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Strengthening Early Childhood Cognitive Stimulation through Parental Assistance in the Educational Digital Media Ecosystem

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ABSTRACT
The rapid development of digital technology has transformed the learning environment of early childhood, creating both opportunities and challenges for cognitive development. While digital media can provide diverse educational resources, its effectiveness largely depends on the quality of parental guidance and supervision. This study aims to examine the strengthening of early childhood cognitive stimulation through parental assistance within an educational digital media ecosystem. The research focuses on how parents facilitate, monitor, and optimize children's interactions with educational digital platforms to support cognitive growth. A qualitative descriptive approach was employed, involving observations, interviews, and documentation with parents and early childhood education stakeholders. The findings reveal that parental involvement plays a crucial role in enhancing children's cognitive abilities, including problem-solving skills, language development, memory retention, creativity, and critical thinking. Educational digital media became more effective when parents actively selected age-appropriate content, provided learning guidance, and encouraged interactive discussions during and after media use. Furthermore, a collaborative ecosystem involving families, educators, and digital learning resources contributed significantly to creating meaningful learning experiences for children. The study concludes that strengthening parental assistance within the educational digital media ecosystem is essential for maximizing the cognitive development potential of early childhood in the digital era while minimizing the negative impacts of uncontrolled media exposure.

Keywords: *Early Childhood Education, Cognitive Stimulation, Parental Assistance, Educational Digital Media, Digital Learning Ecosystem*

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INTRODUCTION

The digital transformation that characterizes the twenty-first century has fundamentally reshaped educational practices, family interactions, and children's learning experiences (Rahmah et al., 2025). The proliferation of smartphones, tablets, educational applications, and internet-based learning platforms has introduced new opportunities for supporting children's cognitive development from an early age (Andrisyah, 2025). Early childhood is widely recognized as a critical developmental period during which the brain experiences rapid growth and forms neural connections that influence future intellectual,

social, and emotional capacities (Ihlas et al., 2022). During this stage, appropriate cognitive stimulation is essential because children's abilities in language acquisition, memory formation, problem-solving, logical reasoning, and creativity develop most rapidly.

Consequently, educational interventions implemented during early childhood significantly affect long-term educational achievement and human development. The importance of cognitive stimulation in early childhood has been emphasized by numerous developmental theories (Jayawardana, 2025). According to Piaget's Cognitive Development Theory, children actively construct knowledge through interactions with their environment, progressing through developmental stages that shape their understanding of the world (Bungsu & Jayawardana, 2025). Cognitive growth occurs when children encounter new experiences that challenge existing mental structures and encourage adaptation through processes of assimilation and accommodation. In the context of digital learning, educational media can provide diverse and interactive experiences that facilitate exploration, experimentation, and knowledge construction (Ihlas et al., 2022). However, Piaget also emphasized that meaningful learning requires active engagement rather than passive reception of information, suggesting that the educational effectiveness of digital media depends largely on how children interact with technological content.

Complementing Piaget's perspective, Vygotsky's Sociocultural Theory highlights the importance of social interaction in cognitive development. Vygotsky argued that learning occurs within the Zone of Proximal Development (ZPD), where children can achieve higher levels of understanding with guidance from more knowledgeable individuals (Reni, 2023). Within contemporary digital environments, parents serve as essential mediators who scaffold children's learning processes, helping them interpret information, solve problems, and develop critical thinking skills (Rohmah et al., 2025). This theoretical perspective suggests that educational digital media alone may not be sufficient to maximize cognitive development; rather, the presence of supportive parental guidance is necessary to transform digital interactions into meaningful learning experiences (Syahid et al., 2025). Similarly, Bronfenbrenner's Ecological Systems Theory provides a broader framework for understanding children's development by emphasizing the interconnected influence of family, school, community, and technological environments.

