Jurnal Cakrawala Pendas
Vol. 11 No. 3, July 2025
DOI: http://dx.doi.org/10.31949/jcp.v11i3.13651

p-ISSN: 2442-7470
e-ISSN: 2579-4442

PELITA INTERACTIVE MEDIA FOR BEGINNING READING IN ELEMENTARY SCHOOL

Endah Saadah[1*], Lutfi Nur[2], Dian Indihadi[3]
[1,2,3]Universitas Pendidikan Indonesia
[1]endahsa26@upi.edu

Abstract
This study investigates the necessity for developing "PELITA" (Early Literacy Adventure), a contextual and engaging digital media aimed at enhancing early reading instruction in primary schools. Early literacy, particularly beginning reading, forms a fundamental pillar of academic success. However, Indonesia's low literacy performance highlights the urgent need for innovative learning tools that can boost student motivation and participation. Adopting the Systematic Literature Review (SLR) method based on PRISMA 2020 guidelines, this study synthesizes relevant research to identify key characteristics of effective media. The findings reveal that successful digital tools incorporate narrative elements, appealing visuals, and gamified components that enhance phonological awareness, comprehension, and learner engagement. Despite their potential, culturally grounded literacy tools remain scarce. This review offers a scientific contribution by proposing a conceptual foundation for developing localized and child-friendly literacy media. The development of PELITA is thus positioned as a promising response to these gaps, emphasizing the importance of fun, adaptive, and developmentally appropriate media design. The results provide valuable insights for educators, media developers, and policy makers committed to fostering an inclusive and sustainable literacy ecosystem.
Keywords: *early literacy; beginning reading; interactive media; elementary school; systematic review*

Abstrak
Penelitian ini mengkaji kebutuhan pengembangan "PELITA" (Petualangan Literasi Awal), media digital kontekstual dan menarik yang bertujuan untuk meningkatkan pengajaran membaca awal di sekolah dasar. Literasi awal, khususnya membaca awal, merupakan pilar fundamental kesuksesan akademik. Namun, kinerja literasi yang rendah di Indonesia menyoroti kebutuhan mendesak akan alat belajar inovatif yang dapat meningkatkan motivasi dan partisipasi siswa. Mengadopsi metode Systematic Literature Review (SLR) berdasarkan pedoman PRISMA 2020, penelitian ini mensintesis penelitian relevan untuk mengidentifikasi karakteristik utama media yang efektif. Temuan menunjukkan bahwa alat digital yang sukses menggabungkan unsur naratif, visual yang menarik, dan komponen gamifikasi yang meningkatkan kesadaran fonologis, pemahaman, dan keterlibatan siswa. Meskipun memiliki potensi, alat literasi yang berakar pada budaya masih langka. Tinjauan ini memberikan kontribusi ilmiah dengan mengusulkan landasan konseptual untuk mengembangkan media literasi yang disesuaikan secara lokal dan ramah anak. Pengembangan PELITA dipandang sebagai respons yang menjanjikan terhadap celah ini, menekankan pentingnya desain media yang menyenangkan, adaptif, dan sesuai dengan perkembangan anak. Hasil penelitian ini memberikan wawasan berharga bagi pendidik, pengembang media, dan pembuat kebijakan yang berkomitmen untuk membangun ekosistem literasi yang inklusif dan berkelanjutan.
Kata Kunci: literasi awal; membaca permulaan; media interaktif; sekolah dasar; kajian sistematis

Received	: 2025-05-03	Approved	: 2025-07-23
Reviesed	: 2025-07-19	Published	: 2025-07-31

Introduction

Basic literacy skills, especially early reading, are a vital foundation in elementary education that determines students' ability to comprehend more complex materials at higher levels. Unfortunately, multiple studies have revealed that Indonesia's early literacy performance remains low. The 2021 PIRLS (Progress in International Reading Literacy Study) positioned

Indonesia among the lowest-ranked countries in reading achievement for 4th-grade students. Supporting this, Budiarti & Shintarahayu (2023) point out that many educators are still unprepared to integrate digital learning tools effectively, which contributes to the weak development of children's basic reading skills. Moreover, Carson,
Bayetto, and Roberts (2019) emphasize that phonemic awareness and letter-sound knowledge are core indicators in early literacy development. When these aspects are underdeveloped, they can hinder long-term academic success.

