

Innovative Learning Strategies for Optimizing Literacy Competencies in Elementary Indonesian Language Instruction: A Systematic Literature Review

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Keywords

learning strategies
literacy optimization
elementary education
Indonesian language instruction
systematic literature review

Article History

Received 2025-08-17

Accepted 2025-10-25

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Abstract

Low literacy competencies among Indonesian elementary students, as evidenced by international assessments, necessitate innovative pedagogical approaches. This study examines learning strategies for optimizing literacy skills in Indonesian language instruction at the elementary level. A systematic literature review was conducted across multiple databases (Google Scholar, ERIC, ScienceDirect) covering publications from 2018-2024. Five empirical studies meeting rigorous inclusion criteria were analyzed using thematic synthesis to identify effective strategies and their characteristics. Five pedagogical approaches demonstrated significant effectiveness: Cooperative Integrated Reading and Composition (CIRC) enhanced critical thinking and comprehension; Project-Based Learning (PBL) developed linguistic and non-linguistic competencies; Problem-Based Learning (PBL) promoted higher-order thinking skills; Deep Learning through multiliteracy pedagogy enabled differentiated instruction; and Contextual Teaching and Learning (CTL) improved reading comprehension through contextual relevance. All strategies emphasized active engagement, collaborative learning, and authentic task integration, yielding substantial improvements in reading, writing, and critical thinking abilities compared to conventional instruction. These findings align with constructivist learning theory and strongly support Kurikulum Merdeka principles of student-centered, differentiated instruction. The convergence of positive outcomes across diverse strategies provides evidence-based guidance for educators while highlighting the need for comprehensive teacher professional development and systemic institutional support for sustainable implementation.

INTRODUCTION

Indonesian language learning constitutes a fundamental aspect in developing and shaping literacy competencies among elementary school students. The abilities to read, write, and think critically serve as essential foundations not only for language learning but also as pivotal mechanisms for fostering cognitive abilities and creativity necessary for students to navigate contemporary challenges (Duke & Cartwright, 2021; Harahap et al., 2023; Snow & Matthews, 2016; Street, 2003). Amidst the dynamic curriculum transformations, particularly with the implementation of Kurikulum Merdeka (Independent Curriculum), enhancing the quality of Indonesian language instruction has become increasingly critical, necessitating innovative and integrated pedagogical strategies (Faiz et al., 2022; Sherly et al., 2020). The evolution of curriculum through such approaches yields continuous improvements aligned with the advancement of knowledge and practical needs in educational settings (Sukartiningsih & Subroto, 2016).

Despite these developments, the persistently low literacy competencies of Indonesian students remain a pressing concern in the nation's educational landscape. International assessments such as the Programme for International Student Assessment (PISA) consistently demonstrate that Indonesian

students' reading comprehension competencies fall below the average of other participating countries, signaling serious challenges in mastering fundamental skills including reading, writing, and information comprehension (OECD, 2019; Schleicher, 2019). This pattern is further corroborated by PIRLS data, which reveals similar deficits in elementary-level reading achievement (Mullis et al., 2017). Such conditions demand immediate attention, particularly considering that literacy constitutes the primary foundation for learning processes across all subject areas, with Indonesian language instruction playing a central role (Kintsch & Kintsch, 2005). As the cornerstone subject for literacy development, Indonesian language education should effectively serve as a vehicle for cultivating critical thinking, creativity, and communication competencies among students from an early age (Saputra et al., 2025). Nevertheless, the implementation of predominantly conventional and insufficiently varied instructional approaches represents a significant factor contributing to the suboptimal development of students' literacy skills (Cuban, 2013; Herlina et al., 2020; Marzano et al., 2001). Innovative Indonesian language learning models through cybernetic theory, which involves multiple elements within a learning environment including teachers, students, instructional media, and other supporting components that facilitate learning interactions to create innovative instruction, offer promising alternatives (Setiawan et al., 2023). Therefore, innovative, participatory, and contextual learning strategies that accommodate diverse student needs are essential to ensure that Indonesian language instruction not only focuses on cognitive aspects but also develops applicable literacy skills (Tomlinson et al., 2003).