From this perspective, children's cognitive growth is shaped not only by individual characteristics but also by interactions among multiple systems surrounding them. In the digital era, educational media constitute an important component of the child's developmental ecosystem (Ihlas et al., 2022). The effectiveness of digital learning therefore depends on the quality of relationships and interactions occurring within this ecosystem, particularly between children and their parents. This theoretical framework supports the notion that parental assistance represents a critical mechanism for optimizing the educational potential of digital technologies. Recent empirical studies have demonstrated the growing significance of digital technology in early childhood education. Research by (Ramadhon et al., 2025) found that well-designed digital applications can promote language development, literacy acquisition, and problem-solving abilities when they encourage active participation and meaningful interaction. Likewise, Janah & Maulidin, (2024) reported that digital literacy activities can contribute positively to children's emergent literacy skills.

More recent investigations have shown that educational technologies can enhance children's engagement, motivation, and cognitive performance when integrated appropriately into learning environments. These findings indicate that digital media possess considerable potential as tools for cognitive stimulation. Nevertheless, scholars continue to debate the developmental implications of children's digital media use. While proponents emphasize educational opportunities, critics warn against excessive screen exposure, passive content consumption, and reduced face-to-face interactions. Rahmah & Junaeni, 2025) reported that prolonged screen time may negatively affect language development and executive functioning when not accompanied by meaningful adult interaction. Similarly, the recommendations of the American Academy of Pediatrics stress that the quality of digital engagement is more important than the quantity of screen exposure alone.

These contrasting findings suggest that the educational outcomes of digital media are largely influenced by contextual factors, particularly parental involvement and guidance. Several studies have therefore examined the role of parents in mediating children's digital experiences. Febriyanti et al., 2022) demonstrated that parental mediation positively affects children's digital literacy and learning behavior. Anisah et al., (2024) further argued that active parental engagement helps children navigate digital environments safely and productively. More recently, Hasanah & Tentiasih, (2025) found that parental support significantly contributes to children's learning motivation and academic development within technology-assisted educational settings. These studies collectively indicate that parents function not merely as supervisors but as facilitators who shape the quality and effectiveness of children's digital learning experiences. Despite the increasing body of literature on digital learning and parental involvement, several limitations remain. Most previous studies focus either on the effects of digital media on child development or on parental mediation strategies independently.

Limited attention has been given to understanding how parental assistance operates within a broader educational digital media ecosystem that encompasses technological resources, family interactions, educational institutions, and learning environments simultaneously. Furthermore, many existing studies emphasize digital literacy or screen-time regulation rather than examining how parental involvement specifically strengthens cognitive stimulation processes. This limitation creates an important research gap requiring further investigation. The present study addresses this gap by conceptualizing children's digital learning experiences within an educational digital media ecosystem. This perspective recognizes that cognitive development emerges through continuous interactions among children, parents, educational content, digital technologies, and social learning contexts. The novelty of this research lies in its integrated analysis of parental assistance as a central mechanism that connects educational digital media with cognitive stimulation outcomes. Unlike previous studies that examine these variables separately, this study investigates their interdependent relationships within a holistic developmental framework.

The significance of this study is both theoretical and practical. Theoretically, it contributes to the advancement of knowledge regarding the integration of Piagetian cognitive development theory, Vygotskian sociocultural learning theory, and Bronfenbrenner's ecological systems theory in explaining children's cognitive development within digital

environments. Practically, the findings are expected to provide evidence-based recommendations for parents, educators, policymakers, and educational technology developers regarding effective strategies for creating supportive digital learning ecosystems that enhance children's cognitive development while minimizing potential risks associated with digital media use. Based on the foregoing discussion, this study aims to analyze how parental assistance strengthens early childhood cognitive stimulation within an educational digital media ecosystem. Specifically, the research explores the forms of parental involvement, the mechanisms through which parental guidance supports cognitive development, and the ways educational digital media can be utilized more effectively to foster meaningful and developmentally appropriate learning experiences for young children in the digital era.

RESEARCH METHODOLOGY

This study employed a qualitative descriptive approach to explore how parental assistance strengthens early childhood cognitive stimulation within an educational digital media ecosystem. A qualitative design was considered appropriate because the research sought to understand the experiences, perceptions, and practices of parents in facilitating children's cognitive development through educational digital media in natural settings. The study was conducted from January to April 2026 in several early childhood education institutions and family environments where children regularly interacted with educational digital media. The research focused on understanding the processes through which parental involvement contributes to children's cognitive stimulation rather than measuring causal relationships statistically.