Amid these challenges, technological advancement provides promising avenues to improve early reading instruction through the integration of interactive digital media. Such media not only attract attention but also enhance motivation and student participation. A recent meta-analysis by Wang, Harun, and Yuan (2024) confirms that digital gamification significantly boosts literacy outcomes in young learners. Interactive media also enables the presentation of diverse, contextualized, and student-centered learning content, which is more aligned with children's developmental characteristics (Haerunnisa et al., 2024). In addition, Sari & Suyadi (2024) argue that media integrating visuals, sounds, and exploratory features fosters a more enjoyable and meaningful learning experience. Interactive media, when designed with a multisensory approach, strengthens the association between sounds and symbols, enhances vocabulary acquisition, and improves phonological awareness (Purnamasari, 2023).

However, despite these potentials, most existing early literacy media lack cultural relevance and are often not tailored to local contexts. This gap underscores the need for innovations that combine technological engagement with local and cultural values. One alternative solution is the development of "PELITA" (Petualangan Literasi Awal), a story-based interactive media designed to support early reading instruction through narrative, visual, and game-based elements. Narrative-based interactive learning has been shown to improve retention, comprehension, and emotional engagement (Nuari et al., 2024; Purnamasari, 2023). Media like PELITA not only aim to make learning more enjoyable but also build a deeper connection between children and the learning content through imaginative experiences.

To build a strong theoretical foundation for this development, this study uses a Systematic Literature Review (SLR) method following PRISMA 2020 guidelines (Page et al., 2021). This method enables a structured and transparent approach to identifying, analyzing, and synthesizing previous research. Furthermore, the SLR framework helps highlight gaps in existing studies—particularly the scarcity of interactive literacy media rooted in Indonesian culture and adapted to elementary school needs (Abuhassna et al., 2024).

Thus, the main objective of this study is to analyze systematically the characteristics of effective early literacy media and map out existing research gaps that support the conceptual development of PELITA. By doing so, this study contributes to the broader discourse on literacy development while offering practical insights for designing innovative, contextual, and engaging media tools for elementary students in Indonesia. The outcomes are expected to inform educators, developers, and policy makers in shaping a more inclusive and sustainable early literacy ecosystem.

Research Methods

This study uses a Systematic Literature Review (SLR) approach, which is a method of literature synthesis conducted systematically, explicitly, and replicably to identify, evaluate, and interpret all relevant evidence related to a specific research question, topic, or phenomenon of focus (Page et al., 2021). This method was chosen because it provides a rigorous and valid framework for evaluating previous studies and is capable of comprehensively identifying

research gaps and current trends. Additionally, the SLR approach allows for objective literature screening using scientifically justified inclusion and exclusion criteria (Abuhassna et al., 2024).

The review followed the PRISMA 2020 guidelines (Page et al., 2021), consisting of four stages: (1) identification, (2) screening, (3) eligibility selection, and (4) inclusion. The identification phase involved a comprehensive search across five major databases: Scopus, ScienceDirect, SpringerLink, Taylor & Francis, and ERIC. The search strategy used keyword combinations such as "early literacy," "interactive media," "digital learning," "early reading," "multimedia learning," and "elementary education," adjusted with Boolean operators “AND” and “OR.”

A total of 157 articles were initially identified. After removing duplicates and conducting title and abstract screening, 63 articles remained for full-text review. Following the application of inclusion and exclusion criteria, 25 articles were included in the final synthesis. The following is Figure 1 of the stages of the PRISMA model in (Handayani, 2017), namely:

