a real, interactive visual format rather than abstract theoretical explanations. In the concrete operational stage, which lasts between ages 7 and 12, the child experiences significant development in understanding mental operations. In this phase, the child can manage general concepts with the help of real objects as a support tool and, through more structured observation and

thinking, shows real cognitive progress (Imanulhaq & Ichsan, 2022). This stage marks the acquisition of new abilities, as the child's level of thinking advances to the next level. (Saputra et al., 2023) Moreover, according to Imanulhaq & Ichsan (2022), revealing these abilities is highly beneficial for children, helping them articulate their thoughts and communicate the experiences of events they encounter more effectively.

Numerous previous studies have extensively explored the integration of digital tools in language education. For instance, several researchers have focused on the general development of interactive multimedia for teaching Arabic vocabulary, while others have examined the impact of gamification on student engagement in higher education. However, most of these prior works operate under broad educational contexts without specifying the distinct psychological boundaries of young learners. There is a noticeable research gap regarding how technological media specifically caters to children in the concrete operational stage (aged 7–12 years) within recent years, particularly from 2021 to 2026. Prior research often overlooks the connection between media design and child developmental psychology, leaving a critical question unanswered: what types of digital scaffolding are most effective for early Arabic internalization? Therefore, a Systematic Literature Review (SLR) is urgently needed to map, analyze, and synthesize recent empirical evidence, thereby establishing a clear psychological framework for utilizing technology in early Arabic language acquisition.

This low interest in learning directly impacts students' motivation to learn. In fact, motivation is an affective factor crucial to the development of children's psyches. Without strong motivation, the process of internalizing language will be hampered, thereby limiting children's cognitive potential to absorb vocabulary and language structure (Fadil et al., 2025). Therefore, Sanjaya et al. (2024) argue that a medium is needed to align learning materials with the characteristics of today's children's mental development, who grow up in the digital era (*Alpha Generation*).

Method

This study is classified as library research employing a qualitative descriptive approach. The research methodology is systematically structured using a Systematic Literature Review (SLR) design to identify, review, evaluate, and interpret the entire body of literature on a particular topic. To ensure transparency, replicability, and rigorous quality of the review results, this research strictly applies the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines (Page et al., 2021).

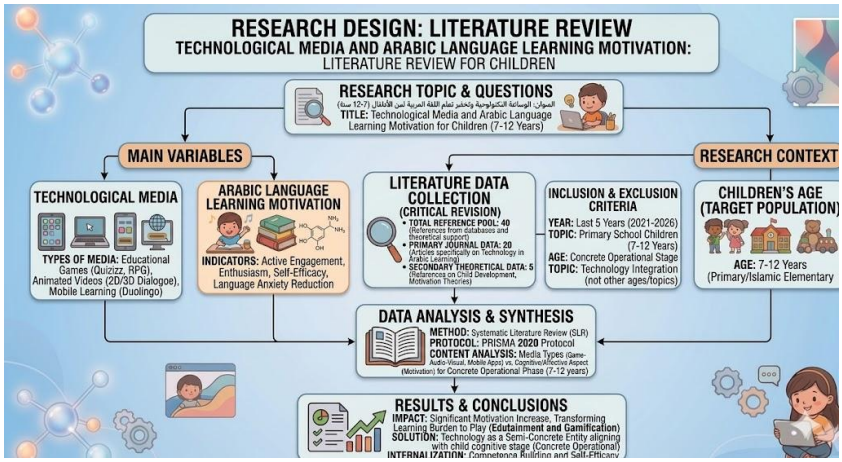

Figure 1. *Conceptual Framework and Research Design of the Study*

1. Research Approach and Data Sources

   The primary approach focuses on content analysis to synthesize qualitative findings from diverse empirical studies. The data sources utilized in this library research are explicitly divided into two categories:

   a. Primary Data Sources: The primary data consists of 20 peer-reviewed journal articles retrieved from reputable national and international databases (such as Scopus and SINTA) that directly investigate the implementation of technological media in early Arabic language learning.

   b. Secondary Data Sources: The secondary data comprises 5 foundational references, including books and peer-reviewed journals focusing on child developmental psychology, Jean Piaget's cognitive development theories, and standard methodological guidelines.

