

The Utilization of Gadgets in Arabic Language Learning for Early Childhood through a Fun-Based Learning Approach

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Abstract. This study explores how gadgets can enhance Arabic learning through a fun-based learning approach at TK Az-Zalfa Mandailing Natal. This study employed a descriptive qualitative method, data were collected through participatory observation, semi-structured interviews with teachers and the school principal, and documentation of classroom activities, involving three teachers, one principal, and nine children aged 5–6 years. Data analysis was conducted through data reduction, thematic categorization, and triangulation. The findings showed that the utilization of gadgets has been effectively integrated into learning sessions using applications such as *Marbel Bahasa Arab*, *Memrise*, and *YouTube Kids*, which supported vocabulary acquisition, listening practice, and verbal participation while fostering contextualized and enjoyable learning experiences. Other results also showed high attention focus ($M = 4.2$), fairly high verbal participation ($M = 3.8$), very high play enthusiasm ($M = 4.6$), and moderate independence in gadget use ($M = 3.5$). This study contributes to the literature on foreign language learning in early childhood by emphasizing the potential of fun-based digital strategies in Islamic education, highlighting the critical role of teachers as facilitators in balancing technology use with developmental needs, and providing practical implications for educators and curriculum developers in designing innovative, adaptive, and inclusive Arabic learning models.

Keywords: *gadget, Arabic language, early childhood education, fun-based learning*

Abstrak. Penelitian ini mengeksplorasi bagaimana pemanfaatan gawai dapat meningkatkan pembelajaran bahasa Arab melalui pendekatan fun-based learning di TK Az-Zalfa Mandailing Natal. Penelitian ini menggunakan metode deskriptif kualitatif, dengan pengumpulan data melalui observasi partisipatif, wawancara semi-terstruktur dengan guru dan kepala sekolah, serta dokumentasi aktivitas pembelajaran, yang melibatkan tiga orang guru, satu kepala sekolah, dan sembilan anak usia 5–6 tahun. Analisis data dilakukan melalui tahapan reduksi data, kategorisasi tematik, dan triangulasi. Temuan penelitian menunjukkan bahwa pemanfaatan gawai telah terintegrasi secara efektif dalam sesi pembelajaran melalui aplikasi seperti *Marbel Bahasa Arab*, *Memrise*, dan *YouTube Kids*, yang mendukung pemerolehan kosakata, latihan menyimak, serta partisipasi verbal, sekaligus menciptakan pengalaman belajar yang kontekstual dan menyenangkan. Hasil lain juga menunjukkan fokus perhatian yang tinggi ($M = 4,2$), partisipasi verbal yang cukup tinggi ($M = 3,8$), antusiasme bermain yang sangat tinggi ($M = 4,6$), serta kemandirian penggunaan gawai pada kategori sedang ($M = 3,5$). Penelitian ini berkontribusi pada literatur pembelajaran bahasa asing di usia dini dengan menekankan potensi strategi digital berbasis permainan dalam pendidikan Islam, menyoroti peran krusial guru sebagai fasilitator dalam menyeimbangkan penggunaan teknologi dengan kebutuhan perkembangan anak, serta memberikan



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implikasi praktis bagi pendidik dan pengembang kurikulum dalam merancang model pembelajaran bahasa Arab yang inovatif, adaptif, dan inklusif.

Kata Kunci: *gadget, bahasa Arab, pendidikan anak usia dini, pembelajaran berbasis kesenangan*

Introduction

The advancement of digital technology over the past two decades has profoundly transformed the global educational landscape, including early childhood education (Muis et al., 2025; Setiadi, 2025). One of the most striking phenomena is the increasing intensity of gadget use, such as tablets and smartphones, in daily life—even among young children (Nofiyanti et al., 2023; Nurhafani et al., 2023). In Indonesia, according to the report of APJII (2024), internet users have reached 221 million, with more than 65% of children aged 4–6 years having direct access to gadgets at home. This phenomenon presents both challenges and opportunities for educational practices, particularly in the teaching of Arabic to early childhood learners.