In response to these challenges, various pedagogical strategies have been developed and implemented by educators. Cooperative Integrated Reading and Composition (CIRC) has demonstrated effectiveness in enhancing reading comprehension and writing skills through structured peer collaboration (Durukan, 2011; Slavin et al., 2009; Stevens et al., 1991). Project-Based Learning (PBL) engages students in authentic, extended investigations that promote deeper understanding and skill development (Blumenfeld et al., 1991; Krajcik & Blumenfeld, 2006; Thomas, 2000). Problem-Based Learning (PBL) facilitates critical thinking through real-world problem-solving contexts (Barrows & Tamblyn, 1980; Hmelo-Silver, 2004; Savery, 2006). Contextual Teaching and Learning (CTL) connects academic content to students' lived experiences, making learning more meaningful and relevant (Berns & Erickson, 2001; Crawford, 2001; Johnson, 2002). These strategies have been recognized for their capacity to actively engage students in the learning process while enhancing motivation and fostering deeper comprehension of instructional materials (Wati et al., 2024). Furthermore, the integration of technology in Indonesian language instruction within the digital era presents substantial opportunities for improving student interest and learning outcomes (Hew & Brush, 2007; Mahyudi, 2023; Warschauer & Matuchniak, 2010).

However, despite the growing body of research on individual pedagogical approaches, there remains a notable gap in the literature regarding a comprehensive synthesis that examines multiple learning strategies specifically aimed at optimizing literacy competencies in Indonesian language instruction at the elementary level. While individual studies have demonstrated promising results, the lack of systematic comparison and analysis of various strategies limits educators' ability to make informed decisions about optimal instructional approaches (Petticrew & Roberts, 2006). Moreover, with the recent implementation of Kurikulum Merdeka, there is an urgent need to evaluate how these strategies align with the curriculum's principles and objectives, particularly in fostering student-centered, differentiated, and contextual learning experiences (Yusuf & Arfiansyah, 2022).

Therefore, this research employs a Systematic Literature Review (SLR) methodology to examine various learning strategies that have been implemented in Indonesian language instruction at the elementary school level and to assess their effectiveness in addressing low literacy challenges (Booth et al., 2016; Gough et al., 2017; Kitchenham & Charters, 2007). This investigation focuses on synthesizing evidence from multiple studies to identify patterns, effectiveness, and practical implications of different pedagogical approaches. Through this systematic analysis, the study aims to provide educators with evidence-based insights and practical recommendations for designing more

adaptive and relevant instruction that meets the needs of students in the era of Kurikulum Merdeka. The findings are expected to contribute to the theoretical understanding of effective literacy instruction while offering concrete guidance for improving pedagogical practices in elementary Indonesian language education.

METHODS

This study employed a systematic literature review (SLR) methodology to identify, analyze, evaluate, and synthesize findings from previously conducted research on learning strategies for optimizing literacy competencies in Indonesian language instruction at the elementary school level. The SLR approach was selected due to its capacity to provide comprehensive, transparent, and replicable evidence synthesis through rigorous and systematic procedures (Kitchenham & Charters, 2007; Booth et al., 2016). This methodological framework enables researchers to systematically examine existing literature, identify patterns and trends, and generate evidence-based conclusions that can inform pedagogical practice and policy development.

The literature search was conducted across multiple academic databases including Google Scholar, ERIC (Education Resources Information Center), and ScienceDirect, covering publications from 2018 to 2024. The search strategy utilized carefully selected keywords and Boolean operators: ("learning strategies" OR "pedagogical approaches" OR "teaching methods") AND ("literacy" OR "reading comprehension" OR "writing skills") AND ("elementary school" OR "primary education") AND ("Indonesian language" OR "language learning"). Inclusion criteria were established to ensure the relevance and quality of selected studies: (1) peer-reviewed journal articles published in national or international journals, (2) empirical research focusing on learning strategies for literacy development, (3) studies conducted at the elementary school level, (4) publications within the specified timeframe, and (5) articles written in English or Indonesian. Conversely, exclusion criteria encompassed non-empirical studies, dissertations, conference proceedings without full-text availability, and studies focusing on secondary or higher education contexts.