The population of this study consisted of parents of early childhood children aged 4–6 years who actively utilized digital media as part of their children's learning activities, as well as early childhood educators who interacted with these children in educational settings. Participants were selected using purposive sampling because they possessed direct experience relevant to the research objectives. The inclusion criteria required parents to have children who regularly engaged with educational digital applications, videos, interactive learning platforms, or other forms of educational digital content. A total of 20 parents and 8 early childhood educators participated in the study. Participant selection continued until data saturation was achieved, meaning that no substantially new information emerged from subsequent interviews and observations. Data were collected using semi-structured interviews, participant observations, and document analysis. Semi-structured interviews enabled participants to describe their experiences, strategies, and perceptions regarding the use of educational digital media and parental assistance.

The interview guide consisted of open-ended questions focusing on parental mediation practices, children's learning behaviors, cognitive stimulation activities, digital content selection, and challenges encountered during digital learning processes. Each interview lasted approximately 45–60 minutes and was conducted either face-to-face or through online communication platforms depending on participants' availability. Observations were conducted to examine interactions between parents and children during digital learning activities. The observations focused on parental guidance, communication patterns, scaffolding behaviors, problem-solving assistance, and children's responses while

using educational digital media. Field notes were recorded systematically to capture contextual information and behavioral patterns relevant to the research objectives. In addition, document analysis was performed on educational applications, digital learning materials, parental activity records, and institutional documents to obtain supplementary information regarding children's learning experiences within digital environments. The primary research instrument was the researcher, supported by interview protocols, observation guidelines, and document review sheets. Instrument validity was established through expert review involving specialists in early childhood education and educational technology.

Prior to data collection, the interview protocol and observation guide were pilot-tested with several participants who possessed characteristics similar to those included in the main study. Feedback obtained from the pilot process was used to refine question wording and improve instrument clarity. To enhance trustworthiness, the study applied methodological triangulation by comparing findings obtained from interviews, observations, and document analysis. Source triangulation was also implemented through the inclusion of parents and educators as different participant groups. Member checking was conducted by sharing interview summaries with participants to confirm the accuracy of interpretations. Furthermore, peer debriefing with fellow researchers was utilized to minimize subjective bias and strengthen analytical rigor. Data analysis followed the interactive model proposed by Miles, Huberman, and Saldaña, consisting of data condensation, data display, and conclusion drawing. Interview recordings were transcribed verbatim and combined with observation notes and documentary evidence. The data were then coded systematically to identify recurring concepts, categories, and themes related to parental assistance and cognitive stimulation. Similar codes were grouped into broader thematic categories reflecting patterns of parental involvement, educational digital media utilization, and cognitive development outcomes.

Data displays in the form of matrices and thematic maps were developed to facilitate interpretation and comparison across participants. Conclusions were continuously refined throughout the analytical process until coherent explanations emerged regarding the role of parental assistance in strengthening children's cognitive stimulation within educational digital media ecosystems. The study adhered to ethical research principles throughout the investigation. All participants voluntarily agreed to participate and provided informed consent prior to data collection. Confidentiality and anonymity were maintained by assigning pseudonyms and removing identifying information from all research records. Participants were informed of their right to withdraw from the study at any stage without consequence. Several methodological limitations should be acknowledged. First, the qualitative nature of the study limits the generalizability of findings to broader populations. Second, the research focused primarily on participants from specific educational and family contexts, which may not fully represent diverse sociocultural environments. Third, data relied partly on participants' self-reported experiences, which may be influenced by recall bias or social desirability. Nevertheless, the use of triangulation, member checking, prolonged engagement, and multiple data sources contributed to enhancing the credibility, dependability, and confirmability of the findings. Despite these limitations, the methodology provided rich and

in-depth insights into how parental assistance functions as a critical component of cognitive stimulation within educational digital media ecosystems for early childhood learners.

