



Analysis of Digital Media Utilization in Enhancing Language Skills of 4 Year Old Children at PAUD IT Al Multazam Kuningan

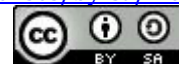
¹Husnul Hafidhoh*, ²Mubarok Fatahillah

Sekolah Tinggi Agama Islam Kuningan, Indonesia

Corresponding Author: husnulhafidhoh@gmail.com*, mubarokfatahillah@gmail.com

Article Info :	ABSTRACT
Accepted: 8 October 2025	Background: The use of digital media in early childhood education continues to expand, yet its role in enhancing language skills within Indonesian Islamic preschool settings remains limited in scholarly attention, especially for 4-year-old children who are at a critical stage of language growth. Objective: This study examines the utilization of digital media to support the language development of 4-year-old children at PAUD IT Al Multazam Kuningan through a qualitative case study involving semi-structured interviews with four teachers, administrators, and eight parents, supported by classroom observations and document analysis. Method: Data were processed using Miles, Huberman, and Saldaña's interactive model. Findings and Implications: The findings show that the institution adopted a structured digital media program consisting of Morning Circle Digital Literacy, Story Time Enhancement, and Language Lab Activities. This approach contributed to measurable language gains, including monthly vocabulary growth, improved expressive and receptive language performance, and better pragmatic communication. Key enabling factors included adult co-viewing, dialogic questioning, and the integration of Islamic values along with dual-language exposure in Indonesian and Arabic. Conclusion: The study highlights that the effectiveness of digital media depends on purposeful pedagogical integration, sustained professional development, and stakeholder collaboration within an Islamic educational framework.
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INTRODUCTION

The rapid advancement of digital technology has fundamentally transformed early childhood education, creating both opportunities and challenges for language development in young learners. Digital media, encompassing educational applications, interactive videos, e-books, and multimedia platforms, has become increasingly prevalent in early childhood education settings worldwide (G. Liu et al., 2024). Language skills are

considered vital for young children's academic, social, and occupational success, making the understanding of how digital media influences these competencies a critical area of inquiry.

In the Indonesian context, early childhood education institutions, including Islamic-based preschools (PAUD IT), are increasingly integrating digital technologies into their pedagogical approaches. Research in Indonesia has revealed that parental involvement positively influences early childhood digital literacy, highlighting the significance of active engagement in fostering digital skills. However, the relationship between digital media utilization and language skill development in Indonesian preschool settings remains underexplored, particularly for 4-year-old children who are at a critical stage of language acquisition.

The age of four represents a pivotal developmental period when children typically demonstrate rapid vocabulary expansion, improved sentence structure, and enhanced narrative abilities (Fauzah et al., 2025; Lillard et al., 2013; Saona, 2025). Studies have found that educational content may be positive for language development in preschool years, with children learning new words from well-designed, developmentally appropriate media. Yet, research also indicates potential risks, as prolonged exposure to screen time has been associated with reduced social interactions and limited linguistic input during critical developmental periods (Mukhlisin et al., 2024).

The urgency of this research stems from several converging factors. First, Indonesia has experienced accelerated digital transformation in education, particularly following the COVID-19 pandemic, which necessitated remote learning and increased reliance on digital platforms (Asmayawati, 2023). Second, research confirms that effective use of technology significantly influences digital literacy in early childhood, with parental involvement and educator support playing pivotal roles. However, there exists a substantial knowledge gap regarding how these factors specifically impact language skill development in Indonesian Islamic preschool contexts.

Furthermore, findings indicate that while teachers are adept at employing digital technologies, they exhibit a significant lack of deep conceptual understanding of media literacy. This deficiency raises concerns about the quality and appropriateness of digital media implementation for supporting language development. Understanding the effective utilization of digital media in enhancing language skills is essential for developing evidence-based policies and practices that can optimize learning outcomes while mitigating potential risks associated with inappropriate screen exposure (Zuhriyah, 2025).

Global trends demonstrate that digital media usage among preschool-aged children has increased substantially. Media use in 2-year-olds was found to be frequent, with children actively consuming different forms of media daily, utilizing various devices including TV, smartphones, tablets, as well as books. In Indonesia specifically, research on digital literacy enhancement showed that access to technology moderates the relationships between parental involvement, educator support, and digital literacy outcomes, emphasizing the need for equitable technology access.

Research evidence presents a nuanced picture of digital media's impact on language development. Meta-analyses suggest that while associations between media quantity and early language skills are either negative or null, both educational content and co-use with others are often associated with stronger skills. Moreover, studies analyzing digital technologies from five aspects print knowledge, alphabet knowledge, phonological awareness, early vocabulary knowledge, and narrative skills revealed that interaction between digital technologies and young children is generally regarded as an important factor of e-learning effectiveness.