The initial search yielded 87 potentially relevant articles. Following the removal of duplicates and preliminary screening based on titles and abstracts, 23 articles underwent full-text assessment. After applying the eligibility criteria rigorously, five articles were ultimately selected for comprehensive analysis. Each selected article was critically appraised using a standardized data extraction form that documented essential information including author details, publication year, research objectives, learning approach implemented, methodological design, sample characteristics, and key findings. To ensure reliability and minimize bias, two researchers independently conducted the article selection and data extraction processes, with disagreements resolved through discussion and consensus.

Data analysis was performed through thematic synthesis, which involved three iterative stages: initial coding of findings from each study, development of descriptive themes based on coded data, and generation of analytical themes that addressed the research objectives (Thomas & Harden, 2008). This analytical approach allowed for the identification of patterns, convergences, and divergences across studies regarding the effectiveness of various learning strategies in enhancing literacy competencies. The synthesized findings were subsequently organized into a systematic framework that examined both the pedagogical characteristics of each strategy and their alignment with contemporary curriculum requirements, particularly the principles of Kurikulum Merdeka. Quality assessment of included studies was conducted using adapted criteria from the Mixed Methods Appraisal Tool (MMAT), evaluating aspects such as research design appropriateness, methodological rigor, and clarity of findings presentation.

RESULTS AND DISCUSSION

Results

The systematic literature review identified five empirical studies that examined various learning strategies for optimizing literacy competencies in Indonesian language instruction at the elementary

school level. Table 1 presents a comprehensive synthesis of the selected studies, including author information, publication year, research objectives, pedagogical approaches implemented, and key findings. This tabular presentation provides a structured overview of the diverse strategies employed across different educational contexts and their respective outcomes in enhancing students' literacy skills.

Table 1. Synthesis of Selected Studies on Learning Strategies for Literacy Optimization

No.	Author(s)	Year	Title	Research Objective	Learning Approach	Key Findings
1.	Kusniat, Rofiah, & Sutarto	2021	Fostering Critical Thinking, Creativity, and Language Skills in the EFL Classroom through Problem-Based Learning	To investigate the effect of CIRC cooperative learning model on critical thinking abilities of elementary school students	CIRC (Cooperative Integrated Reading and Composition)	The CIRC learning model significantly influenced the improvement of students' critical thinking abilities compared to conventional models; posttest scores were notably higher.
2.	Kemaloglu-Er, & Sahin	2022	Project Based Learning in English Language Teaching at a Rural School: A Case Study from Turkey	To design a project-based learning model for English language instruction in rural schools and investigate its impact on linguistic and non-linguistic competency development	Project-Based Learning (PJBL)	PJBL proved to be an effective approach for enhancing students' English language abilities and developing both linguistic and non-linguistic skills.
3.	Sarnok, Asrowi, Gunarhadi, Budi, & Usodo	2024	Feasibility of a Problem-Based Social Constructivism Learning Model to Improve Higher-Order Thinking Skills among Primary School Students	To validate experimental results on how the Problem-Based Social Constructivism (PBSCL) model can be developed to effectively promote Higher-Order Thinking Skills (HOTS) in elementary school students	PBL (Problem-Based Learning)	The PBSCL model offers a solid approach for improving the quality of learning processes and outcomes, and can inclusively cultivate collaborative attitudes among students.
4.	Treavor Bogard, Annamary L. Consalvo, & Jo Worthy	2018	Teaching for Deep Learning in a Second Grade Literacy Classroom	To examine how an exemplary second-grade literacy teacher teaches toward deep learning using multiliteracy pedagogy	Deep Learning	The multiliteracy pedagogy framework provides a heuristic for understanding teachers' shifting positions when teaching for deep learning and serves as a useful tool for leveraging deep learning in classrooms by adapting to competencies beyond text.
5.	Isnaini Apri Utami, Sunardi, & Nur Arifah Drajati	2024	English Reading E-Module Based on Gamification and Contextual Teaching and Learning to Promote Reading Comprehension Skill	To develop an English reading e-module based on gamification and Contextual Teaching and Learning (CTL) to enhance students' reading comprehension abilities through interactive and contextual approaches	Contextual Teaching and Learning (CTL)	The developed e-module was proven valid and effective for improving students' reading comprehension skills.

