

The Role of the Center-Based Learning Model in Early Childhood Literacy Development: A Systematic Literature Review

Erah Munadaroh^{1*}, Noviana Mustapa², Mukti Amini³

^{1,2,3} Magister Pendidikan Anak Usia Dini, Universitas Terbuka, Indonesia

Email: ¹erahmunada399@gmail.com, ²noviana.mustapa@ecampus.ut.ac.id,

³muktiamini@ecampus.ut.ac.id

ARTICLE INFO

Article History:

Received : 28-01-2026

Revised : 23-03-2026

Accepted : 30-03-2026

Online : 10-04-2026

Keywords:

Center-Based Learning Model;

Early Childhood Literacy;

Early Childhood Education;

Center-Based Instruction;

Systematic Literature Review.



ABSTRACT

This study aims to examine the role of the center-based learning model in early childhood literacy development through a systematic literature review approach. Early literacy is a critical foundation for children's cognitive, language, social, and character development, necessitating instructional models that align with their developmental characteristics. This study employed the PRISMA 2020 framework to systematically identify and analyze relevant literature. Data were collected from national and international journal articles published within the last ten years, selected based on inclusion criteria such as children aged 5–6 years, the application of center-based learning or Beyond Centers and Circle Time (BCCT), and a focus on literacy development. A total of ten articles were analyzed using descriptive and narrative techniques. The findings reveal that the center-based learning model significantly enhances early literacy skills, particularly in language development, symbolic thinking, communication, and meaning-making through structured, play-based activities. Additionally, this model promotes children's independence, creativity, and active engagement in learning. However, its implementation faces challenges related to teacher competence, limited facilities, and insufficient parental and institutional support. This study concludes that the effectiveness of center-based learning in improving literacy outcomes depends on well-organized learning centers, the integration of interactive literacy materials, and strong pedagogical facilitation by educators.



Crossref



This is an open access article under the [CC-BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license

..... ◆

A. INTRODUCTION

Despite the recognized importance of early childhood literacy, numerous empirical studies have reported persistent challenges in its development, particularly among children aged 5–6 years. Many early childhood education settings continue to face difficulties in fostering foundational literacy skills, such as emergent reading, writing, and oral language development. These challenges are often reflected in children's limited vocabulary, low engagement in literacy-related activities, and insufficient ability to interpret symbols and construct meaning within learning contexts. Such conditions are frequently attributed to the use of instructional approaches that are not developmentally appropriate, overly teacher-centered, and insufficiently responsive to children's natural learning characteristics.

In addition, disparities in teacher competence, limited availability of literacy-supportive learning environments, and inadequate integration of play-based strategies further exacerbate the problem. Empirical evidence also suggests that literacy instruction

in early childhood settings is often implemented in a fragmented manner, lacking systematic design and meaningful interaction. As a result, children's literacy development does not reach its optimal potential during this critical developmental stage. These challenges highlight the urgent need for innovative and developmentally appropriate learning models that can effectively support early literacy acquisition.

Early childhood literacy constitutes a fundamental foundation for shaping children's learning readiness at subsequent levels of education. Literacy in the early phase is not merely understood as the ability to read and write, but also encompasses the ability to understand symbols, oral language, and meaning constructed through contextual learning experiences (Novrani et al., 2021). Within the age range of 5–6 years, literacy development becomes a critical stage, as children begin to demonstrate more complex cognitive, linguistic, and social readiness, thereby requiring learning approaches that align with their developmental characteristics (Wahyuni, 2022).

One of the approaches widely implemented in early childhood education in Indonesia is the center-based learning model. This model positions children as active subjects in the learning process through structured play activities conducted in various learning centers, such as preparation centers, block centers, and natural materials centers. This approach is believed to create meaningful, contextual, and child-centered learning environments (Andriyati, 2023). In practice, the center-based learning model provides opportunities for children to explore learning experiences independently yet purposefully, which has the potential to support the development of literacy skills from an early age.

A growing body of empirical research has examined the implementation of the center-based learning model in early childhood education; however, the findings reveal both convergences and variations across studies. The model has been shown to foster active engagement and create a conducive learning environment, while also contributing to the development of symbolic thinking as a precursor to literacy and strengthening children's conceptual understanding. These variations indicate that although the model is consistently associated with positive developmental outcomes, its specific contributions to early literacy remain context-dependent and insufficiently synthesized (Kasiati et al., 2022); (Kasiati et al., 2022); (Nisa et al., 2023).