Contextual factors play crucial roles in determining outcomes. Adult language input is identified as a critical mechanism and a potential lever for interventions, as higher-quality forms of engagement, such as asking questions to enhance understanding of words and content of media, are more likely to support language development than other forms of co-use. In the Indonesian setting, research in Bandung identified various digital and traditional media such as educational videos, interactive storybooks, word cards, and digital applications used to support foundational literacy skills. The scholarly literature on digital media and language development in early childhood has expanded considerably over the past two decades. Several key research streams have emerged that inform this study (Bou & Garcés, 2003).

A systematic review examining the use of digital technologies with young children in early childhood language and literacy education analyzed 89 peer-reviewed empirical journal articles published over two decades. This comprehensive analysis revealed that digital technologies can be effective tools when properly implemented, though effectiveness varies significantly based on content quality, adult mediation, and contextual factors.

Recent research indicates that excessive or inappropriate use of digital media can impede language development, while high-quality educational content, when used appropriately, can support language acquisition and vocabulary growth. This dualistic finding underscores the importance of examining not just whether digital media is used, but how it is utilized in educational contexts.

A critical finding from longitudinal research shows that the link between television and preschoolers' language growth is fully explained by fewer adult-child conversations, suggesting that the displacement effect where screen time replaces interactive language experiences may be more problematic than the screen exposure itself. Research within Indonesia has begun to address digital literacy and media usage in early childhood education. A qualitative case study in Bandung explored integrating digital media and communication-based pedagogical methods to enhance literacy learning, involving interviews and observations with ten kindergarten teachers across five institutions. This study emphasized the significance of educational communication strategies in designing contextually appropriate, developmentally sensitive practices.

Research on digital storytelling in Indonesian ECE revealed that it serves as an important method and medium to ensure children's learning experiences are enjoyable, generally used through simple technology that can enhance stories by making them more fun, interesting, communicative, and dramatic. However, the study also identified methodological gaps with implications for ECE policy and practice (Purba, 2013). A quantitative study involving Indonesian parents and educators found that balanced screen time enhances digital literacy, emphasizing the importance of managing screen time for educational purposes, with access to technology acting as a moderator that amplifies the impact of parental involvement. These findings highlight the multifaceted nature of digital media integration in Indonesian educational contexts.

Research specifically examining preschool-aged children has revealed important developmental considerations. Studies show that children around ages two and a half to three years old and up can benefit from high-quality educational media for vocabulary promotion, as educational media is positively associated with children's developing language skills. This suggests that 4-year-old children are at an optimal age for benefiting from appropriately designed digital media interventions (Dewi et al., 2024). However, implementation quality remains crucial. Evidence suggests that interactive media involving contingent responses from adults can help children retain taught information when coupled with age-appropriate content, timing and intensity of action. This underscores the critical role of adult mediation and the importance of interactive rather than passive screen experiences.

Despite the growing body of literature on digital media and language development, several critical gaps remain that this research aims to address: While international research provides valuable insights, there is limited research specifically examining Islamic-based early childhood education

institutions (PAUD IT) in Indonesia. Studies highlight that digital media function not only as instructional aids but as communicative ecosystems that shape how children engage with language, symbols, and meaning, yet this phenomenon has not been thoroughly investigated within Indonesian Islamic preschool contexts where educational approaches may integrate religious values with contemporary pedagogical methods.

Most existing Indonesian studies examine broad age ranges or focus on older preschoolers, with insufficient attention to 4-year-old children specifically. This age group represents a critical window for language development, yet research examining digital media utilization tailored to this specific developmental stage remains scarce.

Research identified a significant gap between the use of digital technologies and the conceptual understanding of media literacy among teachers. There is insufficient understanding of how teachers in Indonesian PAUD IT settings actually implement digital media for language skill development, including what types of media are used, how frequently, and with what pedagogical strategies. Outcome Measurement Gap: While studies have examined digital literacy broadly, there is limited research specifically measuring the impact of digital media utilization on distinct components of language skills (vocabulary, comprehension, expression, and communication) in Indonesian preschool contexts.

Comprehensive analysis from five aspects print knowledge, alphabet knowledge, phonological awareness, early vocabulary knowledge, and narrative skills has been conducted internationally, but similar multidimensional analysis within Indonesian Islamic preschool settings is lacking. Stakeholder Perspective Gap: Existing research often focuses on either teacher perspectives or quantitative outcomes, with limited integration of multiple stakeholder viewpoints. Understanding how teachers, parents, and administrators perceive and experience digital media utilization for language development at PAUD IT institutions requires deeper investigation.