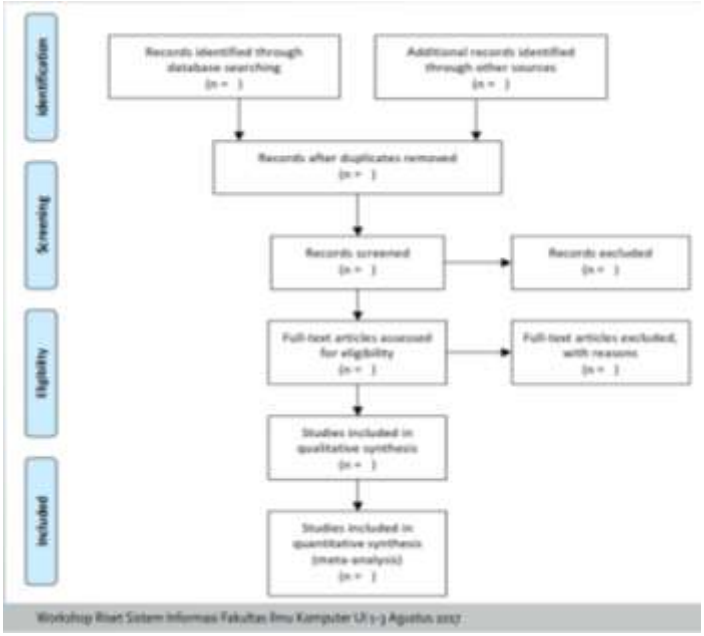

Figure 1. Stages of the PRISMA model

To ensure quality and relevance, the inclusion criteria were as follows: (1) published between 2019–2024, (2) written in English, (3) indexed in Scopus and/or other reputable international journals, (4) focused on the development or evaluation of interactive learning media in elementary education (specifically early literacy), and (5) presenting empirical data using quantitative, qualitative, or mixed-methods. Exclusion criteria included: (1) opinion pieces, editorials, or non-systematic reviews, (2) studies unrelated to elementary-level literacy, and (3) articles lacking full-text access.

In addition to eligibility criteria, the methodological quality of the selected articles was appraised using the CASP (Critical Appraisal Skills Programme) checklist for qualitative and mixed-method studies, and the JBI (Joanna Briggs Institute) Critical Appraisal Tools for quantitative studies. Each article was reviewed by two independent assessors, and discrepancies were resolved through discussion to ensure inter-rater reliability.

Data analysis was conducted in two stages: data extraction and thematic synthesis. In the extraction phase, key details such as author, year, study objectives, method, type of media, and

major findings were tabulated. Thematic synthesis was then performed to categorize the results into emerging themes such as media characteristics, instructional design strategies, effects on early literacy, and challenges in implementation. By using this rigorous and transparent methodology, the study aims to produce a comprehensive literature map that can inform the conceptual and contextual development of the "PELITA" interactive media for early reading instruction.

Result and Discussion

Although the reviewed studies highlight the promising potential of interactive media in supporting early literacy, several research gaps remain evident. he integration of digital tools into early reading instruction has shown measurable benefits in terms of learner engagement, phonemic awareness, and vocabulary development (Farisia & Hasan, 2022). However, a closer examination reveals that many of these interventions remain narrowly focused on surface-level literacy indicators, without critically addressing the broader pedagogical frameworks or long-term impacts on children's literacy trajectories. Furthermore, the majority of existing studies tend to evaluate media effectiveness in isolated settings, limiting their generalizability across diverse educational contexts—particularly in regions with infrastructural or cultural constraints.

First, many studies prioritize surface-level outcomes such as phonemic awareness or motivation while fewer explore deeper literacy skills like inferential comprehension, critical thinking, or long-term retention. The effectiveness of gamification, for instance, tends to be measured in terms of engagement, yet its sustained cognitive impact is rarely addressed.

Second, only a limited number of interactive media incorporate localized content or culturally relevant narratives, particularly in the context of developing countries. This presents a gap in designing media that resonates with learners' cultural backgrounds and linguistic identities. Media developed for global use may not adequately support the nuanced needs of Indonesian or regional learners.

Third, the digital divide continues to be a barrier. Few studies discuss design approaches that accommodate schools with limited access to internet connectivity, digital devices, or teacher training. Offline-first design, low-spec accessibility, and user-friendly interfaces for low-literacy households remain underexplored.

Fourth, although instructional design models such as ADDIE, TPACK, and UDL are mentioned in several studies, they are often applied loosely. There is a lack of rigorous evaluation of how these frameworks directly influence media effectiveness in actual classrooms. These gaps offer opportunities for future media development, especially for the proposed PELITA interactive media. To be effective, future literacy media should: Integrate narrative and gamification in a balanced way to foster both engagement and comprehension. Reflect local cultures, languages, and daily contexts in their storylines and design aesthetics. Be accessible in low-resource settings through offline functionality and minimal hardware requirements. Be developed alongside teachers, incorporating structured pedagogical models to ensure instructional alignment. Be tested through longitudinal research to measure sustained literacy outcomes over time.