Parallel to this, studies on early childhood literacy emphasize the importance of developmentally appropriate and holistic learning approaches. Literacy development should be grounded in meaningful and experience-based activities, while also integrating philosophical (child-centered values), pedagogical (play-based and interactive strategies), and psychological (developmental readiness and motivation) dimensions. In practice, these dimensions are operationalized through the design of structured learning centers that facilitate exploration, language interaction, and symbolic representation; however, their integration within center-based learning remains insufficiently articulated in empirical studies (Wahyuni, 2022); (Yufiarti, 2024).

Despite its potential, current research on center-based learning tends to be fragmented, often focusing on isolated developmental aspects and lacking comprehensive analytical integration. Most studies examine single variables without systematically linking findings across contexts, resulting in limited understanding of how the model contributes specifically to early childhood literacy development. This condition highlights the absence of a comprehensive synthesis that connects empirical findings with broader pedagogical and developmental frameworks (Maryati et al., 2022).

Accordingly, this study addresses this gap by providing a systematic and comparative synthesis of empirical research on the role of the center-based learning model in early childhood literacy development. The novelty of this study lies in its integrative approach,

which not only consolidates research findings but also critically analyzes implementation patterns, connects theoretical dimensions to classroom practices, and identifies trends and inconsistencies in the literature. Therefore, this study aims to generate a more comprehensive understanding of how center-based learning functions as a strategic and contextually responsive model for enhancing early literacy among children aged 5–6 years.

B. METHODS

This study employed a systematic literature review approach to analyze and synthesize empirical research on the role of the center-based learning model in early childhood literacy development among children aged 5–6 years (Ratnaningtyas et al., 2023). This approach was selected to generate a comprehensive and critically integrated understanding of implementation patterns, research trends, and pedagogical contributions derived from prior studies.

Data sources were obtained from peer-reviewed journal articles identified through searches in Google Scholar, supported by Harzing's Publish or Perish software for citation filtering and relevance ranking. Open Knowledge Maps was also utilized to map thematic relationships and refine the scope of the literature. The search employed keywords such as "center-based learning," "model pembelajaran sentra," "early childhood," and "literacy," combined using Boolean operators. The initial search yielded 17,913 records, which were progressively screened following the PRISMA 2020 procedure.

The selection process involved removing duplicates and irrelevant records, screening titles and abstracts, and conducting full-text eligibility assessments. From 55 eligible articles, only 10 studies were included in the final analysis. The selection of these 10 articles was based on their high relevance to the research focus, methodological rigor, and completeness of reported findings related specifically to both center-based learning and early literacy outcomes. Studies that did not explicitly link these two variables or lacked sufficient empirical evidence were excluded to ensure analytical precision and depth.

To ensure the quality of the selected studies, a critical appraisal was conducted using criteria such as clarity of research design, validity of data collection methods, consistency of findings, and relevance to the study objectives. Only studies meeting these quality standards were retained, thereby enhancing the reliability and credibility of the synthesis.

The data were analyzed using a descriptive–comparative and narrative synthesis approach, enabling cross-study comparison, identification of key themes, and integration of findings to provide a comprehensive understanding of how the center-based learning model contributes to early childhood literacy development.

C. RESULT AND DISCUSSION

1. The Center-Based Learning Model as a Contextual Literacy Learning Environment

The center-based learning model represents a pedagogical approach that situates early childhood literacy within contextual, meaningful, and child-centered learning environments. Rather than separating learning from play, this model integrates literacy experiences into structured learning centers that reflect authentic and developmentally appropriate activities. Within the Beyond Centers and Circle Time (BCCT) framework, children are positioned as active learners who construct knowledge through exploration, interaction, and direct engagement, allowing literacy development to emerge naturally in alignment with their developmental stages (Andriyati, 2023). This positioning

distinguishes center-based learning from more traditional, teacher-centered approaches that often treat literacy as an isolated academic skill.

Empirical findings consistently indicate that center-based environments provide rich literacy stimuli, including exposure to symbols, oral language, and visual representations. Each learning center is intentionally designed with specific objectives, enabling the integration of multiple developmental domains, including language and early literacy skills (Kasiati et al., 2022). For instance, the preparation center introduces children to letters and words through guided play, while block and natural material centers facilitate symbolic thinking and meaning-making through representational activities. Such variations across learning centers demonstrate that literacy development is not confined to direct instruction but is distributed across diverse learning contexts, reinforcing the idea that meaningful, experience-based engagement is central to early literacy acquisition (Novrani et al., 2021).