RESULTS AND DISCUSSION

The findings indicate that parental assistance plays a decisive role in strengthening cognitive stimulation among early childhood learners within an educational digital media ecosystem. Data obtained from interviews and observations revealed that children who received active parental guidance during digital learning activities demonstrated higher levels of concentration, curiosity, verbal interaction, and problem-solving abilities than children who interacted with digital media independently. Parents were not merely supervisors controlling screen exposure but functioned as facilitators who transformed digital experiences into meaningful learning opportunities. One parent explained:

> *"When my child watches educational videos alone, he often focuses only on the animations. However, when I sit beside him and ask questions about the story, colors, numbers, or objects shown on the screen, he becomes more active and remembers the lesson longer." (Parent 4)*

This statement illustrates that cognitive stimulation emerged not only from exposure to educational content but also from the interaction surrounding that content. Observational data confirmed this finding. During digital storytelling sessions, children accompanied by parents frequently responded to questions, predicted story outcomes, identified objects, and related digital content to their daily experiences. In contrast, children who engaged with the same content without parental involvement tended to become passive viewers.

These findings support Piaget's Cognitive Development Theory, which emphasizes that knowledge is actively constructed through interaction with the environment. Educational digital media provided opportunities for exploration, but parental involvement enhanced children's ability to assimilate and accommodate new information. The results suggest that digital technology alone cannot guarantee cognitive development; rather, learning occurs when children actively process information through guided interactions. Table 1 presents the principal forms of parental assistance identified during the study and their observed contributions to children's cognitive development.

Table 1. Forms of Parental Assistance and Cognitive Development Outcomes

Forms of Assistance	Empirical Evidence	Cognitive Outcomes
Content Selection	Parents chose educational videos, literacy apps, and numeracy games	Improved attention and learning engagement
Joint Participation	Parents accompanied children during learning sessions	Increased curiosity and motivation
Questioning and Discussion	Parents encouraged explanation and reflection	Enhanced critical thinking and verbal reasoning
Problem-Solving Guidance	Parents provided hints and explanations	Strengthened logical thinking and decision-making
Monitoring and Regulation	Parents controlled duration and quality of media use	Improved concentration and self-regulation

The study further revealed that educational digital media became most effective when parents adopted interactive mediation strategies. Rather than providing direct answers, many parents encouraged children to think independently. One participant stated:

> *"I usually ask my daughter what she thinks before giving the answer. If she is confused, I give clues little by little until she can solve the problem herself." (Parent 11)*

Observational findings demonstrated that this approach encouraged persistence and cognitive flexibility. Children frequently attempted alternative solutions and displayed greater confidence when completing educational tasks. Such findings correspond closely with Vygotsky's concept of the Zone of Proximal Development (ZPD), which emphasizes that children achieve higher levels of understanding through support provided by more knowledgeable individuals. In this context, parental scaffolding enabled children to perform beyond their independent capabilities.

Another significant finding concerns the development of language and communication skills through digital learning interactions. Parents reported that educational applications and digital storytelling platforms often stimulated conversations that rarely occurred during conventional screen viewing. One educator observed:

> *"Children whose parents discuss educational content at home tend to ask more questions in class and show better vocabulary development compared with children who mostly consume digital content passively." (Teacher 3)*

Classroom observations supported this perception. Children who experienced frequent parent-child discussions during digital learning activities displayed stronger narrative skills, richer vocabulary, and greater confidence when expressing ideas. These findings are consistent with research emphasizing that language development is enhanced when digital learning experiences involve social interaction rather than solitary media consumption.

The findings also demonstrated the importance of content quality within the educational digital media ecosystem. Parents who deliberately selected age-appropriate educational content reported more positive developmental outcomes than parents who primarily focused on entertainment-oriented applications. Several participants explained that educational videos, literacy applications, digital puzzles, and interactive storytelling resources were particularly effective in promoting children's cognitive engagement. One parent commented:

> *"I try to choose applications that make my child think, count, match pictures, or solve simple problems. I avoid content that only entertains without teaching anything." (Parent 15)*

This finding supports previous studies indicating that the educational value of digital media depends largely on content characteristics. The present study therefore suggests that parental digital literacy is a critical factor influencing children's learning outcomes. Parents who possessed greater knowledge regarding educational technologies appeared more capable of creating cognitively stimulating digital learning environments.