By identifying these research gaps, this review highlights the urgency of designing learning media that not only responds to global digital trends but also addresses the unique needs of diverse educational settings. Future efforts must bridge the divide between technological innovation and cultural-pedagogical relevance, ensuring that interactive literacy tools are not only engaging but also equitable and developmentally impactful. This direction opens a critical avenue for interdisciplinary collaboration between education researchers, instructional

Jurnal Cakrawala Pendas Vol. 11, No. 3, July 2025, pp. 677-689

designers, and policy stakeholders in shaping the future of early literacy learning. The following is table 1 on the summary of selected studies and table 2 on the distribution of studies by year and country, namely:

Table 1. Summary of Selected Studies

No	Authors	Year	Article Title	Method	Media / Platform	Key Findings	Target Grade
1	Wang, Z., Harun, J., Yuan Y	2024	Enhancing Reading Instruction Through Gamification	Systematic Review	Digital gamification	Gamification strategies like points and challenges improved motivation and time-on-task; however, comprehension gains varied depending on task type and structure.	Grade 2–3
2	Anggrainy, F. P. N., et al.	2024	Gamifying Reading Motivation in EFL Students	Experiment	Game-based platform	Use of points, badges, and challenge levels increased motivation and EFL student participation; effect on comprehension limited.	Grade 3–5 (EFL)
3	Behnamnia, N., et al.	2023	Digital Game-Based Learning for Preschoolers	Review	Educational games	Game-based learning boosted early vocabulary and motivation; lacks longitudinal data on reading comprehension development.	Age 4–6 (Preschool)
4	Wijaya, A. W. A.	2024	School-Based Literacy Program	Qualitative	Local literacy program	Community-integrated literacy program improved	Grade 1–2

						basic decoding skills; teacher support was key to implementation success.	
5	Zhang, X. & Li, Y.	2019	Mobile-Assisted Early Literacy Learning	Quantitative	Mobile apps	Visualization of letters and auditory repetition strengthened phonemic awareness; success was device-dependent.	Grade 1–2
6	Chen, C. H.	2021	Using Interactive eBooks to Improve Reading Fluency	Experiment	Interactive eBook	Visual-audio eBooks improved fluency and sequencing skills; comprehension increased when narration matched visuals.	Grade 2–3
7	Tondeur, J., et al.	2020	The Role of EdTech in Early Literacy	Mixed-methods	Integrated platform	Technology-supported learning was most effective when paired with trained teachers; TPACK model enhanced phonological learning outcomes.	Grade 1–3
8	Novianti, R. & Pratiwi, N.	2024	AR Media to Stimulate Early Reading Skills	Quantitative	Augmented Reality (AR)	AR features increased engagement and memory retention; navigation complexity needs simplification for younger learners.	Grade 1–2

9	Maureen, H., et al.	2020	Enhancing Storytelling for Early Literacy	Experiment	Digital storytelling	Narrative-based learning improved vocabulary and emotional connection; comprehension linked to storyline complexity.	Age 5–7
10	Matyakhan, T., et al.	2024	Gamification to Enhance Reading Engagement	Experiment	EFL-based game	Gamification improved motivation and comprehension among university EFL learners; transferability to younger learners not tested.	University (EFL)

Table 2. Distribution of Studies by Year and Country

Year	Country	Number of Studies	General Focus	Dominant Method
2019	China	1	Literacy using mobile applications	Quantitative
2020	Netherlands	2	Storytelling & educational technology	Experimental & Mixed
2021	Taiwan	1	Interactive eBooks	Experimental
2022	International (multi-context)	1	Game-based learning	Review
2024	Indonesia	3	Literacy programs & AR media	Quantitative & Qualitative
2024	Malaysia – China – International	1	Basic literacy gamification	Systematic Review
2024	Thailand	1	EFL gamification	Experimental

The interactive media used in early literacy development demonstrate diversity in design, features, and instructional approaches. Based on synthesis from the studies reviewed in this SLR, five main characteristics were generally present in early literacy interactive media: narrative elements, gamification, visualization and animation, multimodal audio, and user interactivity.