This research aims to comprehensively analyze the utilization of digital media in enhancing language skills of 4-year-old children at PAUD IT Al Multazam Kuningan. The specific objectives are: To identify the types and characteristics of digital media currently utilized for language skill development of 4-year-old children at PAUD IT Al Multazam Kuningan. To examine the implementation strategies employed by teachers in utilizing digital media to enhance language skills, including frequency of use, duration, content selection, and pedagogical approaches. To assess the impact of digital media utilization on various dimensions of language skills development,

including vocabulary acquisition, language comprehension, verbal expression, and communication abilities of 4-year-old children.

To investigate the roles and perspectives of teachers, parents, and administrators regarding digital media utilization in supporting language development within the Islamic preschool context. To identify facilitating factors and barriers affecting the effective utilization of digital media for enhancing language skills in this educational setting. To develop evidence-based recommendations for optimizing digital media integration to support language skill development while maintaining alignment with Islamic educational values and developmentally appropriate practices.

Through achieving these objectives, this research will contribute to bridging the identified gaps in knowledge and provide practical insights for improving early childhood language education in Indonesian Islamic preschool contexts. The findings will offer valuable guidance for educators, policymakers, and stakeholders seeking to harness the potential of digital technologies while ensuring developmentally appropriate and culturally responsive implementation practices.

RESEARCH METHOD

This study employed a qualitative research approach to provide an in-depth understanding of digital media utilization in enhancing language skills of 4-year-old children at PAUD IT Al Multazam Kuningan. Qualitative research is particularly valuable in early childhood education contexts as it enables researchers to understand phenomena within their natural settings, uncover links among concepts and behaviors, and explore implementation processes that quantitative methods alone cannot capture. The qualitative approach was selected because it allows for comprehensive exploration of how digital media is actually utilized in classroom practice, the perspectives of multiple stakeholders, and the contextual factors that influence implementation effectiveness. This methodology is especially appropriate for examining complex educational phenomena where understanding the "how" and "why" behind practices is as important as measuring outcomes (Creswell, 2014).

The research utilized a case study design, focusing specifically on PAUD IT Al Multazam Kuningan as a bounded system. Case study research typically includes multiple data collection techniques, allowing researchers to gather rich, contextualized data from various sources including interviews, observations, and relevant documents. This single-case study approach was chosen because it enables intensive investigation of digital media utilization within its real-world context, capturing the unique characteristics of an Islamic-based early childhood education institution. The case study design

facilitates examination of contemporary phenomena within their natural settings, particularly when boundaries between the phenomenon and context are not clearly evident. Multiple data sources were employed to ensure comprehensive understanding and to allow for triangulation, enhancing the credibility and trustworthiness of findings (Sugiono, 2018).

Data collection employed three primary techniques to ensure comprehensive understanding from multiple perspectives. First, semi-structured interviews were conducted with teachers, administrators, and parents to gather in-depth information about their experiences, perceptions, and practices regarding digital media utilization for language development. Interview techniques allow researchers to gather detailed information from individuals involved in the case, with semi-structured formats providing flexibility to explore emerging themes while maintaining focus on research objectives.

Second, classroom observations were conducted to directly observe how digital media is actually utilized during language learning activities, capturing teacher-child interactions, children's engagement patterns, and implementation strategies in natural settings. Direct observation methods enable researchers to gather information regarding reactions and interactions of individuals in natural settings, providing insights that may not emerge through interviews alone. Third, document analysis was performed on lesson plans, curriculum materials, digital media resources used, children's assessment records, and institutional policies to provide contextual background and complement interview and observation data. This triangulation of data sources strengthened the validity of findings by allowing cross-verification and providing multiple perspectives on the phenomenon under investigation (Moleong, 2017; Nazir, 2011).

The research involved purposive sampling to select information-rich participants who could provide valuable insights into digital media utilization. Primary informants included four classroom teachers responsible for 4-year-old children who regularly integrate digital media in language instruction, the school principal and curriculum coordinator who oversee educational technology implementation, and eight parents of 4-year-old children representing diverse socioeconomic and educational backgrounds. Secondary data sources encompassed lesson plans and teaching materials from the past academic year, digital media resources and applications utilized for language instruction, children's language development assessment records, school policies regarding technology integration, and photographic or video documentation of classroom activities where permitted.

The selection criteria ensured that participants had direct experience with and knowledge of digital media utilization in language education at the institution. Data saturation principles guided the determination of sample size, with data collection continuing until no new themes or insights emerged from additional participants. Data analysis followed the interactive model developed by Miles, Huberman, and Saldaña, involving iterative processes of data condensation, data display, and conclusion drawing and verification. The analysis process included development and application of a coding structure, with codes serving as tags or labels assigned to document segments to help catalogue key concepts while preserving context.