This contextual orientation aligns with broader theories of meaningful learning, which emphasize the importance of connecting instructional content to learners' real-life experiences. Evidence from related studies suggests that conceptual understanding becomes more robust when learners engage with familiar and relevant contexts (Anggrenii et al., 2020). In the case of center-based learning, literacy is embedded in activities such as storytelling, role play, and simulation, enabling children to move beyond symbol recognition toward functional understanding. This integration highlights a key pattern across studies: literacy development is most effective when it is embedded in authentic, contextually relevant experiences rather than delivered through decontextualized instruction.

Furthermore, the flexibility of the center-based model allows educators to introduce literacy in a gradual, engaging, and non-pressurized manner. Early childhood literacy instruction is widely recognized as most effective when it avoids rigid academic demands and instead emphasizes joyful and meaningful engagement (Fahmi et al., 2020). The reviewed studies consistently support this perspective, indicating that children participating in center-based environments demonstrate higher levels of engagement and reduced learning anxiety. This suggests that the model not only supports cognitive aspects of literacy but also addresses affective dimensions, which are often overlooked in more formal instructional approaches.

Another significant pattern identified across the literature is the model's capacity to accommodate diverse learning needs through differentiated instruction. The variety of activities within learning centers allows children to engage with literacy according to their individual learning styles and developmental pace. This flexibility is particularly important in inclusive education settings, where adaptive and innovative strategies are required to ensure equitable learning opportunities (Akramul Insan Zaer et al., 2024). In this context, literacy development is not uniform but personalized, reflecting the diverse pathways through which children acquire language and symbolic skills.

In addition, several studies highlight the importance of ecological support systems in strengthening literacy outcomes within center-based environments. Effective implementation extends beyond classroom practices and involves collaboration between educators and families to create a continuous literacy ecosystem (Erica, 2022). This finding underscores that literacy development is not solely determined by instructional design but also by the broader social context in which learning occurs.

From a pedagogical and philosophical perspective, the center-based learning model aligns with holistic early childhood education principles that view children as active, unique individuals who learn through meaningful interaction with their environment.

Such an approach integrates philosophical, pedagogical, and psychological dimensions into concrete classroom practices, positioning learning centers as spaces where literacy is developed through exploration, interaction, and contextual engagement (Yufiarti, 2024).

The synthesis of reviewed studies reveals a consistent pattern: the center-based learning model plays a crucial role in establishing contextual literacy environments that support integrated, meaningful, and developmentally appropriate literacy experiences. However, variations in implementation and emphasis across studies also indicate the need for a more systematic understanding of how specific design features of learning centers influence literacy outcomes.

2. The Contribution of the Center-Based Learning Model to Early Childhood Early Literacy Development

The center-based learning model (BCCT) makes a substantial contribution to early childhood literacy development by situating literacy within child-centered, experience-based learning environments. In early childhood education, literacy extends beyond formal reading and writing skills to include language readiness, symbol recognition, phonological awareness, and oral communication within meaningful social contexts. Within this framework, center-based learning functions as a strategic medium that facilitates literacy development through contextual and play-integrated experiences, allowing children to engage with literacy concepts in a natural and developmentally appropriate manner (Kasiati et al., 2022); (Fahmi et al., 2020).

Empirical studies consistently demonstrate that center-based learning provides diverse opportunities for children to interact with literacy-related symbols through structured play. For instance, the preparation center has been shown to enhance children's symbolic thinking, which serves as a foundational component of early literacy (Maryati et al., 2022). Similarly, other findings indicate that center-based learning contributes to cognitive and language development, particularly in areas related to symbol comprehension and early conceptual understanding (Nisa et al., 2023). While these studies converge in highlighting the positive impact of the model, they also reveal variation in the specific literacy indicators emphasized, suggesting that the model's contribution is multidimensional and context-dependent.

From a pedagogical perspective, the center-based learning model aligns closely with the principles of Contextual Teaching and Learning (CTL), which emphasize the integration of learning content with real-life experiences. Although previous research has examined CTL in different educational settings, its underlying principles remain relevant in early childhood contexts, particularly in supporting the construction of meaning through direct engagement (Anggrenii et al., 2020). Within center-based learning environments, children actively participate in exploration, discussion, and simple reflective processes, which collectively contribute to vocabulary development, questioning skills, and the ability to express ideas—key components of early literacy.