Narrative Elements and Story Contextualization**.** Many studies emphasize that the use of narratives and stories in interactive media positively contributes to children's cognitive engagement. Digital storytelling, as described by Maureen et al. (2020) and Purnamasari (2023),

not only introduces richer language structures but also builds meaningful and imaginative learning experiences. A story-based approach allows children to connect learning content with personal experiences, strengthening understanding and retention.

Gamification and Game Mechanics**.** Another prominent characteristic is the integration of game elements in the media. The study by Behnamnia et al. (2023) shows that features such as challenges, points, levels, and virtual rewards encourage children's intrinsic motivation to learn reading. Gamification has been shown to increase children's engagement time with literacy material and promote positive repetition patterns in the learning process.

Dynamic Visualization and Animation**.** Attractive visuals and responsive animations are dominant features in interactive media for early literacy. As shown by Chen (2021) and Zhang & Li (2019), colorful illustrations, animated characters, and dynamic visual transitions help children build concrete associations between text and meaning—especially critical during early reading stages when children are still forming fundamental understanding of symbol-sound relationships.

Audio and Multimodal Features**.** Studies like those by Novianti & Pratiwi (2024) highlight the importance of sound, such as automated narration, sound effects, and digital phonemes. Media that combines text with sound has proven to strengthen phonemic awareness and accelerate vocabulary recognition. Multimodal features activate more sensory channels during learning, thus enriching children's cognitive processing.

Interactivity and Personalization**.** Another common trait is a high level of interactivity, where children can click, drag, choose, or respond to questions directly through digital interfaces. Some media even offer personalization features such as avatar selection, difficulty adjustment, and progress tracking. Tondeur et al. (2020) emphasize that flexible and adaptive interactive media are more successful in addressing individual learning needs. From the overall studies, several consistent trends emerge in the development of early literacy interactive media: Focus on phonemic and basic vocabulary, particularly for children aged 4–8. Child-centered design considering user-friendly interfaces. Increasing use of AR technology and interactive eBooks in recent years. Culturally contextual approaches are increasingly developed, especially in developing countries. These characteristics provide a conceptual foundation for the development of "PELITA" media, designed not just as a teaching aid, but as a platform for imaginative, enjoyable, and effective literacy exploration for elementary-aged children.

Based on the synthesis of 25 selected articles in this review, it can be concluded that interactive media significantly contributes to the development of various early literacy skills among elementary school children. The effectiveness of such media is observed across four main domains: phonemic awareness, vocabulary acquisition, reading comprehension, and reading motivation. Media approaches—both in design and implementation—show varying degrees of effectiveness.

Phonemic Awareness**.** Phonemic awareness refers to the basic ability to recognize and manipulate sounds in words. Studies by Purnamasari (2023) and Zhang & Li (2019) show that phoneme-based applications on tablets and mobile learning significantly improve accuracy in recognizing letter sounds and syllables. Media that presents phonemes through audio narration, mouth movement visualization, and interactive phonetic exercises provide multisensory stimulation that strengthens children's auditory perception of sound patterns.

Vocabulary Acquisition**.** Interactive media has also proven effective in expanding children's vocabulary. Behnamnia et al. (2023) and Maureen et al. (2020) assert that digital storytelling and educational games introduce new words within rich and meaningful contexts. Children not only read or hear words but also use them in meaningful activities, such as choosing responses

in stories or answering questions from digital characters. This accelerates both receptive and productive vocabulary acquisition.

Reading Comprehension**.** Reading comprehension improves when children can connect texts with images, sounds, and animations in an integrated manner. Chen (2021) found that using interactive eBooks that combine text with narrative visuals and audio narration simultaneously enhances story comprehension and sequencing ability. Interactivity in the form of reflective questions during reading also helps children build simple inferences and improve memory retention.

Reading Motivation. The motivational effect is one of the most prominent aspects of interactive media. Gamification, as studied by Matyakhan et al. (2024), and personalization features such as avatars or progress tracking, as discussed by Tondeur et al. (2020), significantly enhance emotional engagement and strengthen children's focus and motivation to read. Children feel more motivated when learning is framed as an adventure, game, or interactive story. Comparatively, narrative-based approaches tend to be superior in developing reading comprehension and vocabulary due to structured story contexts. Meanwhile, game-based approaches are more effective in phonemic awareness and learning motivation due to their repetitive and enjoyable nature. Media that combine multiple features—such as animated eBooks with narrative educational games—show synergistic effects that simultaneously support multiple literacy skills. These findings suggest that the effectiveness of interactive media strongly depends on the alignment of media features with targeted literacy learning goals. Meaningful audio-visual integration, relevant contextual content, and responsive design to user interaction are key success factors in enhancing early literacy skills through media.