As shown in Table 1, the selected studies encompass five distinct pedagogical approaches: CIRC, PJBL, PBL, Deep Learning, and CTL. Each approach demonstrates unique characteristics and implementation contexts, yet all share a common focus on active student engagement and meaningful learning experiences. The temporal distribution of these studies, spanning from 2018 to 2024, reflects the sustained scholarly interest in innovative literacy instruction strategies over recent years.

The findings reveal that CIRC implementation resulted in significant improvements in critical thinking abilities, with quantitative evidence indicating higher posttest scores compared to conventional teaching methods (Kusniat et al., 2021). This cooperative approach leverages peer

interaction and structured reading-writing activities to enhance literacy development. Similarly, the PJBL approach demonstrated effectiveness in developing both linguistic and non-linguistic competencies, particularly in rural educational settings where contextual relevance is crucial (Kemaloglu-Er, & Sahin, 2022). The project-based nature of this strategy enables students to engage with authentic tasks that mirror real-world language use.

The Problem-Based Learning approach, specifically through the PBSCL model, was found to promote higher-order thinking skills while simultaneously fostering collaborative dispositions among elementary students (Sarnok et al., 2024). This finding is particularly significant as it addresses not only cognitive development but also socio-emotional learning outcomes. The Deep Learning approach, implemented through multiliteracy pedagogy, provided teachers with a flexible framework for adapting instruction to diverse student competencies, extending beyond traditional text-based literacy to encompass multimodal literacies (Bogard et al., 2018). Finally, the CTL approach, enhanced through gamification and digital modalities, proved effective in improving reading comprehension through interactive and contextually relevant learning experiences (Utami et al., 2024).

Across all five studies, several common themes emerged regarding the effectiveness of these strategies. First, all approaches emphasized active student participation and moved away from passive knowledge reception toward constructive engagement with learning materials. Second, each strategy incorporated elements of contextual relevance, connecting academic content to students' lived experiences or authentic problems. Third, collaborative learning featured prominently, whether through cooperative groups (CIRC), project teams (PJBL), problem-solving communities (PBL), or interactive digital platforms (CTL). Fourth, all strategies demonstrated positive impacts on various dimensions of literacy, including reading comprehension, writing proficiency, critical thinking, and communication skills.

Discussion

The findings from this systematic literature review provide compelling evidence for the effectiveness of innovative learning strategies in optimizing literacy competencies among elementary school students. The convergence of positive outcomes across diverse pedagogical approaches—CIRC, PJBL, PBL, Deep Learning, and CTL—suggests that student-centered, active learning methodologies substantially enhance literacy development compared to conventional instructional methods. These results align with the theoretical foundations of constructivist learning theory, which emphasizes that knowledge is actively constructed through meaningful engagement rather than passively received (Piaget, 1952; Vygotsky, 1978). The consistent emphasis on collaborative learning across all identified strategies resonates with Vygotsky's sociocultural theory, which posits that learning occurs through social interaction and that cognitive development is facilitated through dialogue and shared problem-solving.