Within the Indonesian context, Arabic language education carries significant cultural and religious urgency, as it is the language of the sacred text and constitutes one of the core components of Islamic education (Kurniawan et al., 2021; Setiadi & Asrin, 2025). Nevertheless, the process of teaching Arabic to young children continues to face various pedagogical challenges, such as the limited availability of engaging methods and children's difficulties in memorizing abstract vocabulary (Marni & Rahmi, 2025; Norlaila et al., 2025). These issues underscore the need for innovative approaches to language instruction that are not only educationally effective but also enjoyable and developmentally appropriate for early childhood learners.

The main issue examined in this study concerns the low levels of motivation and active participation among children in Arabic language learning, which continues to be dominated by conventional approaches. In several cases, children exhibit signs of boredom and reluctance to engage in verbal interaction in Arabic due to monotonous and non-interactive teaching methods. Consequently, this research seeks to address a critical question: how can the use of gadgets enhance the quality of Arabic language learning for early childhood through a fun-based learning approach?

Several previous studies have highlighted how the integration of digital devices can enrich children's learning experiences through multisensory stimulation and game-based activities. Research conducted by Liu et al. (2024), Tatminingsih (2022), and Teichert et al. (2021) demonstrates that digital technology contributes significantly to the

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development of children's critical thinking, collaborative skills, and early literacy. In a more specific context, Fitriana (2023) found that digital game-based learning models can effectively enhance fine motor skills while simultaneously fostering sustained learning motivation among young learners.

Meanwhile, other scholars have emphasized the motivational power of digital games and interactive media. For instance, Melkonyan & Matevosyan (2020) found that the use of gadgets integrated with visual and auditory content can accelerate second language acquisition, as digital media provide meaningful contextualization that helps children connect sounds, images, and meanings. Similarly, Setiadi et al., (2024) supported this view, showing that gadgets not only function as entertainment tools but also serve as educational instruments that stimulate creativity and emotional engagement in learners. Through easy access to diverse educational applications, children are given opportunities to learn through play, thereby cultivating autonomy and curiosity toward new languages.

Nevertheless, the main challenge lies in how such technologies are implemented within a fun-based learning framework that aligns with children's developmental stages. At the national level, studies by Djody et al. (2024) and Setiadi & Khairunnisa (2025) emphasize the urgency of integrating digital technology into Arabic language education. However, their focus remains largely confined to the elementary school context, without addressing the methodological dimensions of early childhood learning. Accordingly, a research gap persists regarding the practical implementation of gadget-assisted, fun-based learning in Arabic language instruction for early childhood education institutions in Indonesia. This study seeks to fill that gap by examining the practices, effectiveness, and pedagogical challenges of using gadgets in Arabic language learning at TK Az-Zalfa Mandailing Natal.

The primary objective of this study is to analyse how digital gadgets are utilized in Arabic language learning for early childhood education, as well as to identify the extent to which a fun-based learning approach can enhance children's interest and participation in acquiring Arabic at TK Az-Zalfa Mandailing Natal. This study further aims to provide pedagogical recommendations for teachers and early childhood education administrators on how to effectively and optimally integrate digital media into Arabic language instruction in an engaging and enjoyable manner.

The significance of this research lies in its attempt to address the urgent need for pedagogical transformation in Arabic language education that is responsive to both

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technological developments and children's psychological growth. Moreover, the findings of this study are expected to offer new directions for curriculum development, teacher training, and the formulation of adaptive and sustainable digital-based early childhood education policies, particularly in the domain of Arabic language learning.

Methodology

This study employed a descriptive qualitative approach (Creswell, 2014), aimed at gaining an in-depth understanding of the practices surrounding the use of digital devices in Arabic language learning for early childhood through a fun-based learning approach. This approach was selected as it allows for a holistic depiction of the empirical realities observed in the field, particularly regarding the dynamics of interaction between teachers, children, and digital media within the learning environment.