Studies analyzed in this review show that the success of interactive media in improving early literacy heavily relies on the instructional design strategies used. Various instructional design models are applied in media development, including ADDIE (Analysis, Design, Development, Implementation, Evaluation), TPACK (Technological Pedagogical Content Knowledge), and UDL (Universal Design for Learning). Each model provides a systematic framework to adapt media to the needs and characteristics of young children.

ADDIE Model. The ADDIE model is the most widely used in educational digital media development. Studies by Chen (2021) and Zhang & Li (2019) indicate that ADDIE enables a systematic and measurable development process. The stages of student needs analysis and learning context, followed by responsive design to early childhood preferences, provide a strong foundation for creating adaptive and enjoyable media

TPACK Model. The TPACK model, used in studies such as Tondeur et al. (2020), ensures a harmonious integration of literacy content, pedagogical strategies, and digital technologies. This approach is vital to ensure that technology is not merely a tool but an integral part of contextual learning processes. For instance, selecting phoneme-based applications combined with multisensory phonetic approaches effectively enhances phonological skills.

UDL Model. Universal Design for Learning (UDL) is a reference for inclusive media design. Behnamnia et al. (2023) show that flexible features such as automated narration, resizable text, and multiple learning options (visual, auditory, kinesthetic) greatly support children with diverse learning needs. UDL ensures that literacy media is accessible to all children, including those with cognitive or sensory barriers. Given young children's exploratory, visual, and easily distracted characteristics, media design must be enjoyable, repetitive, and experience-based. Therefore, effective instructional strategies should consider and here is table 3 related to the comparison of instructional design models and media effectiveness, namely:

Short but intensive interaction durations, such as repeated 5–10 minute sessions. Fast-response-based interaction to make children feel acknowledged and motivated. Harmonious visuals and sounds to maintain focus and reinforce meaning association. Consistent narratives or characters to build emotional connection with the media.

Table 3. Comparison of Instructional Design Models and Media Effectiveness

Instructional Model	Studies Using It	Media Focus	Advantages	Dominant Literacy Skills
ADDIE	Chen (2021); Zhang & Li (2019)	eBook, mobile learning	Structured, iterative, evaluative	Phonemic, reading comprehension
TPACK	Tondeur et al. (2020)	Integrated interactive platforms	Integration of content, technology & pedagogy	Phonemic, motivation
UDL	Behnamnia et al. (2023)	Flexible educational games	Accessible, adaptive for all children	Vocabulary, motivation

In conclusion, an effective instructional design strategy is not just about the selection of a model, but the extent to which the model is implemented taking into account the cognitive, social and emotional developmental needs of early childhood. The "PELITA" media needs to adopt the principles of flexibility, interactivity and cultural relevance to ensure its effectiveness in improving early literacy as a whole.

Although interactive media has been shown to contribute significantly to improving early literacy, its implementation in primary school settings is not free from challenges. These challenges arise from technical, pedagogical and sociocultural aspects. At the same time, the study also shows that if these challenges can be properly anticipated, then the opportunities for utilizing interactive media in literacy learning will be more optimal.

Implementation challenges. Availability of Infrastructure and Access to Technology: Studies by Tondeur et al. (2020) and Sung et al. (2016) reveal that one of the biggest challenges is the limited digital infrastructure in primary schools, especially in rural and disadvantaged areas. Lack of digital devices, unstable internet connections, and the absence of multimedia rooms limit the full integration of digital media. Teacher Competencies in Digital Literacy: According to Budiarti & Shintarahayu (2023), many early childhood education teachers are not optimally prepared to manage digital-based learning media. Teachers are often not provided with adequate training to manage interactive media in the context of literacy learning. This causes the potential of the media not to be optimally utilized. Inequality in student readiness: Some students have better access to technology at home than their peers. This creates a gap in readiness and ability to use digital media (Zheng et al., 2021). Children with economic limitations or special needs also require adaptation of features to keep the media inclusive. Weak Reading Culture: In many contexts, including Indonesia, a weak reading culture at home and at school is a challenge in strengthening early literacy. Without an environment conducive to reading, interactive media risk becoming a fleeting experience without sustainability (Budiarti & Shintarahayu (2023).