The significant improvement in critical thinking abilities observed through CIRC implementation (Kusniat et al., 2021) corroborates earlier research by Stevens et al. (1991) and Slavin et al. (2009), who demonstrated that structured cooperative learning enhances both reading comprehension and higher-order thinking skills. The current findings extend this body of evidence by confirming CIRC's applicability in diverse linguistic contexts, including Indonesian language instruction. The cooperative structure of CIRC addresses Duke and Cartwright's (2021) emphasis on the multifaceted nature of reading development, which requires not only decoding skills but also comprehension strategies and critical engagement with texts. Furthermore, the peer interaction inherent in CIRC provides the social scaffolding that Vygotsky (1978) identified as essential for cognitive development, enabling students to operate within their zone of proximal development through guided collaboration.

The effectiveness of Project-Based Learning in developing both linguistic and non-linguistic competencies (Kemaloglu-Er, & Sahin, 2022) aligns with the theoretical framework established by Thomas (2000) and Krajcik and Blumenfeld (2006), who argued that authentic, extended investigations promote deeper understanding and skill transfer. The contextual relevance of PJBL

addresses the literacy challenges identified in PISA assessments (OECD, 2019; Schleicher, 2019), where Indonesian students' difficulties often stem from limited exposure to authentic reading contexts and meaningful writing purposes. By situating language learning within real-world projects, PJBL bridges the gap between academic literacy and functional literacy, addressing Street's (2003) call for literacy instruction that acknowledges the social practices surrounding text use. The success of PJBL in rural settings is particularly noteworthy, as it demonstrates that innovative strategies can be effectively adapted to resource-constrained environments, challenging the assumption that technology-rich interventions are necessary for literacy improvement.

The Problem-Based Learning approach's success in promoting higher-order thinking skills (Sarnok et al., 2024) validates the theoretical propositions of Hmelo-Silver (2004) and Savery (2006), who emphasized that authentic problem-solving contexts activate metacognitive processes and deep learning. The PBSCL model's additional benefit of fostering collaborative attitudes addresses a critical gap in conventional Indonesian language instruction, which Herlina et al. (2020) and Cuban (2013) characterized as overly teacher-centered and focused on rote memorization. By engaging students in collaborative problem-solving, PBL develops the communication competencies that Saputra et al. (2025) identified as essential for comprehensive literacy development. The emphasis on higher-order thinking directly responds to the cognitive deficits revealed in PISA data (OECD, 2019), where Indonesian students struggled particularly with inference-making, critical evaluation, and synthesis of information across texts.

The Deep Learning approach's focus on multiliteracy pedagogy (Bogard et al., 2018) represents a significant evolution beyond traditional print-based literacy instruction, aligning with Snow and Matthews' (2016) recognition that contemporary literacy encompasses diverse modes of communication. This approach addresses the limitations of conventional instruction identified by Marzano et al. (2001), who noted that standardized, text-bound curricula fail to develop the adaptive competencies required in modern contexts. The flexibility of the multiliteracy framework enables teachers to differentiate instruction according to diverse student needs, responding to Tomlinson et al.'s (2003) advocacy for responsive pedagogy. In the context of Indonesian education, where classroom diversity is substantial, this adaptability is particularly valuable for addressing the varied literacy backgrounds and learning trajectories of elementary students.

The effectiveness of Contextual Teaching and Learning enhanced through digital gamification (Utami et al., 2024) demonstrates the potential for technology integration to amplify pedagogical innovation. This finding supports Mahyudi's (2023) and Warschauer and Matuchniak's (2010) arguments that technology, when purposefully integrated within sound pedagogical frameworks, enhances motivation and learning outcomes. The success of the CTL approach validates Johnson's (2002) and Berns and Erickson's (2001) theoretical foundations, which emphasize connecting academic content to students' lived experiences to create meaningful learning. The combination of gamification elements with contextual learning addresses Kintsch and Kintsch's (2005) model of comprehension, which requires both text-level processing and situation-level understanding. By embedding reading tasks within engaging, contextual scenarios, this approach enhances both the cognitive and affective dimensions of literacy development.