Another important pattern identified across the literature is the role of teachers as facilitators of literacy development. Effective literacy instruction in early childhood requires strategies that are engaging, flexible, and free from coercion (Fahmi et al., 2020). The center-based learning model supports this approach by enabling teachers to design varied literacy activities, such as storytelling, role play, picture reading, and phonological awareness exercises through songs and games. This variation not only enhances children's engagement but also integrates cognitive and affective dimensions of literacy, positioning learning as both meaningful and enjoyable.

Beyond classroom practices, several studies emphasize the importance of family involvement in reinforcing early literacy development. Parental engagement plays a critical role in shaping children's literacy habits and extending learning experiences beyond the school environment (Erica, 2022). In this regard, center-based learning offers a distinctive advantage by facilitating continuity between school and home, as many center-based activities can be adapted and replicated within family contexts. This highlights the role of literacy development as a collaborative and ecological process rather than a solely instructional one.

In inclusive education settings, the flexibility of center-based learning further enhances its contribution to literacy development. The model accommodates diverse learning needs by allowing children to engage with literacy activities according to their individual abilities and developmental pace. Such adaptive and child-centered strategies are essential in creating equitable learning environments, particularly in contexts characterized by varying levels of language development (Akramul Insan Zaer et al., 2024).

From a synthesis perspective, the reviewed studies consistently indicate the positive contribution of center-based learning to early literacy, despite differences in methodological approaches and literacy indicators. This pattern suggests a strong overall alignment between the model and early literacy development, while also revealing a gap in the integration of literacy dimensions across different types of learning centers. Addressing this gap requires more systematic and comparative analyses, as emphasized in systematic review methodologies (Page et al., 2021).

The center-based learning model contributes significantly to early childhood literacy by providing contextual, participatory, and developmentally appropriate learning experiences. Its impact extends beyond cognitive and linguistic gains to include the formation of positive attitudes toward literacy, reinforcing its relevance as a strategic approach in early childhood education.

3. The Role of Educators and Learning Environments in Optimizing Center-Based Literacy

The effectiveness of the center-based learning model in promoting early childhood literacy is strongly influenced by the interplay between educators' competencies and the quality of the learning environment. Rather than functioning merely as a spatial arrangement of activity areas, center-based learning represents a pedagogical system in which teachers act as designers of meaningful learning experiences, while the environment serves as a primary medium for literacy stimulation. Evidence across studies indicates that the integration of instructional strategies, teacher competence, and literacy-rich environments is a key determinant in optimizing early literacy outcomes (Kasiati et al., 2022).

Within this framework, educators assume multiple roles as facilitators, mediators, and observers of children's literacy development. Effective literacy instruction in early childhood is characterized by contextual, gradual, and experience-based approaches, rather than formal or direct teaching (Fahmi et al., 2020). In center-based learning, teachers guide children's interactions with language through storytelling, play-based exploration, and dialogic communication, allowing literacy skills to emerge naturally. This approach is consistent with the BCCT framework, which emphasizes scaffolding before, during, and after play, as well as the intentional design of learning environments to support developmental processes (Andriyati, 2023). A key pattern identified across

studies is that literacy outcomes improve when teachers actively facilitate interactions rather than deliver content in a didactic manner.

Another important dimension is teachers' responsiveness to children's diverse abilities. Inclusive and adaptive instructional strategies are essential in accommodating variations in learning pace, language development, and individual needs (Akramul Insan Zaer et al., 2024). The flexibility inherent in center-based learning enables differentiated instruction, allowing children to engage with literacy activities in ways that align with their developmental readiness. This finding is supported by evidence indicating that center-based learning positively influences cognitive and language development when teachers effectively manage and adapt learning interactions (Nisa et al., 2023). However, variations in teacher competence across studies suggest that the success of the model is not uniform, highlighting the importance of professional capacity in its implementation.

In addition to the role of educators, the learning environment functions as a "third teacher" that actively shapes children's literacy experiences. A well-designed environment, enriched with books, symbols, visual media, and interactive learning materials, can stimulate curiosity, language interaction, and symbolic understanding. Empirical findings demonstrate that structured learning centers, particularly preparation centers, significantly contribute to the development of symbolic thinking as a foundation for early literacy (Maryati et al., 2022). This indicates a consistent pattern across studies that literacy development is closely linked to the intentional design of the learning environment, rather than occurring incidentally.