The study was conducted at TK Az-Zalfa Mandailing Natal, an Islamic educational institution that has systematically introduced Arabic language learning from an early age. The site was purposively chosen because it had already integrated digital devices, albeit in a limited capacity, as one of its learning media. The participants of this study consisted of three classroom teachers directly involved in Arabic instruction, one school principal responsible for educational policymaking, and nine early childhood learners (aged 5–6 years) who actively participated in Arabic learning activities supported by digital media.

Data were collected through three primary techniques: participatory observation, interviews, and documentation (Sugiyono, 2015). Observations were carried out by the researcher during Arabic classroom activities to examine how digital devices were employed, how children responded to learning tasks, and how teachers implemented fun-based learning strategies. Semi-structured interviews were conducted with teachers and the principal to gain deeper insights into the planning, implementation, and evaluation of digital device integration in the learning process. Meanwhile, documentation was utilized to collect supplementary materials, including classroom activity photographs, screenshots of the applications used, and lesson plans containing gadget-based activities.

The data analysis process followed three stages: data reduction, thematic categorization, and triangulation (Qomaruddin & Sa'diyah, 2024). Data reduction was carried out by filtering relevant information in accordance with the research focus.

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Subsequently, the data were categorized into key themes, such as the types of applications or digital media utilized, the level of children's engagement, teachers' methods in presenting materials, and the technical or pedagogical challenges encountered. Triangulation was then applied to validate the findings by comparing data across multiple sources – observations, interviews, and documentation.

Results and Discussion

Types of Gadgets and Applications Used

The observations revealed that the primary gadget employed in the learning process was an Android tablet provided by the school, distributed on a rotational basis among small groups of two to three children per device. The main applications integrated into Arabic language learning activities included:

Table 1. Applications and Media Types Utilized in Arabic Learning at TK Az-Zalfa

No.	Application Name	Media Type	Main Function
1	<i>Marbel Bahasa Arab</i>	Interactive Educational Game	Introduction to letters, numbers, and vocabulary
2	<i>Memrise</i>	Audio-Visual Media	Listening practice and word repetition
3	<i>YouTube Kids</i>	Animated Video	Learning through songs and simple conversations

Table 1 above presents the types of applications and media utilized in the implementation of gadget-assisted Arabic learning at TK Az-Zalfa Mandailing Natal. *Marbel Bahasa Arab*, categorized as an interactive educational game, was primarily employed for the introduction of letters, numbers, and basic vocabulary, providing children with a playful yet structured entry point into Arabic literacy. *Memrise*, which combines audio and visual modalities, was used to facilitate listening practice and word repetition, thereby reinforcing pronunciation and auditory recognition skills. Meanwhile, *YouTube Kids* offered animated video content featuring songs and simple conversational models, allowing children to acquire vocabulary and expressions in a natural, context-rich environment.

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The integration of these applications fostered multimodal engagement, combining auditory, visual, and kinesthetic learning processes. The *Marbel Bahasa Arab* was particularly effective in maintaining children's attention through colorful interfaces and gamified tasks, while *Memrise* provided consistent reinforcement of pronunciation and listening comprehension. *YouTube Kids* was used strategically for song-based learning sessions, which promoted both repetition and vocabulary recall through musical rhythm and visual storytelling. The diversity of applications not only supports multimodal learning but also meets the diverse cognitive and affective needs of children and has proven to be an effective strategy for increasing student motivation and understanding (Susiawati et al., 2025).

The utilization of these applications is consistent with the findings of Haq et al. (2024), which demonstrate that Arabic language learning technologies, such as interactive applications and instructional videos, can effectively enhance comprehension and linguistic skills in an engaging and enjoyable manner. For instance, applications such as Duolingo enable students to learn at any time while adjusting the level of difficulty to match their individual proficiency in Arabic (Tabroni et al., 2022). Similarly, *Mondly* provides in-depth Arabic learning with a strong emphasis on cultural context and everyday conversations, supported by advanced features such as speech recognition for pronunciation practice (Habibah et al., 2024). These findings corroborate Mayer's (2024) multimedia learning theory, which posits that the integration of audiovisual and interactive media enhances students' motivation and learning outcomes by simultaneously engaging both visual and auditory senses.