Implementation Implications. Context Responsive Media Design: Interactive learning media needs to be designed by considering existing limitations and potentials. The use of local resources, culture-based content, and designs that can run without the internet are strategic options. Media like "PELITA" need to adapt to the technical needs and social context of elementary schools in Indonesia. Strengthening Teacher Digital Literacy: Jakawali (2023)

emphasizes that the TPACK approach in early reading learning helps teachers to integrate technology effectively and pedagogically. Teacher professional development through training, learning communities and collaboration with media developers is crucial. Policy Support and School Leadership: School principals and education stakeholders have an important role to play in driving innovation. The Guardian Foundation (2024) calls for the integration of digital literacy as part of a systemic reform of education that emphasizes the role of principals and national policies. Parent Engagement: Early literacy interactive media that involves parents as facilitators of learning at home has been shown to be more effective. According to Purnamasari (2023), the synergy between digital experiences at school and at home can strengthen knowledge transfer and create a sustainable literacy culture.

Conclusion

This Systematic Literature Review (SLR) reveals that interactive media has great potential in supporting early literacy development in elementary school-age children. Based on a synthesis of 25 verified scientific articles, it was found that digital-based media can improve phonemic awareness, vocabulary acquisition, reading comprehension and reading motivation through a multimodal, interactive and contextual approach. Effective interactive media are generally designed with instructional strategies based on ADDIE, TPACK, or UDL models that are tailored to the cognitive and affective characteristics of early childhood. Key features such as narrative elements, gamification, visualization, sound and personalization are proven to provide a more enjoyable and meaningful learning experience. However, the implementation of this media still faces challenges from the aspects of infrastructure, teacher readiness, inequality of student access, and a reading culture that is not yet strong. Therefore, implementation strategies in the field must consider the local context and involve the entire education ecosystem, from teachers, principals, parents, to policy makers. As a contribution to evidence-based literacy media development, the findings provide a conceptual basis for the design of the "PELITA" (Early Literacy Adventure) media that combines adventure narrative, educational animation and active user interaction. "PELITA" is designed not only to meet children's learning needs but also to enrich teachers' teaching strategies in building a solid literacy foundation. By integrating findings from various international literatures and taking into account the conditions of basic education in Indonesia, this research is expected to be a scientific as well as practical reference in the development of innovative and applicable early literacy learning media.

References

Abuhassna, H., Alnawajha, S., Awae, F., Adnan, M. A. B. M., & Edwards, B. I. (2024). Synthesizing technology integration within the ADDIE model for instructional design: A comprehensive systematic literature review. *Journal of Autonomous Intelligence*, *7*(5), 1–28. https://doi.org/10.32629/jai.v7i5.1307

Anggrainy, F. P. N., Sharizan, S., Sriyanda, R., & Farhan, M. (2024). Gamifying reading motivation in EFL students: Enhancing engagement and language learning through ICT. *Jurnal Simki Pedagogia*, *7*(1), 106–118.

Behnamnia, N., Kamsin, A., Ismail, M. A. B., & Hayati, S. A. (2023). A review of using digital game-based learning for preschoolers. *Journal of Computers in Education*, *10*(4), 603–636. https://doi.org/10.1007/s40692-022-00241-7

Budiarti, E., & Shintarahayu, B. (2024). Evaluating kindergarten teachers' readiness for technology-integrated pedagogy: An analysis based on the TPACK framework. *Jurnal Pendidikan Progresif*, *14*(3), 2219–2233.