The findings further highlight the relevance of Bronfenbrenner's Ecological Systems Theory. Children's cognitive development was influenced not solely by interactions with digital applications but also by relationships among parents, educators, and learning environments. Interviews with teachers revealed that communication between schools and families strengthened the consistency of learning experiences across settings. Educators

frequently provided recommendations regarding educational applications and digital learning activities that could be continued at home. Consequently, cognitive stimulation emerged through collaborative interactions among multiple elements of the educational ecosystem rather than through isolated technological interventions.

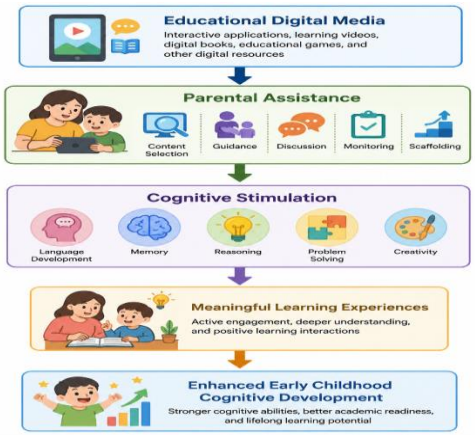

Figure 1. Conceptual Model of Cognitive Stimulation within an Educational Digital Media Ecosystem

The present findings extend previous scholarship concerning parental mediation and children's digital learning experiences in several important ways. Existing studies have generally concentrated on specific dimensions of children's technology use, such as digital literacy development, screen-time management, parental monitoring strategies, or the effectiveness of educational applications. While these studies have generated valuable insights, they often treat technology and parental involvement as separate variables. The findings of the present study suggest a more integrated perspective, demonstrating that parental assistance functions as a critical connecting mechanism that links educational digital media with cognitive stimulation processes. In this regard, the effectiveness of educational technology is not determined solely by technological features or content quality but by the extent to which parents actively facilitate children's engagement with those resources.

This finding reinforces and extends Vygotsky's sociocultural perspective, which emphasizes that cognitive development is fundamentally a socially mediated process. Within digital learning environments, parents provide scaffolding that enables children to perform tasks, interpret information, and construct knowledge beyond their independent capabilities. Observational evidence from this study revealed that children often required guidance to understand instructions, connect concepts, and maintain focus during digital learning activities. Such findings indicate that educational technologies become most effective when embedded within supportive social interactions rather than functioning as independent instructional tools (Jayawardana, 2025). Consequently, the study challenges technology-centered assumptions that regard digital devices as autonomous agents of learning and instead highlights the continuing importance of human mediation in cognitive development.

The findings also contribute to the growing discourse concerning the educational value of digital media in early childhood. Previous research has reported inconsistent conclusions regarding the developmental consequences of children's technology use. Some

scholars have emphasized the educational benefits of digital learning platforms, interactive applications, and multimedia resources for promoting literacy, numeracy, and problem-solving skills (Irawan et al., 2024). Conversely, other studies have warned that excessive or unguided screen exposure may negatively influence attention, language development, and social interaction (Formen & Pranoto, 2025). The present findings help reconcile these seemingly contradictory perspectives by demonstrating that the developmental impact of digital media depends largely on the quality of interaction surrounding its use. Educational media can function either as a powerful cognitive stimulus or as a passive entertainment tool depending on the nature and quality of parental engagement.