From the perspective of learning media development, the study conducted by Mizan et al. (2022) at SMAS Taman Siswa Teluk Betung, Lampung, revealed that Android-based learning media significantly improved Arabic learning outcomes. This was evidenced by the evaluations of subject matter experts (93%), media experts (94%), Arabic teachers at the senior high school level (96%), and the positive responses of students (91.62%). A related study by Shidqi et al. (2024) further demonstrated that the use of Android-based animated video applications, successfully increased students' motivation and enthusiasm in learning Arabic. These results indicated that the integration of technology into Arabic language learning not only facilitates access to learning materials but also enhances the overall effectiveness of the learning process.

In addition to applications and video-based media, digital educational games have also proven to be effective methods for Arabic language learning. Studies

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conducted by Rezi et al. (2023) and Hidayatika & Nurhamidah (2024) revealed that educational games such as Quizizz and Quizwhizzer make the learning process more engaging and enjoyable, particularly in addressing students' boredom and lack of interest. Sitompul et al. (2023) argue that these educational games leverage interactivity to enhance student engagement, aligning with constructivist learning theory, which emphasizes the importance of active and meaningful learning activities.

Nevertheless, the integration of gadgets into Arabic language learning also encounters notable challenges, particularly in fostering learner autonomy and effective time management. A study by Kasmianti et al. (2023) revealed that although the use of gadgets positively influences students' listening (*istimā'*) proficiency in Arabic, greater attention must be given to time allocation and content selection to ensure that technology use does not undermine the overall effectiveness of learning. At the early childhood level, findings by Fitri et al. (2022) demonstrated that gadget use affects language development among Early Childhood Islamic Education students, including its application in Arabic language learning. Similarly, research conducted by Adhimah & Hasan (2024) indicated that gadgets have a positive impact on children, particularly in introducing Arabic vocabulary. These findings highlight the importance of balancing technological use with appropriate teacher guidance and well-structured pedagogical strategies in order to optimize its benefits.

Based on these findings, it is clear that the integration of gadgets and digital applications in Arabic language learning for young students can produce significant positive results, particularly in terms of increasing motivation, listening and speaking skills, as well as vocabulary and grammar comprehension. However, teacher supervision remains essential to maximize the effectiveness of technology, especially for students who are still in the process of mastering the use of digital devices. Previous studies, along with theories of multimedia learning and constructivism, reinforce the view that digital media can serve as effective and engaging pedagogical tools, provided their use is managed appropriately and tailored to students' needs.

Gadget-Based Learning Activities

The observational findings indicated that teachers at Az-Zalfa Kindergarten, Mandailing Natal, employed a gadget-assisted learning model grounded in a fun-based learning approach. This method is characterized by three recurring activity patterns in every session, emphasizing enjoyable, interactive, and participatory learning

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experiences as the core of the pedagogical process. Each learning session is consistently structured into three main phases—opening, core, and closing—which are systematically repeated across meetings. Every phase is deliberately designed to cultivate a positive atmosphere and encourage students' active engagement, enabling them to become not merely passive recipients of knowledge but also active participants in the learning process.