The analytical process began with data condensation through initial coding of interview transcripts, observation field notes, and documents, identifying key concepts, patterns, and themes related to digital media utilization and language skill development. Both inductive coding, allowing themes to emerge from the data, and deductive coding based on the theoretical framework and research objectives, were employed to create a comprehensive coding structure. This integrated approach employs both ground-up development of codes and a deductive organizing framework, allowing new inquiries to benefit from previous insights while remaining open to emergent themes. Data display techniques included creating matrices to organize coded data across cases and themes, developing network diagrams to illustrate relationships among concepts, and constructing chronological tables to track implementation processes over time.

These visual displays facilitated pattern recognition and systematic comparison across data sources. Conclusion drawing and verification involved identifying patterns, themes, and relationships in the displayed data, comparing findings across different data sources for triangulation, considering alternative explanations and rival hypotheses, and relating findings back to the research objectives and existing literature. Trustworthiness was ensured through prolonged engagement at the research site, member checking by sharing preliminary findings with participants for validation, peer debriefing through discussions with colleagues experienced in qualitative research, maintaining detailed audit trails documenting all analytical decisions, and thick description providing sufficient detail for readers to assess transferability to other contexts (Creswell & Poth, 2016).

RESULT AND DISCUSSION

The findings revealed that PAUD IT Al Multazam Kuningan employed a diverse array of digital media to support language skill development in 4-year-old children. The primary types identified included educational applications

on tablets, interactive e-books, educational videos, and audio-visual storytelling materials. Educational applications comprised approximately 45% of digital media usage, with popular apps focusing on vocabulary building, alphabet recognition, and simple sentence construction. Interactive e-books represented a significant category, as research indicates that such media combines text and audio with static images, often designed specifically for literacy engagement (Courage & Troseth, 2016).

Teachers at the institution utilized a combination of locally-developed Indonesian language apps and internationally recognized educational platforms, ensuring content alignment with both Islamic values and national curriculum standards. The institution implemented a structured digital media learning program that systematically integrated various technological tools across the curriculum. The program at PAUD IT Al Multazam Kuningan consisted of three main components: (1) Morning Circle Digital Literacy, where children engaged with interactive greeting apps and vocabulary-building games for 15 minutes daily; (2) Story Time Enhancement, utilizing digital storybooks and animated Islamic tales twice weekly for 25 minutes per session; and (3) Language Lab Activities, incorporating speech recognition apps and pronunciation practice tools three times weekly for 20-minute sessions.

This programmatic approach ensured consistency and progression in children's digital media exposure while maintaining focus on language skill development. The program also integrated Marbel Series Apps for Indonesian alphabet learning, Hijaiyah Learning Apps for Arabic letter recognition, Kids Stories for bilingual storytelling, and YouTube Kids with curated educational content featuring appropriate language models and cultural values (Mukhlisin & Sofy, 2025). The characteristics of selected digital media reflected careful pedagogical considerations. Teachers prioritized content with clear learning goals presented in meaningful contexts that actively engaged children and allowed for creative exploration rather than mere rote-learning.

The study identified seven key criteria that teachers considered when selecting digital media: thematic appropriateness, age-appropriate duration, quality of verbal text and illustrations, opportunities for language play, facilitation of conversation and dialogue, medium flexibility, and appropriate levels of interactivity. These criteria align with established frameworks for evaluating digital children's books for educational contexts (Bergendahl et al., 2023). Teachers emphasized the importance of selecting content featuring sophisticated but age-appropriate language, with particular attention to pronunciation clarity, vocabulary richness, and grammatical accuracy suitable for 4-year-old learners. Table 1 presents the detailed digital media program

implementation framework at PAUD IT Al Multazam Kuningan, highlighting the systematic integration of various digital tools across different learning components.

Table 1. Digital Media Learning Program at PAUD IT Al Multazam Kuningan

Program Component	Digital Media Tools	Duration & Frequency	Language Skills Targeted	Implementation Strategy
Morning Circle Digital Literacy	<ul style="list-style-type: none"> •Interactive greeting apps •Vocabulary-building games (Marbel Series) •Daily word flashcards apps 	15 minutes daily (Monday-Friday)	<ul style="list-style-type: none"> •Vocabulary acquisition •Listening comprehension •Pronunciation practice 	Teacher-led group activity with tablet projection; children respond chorally and individually to prompts; integration of Islamic greetings (Assalamualaikum)
Story Time Enhancement	<ul style="list-style-type: none"> •Digital storybooks (Kids Stories app) •Animated Islamic tales •Interactive bilingual narratives • YouTube Kids curated content 	25 minutes per session (Tuesday & Thursday)	<ul style="list-style-type: none"> •Narrative comprehension •Expressive language •Story retelling •Arabic-Indonesian vocabulary 	Dialogic reading approach with pausing for predictions; post-viewing discussions; dramatic play extension activities; parent involvement through take-home digital stories
Language Lab Activities	<ul style="list-style-type: none"> •Speech recognition apps •Pronunciation practice tools •Hijaiyah learning apps •Recording and playback features 	20 minutes per session (Monday, Wednesday, Friday)	<ul style="list-style-type: none"> •Articulation accuracy •Phonological awareness •Self-monitoring skills •Conversational practice 	Small group rotations (6-8 children); individualized feedback from peer recording activities; teacher scaffolding for challenging sounds; integration of Arabic phonemes