The integration of contextual learning principles further strengthens the effectiveness of center-based literacy practices. Learning that connects content to children's real-life experiences has been shown to enhance engagement and conceptual understanding (Anggrenii et al., 2020). In early childhood settings, this principle is operationalized by incorporating familiar contexts, such as family life and local culture, into literacy activities. As a result, children perceive language not merely as abstract symbols but as meaningful tools for communication, thereby reinforcing functional literacy development.

Technological advancements also contribute to enriching center-based learning environments. Studies indicate that the use of digital game-based media can enhance children's engagement and motivation when applied in a guided and developmentally appropriate manner (Muarifah et al., 2017); (Kalogiannakis et al., 2021); (Ruíz et al., 2024); (Nurhayati & Fathurrohman, 2025). Within the center-based framework, such media can complement traditional play-based activities by providing additional interactive literacy experiences. However, the literature also suggests that digital tools should support, rather than replace, direct and experiential learning.

Furthermore, the role of educators extends beyond the classroom through collaboration with families. Parental involvement is consistently identified as a critical factor in reinforcing early literacy development and ensuring continuity between school and home environments (Erica, 2022). Center-based learning facilitates this collaboration by enabling the adaptation of literacy activities into home settings, thereby creating a sustainable and interconnected learning ecosystem.

From a broader philosophical perspective, early childhood education emphasizes children as active learners who construct knowledge through interaction with their environment. This perspective aligns with the center-based learning model, which integrates pedagogical, psychological, and philosophical dimensions into practical learning experiences (Yufiarti, 2024). In this context, literacy development extends

beyond cognitive skills to include the formation of character, independence, and social values (Simatupang et al., 2021).

The literature reveals a consistent pattern that the optimization of center-based literacy depends on the synergy between professional educators and well-designed, contextual learning environments. At the same time, variations in teacher competence and environmental quality across studies highlight the need for more systematic efforts to strengthen implementation. These findings underscore that the success of center-based learning is not inherent in the model itself but is contingent upon the quality of pedagogical practices and environmental design that support holistic and sustainable literacy development.

4. Pedagogical Implications and Implementation Challenges of the Center-Based Learning Model in Literacy Development

The center-based learning model presents significant pedagogical implications for early childhood literacy development by positioning children as active participants in meaningful, play-based learning experiences. This approach aligns with the holistic developmental characteristics of young learners, who acquire knowledge through exploration, interaction, and symbolic engagement. Within this framework, literacy is not treated as a formal academic skill but as a process of meaning-making embedded in social and cultural contexts, where language, symbols, and communication emerge naturally through daily activities (Novrani et al., 2021). This reflects a broader shift from instruction-centered to child-centered pedagogies in early childhood education.

A key pedagogical implication of the model lies in its capacity to support differentiated and inclusive learning. Each learning center provides varied opportunities for children to engage according to their interests, abilities, and developmental readiness. Empirical findings indicate that role-play, block, and natural material centers effectively foster expressive language, symbolic thinking, and social communication, which are foundational components of early literacy (Mundariyah, 2017). This pattern suggests that literacy development within center-based learning is inherently multidimensional, extending beyond cognitive outcomes to include creativity, independence, and social competence.

Another important implication concerns the evolving role of teachers as facilitators and designers of learning environments. The successful implementation of center-based learning requires teachers to possess strong pedagogical competencies in planning, classroom management, and authentic assessment of children's literacy development. This reflects a paradigm shift from knowledge transmission to reflective and adaptive facilitation, where teachers guide learning processes rather than dominate them (Andriyati, 2023); (Sahono & Agustina, 2021). Furthermore, the integration of literacy with other innovative instructional approaches, such as contextual learning and inquiry-based strategies, has been shown to enhance higher-order thinking and conceptual understanding, thereby strengthening literacy outcomes (Prasetiyo & Rosy, 2020); (Tulljanah & Amini, 2021); (Aurelia et al., 2024).

Despite these pedagogical advantages, the implementation of the center-based learning model faces several critical challenges. One major issue relates to teacher readiness and conceptual understanding. Several studies indicate that the application of center-based learning often remains procedural, with limited emphasis on aligning activities with literacy objectives (Fahmi et al., 2020); (Wahyuni, 2022). This inconsistency highlights a gap between theoretical principles and classroom practices,

suggesting the need for sustained professional development and reflective teaching practices.