Table 2. Learning Phases and Time Allocation in Gadget-Assisted Arabic Learning

No.	Learning Phase	Activity Description	Average Duration
1	Opening	Greetings and vocabulary reinforcement through songs in the application	5–10 minutes
2	Core	Children engage in interactive quizzes, matching images with sounds	20–25 minutes
3	Closing	Light evaluation through oral questioning and vocabulary reinforcement	5–10 minutes

As presented in the table, the Arabic language learning model at Az-Zalfa Kindergarten integrates applications on gadgets through a fun-based learning approach. Each session is divided into three essential phases: opening, core, and closing. In the opening phase, teachers typically begin with greetings followed by vocabulary repetition through interactive songs available in the learning application. This stage, lasting approximately 5–10 minutes, aims to foster familiarity, reactivate prior knowledge, and motivate students to participate in subsequent activities. The use of songs not only introduces new vocabulary but also assists students in recalling and pronouncing Arabic words in an enjoyable manner. This practice aligns with the audio-lingual learning theory proposed by Smith & Lado (1958), which underscores the significance of repetition and listening drills in the acquisition of foreign languages.

The core stage represents the most crucial part of the learning process, during which children engage in interactive quizzes, picture–sound matching games, and other activities that require active participation. This stage typically lasts for approximately 20–25 minutes. The use of educational applications and digital games at this phase has

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been shown to enhance students' enthusiasm and motivation, as reflected in their active involvement during quizzes and games. These findings are consistent with previous studies, such as Anane (2024), who concluded that game-based digital learning fosters greater engagement and improves learning outcomes in foreign language acquisition.

The results align with constructivist theory (Piaget, 1964), which posits that children at the pre-operational stage (ages 4–7) learn most effectively through sensory exploration, play, and interaction with their environment. In the specific context of an Islamic kindergarten, the integration of digital games into Arabic language learning provides structured yet playful opportunities for children to construct meaning through active engagement, symbolic representation, and imitation. This aligns with Piaget's (1964) view that meaningful learning emerges when children interact with stimuli that are both developmentally appropriate and culturally relevant.

In the closing stage, the teacher conducts a light evaluation through oral questioning and reinforcement of the vocabulary learned. Lasting about 5–10 minutes, this stage serves to reflect on the learning process, strengthen students' memory retention, and provide immediate feedback on their comprehension. This brief evaluation also offers opportunities for students to express their opinions and ask questions, thereby fostering a more dialogical and less one-directional learning environment.

Although most children demonstrated high enthusiasm while interacting with the applications, particularly during quizzes and games, observations also revealed that their independence in operating tablets still required teacher supervision. The most effective strategies observed included step-by-step verbal scaffolding, modeling how to navigate the applications, and providing direct hand-over-hand guidance during the first phase of interaction. Teachers also used clear Arabic keywords and visual cues to help children associate functions on the screen with specific learning commands. These findings confirm that teacher supervision plays a pivotal role not merely as a form of control but as an intentional facilitation strategy that supports the development of children's digital literacy in early Arabic language (Aulia et al., 2022). Similarly, Yulianti et al. (2023) confirmed that while digital technologies significantly support children's learning development, scaffolding or adult assistance remains essential in helping learners achieve higher levels of independence.

Overall, the implementation of fun-based learning in Arabic language education through digital applications has created an enjoyable and effective learning atmosphere.

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This approach not only increases students' motivation and engagement but also strengthens their mastery of vocabulary and Arabic language skills. Nevertheless, the success of this model is highly dependent on the teacher's role as facilitator, guide, and motivator throughout the learning process. Thus, the synergy between technology, engaging pedagogical methods, and teacher facilitation emerges as the key to achieving Arabic language learning objectives in today's digital era.

Children's Responses to Gadget-Based Learning

Children's responses to gadget-based learning reveal intriguing dynamics, particularly in terms of engagement, attention, and enjoyment of the learning process. The following table summarizes the quantitative findings derived from the observation scale (scores 1–5):

Table 3. Children's Responses to Digital Game-Based Arabic Learning

No.	Aspect	Mean Score (9 Children)	Category
1	Attention Focus	4.2	High
2	Verbal Participation	3.8	Fairly High
3	Play Enthusiasm	4.6	Very High
4	Independent Use	3.5	Moderate

Based on the data above, which employed a 1–5 scale, it was found that most children demonstrated a high level of attention focus (mean score 4.2). The children appeared capable of maintaining concentration effectively during the learning process, especially when interacting with applications that incorporated interactive games. This finding is consistent with Sweller's (2011) Cognitive Load Theory, which suggests that well-designed digital media can assist learners in sustaining attention on learning tasks without experiencing excessive cognitive burden.