2. Literature Search Strategy

   This study collected key data through a comprehensive literature search on digital databases. To ensure the data's relevance to the latest developments in learning technology, the journal publication timeframe is strictly limited to the last five years, spanning from 2021 to 2026. The search queries utilized specific keywords such as "Arabic language learning", "educational technology", "learning motivation", and "primary school students".

3. Inclusion and Exclusion Criteria

   The researcher established rigorous selection criteria to ensure data accuracy and relevance, divided as follows:

a. Inclusion Criteria: (1) Peer-reviewed journals discussing the use of technological media in Arabic language learning; (2) Research subjects focusing strictly on elementary school-age children (7–12 years old) or students within the concrete operational phase; (3) Articles containing clear indicators of learning motivation.
b. Exclusion Criteria: (1) Articles not directly related to educational technology or language learning; (2) Research involving higher education students or subjects outside the predetermined primary school age category; (3) Dissertations, theses, or articles published outside the 2021–2026 timeframe.

4. Review Stages (PRISMA Protocol)

Following the PRISMA protocol, the literature selection process is carried out through four main operational stages:

a. Identification: Collecting all potential records and journals from the database search results using the predefined keywords.
b. Screening: Selecting the identified journals based on titles and abstracts to evaluate their initial suitability and removing duplicates.
c. Eligibility: Conducting a comprehensive full-text review of the remaining articles to guarantee they meet all set inclusion criteria.
d. Included: Determining the final amount of literature (25 references in total) to be analyzed and synthesized in-depth.

5. Data Analysis

The collected qualitative data is analyzed using content analysis techniques. The researcher groups the findings systematically by the type of technological media used (such as game-based learning, animated videos, or mobile applications) and by their direct impact on children's cognitive and affective aspects (motivation) during the concrete operational development phase. Final conclusions are drawn based on the holistic synthesis of these relevant research results.

Result and Discussion

Based on the PRISMA selection process across national and international databases covering the publication period of 2021–2026, a final pool of 25 relevant references was successfully gathered and verified via reference management software. Within this selection, 20 peer-reviewed articles serve as the primary empirical data, focusing directly on the utilization of technological media in Arabic language learning.

Concurrently, 5 foundational references (including standard guidelines and developmental theories) were integrated as secondary data to analyze the cognitive alignment of primary school students aged 7–12 years. The structural distribution of these 25 references based on their specific thematic focus is detailed in Table 1.

Table 1. *Distribution of Selected Literature for Synthesis*

No	Technological Media Typology / Theme	Database Source	Number of Articles (n)
1.	Game-Based Learning (Wordwall, Quizizz, RPG Games)	Scopus & SINTA	8
2.	Interactive Audio-Visual Media (2D/3D Animation, Video)	Scopus & SINTA	6
3.	Mobile Learning (Duolingo, Android Apps, TikTok Mobile)	Scopus & SINTA	6
4.	Methodology (PRISMA Guide) & Child Development Theories	Books & Journals	5
Total	**All Selected Literature Pool**	**Combined Database**	**25**

a. *Game-Based Learning*: The use of platforms such as Wordwall, Quizizz, and RPG-based adventure games. These media include mechanical elements such as points (Rewards), leaderboards (Leaderboards), and leveled challenges.

b. Interactive Audio-Visual Media: The use of 2D and 3D animated videos to visualize the conversation (hiwar) as well as the incorporation of native speakers' voice elements to introduce the context of the sentence.

c. *Mobile Learning*: The use of smartphone applications such as Duolingo, Mondly Arabic, or Android/iOS-based local applications that have an instant feedback feature on students' pronunciation (makhraj).