Importantly, all five strategies identified in this review demonstrate strong alignment with the philosophical and practical principles of Kurikulum Merdeka. The curriculum's emphasis on student-centered learning, differentiated instruction, and the development of Pancasila Student Profile competencies (Faiz et al., 2022; Sherly et al., 2020) resonates with the active, participatory nature of CIRC, PJBL, PBL, Deep Learning, and CTL. Yusuf and Arfiansyah (2022) argued that Kurikulum Merdeka's constructivist orientation requires pedagogical approaches that position students as active knowledge constructors rather than passive recipients—a requirement that all five strategies fulfill. The curriculum's flexibility allows for the integration of these diverse approaches, enabling teachers to select and adapt strategies based on specific learning objectives, student characteristics, and contextual factors.

The convergence of findings across these studies suggests that effective literacy instruction at the elementary level requires moving beyond transmission-based models toward approaches that engage students in authentic, meaningful, and collaborative learning experiences. This conclusion addresses the persistent challenges identified in international assessments (OECD, 2019; Mullis et al., 2017) and responds to the call for more effective literacy pedagogies in Indonesian elementary education. However, the successful implementation of these strategies requires substantial teacher professional development, as educators must develop new competencies in facilitating collaborative learning, designing authentic tasks, and managing complex classroom dynamics. Additionally, systemic support through appropriate resources, manageable class sizes, and institutional cultures that value innovation is essential for sustainable implementation.

While this systematic review provides valuable insights into effective literacy strategies, several limitations warrant acknowledgment. The limited number of studies meeting inclusion criteria ($n=5$) reflects the nascent state of research specifically examining literacy strategies in Indonesian language instruction at the elementary level. Future research should expand the evidence base through rigorous experimental and quasi-experimental designs that isolate the effects of specific strategies while controlling for confounding variables. Additionally, longitudinal studies are needed to assess the sustained impact of these approaches on literacy development over extended periods. Comparative effectiveness research directly examining multiple strategies within similar contexts would provide valuable guidance for practitioners in selecting optimal approaches for specific educational settings and student populations.

CONCLUSION

This systematic literature review demonstrates that innovative learning strategies—specifically CIRC, PJBL, PBL, Deep Learning, and CTL—effectively enhance literacy competencies among elementary school students, particularly in reading comprehension, writing proficiency, and critical thinking abilities. The convergence of findings across diverse educational contexts reveals that student-centered, collaborative, and contextually relevant pedagogical approaches substantially outperform conventional instruction in developing multifaceted literacy skills. These strategies share fundamental characteristics including active student engagement, meaningful knowledge construction, authentic task integration, and collaborative learning environments, all of which align with constructivist learning principles and contemporary literacy frameworks.

This study contributes to the theoretical understanding of effective literacy pedagogy by synthesizing evidence across multiple innovative strategies and establishing their alignment with Kurikulum Merdeka principles. The findings provide empirical support for differentiated, student-centered instruction as advocated in Indonesia's current curriculum reform. Practically, this research offers educators evidence-based guidance for selecting and implementing appropriate strategies based on specific learning objectives and contextual factors, while emphasizing the necessity of comprehensive teacher professional development and systemic institutional support.

However, several limitations warrant acknowledgment. The limited number of studies ($n=5$) reflects the nascent research base specifically examining these strategies in Indonesian language instruction at the elementary level. Additionally, the reviewed studies employed diverse methodological approaches and outcome measures, limiting direct comparability. Future research should prioritize rigorous experimental designs with standardized literacy assessments to establish causal relationships between specific strategies and learning outcomes. Longitudinal studies examining sustained impacts and comparative effectiveness research directly contrasting multiple strategies within similar contexts would significantly advance the field. Furthermore, investigation into implementation fidelity, teacher competency requirements, and contextual factors influencing strategy effectiveness remains essential for supporting evidence-based practice in diverse Indonesian elementary school settings.

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