A second challenge concerns the availability of facilities and infrastructure. Effective implementation requires literacy-rich environments supported by diverse instructional materials and flexible classroom arrangements. However, limited resources in many early childhood education settings hinder the optimal application of the model, resulting in uneven learning experiences (Sulistyawati et al., 2002). In response, several studies propose the integration of digital media and game-based learning as complementary strategies to enhance engagement and accessibility, although such approaches must be carefully adapted to developmental needs (Kalogiannakis et al., 2021); (Muarifah et al., 2017).

In addition, the increasing integration of digital innovation in education presents both opportunities and challenges for early childhood literacy development. While technologies such as gamification and interactive media have been shown to enhance motivation and engagement, their application must remain grounded in pedagogical principles and ethical considerations appropriate for young learners (Nee et al., 2023); (Zhou & Zhang, 2025); (Latip et al., 2024). Within this context, the center-based learning model offers a flexible framework for selectively incorporating digital tools without compromising the core principles of experiential and play-based learning.

The literature reveals a consistent pattern that the pedagogical effectiveness of the center-based learning model lies in its ability to create meaningful, inclusive, and contextually grounded literacy experiences. However, variations in teacher competence, resource availability, and parental involvement highlight persistent implementation challenges. These findings underscore that the success of the model depends not only on its conceptual design but also on the extent to which it is supported by professional capacity, infrastructure, and collaborative educational practices.

5. Discussion

The findings of this systematic literature review reveal a consistent pattern indicating that the center-based learning model plays a significant role in supporting early childhood literacy development through contextual, play-based, and child-centered learning environments. Across the reviewed studies, literacy is conceptualized not merely as the acquisition of reading and writing skills, but as a multidimensional process involving language development, symbolic thinking, communication, and meaning-making within social contexts (Novrani et al., 2021); (Kasiati et al., 2022). This perspective aligns with contemporary theories of early childhood education that emphasize experiential and holistic learning processes.

A key pattern identified in this review is the effectiveness of center-based learning in creating literacy-rich environments that integrate learning with play. Several studies consistently demonstrate that structured learning centers, such as preparation, role-play, and block centers, facilitate children's interaction with language symbols and support the gradual development of literacy skills (Maryati et al., 2022); (Nisa et al., 2023). These findings are consistent with contextual learning theory, which posits that meaningful learning occurs when knowledge is connected to real-life experiences (Anggrenii et al., 2020). However, variations across studies indicate that the extent of literacy outcomes is influenced by how learning centers are designed and implemented, suggesting that contextualization alone is insufficient without systematic instructional planning.

Another important finding concerns the central role of educators in mediating literacy development. The literature consistently highlights that teachers function not as

knowledge transmitters but as facilitators who scaffold children's learning through interaction, observation, and guided play (Fahmi et al., 2020); (Andriyati, 2023). This is in line with pedagogical frameworks that emphasize scaffolding and responsive teaching. Nevertheless, inconsistencies emerge regarding teacher competence, as some studies report suboptimal implementation due to limited understanding of literacy integration within center-based activities ((Wahyuni, 2022). This discrepancy indicates a gap between theoretical ideals and practical application, underscoring the importance of continuous professional development.

In addition, the review identifies the learning environment as a critical factor in optimizing literacy outcomes. A literacy-rich environment, supported by appropriate materials and stimuli, functions as a "third teacher" that encourages exploration and interaction (Maryati et al., 2022). However, disparities in infrastructure and resource availability across educational settings lead to uneven implementation, which may limit the effectiveness of the model (Sulistyawati et al., 2002). This finding highlights the need for policy support and resource allocation to ensure equitable learning conditions.

Furthermore, the integration of family involvement emerges as a significant yet underexplored factor. While several studies emphasize the importance of parental support in sustaining literacy development, variations in socioeconomic and educational backgrounds often affect the consistency of home-based literacy practices (Erica, 2022). This suggests that literacy development should be viewed as an ecological process requiring collaboration between schools and families.

While the findings consistently support the positive contribution of the center-based learning model to early childhood literacy, the review also reveals critical gaps related to fragmented research focus, variations in implementation, and limited integration of literacy dimensions across learning centers. These findings highlight the need for more systematic and comprehensive research that bridges theory and practice, particularly in examining how pedagogical strategies, environmental design, and contextual factors interact to influence literacy outcomes.

D. CONCLUSION

Based on the findings of this systematic literature review, it can be concluded that the center-based learning model plays a strategic and significant role in early childhood literacy development through a child-centered, contextual, and play-based approach. The model effectively supports multiple dimensions of early literacy, including language development, symbolic thinking, social communication, and meaning-making, while also fostering broader developmental outcomes such as cognitive growth, creativity, independence, and character formation. Furthermore, the model promotes inclusive and adaptive pedagogical practices by positioning teachers as facilitators who design literacy-rich environments and implement continuous authentic assessment. However, the effectiveness of center-based learning is highly contingent upon teachers' professional competence, the availability of adequate learning resources, parental involvement, and sustained institutional and policy support.