Media Synchronization with Concrete Operational Stages

The findings show that technological media serve as a semi-concrete object. This relates to Jean Piaget's theory of cognitive development, which posits that children aged 7–12 years need physical representations to understand logic. According to Tallas-Mahajna et al. (2023), Arabic languages with complex grammatical structures (nahwu and sharaf) are often difficult to process both verbally and abstractly. However, through color animation and interactive simulations, patterns of word change can be visualized directly, thereby accelerating assimilation and accommodation within the child's cognitive structure (Syifa & Djamilah, 2024) (Fadil et al., 2025). Unlike previous studies that focus on general education,

this review specifically highlights the unique challenges of Arabic phonology (makhraj) and how mobile learning feedback can effectively address them (Adawiyah et al., 2025) (Maghfirah et al., 2024).

Transformation of Learning Motivation in the Digital Era

Affectively, the integration of technology changes children's perception of the Arabic language. Elements *edutainment* (education-entertainment) has been proven to be able to turn the cognitive load of memorization into a fun play activity (Daud et al., 2025), (Azahra et al., 2024), and (Farida et al., 2022). Extrinsic motivation arises from a reward system and immediate feedback on the application, which helps maintain a stable learning rhythm. According to (Aurellia & Kusuma Wardana, 2025) and (Rizqiya et al., 2025), intrinsic motivation grows when children feel competent and confident using independent media (*Mobile Learning*), which ultimately lowers language anxiety levels (*Language Anxiety*), as expressed by (Alvi, 2025) and (Ismalia et al., 2026).

The use of technological media for the Alpha Generation is no longer just a complement, but an essential bridge. According to Depita (2024), Li et al. (2024), and Ali et al. (2025) active involvement through audiovisual media and educational games has been shown to significantly increase student enthusiasm compared to conventional methods, which tend to be rigid. In addition, children tend to feel more enthusiastic when using digital devices than when using print media (Aminullah et al., 2022). The main advantage of digital media or technology media lies in the *Instant Feedback*, where the child immediately knows the correct or wrong pronunciation (makhraj) or writing of their hijaiyah letters, which psychologically keeps the learning rhythm stable (Tarlam et al., 2026) and (Nugraha & Mardiani, 2023). Overall, these findings demonstrate that technology is not just a tool but a psychological solution for addressing the difficulties of learning Arabic for children.

The use of technological media in Arabic language learning contributes to the formation of an independent learning ecosystem (*self-directed learning*). Interactive features in mobile applications not only provide cognitive stimulation but also build self-regulation in children (Lai et al., 2022). (Zhang & Crawford, 2024) argues that when children can correct their own mistakes through Instant Feedback without fear of judgment from the social environment, this significantly fosters a sense of competence (*self-efficacy*). In the long run, the small but repeated successes in this educational game create positive dopamine responses that shift the burden of learning a foreign language from an obligation to an exploratory need

for children. Thus, technology has succeeded in minimizing the affective barriers that have been the main obstacles in conventional Arabic teaching (Aprilia et al., 2024).

Overall, the integration of technological media into Arabic language learning is not just a response to digital trends but a psychological need rooted in the characteristics of Generation Alpha's development. The selection of media aligned with the concrete operational stage has the potential to form a solid affective foundation for the long-term internalization of Arabic, providing practical implications for educators and curriculum developers in Indonesia.

Conclusion

This study concludes that integrating technological media, including educational games, animated videos, and mobile applications, is an effective way to increase motivation to learn Arabic among children aged 7–12 years. Psychologically, the use of this medium aligns with the characteristics of children at the concrete operational stage, who require visual and interactive stimulation to understand complex language concepts. Technology has served as a concrete medium that transforms abstract materials such as grammar (nahwu and sharaf) into real learning experiences, thereby reducing *language anxiety* and increasing students' active involvement.

The success of internalizing Arabic in this phase depends heavily on the accuracy of selecting media that can trigger intrinsic and extrinsic motivation. The instant feedback features and reward systems in digital media have proven effective in maintaining the learning rhythm and building children's confidence. Therefore, educators are advised to optimize the Alpha Generation's digital literacy by creating an innovative and fun learning environment to ensure more lasting mastery of the Arabic language from an early age.

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