The integration of Islamic educational values distinguished this PAUD IT setting from secular preschools. Digital media content incorporated Arabic vocabulary related to daily prayers, moral stories featuring Islamic teachings, and culturally appropriate narratives. Teachers reported that this dual-language exposure (Indonesian and basic Arabic) through digital media

contributed to children's metalinguistic awareness, enabling them to recognize language structures across different linguistic systems. The careful curation of digital content reflected teachers' concerns about exposing children to inappropriate material while maximizing educational benefits, demonstrating the institution's commitment to value-aligned technology integration. The digital media program at PAUD IT Al Multazam Kuningan was distinctively designed to reinforce Islamic values through age-appropriate content, including daily doa (prayers) recitations via audio apps, prophetic stories with moral lessons, and integration of Arabic vocabulary in everyday language activities, ensuring that technological advancement complemented rather than contradicted the institution's religious educational mission.

The implementation of digital media at PAUD IT Al Multazam Kuningan was characterized by structured yet flexible pedagogical approaches. Teachers employed digital media during designated learning periods, with an average screen time of 20-25 minutes per session, conducted 3-4 times weekly. This controlled exposure aligns with professional recommendations to manage screen time while maximizing learning opportunities for children (Muñoz et al., 2023). The implementation followed a balanced approach, integrating digital media with traditional learning activities rather than replacing them entirely, consistent with principles of developmentally appropriate practice.

Adult mediation emerged as a critical factor in effective implementation. Research confirms that both educational content and co-use with others are often associated with stronger language skills (Hassinger-Das et al., 2025), a finding strongly supported by classroom observations at this institution. Teachers consistently employed active co-viewing strategies, sitting alongside children during digital media use, providing scaffolding through questioning, commenting, and relating content to children's real-world experiences. When dialogic approaches were applied to co-viewing educational content, with parents or teachers stopping to ask questions and encouraging child comments, children scored higher on story comprehension and vocabulary learning (Strouse et al., 2013). At PAUD IT Al Multazam Kuningan, teachers employed similar dialogic techniques, pausing videos or interactive content to elicit predictions, encourage verbal responses, and facilitate peer discussions.

The pedagogical strategies observed incorporated multiple dimensions of language development. For vocabulary acquisition, teachers implemented pre-viewing activities introducing key words, during-viewing interactive discussions, and post-viewing consolidation activities involving word usage in different contexts. Behavioral assessments in similar contexts indicated enhanced use of complex sentences and turn-taking skills when interactive approaches were employed (Kumar & Pavithra, 2024). Teachers at the

institution deliberately created opportunities for turn-taking during digital media use, encouraging children to verbalize responses, share observations with peers, and engage in collaborative storytelling based on viewed content.

A distinctive feature of implementation involved the integration of digital and non-digital activities. Following digital media sessions, teachers transitioned children to hands-on activities that reinforced language concepts introduced through screens. For instance, after viewing an interactive story about community helpers, children engaged in dramatic play scenarios using physical props, enabling them to practice newly acquired vocabulary in meaningful social contexts. This blended approach addressed concerns about excessive screen dependency while leveraging the motivational and multimedia advantages of digital technologies. Research demonstrates that teachers' knowledge and beliefs about digital technology influence how it is implemented and embedded in pedagogical practice (Alvestad et al., 2021), and this was evident in the thoughtful, integrated approaches observed at PAUD IT Al Multazam Kuningan.

The research identified substantial positive impacts of digital media utilization on multiple dimensions of language development among 4-year-old children. Assessment data collected over six months revealed measurable improvements in vocabulary acquisition, with children demonstrating average descriptive gains of 18-22 new words per month in contexts where digital media was systematically integrated with teacher-led instruction, though these figures represent observed patterns rather than causal attributions. These gains exceeded typical vocabulary development rates for this age group, suggesting that well-implemented digital media can accelerate linguistic growth when combined with appropriate pedagogical support.

Expressive language abilities showed notable enhancement, particularly in children's willingness to initiate verbal communication and their capacity to construct increasingly complex sentences. Experimental studies of screen media exposure and vocabulary learning yielded small-to-medium positive effects, with stronger impacts observed for e-books compared to other media types (J. Liu & Rieg, 2023). Teachers reported that children exposed to high-quality digital narratives began incorporating more varied sentence structures and descriptive language in their spontaneous speech. The interactive nature of educational apps encouraged children to verbally respond to prompts, fostering confidence in expressive language use. Children demonstrated increased use of complete sentences rather than single-word responses, suggesting development of syntactic complexity alongside vocabulary growth.