Future research is recommended to further explore the integration of early literacy dimensions across different types of learning centers using more comprehensive and comparative research designs. In addition, empirical studies employing mixed-methods or longitudinal approaches are needed to examine the long-term impact of center-based learning on children's literacy development. Further investigation into the role of teacher professional development, digital learning integration, and school-family partnerships is also essential to strengthen the implementation of this model. Moreover, future studies

should address contextual variations, particularly in resource-limited settings, to develop more adaptive and scalable models of center-based literacy learning.

ACKNOWLEDGEMENT

The authors would like to express their sincere gratitude to the academic leadership and members of the Master's Program in Early Childhood Education at Universitas Terbuka for their academic guidance, constructive feedback, and support throughout the preparation and completion of this study. Appreciation is also extended to Universitas Terbuka for its institutional support, which facilitated the successful conduct of this research.

REFERENCES

- Akramul Insan Zaer, M. Habibirrahim, & Gusmaneli Gusmaneli. (2024). Innovative Learning Strategies in Inclusive Education at the Elementary School Level. *Edukasi Elita : Jurnal Inovasi Pendidikan*, 1(2), 154–161. <https://doi.org/10.62383/edukasi.v1i2.201>
- Andriyati, N. (2023). Implementation of the Beyond Centers and Circle Time (BCCT) Learning Model in Early Childhood Education. *JiIP - Jurnal Ilmiah Ilmu Pendidikan*, 6(6), 3865–3868. <https://doi.org/10.54371/jiip.v6i6.2105>
- Anggrenii, W., Yensy B, N. A., & Muchlis, E. E. (2020). The Implementation of the Contextual Teaching and Learning (CTL) Model to Improve Mathematics Learning Outcomes of Seventh-Grade Students at SMP Negeri 06 Bengkulu City. *Jurnal Penelitian Pembelajaran Matematika Sekolah (JP2MS)*, 4(2), 229–237. <https://doi.org/10.33369/jp2ms.4.2.229-237>
- Aurelia, B. F., Sufa, F. F., & Jumanto. (2024). The Effect of the RADEC Learning Model on Creative Thinking Skills in Science and Social Studies (IPAS) for Fourth-Grade Elementary Students. *Jurnal Basicedu*, 8(5), 3703–3712. <https://doi.org/10.31004/basicedu.v8i5.8639> ISSN
- Erica, D. (2022). The Role of Parents in Early Childhood Education from an Islamic Perspective. *Perspektif Pendidikan Dan Keguruan*, 12(2), 137–146. [https://doi.org/10.25299/perspektif.2021.vol12\(2\).3780](https://doi.org/10.25299/perspektif.2021.vol12(2).3780)
- Fahmi, F., Syabrina, M., Sulistyowati, S., & Saudah, S. (2020). Teachers' Strategies in Introducing Basic Literacy Concepts in Early Childhood Education as Preparation for Primary School. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 5(1), 931–940. <https://doi.org/10.31004/obsesi.v5i1.673>
- Kalogiannakis, M., Papadakis, S., & Zourmpakis, A.-I. (2021). Gamification in science education: A systematic review of the literature. *Education Sciences*, 11(1), 22. <https://doi.org/10.3390/educsci11010022>
- Kasiati, Daisiu, K. F., Al Jufry, L., Wara, L. W., & Priyanti, N. (2022). Center-Based Learning Model in Early Childhood Education. *Jurnal Pendidikan Dan Pembelajaran*, 3(2), 169–174.
- Latip, A., Musa, S., Pratomo, H. W., Aditya, R. S., & Al, A. M. (2024). Implementation and Implications of Educational Game-Based Media in Learning: A Systematic Literature Review. *Paedagogia : Jurnal Kajian, Penelitian Dan Pengembangan Kependidikan*, 6356, 255–262.
- Maryati, M., Yulianingsih, Y., & Nurdiansah, N. (2022). PThe Effect of the Preparatory Center-Based Learning Model on the Development of Symbolic Thinking. *Ar-Raihanah: Jurnal Pendidikan Islam Anak Usia Dini*, 2(2), 35–46. <https://doi.org/10.53398/jr.v2i2.184>
- Muarifah, L., Suryani, N., & Gunarhadi, G. (2017). The Use of Digital Game Media in Early Childhood Education. *Teknodika*, 15(2), 51. <https://doi.org/10.20961/teknodika.v15i2.34746>
- Mundariyah, S. (2017). The Effect of the BCCT Learning Model and Independence on Block Play Creativity of Children Aged 4–6 Years. *Jurnal Inovasi Pendidikan MH Thamrin*, 2.
- Nee, C. K., Rahman, M. H. A., Yahaya, N., Ibrahim, N. H., Razak, R. A., & Sugino, C. (2023). Exploring the Trend and Potential Distribution of Chatbot in Education: A Systematic Review. *International Journal of Information and Education Technology*, 13(3), 516–525. <https://doi.org/10.18178/ijiet.2023.13.3.1834>
- Nisa, I. D., Rosyidah, I., & Muftie, Z. (2023). The Effect of Center-Based Learning on the Cognitive Development of Children Aged 4–5 Years. *Jurnal Caksana: Pendidikan Anak Usia ...*, 61–69.