Furthermore, children's verbal participation was relatively high, with an average score of 3.8. They demonstrated confidence in repeating vocabulary acquired from the application and actively responded to the teacher's oral questions. This elevated level of verbal participation indicates that digital media can serve as an effective stimulus for enhancing communication skills and Arabic pronunciation. These findings are consistent with the study conducted by Wahyuni et al. (2023), which revealed that the use of game-based educational applications fosters children's confidence in speaking and engaging in verbal interaction within Arabic language classrooms.

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The most prominent observation, however, was the level of children's enthusiasm during play, which achieved the highest score (4.6). The learners appeared to greatly enjoy the learning process, as reflected in their cheerful expressions, laughter, and voluntary eagerness to repeat the games. The appeal of digital media – particularly when designed in the form of interactive games or dynamic songs – proved effective in stimulating children's intrinsic motivation to learn. This aligns with the self-determination theory of motivation proposed by Gagné & Deci (2005), which posits that enjoyable and challenging learning experiences naturally enhance students' motivation.

Nevertheless, the aspect of autonomy in gadget use remains at a moderate level (score 3.5). Many children still require teacher assistance to open applications, navigate menus, or press the appropriate buttons. This condition is understandable considering the limitations of fine motor skills and digital literacy among young learners. These findings are consistent with the study conducted by Sergi et al. (2017) on the use of digital technology among early childhood learners in Europe, which concluded that children require intensive adult guidance when engaging with digital devices, particularly in educational contexts. Furthermore, Clemente-Suárez et al. (2024) emphasized that the effectiveness of technology use at an early age depends primarily on the quality of adult supervision rather than on the sophistication of the devices themselves.

In the local context, these findings align with the research of Karnita et al. (2025), which examined digital literacy among kindergarten children in Indonesia. Their study revealed that digital interaction contributes positively to other cognitive domains such as critical thinking, creativity, problem-solving, and executive functioning. When digital tools are thoughtfully designed and implemented, they can foster children's active engagement, exploration, and collaboration, thereby supporting their holistic development. This highlights the necessity of a collaborative approach involving educators, families, and policymakers.

Based on the above data, it can be argued that children's responses to gadget-based learning are highly positive, particularly in terms of attention, verbal participation, and play enthusiasm. Digital media has been shown to create an enjoyable and interactive learning environment while simultaneously enhancing children's motivation and engagement in learning Arabic. However, to achieve autonomy in gadget use, more intensive strategies of guidance and digital literacy training from teachers are required. Thus, the integration of technology in early childhood education

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must always be balanced with the active role of teachers as facilitators, mentors, and guides to ensure that the benefits of learning are optimally realized.

Conclusion

Based on the research conducted, it can be concluded that the integration of gadgets into Arabic language learning for early childhood through a fun-based learning approach at TK Az-Zalfa Mandailing Natal can foster an engaging, interactive, and developmentally appropriate environment. The use of applications such as *Marbel Bahasa Arab*, *Memrise*, and *YouTube Kids* enhanced children's attention, verbal participation, and enthusiasm while providing contextualized and enjoyable learning experiences, supported by structured phases of opening, core, and closing activities. Theoretically, this research contributes to the literature on early childhood foreign language education by affirming the relevance of multimedia learning and constructivist theories in non-urban Islamic contexts, while practically highlighting the crucial role of teachers as facilitators, guides, and motivators in aligning digital tools with developmental stages. In conclusion, gadget-assisted fun-based learning holds promising potential as an innovative model for Arabic language instruction in early childhood, with its effectiveness hinging on the synergy between technology, pedagogical design, and teacher scaffolding.

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