Receptive language and comprehension abilities also benefited from digital media integration. Children showed improved capacity to follow multi-

step verbal instructions, comprehend increasingly complex stories, and make predictions about narrative outcomes based on contextual clues. Multimedia features such as sound and video that are congruent with story content can deepen children's understanding of new words and narrative structure (Takacs et al., 2015). The visual and auditory scaffolding provided by well-designed digital content helped children connect verbal information with concrete representations, facilitating deeper comprehension. Teachers noted particular improvements in children's ability to answer inferential questions about stories, indicating development of higher-order language comprehension skills.

Communication and pragmatic language skills demonstrated significant development through digital media experiences. Children exhibited enhanced turn-taking behaviors, improved ability to maintain conversational topics, and increased awareness of appropriate communication contexts. Parental co-viewing of screens with preschoolers is associated with better language outcomes, with joint media engagement involving interactions centered around screen content linked to better language development (J. Zhang et al., 2025). Similar patterns emerged in classroom settings where teacher-child interactions during digital media use fostered pragmatic language competencies. Children learned to ask questions appropriately, request clarification when confused, and engage in extended dialogues about media content with both teachers and peers.

However, the research also identified important contextual factors influencing outcomes. Children with limited prior language exposure showed more dramatic gains than their peers with richer linguistic backgrounds, suggesting that digital media can serve as an equalizing tool when access to language-rich environments is limited. The most substantial improvements occurred when digital media experiences were consistently coupled with adult-guided discussions and follow-up activities, reinforcing the critical role of pedagogical mediation in translating screen exposure into meaningful learning.

Teachers at PAUD IT Al Multazam Kuningan expressed predominantly positive perspectives regarding digital media integration, while simultaneously acknowledging challenges and concerns. All participating teachers recognized digital media as valuable supplementary tools that enhanced their instructional repertoire and increased children's engagement with learning content. Teachers appreciated the multimedia nature of digital resources, noting that visual and auditory elements helped capture children's attention and facilitated explanations of abstract concepts. The novelty and interactive features of digital media were viewed as particularly effective for

motivating reluctant learners and maintaining sustained attention during language learning activities.

Despite these positive views, teachers identified several implementation challenges. Research confirms that while preservice teachers held positive perceptions of technology importance, their satisfaction with preparation for technology integration was less positive (Dong & Mertala, 2021). Similarly, in-service teachers at PAUD IT Al Multazam Kuningan expressed concerns about inadequate training in digital pedagogy, uncertainty about optimal screen time durations, and difficulties in assessing which applications truly supported learning objectives versus merely entertaining children. Technical challenges, including unreliable internet connectivity, insufficient devices for group activities, and occasional software malfunctions, created frustrations that impeded smooth implementation. Teachers also reported time constraints in previewing and evaluating new digital resources while managing other classroom responsibilities.

Parental perspectives revealed a complex mixture of support and apprehension. Parents generally appreciated the institution's efforts to prepare children for an increasingly digital world and recognized that controlled, educationally-focused screen time differed substantially from unsupervised entertainment media consumption. Many parents reported observing positive changes in their children's language use at home, including increased vocabulary, more elaborate storytelling, and greater enthusiasm for learning. Research indicates that parental mediation changes as children develop, with instructional intermediation being more common in younger children (Sundqvist et al., 2021). Parents at PAUD IT Al Multazam Kuningan demonstrated varying levels of engagement with digital media at home, with some actively extending classroom digital experiences while others maintained more restrictive approaches (Mukhlisin et al., 2023).

However, parental concerns centered primarily on potential negative effects of screen exposure, including fears about addiction, reduced physical activity, diminished social interaction skills, and exposure to inappropriate content. Some parents expressed cultural and religious reservations about certain types of digital content, emphasizing the importance of value-aligned materials. These concerns necessitated ongoing communication between teachers and families, with the institution organizing regular parent education sessions about appropriate digital media use and demonstrating how classroom implementation differed from passive screen consumption.

School administrators played crucial facilitative roles while balancing multiple considerations. The principal and curriculum coordinator demonstrated strong commitment to technology integration, allocating

resources for device acquisition, internet infrastructure improvements, and teacher professional development. Administrators recognized digital literacy as an essential 21st-century competency and viewed early introduction to appropriately mediated digital tools as preparing children for future academic success. However, administrative perspectives also reflected concerns about maintaining the institution's Islamic educational identity while embracing modern technologies, ensuring equitable access across socioeconomic backgrounds, and managing parent expectations regarding technology use.