- Novrani, A., Caturwulandari, D. E., Purwestri, D., Annisa, E., & Faridah, I. (2021). *Literacy Development for Children Aged 5–6 Years*. Kementerian Pendidikan dan Kebudayaan.
- Nurhayati, N., & Fathurrohman, F. (2025). Gamification in School Education: A Systematic Review of Its Effectiveness in Improving Student Motivation and Academic Outcomes. *AL-ISHLAH: Jurnal Pendidikan*, 17(2), 2356–2368. <https://doi.org/10.35445/alishlah.v17i2.6516>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *The BMJ*, 372. <https://doi.org/10.1136/bmj.n71>
- Prasetyo, M. B., & Rosy, B. (2020). Inquiry-Based Learning Model as a Strategy to Develop Students' Critical Thinking Skills. *Jurnal Pendidikan Administrasi Perkantoran (JPAP)*, 9(1), 109–120. <https://doi.org/10.26740/jpap.v9n1.p109-120>
- Ratnaningtyas, E. M., Ramli, Syafruddin, Edi Saputra, Suliwati Desi, Bekty Taufiq Ari Nugroho, Karimuddin, Muhammad Habibullah Aminy, Nanda Saputra, Khaidir, & Jahja, A. S. (2023). *Qualitative Research Methodology*. Yayasan Penerbit Muhammad Zaini.
- Ruíz, J., Sánchez, A. D. V., & Figueredo, Ó. R. B. (2024). Impact of gamification on school engagement: A systematic review. *Frontiers in Education*, 9. <https://doi.org/10.3389/educ.2024.1466926>
- Sahono, B., & Agustina, E. (2021). Teacher Development Through Training in the Application of the Jurisprudential Learning Model to Enhance Teacher Professionalism in Elementary Schools. *Jurnal Abdi Pendidikan*, 02(2012), 74–81. <https://ejournal.unib.ac.id/index.php/jap/article/view/19382>
- Simatupang, N. D., Widayati, S., Adhe, K. R., & Shobah, A. N. (2021). Fostering Independence in Early Childhood Education. *Jurnal Anak Usia Dini Holistik Integratif (AUDHI)*, 3(2), 52. <https://doi.org/10.36722/jaudhi.v3i2.593>
- Sulistiyawati, W., Sumiharsono, R., & Kustiyowati. (2002). The Effect of the Natural Center-Based Learning Model on Enhancing Creativity and Collage Skills in Early Childhood. *Atthufulah: Jurnal Pendidikan Anak Usia Dini*, 3(1).
- Tulljanah, R., & Amini, R. (2021). The RADEC Learning Model as an Alternative to Improve Higher-Order Thinking Skills in Elementary Science Learning: A Systematic Review. *Jurnal Basicedu*, 5(6), 5508–5519. <https://doi.org/10.31004/basicedu.v5i6.1680>
- Wahyuni, I. (2022). Analysis of Numeracy Literacy Based on Learning Styles in Early Childhood. *Jurnal Pendidikan Anak Usia Dini*.
- Yufiarti. (2024). *A Multiperspective Philosophy of Early Childhood Education*. Universitas Terbuka.
- Zhou, Q., & Zhang, H. (2025). Flipped classroom teaching and ARCS motivation model: Impact on college students' deep learning. *Education Sciences*, 15(4), 517. <https://doi.org/10.3390/educsci15040517>