Another noteworthy contribution of the study concerns the conceptualization of children's learning experiences within an educational digital media ecosystem. Unlike many previous studies that focus primarily on individual parent-child interactions, the present findings reveal that cognitive stimulation emerges through interconnected relationships involving families, educational institutions, digital resources, and broader sociocultural contexts (Fahmiyah et al., 2025). This observation supports Bronfenbrenner's ecological systems theory, which views child development as the product of interactions occurring across multiple environmental systems. The study therefore expands existing understanding by illustrating how digital technologies become integrated into children's developmental ecosystems and how parental assistance serves as a bridge connecting various learning environments.

Furthermore, the findings suggest that parental assistance contributes not only to immediate learning outcomes but also to the development of long-term cognitive dispositions. Children who experienced consistent parental guidance demonstrated greater curiosity, persistence, confidence, and willingness to engage in exploratory learning activities (Qoumariah et al., 2025). These characteristics are particularly important because they represent foundational dispositions that support lifelong learning (Syafiqoh et al., 2023). Thus, the contribution of parental assistance extends beyond helping children complete digital learning tasks and includes fostering habits of inquiry, reflection, and independent thinking. This finding broadens the discussion of cognitive stimulation by emphasizing developmental processes rather than merely measuring short-term educational outcomes.

Despite these important findings, alternative explanations should be carefully considered. Variations in children's cognitive outcomes may not be attributable exclusively to parental assistance. Several contextual factors appear to influence the effectiveness of digital learning experiences (Agustina, 2022). One important factor is parental educational background. Parents with higher educational attainment generally reported greater confidence in selecting educational content, facilitating discussions, and guiding children's learning activities. Consequently, some observed differences in cognitive stimulation may partly reflect disparities in parental educational resources rather than parental involvement alone.

Socioeconomic conditions also emerged as a relevant contextual influence. Families with greater economic resources tended to possess more stable internet connectivity, a wider range of digital devices, and greater access to high-quality educational applications (Hayati & Asbi, 2025). Conversely, several participants described difficulties related to limited technological infrastructure and restricted access to educational content (Rahmah et al., 2025).

These circumstances suggest that children's opportunities for cognitive stimulation are shaped not only by parental behaviors but also by structural factors that influence access to learning resources. Therefore, policies aimed at improving children's digital learning experiences should address issues of technological equity alongside parental support initiatives.

Another possible explanation involves differences in parental digital literacy. Interviews revealed substantial variation in parents' understanding of educational technologies and digital learning strategies (Andrisyah, 2025). Parents who were familiar with educational applications generally demonstrated more effective mediation practices than parents who possessed limited technological knowledge (Ihlas et al., 2022). This finding suggests that parental competence may moderate the relationship between digital media use and cognitive development. Consequently, strengthening parental digital literacy may represent an important pathway for enhancing the educational value of children's digital experiences. Individual differences among children should likewise be acknowledged. Children's interests, developmental readiness, attention spans, learning preferences, and prior experiences may influence how they respond to digital learning opportunities (Jayawardana, 2025). Some children demonstrated strong enthusiasm for educational technologies and readily engaged in interactive learning activities, whereas others required more intensive encouragement and support. These variations indicate that cognitive stimulation results from dynamic interactions among child characteristics, parental involvement, and learning environments rather than from any single factor operating independently.

The findings carry several important implications for educational practice, policy development, and future research. At the practical level, parents should be encouraged to move beyond passive supervision toward active engagement in children's digital learning experiences. Effective parental assistance involves more than monitoring screen time; it requires meaningful participation through discussion, questioning, explanation, and collaborative problem-solving. Educational programs designed for parents should therefore emphasize strategies for transforming everyday digital interactions into opportunities for cognitive stimulation. For early childhood education institutions, the findings underscore the importance of strengthening partnerships between schools and families. Educators can play a critical role by providing parents with guidance regarding age-appropriate digital resources, effective mediation strategies, and methods for integrating digital learning into everyday family activities. Such collaboration may help ensure consistency between home and school learning environments, thereby maximizing opportunities for cognitive development.

The findings also hold implications for educational technology developers. Digital learning platforms should be designed not only to engage children but also to encourage parent-child interaction. Features that promote collaborative activities, discussion prompts, guided reflection, and joint problem-solving may enhance the educational effectiveness of digital applications. This approach represents a shift from technology-centered design toward relationship-centered design, recognizing that meaningful learning emerges through social interaction.