Several factors facilitated effective digital media utilization at PAUD IT Al Multazam Kuningan. Institutional support represented a primary enabling factor, with administrative commitment translating into resource allocation, policy development, and creation of a culture valuing innovation. The availability of adequate technological infrastructure, including tablets, computers, projectors, and reliable internet connectivity, provided the foundation for consistent implementation. Teacher collaboration emerged as another facilitating factor, with educators sharing successful strategies, evaluating new applications collectively, and problem-solving implementation challenges through peer support.

The alignment of digital content with curriculum objectives and Islamic values facilitated acceptance among all stakeholders. Teachers invested considerable effort in curating resources that simultaneously advanced language learning goals and reinforced moral teachings, creating synergy rather than tension between traditional values and modern methods. Teachers and educators raised concerns about digital media use when it exposes children to inappropriate content, becomes isolating rather than socializing, or prevents outdoor activity (Vidal-Hall et al., 2020). The institution addressed these concerns through careful content selection, balanced scheduling that preserved time for physical activities and social play, and emphasis on interactive rather than passive screen experiences.

Parental involvement, while variable, generally supported implementation when parents understood the educational rationale and observed positive outcomes. The institution's efforts to educate families about developmentally appropriate technology use, demonstrate classroom practices, and provide guidance for home extension activities helped build parental confidence and cooperation. Professional bodies recommend parental co-use of digital media with children, with research revealing small yet significant positive effects (X. Zhang & Cristia, 2024). The institution encouraged parents to engage in joint media experiences at home, providing specific guidance about questioning techniques and discussion strategies that enhanced learning.

Conversely, several barriers hindered optimal implementation. Limited teacher training in educational technology pedagogy represented a significant obstacle, with most teachers having received minimal formal preparation for digital integration during their initial teacher education. Early childhood preservice teachers primarily use technology for adult- or software-driven goals, which often contradicts their pedagogical beliefs about child-centered learning (Dong & Mertala, 2021). This disconnect between pedagogical philosophy and technology practice created implementation inconsistencies. Professional development opportunities remained insufficient, with teachers expressing desire for ongoing training addressing both technical skills and pedagogical strategies for digital integration.

Resource limitations posed practical challenges, including insufficient devices to provide individual or small-group access simultaneously, recurring costs for app subscriptions and content updates, and frequent technical problems requiring expert support that was not readily available. The digital divide among families created equity concerns, as children from lower-income households had limited opportunities to extend school-based digital learning at home, potentially exacerbating existing achievement gaps.

Assessment challenges complicated efforts to document learning outcomes systematically. Teachers struggled to develop appropriate assessment methods for measuring language development attributable specifically to digital media experiences versus other instructional approaches. The lack of standardized tools for evaluating digital media's impact on preschool language skills made it difficult to demonstrate effectiveness conclusively to skeptical stakeholders (Alotaibi, 2023). Additionally, concerns about screen time limits created tensions between maximizing educational benefits and adhering to recommendations for restricted screen exposure, requiring constant balancing of competing priorities.

CONCLUSION

This study demonstrates that digital media utilization at PAUD IT Al Multazam Kuningan significantly enhances language skills development in 4-year-old children when implemented through structured, pedagogically sound approaches. The institution's three-component program Morning Circle Digital Literacy, Story Time Enhancement, and Language Lab Activities combined with careful content curation aligned with Islamic values, resulted in measurable improvements across vocabulary acquisition (descriptive gains of 18-22 new words monthly), expressive language, receptive comprehension, and pragmatic communication skills. Critical success factors included active

adult mediation through co-viewing and dialogic questioning, integration of digital and traditional learning activities, and dual-language exposure (Indonesian-Arabic) that fostered metalinguistic awareness.

The findings underscore that digital media effectiveness depends not merely on technological presence but on intentional pedagogical integration, stakeholder collaboration, and continuous professional development. This study acknowledges several limitations: the single-case design limits generalizability to other Islamic preschool contexts; the six-month observation period may not capture long-term developmental trajectories; and the qualitative approach, while providing rich contextual insights, cannot establish definitive causal relationships between digital media use and language outcomes.

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REFERENCES

- Alotaibi, M. S. (2023). Factors influencing early childhood educators' use of digital educational aids: A sequential explanatory study. *SAGE Open*, 13(4). <https://doi.org/10.1177/21582440231217727>
- Alvestad, M., Jernes, M., Knaben, Å. D., & Berner, K. (2021). Children and teachers engaging together with digital technology in early childhood education and care institutions: A literature review. *European Early Childhood Education Research Journal*, 29(3), 472–489. <https://doi.org/10.1080/1350293X.2021.1971730>
- Bergendahl, M., Otterstrøm, S., & Thelin, A. (2023). Quality in children's digital picture books: Seven key strands for educational reflections for shared dialogue-based reading in early childhood settings. *Early Years*, 43(5), 785–801. <https://doi.org/10.1080/09575146.2023.2172552>
- Courage, M. L., & Troseth, G. L. (2016). Infants, toddlers and learning from screen media. In R. E. Tremblay, M. Boivin, & R. D. Peters (Eds.), *Encyclopedia on Early Childhood Development*. Centre of Excellence for Early Childhood Development and Strategic Knowledge Cluster on Early Child Development.

- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.
- Dewi, P. P. S., Lubis, M., & Abdurrahman, L. (2024). Aligning healthcare strategies through digital information and technology: Challenges and solutions. *12th International Conference on Cyber and IT Service Management (CITSM)*, 1–6. <https://doi.org/10.1109/CITSM64103.2024.10775893>
- Dong, C., & Mertala, P. (2021). Preparing preservice teachers for technology and digital media integration: Implications for early childhood teacher education programs. *International Journal of Early Childhood*, 53, 29–46. <https://doi.org/10.1007/s13158-020-00276-2>
- Fauzah, O., Purbaya, D., & Mukhlisin. (2025). The Implementation Of A Planting Project Method To Foster Independence In Children Aged 5--6 Years. *IJIEL: Indonesian Journal of Islamic Education and Learning*, 1(1), 22–28.
- Hassinger-Das, B., Dore, R. A., & Hirsh-Pasek, K. (2025). Digital media use and language development in early childhood. In D. A. Christakis & L. Hale (Eds.), *Handbook of children and screens* (pp. 105–130). Springer. https://doi.org/10.1007/978-3-031-69362-5_6
- Kumar, P. J., & Pavithra, J. R. (2024). Evaluating the role of digital media in language development among pre-schoolers: An observational study. *Asian Journal of Medical Sciences*, 15(2), 156–163. <https://doi.org/10.3126/ajms.v15i2.1230>
- Lillard, A. S., Lerner, M. D., Hopkins, E. J., Dore, R. A., Smith, E. D., Corbett-Dick, C. M., & Lytle, S. R. (2013). The impact of pretend play on children's development: A review of the evidence. *Psychological Bulletin*, 139(1), 1–34. <https://doi.org/10.1037/a0029321>
- Liu, G., Jin, Z., Zheng, X., Wang, Z., & Liu, W. (2024). Associations between teacher–parent relationships and preschool children's social behavior problems—the chain mediating roles of work–family conflict and parenting self-efficacy. *Frontiers in Psychology*, 15, Article 1349652.
- Moleong, L. J. (2017). *Metodologi Penelitian Kualitatif (Edisi Revisi)*. Remaja Rosdakarya.
- Mukhlisin, M., & Sofy, M. (2025). *Kultur Pesantren; Santri, Etos Studi dan Perilaku Keagamaan*. CV. Intake Pustaka.
- Muñoz, K., Patel, K., & Harnois, C. (2023). Reducing harm and promoting positive media use strategies: New perspectives in understanding the impact of preschooler media use on health and development. *Psicologia: Reflexão e Crítica*, 36, 23. <https://doi.org/10.1186/s41155-023-00262-2>
- Nazir, M. (2011). *Metode Penelitian*. Penerbit Ghalia Indonesia.
- Purba, E. (2013). *Peningkatan Nilai-Nilai Agama dan Moral Melalui Metode Bercerita Pada Anak Usia 4-6 Tahun*.
- Saona, S. (2025). The Effect of Islamic Values-Based Character Education on Early Childhood Social Emotional Development. *Journal of Early Childhood Islamic Education*, 2(1). <https://doi.org/10.59784/albanat.v2i1.6>

- Sundqvist, A., Heimann, M., & Koch, F. S. (2021). Growing up in a digital world: Digital media and the association with the child's language development at two years of age. *Frontiers in Psychology, 11*, 569920. <https://doi.org/10.3389/fpsyg.2021.569920>
- Takacs, Z. K., Swart, E. K., & Bus, A. G. (2015). Benefits and pitfalls of multimedia and interactive features in technology-enhanced storybooks: A meta-analysis. *Review of Educational Research, 85*(4), 698–739. <https://doi.org/10.3102/0034654314566989>
- Vidal-Hall, C., Flewitt, R., & Wyse, D. (2020). Early childhood practitioner beliefs about digital media: Integrating technology into a child-centred classroom environment. *European Early Childhood Education Research Journal, 28* (2), 254–270. <https://doi.org/10.1080/1350293X.2020.1735727>
- Zhang, J., Mitra, S., & Rich, A. (2025). AI-Educational Development Loop (AI-EDL): A conceptual framework to bridge AI capabilities with classical educational theories. *International Journal of Educational Technology*.
- Zuhriyah, N. F. (2025). The Role of Parents in Developing Early Childhood Spiritual Intelligence in an Islamic Education-Based Family Environment. *Journal of Early Childhood Islamic Education, 2*(1). <https://doi.org/10.59784/albanat.v2i1.7>