Carson, K. L., Bayetto, A. E., & Roberts, A. F. B. (2019). Effectiveness of preschool-wide teacher-implemented phoneme awareness and letter-sound knowledge instruction on code-based school-entry reading readiness. *Communication Disorders Quarterly*, *41*(1), 4–17. https://doi.org/10.1177/1525740118786934

Chen, C. C., & Tsai, Y. H. (2025). Effect of interactive e-book use on learning engagement, satisfaction and perceived learning. *Education and Information Technologies*, 1–33. https://doi.org/10.1007/s10639-025-11987- 1

Chen, C. H. (2021). Using interactive eBooks to improve reading fluency. *Educational Technology Research and Development*, *69*(1), 233–248. https://doi.org/10.1007/s11423-020-09763-4

Farisia, H., & Hasan, A. (2022). Modul pembelajaran literasi kelas awal Sekolah Dasar.

Haerunnisa, C., Irfan, M., & Raihan, S. (2024). Development of hypercontent-based interactive learning multimedia for elementary school students with ecosystem material. *Pinisi Journal of Education*, *4*(2), 123–132.

Handayani, P. W. (2017). Systematic review dengan PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses). In *Workshop Riset Sistem Informasi Fakultas Ilmu Komputer UI* (Vol. 9, pp. 1–3).

Jakawali, G. (2023, June). Early reading with technological pedagogical content knowledge (TPACK) approach. In *Proceedings of the International Conference on Elementary Education* (Vol. 5, No. 1, pp. 274–284).

Matyakhan, T., Chaowanakritsanakul, T., & Santos, J. A. L. (2024). Implementing gamification to enhance reading engagement and reading comprehension of Thai EFL university students. *LEARN Journal: Language Education and Acquisition Research Network*, *17*(1), 121–239.

Maureen, I. Y., van der Meij, H., & de Jong, T. (2020). Enhancing storytelling activities to support early (digital) literacy development in early childhood education. *International Journal of Early Childhood*, *52*(1), 55–76. https://doi.org/10.1007/s13158-020-00261-9

Novianti, R., & Pratiwi, N. (2024). Augmented reality (AR) media to stimulate early reading skills in early childhood. *Jurnal Ilmiah Visi*, *19*(2), 112–124.

Nuari, H., Zen, Z., & Hidayati, A. (2024). Development of interactive video for the basics of educational technology course. *Jurnal Penelitian Pendidikan IPA*, *10*(6), 3024–3030.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ... & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, *372*, n71. https://doi.org/10.1136/bmj.n71

Purnamasari, I. (2023). Increasing literacy through interactive media in early childhood. *OBSESI: Jurnal Pendidikan Anak Usia Dini*, *7*(3), 2000–2012.

Sari, B. M., & Suyadi, S. (2024). Media video pembelajaran interaktif rumah adat Sumatera untuk menstimulasi kecintaan budaya dan pemahaman konsep geometri pada anak usia dini. *JEMS: Jurnal Edukasi Matematika dan Sains*, *12*(2), 134–148.

Sung, Y. T., Chang, K. E., & Liu, T. C. (2016). The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-analysis and research synthesis. *Computers & Education*, *94*, 252–275. https://doi.org/10.1016/j.compedu.2015.11.003

The Guardian Foundation. (2024, December 2). The Guardian Foundation call on the government to embed news and media literacy into the curriculum. *The Guardian*. https://www.theguardian.com/guardian-foundation/2024/dec/02/the-guardian-foundation-call-on-the-government-to-embed-news-and-media-literacy-into-the-curriculum

Tondeur, J., Scherer, R., Siddiq, F., & Baran, E. (2019). Enhancing pre-service teachers' technological pedagogical content knowledge (TPACK): A mixed-method study. *Educational Technology Research and Development*, *68*(1), 319–343. https://doi.org/10.1007/s11423-019-09645-4

Wang, Z., Harun, J., & Yuan, Y. (2024). Enhancing reading instruction through gamification: A systematic review of theoretical models, implementation strategies, and measurable outcomes. *Journal of Information Technology Education: Research*, *23*, 421–452.

Wijaya, A. W. A. (2025). School-based literacy program to improve students' reading competencies. *International Journal of Indonesian Education and Teaching*, *9*(1), 15–27.

Zhang, X., & Li, Y. (2019). Mobile-assisted early literacy learning. *British Journal of Educational Technology*, *50*(2), 703–715. https://doi.org/10.1111/bjet.12603

Zheng, L., Li, X., & Huang, R. (2021). Developing students' information literacy through digital media tools: A study of digital inequality in China. *British Journal of Educational Technology*, *52*(2), 727–743. https://doi.org/10.1111/bjet.13028