Although the qualitative design provided rich and contextually grounded insights, several limitations should be acknowledged. The findings reflect experiences within specific educational and sociocultural contexts and therefore cannot be generalized universally. In

addition, the study focused primarily on parental perceptions and observed interactions within a limited timeframe. Future studies employing longitudinal designs could provide deeper understanding regarding the long-term influence of parental assistance on children's cognitive development. Mixed-method approaches may also help examine relationships among parental involvement, digital media use, and cognitive outcomes across larger and more diverse populations.

Overall, the evidence consistently demonstrates that educational digital media achieve their greatest developmental potential when embedded within supportive human relationships. Technology provides opportunities for learning, exploration, and engagement; however, it is parental assistance that transforms these opportunities into meaningful cognitive experiences. The findings therefore suggest that the future of early childhood digital education should not be framed as a choice between technology and human interaction but rather as an effort to integrate both elements within a holistic educational ecosystem that supports children's cognitive growth and lifelong learning.

CONCLUSION

The findings indicate that parental assistance plays a crucial role in enhancing early childhood cognitive development through educational digital media. Rather than technology alone, meaningful parent–child interactions, including guidance, questioning, and collaborative engagement, transform digital media into an effective learning environment that supports language, reasoning, memory, problem-solving, and critical thinking skills. These results support cognitive, sociocultural, and ecological development theories by emphasizing the importance of supportive social contexts in children's learning. The study contributes to the literature by positioning parental assistance as a key link between digital resources and cognitive development within the educational digital media ecosystem. Therefore, efforts to optimize children's cognitive growth in the digital era should prioritize strengthening parents' roles as active partners in children's digital learning experiences.

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REFERENCES

Agustina, R. (2022). Pendampingan Kelompok Belajar Anak Usia Dini Di Kampung Mulyasari, Desa Sukamulya, Kabupaten Bogor. *Praxis Jurnal Pengabdian Kepada Masyarakat*, *1*(1), 62–69. https://doi.org/10.47776/Praxis.v1i1.536

Andrisyah. (2025). *Peningkatan Kompetensi Guru Paud: Implementasi Digital Pembelajaran Mendalam Di Paud*. *1*, 62–69.

Anisah, A., Sukanty, N. M. W., Darmaisasih, W., Santika, I. G. P., & Yunita, L. (2024).

Pengaruh Pemberian Edukasi Gizi Dan Stunting Terhadap Pengetahuan Ibu Dan Penentuan Status Gizi Murid Paud Az-Zahra. *Alamtana: Jurnal Pengabdian Masyarakat Unw Mataram*, *5*(3), 195–202.

Bungsu, H., & Jayawardana, A. (2025). *Implementasi Pembelajaran Mendalam (Deep Learning) Pada Jenjang Pendidikan Anak Usia Dini (Paud)*. *8*(C), 510–516.

Fahmiyah, A. U., Kuswandi, D., & Wahyuni, S. (2025). Using Learning Media To Improve Beginning Reading Skills. *Paudia*, 308–326.

Febriyanti, F., Syaodih, E., & Agustin, M. (2022). Pengenalan Bahasa Inggris Dalam Pembelajaran Paud Di Taman Kanak-Kanak Kota Bandung. *Jurnal Pedagogik Pendidikan Dasar*, *9*(1), 31–40. https://doi.org/10.17509/Jppd.v4i1.21322

Formen, A., & Pranoto, Y. K. S. (2025). Early Childhood Literacy Stimulation By Parents (Systematic Literature Review). *Paudia*, 376–392.

Hasanah, I. N., & Tentiasih, S. (2025). Strategi Pendidikan Paud Dalam Menanamkan Akhlak Mulia Melalui Pembiasaan Doa Dan Hafalan Surat Pendek (Studi Kasus Di Ba Ketro 1). *Al-Athfal: Jurnal Pendidikan Anak*, *6*(1), 13–23.

Hayati, M., & Asbi, S. A. (2025). *Eksplorasi Alam Semesta : Mengintegrasikan Astronomi Dalam Kurikulum Pendidikan Anak Usia Dini*. *14*(3), 573–590. Https://doi.org/10.26877/Paudia.v14i3.1736

Ihlas, I., Haerul, H., & Muslim, M. (2022). Nilai-Nilai Budaya Yang Diterapkan Di Paud Alam Ja Warraihan Santi Kota Bima. *Edu Sociata (Jurnal Pendidikan Sosiologi)*, *5*(2), 132–137.

Irawan, C. P., Fadhilah, A. N., Arsita, A. D., Putri, D. I., Maharani, M., Billanti, R., Oktavia, M., Sasera, Y., & Maharani, R. (2024). Pola Asuh Orang Tua Dalam Membentuk Karakter Moral Anak Usia Dini. *Jurnal Paud Agapedia*, *8*(2), 229–236.

Janah, S. W., & Maulidin, S. (2024). Strategi Sekolah Dalam Membentuk Karakter Religius Pada Anak Usia Dini: Studi Di Paud Laskar Pelangi Srikaton. *Edukids: Jurnal Inovasi Pendidikan Anak Usia Dini*, *4*(2), 69–79.

Jayawardana, H. B. A. (2025). Implementasi Pembelajaran Mendalam (Deep Learning) Pada Jenjang Pendidikan Anak Usia Dini (Paud). *JECIE (Journal Of Early Childhood And Inclusive Education)*, *8*(2), 510–516.

Qoumariah, S., Mustapa, N., Aisyah, S., Ulfah, S. M., & Chandrawati, T. (2025). Stimulation Of Early Childhood Creativity Through Steam Learning Based On Loosparts Media: A Systematic Narrative Review. *Paudia*, 639–656.

Rahmah, Y., Asiah, A., Junaeni, E. S., & Ma'arif, M. (2025). Implementasi Kurikulum Paud Berbasis Alam: Studi Observasi Terhadap Kegiatan Pembelajaran Anak Usia Dini Di Luar Ruangan. *Jurnal Intelek Dan Cendikiawan Nusantara*, *2*(3), 1805–1814.

Rahmah, Y., & Junaeni, E. S. (2025). *Implementasi Kurikulum Paud Berbasis Alam : Studi Observasi Terhadap Kegiatan Pembelajaran Anak Usia Dini Di Luar Ruangan Implementation Pf A Nature-Based Early Childhood Education Curriculum : An Observasional Study Of Outdoor*. 1805–1814.

Ramadhon, P., Anggina, D. Y., Syahrani, S., & Rizqa, M. (2025). Pembiasaan Nilai-Nilai

Akhlak Melalui Kegiatan Rutin Harian Di Paud Khalifah Al Fatih. *Qosim: Jurnal Pendidikan Sosial & Humaniora*, *3*(4), 1642–1649.

Reni, M. (2023). *Penggunaan Permainan Chalenge Board Dalam Meningkatkan Perkembangan Motorik Kasar Anak Di Paud Mekar Sari Abung Semuli Lampung Utara*. Uin Raden Intan Lampung.

Rohmah, N., Medilianasari, R., Kurniawati, Y., Pranoto, S., & Asi, F. Z. (2025). *Penguatan Pembelajaran Steam Menggunakan Ragam Material Lepasan Bagi Pendidik Paud*. *5*(2), 123–133.

Syafiqoh, I., Utanto, Y., & Setiawan, D. (2023). Adaptasi Kurikulum Taman Kanak-Kanak Penggerak: Sebuah Strategi Dari Daerah Pesisir. *Jurnal Obsesi Jurnal Pendidikan Anak Usia Dini*, *7*(1), 1044–1054. https://doi.org/10.31004/Obsesi.V7i1.4043

Syahid, I., Mustaqim, I., & Rohman, S. (2025). Strategi Guru Paud Dalam Mengintegrasikan Nilai-Nilai Keislaman Pada Kegiatan Belajar. *Waladi*, *3*(2), 75–93.