Enhancing Early Reading Skills Through Picture-Based Contextual Learning for At-Risk First-Grade Students

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Abstract
Early reading skills represent fundamental competencies essential for elementary students' academic success, yet substantial gaps persist in effective interventions for at-risk learners. This study investigated how picture-based contextual learning media enhances early reading skills among first-grade students with learning difficulties. This classroom action research employed Kemmis and McTaggart's spiral model, conducted at SDN 006 Telen with 15 first-grade students (9 female, 6 male), including two students with learning difficulties. The intervention utilized picture-based contextual learning media across two complete cycles, each comprising three meetings with systematic planning, implementation, observation, and reflection phases. Data collection employed reading competency tests and structured observation sheets, analyzed using quantitative descriptive techniques including N-Gain calculations and qualitative analysis of behavioral observations. The intervention demonstrated remarkable effectiveness, progressing from baseline conditions where only 30% of students recognized vowels to achieving 93.33% competency by Cycle 2. Pre-test scores averaged 40, improving to post-test scores of 87, representing 117.5% improvement. The N-Gain score of 0.78 indicated high intervention effectiveness. Beyond cognitive improvements, students demonstrated enhanced motivation, self-confidence, and psychomotor skills development. The findings validate theoretical frameworks including Paivio's dual coding theory and constructivist learning principles while providing empirical evidence for integrating visual media with contextual learning approaches. The research contributes practical, accessible interventions that regular classroom teachers can implement for at-risk populations, supporting inclusive education initiatives and early literacy intervention programs across diverse educational contexts.

INTRODUCTION

Reading ability represents one of the fundamental skills essential for elementary school students, serving as a critical gateway for academic development and lifelong learning success. Early reading skills constitute the foundational competencies that enable students to access knowledge, comprehend instructional content, and participate meaningfully in educational processes. The significance of early reading development extends beyond mere letter recognition and word decoding, encompassing complex cognitive processes that facilitate comprehension, critical thinking, and knowledge construction across diverse academic disciplines.

Contemporary educational research emphasizes the crucial role of early reading intervention, particularly for students at risk of learning difficulties. Many children with intellectual disabilities struggle to learn to read (U.S. Department of Education, 2007). Learning difficulties encompass a broad spectrum of challenges that affect information processing, memory retention, and academic performance. Children with learning difficulties (LD) have long been a population of interest in contemporary mainstream education systems around the world (Ashman 2005; Cadman 1976; Elkins

1983; National Health and Medical Research Council [NHMRC] 1990; Westwood 2003). These students typically demonstrate difficulties with reading, written language, and numeracy skills, often appearing as inactive and inefficient learners who struggle with attention and task completion.

Despite significant advances in reading instruction methodologies, substantial gaps persist in educational practice, particularly regarding effective interventions for at-risk students. Conventional early reading instruction (i.e., instruction involving the development of reading abilities using traditional orthography) for children with intellectual disabilities has typically focused on developing a vocabulary of sight words (Katims 2000). However, this approach presents limitations, as sight words learned are often not generalised to become functionally useful in either academic or daily living contexts (Browder and Xin 1998). Furthermore, traditional sight word approaches fail to develop decoding skills necessary for reading unfamiliar words, thereby constraining reading abilities to directly taught vocabulary.

Recent empirical investigations have demonstrated promising alternatives to conventional approaches. Antariani et al. (2021) explored big book implementation for improving early reading capabilities in young children. Similarly, Erlin & Saptono (2025) investigated the effectiveness of structural analytic synthetic methods based on flashcards for elementary students. Fatimah et al. (2024) examined picture media utilization for enhancing early reading skills among 5-6 year old children, while Jamaludin et al. (2016) demonstrated synthetic phonics effectiveness in developing early reading skills among struggling young ESL readers.

Visual media interventions have gained considerable attention in recent literature. Ali (2021) demonstrated significant improvements in early reading and writing abilities through picture media implementation for second-grade students at SDN 93 Palembang. Desa (2023) specifically investigated picture media effectiveness for children with moderate intellectual disabilities, revealing substantial progress in early reading development. Dunda (2021) explored efforts to enhance early reading capabilities through picture media among first-grade students, showing promising outcomes in foundational literacy skills.

Khosa (2025) investigated print-rich literacy environments' effects on developing early reading skills, revealing significant improvements in foundation phase classrooms. Oktaviana et al. (2021) demonstrated big book media effectiveness for 5-6 year old children's early reading development. Ilham & Desinatalia (2022) utilized animated picture media based on PowerPoint to improve elementary students' early reading skills, while Oktaviyanti et al. (2022) conducted comprehensive analysis demonstrating significant positive influence of picture media on students' early reading abilities. International perspectives further support visual media approaches, with Ome & Menendez (2022) utilizing SMS and parental outreach to improve early reading skills in Zambia, and Sampa et al. (2018) evaluating literacy program efficacy for developing children's early reading skills in familiar language contexts.

More recent research indicates children with intellectual disabilities might benefit from phonics-based reading instruction to develop such decoding skills, as has been found for typically developing children (Dessemontet et al. 2019; Hill 2016; Joseph and Seery 2004; National Reading Panel 2000; Whalon et al., 2009). A comprehensive meta-analysis revealed significant and large overall effects of phonics instruction on decoding skills for children with varying degrees of intellectual disabilities. However, age and severity of intellectual disability were associated with different responses relating to the choice of approaches and expectations (Roberts-Tyler et al., 2020).

Contextual learning approaches offer promising frameworks for addressing these educational challenges. Contextual approach is the cornerstone philosophy of constructivism, namely learning philosophy that emphasizes learning is not just about memorizing (Suryawati & Osman, 2017). This pedagogical framework emphasizes knowledge construction through meaningful experiences and real-world connections. According to Vygotsky (1978), students construct their own knowledge through their own experience and the through learning process which students required the assistance from their peers and adults in the form of scaffolding.

The integration of picture-based media with contextual learning principles presents a potentially effective intervention for at-risk students. Roberts-Tyler et al. (2021) surveyed current practices and perceived barriers in teaching conventional early reading skills to children with intellectual disabilities in UK special schools, identifying access to training and suitable curricula were seen as greater barriers to improving reading skills than time or staffing.

This research addresses the critical need for evidence-based interventions that combine visual media with contextual learning approaches to support early reading development among at-risk elementary students. The study aims to investigate how picture-based contextual learning media can enhance early reading skills for students with learning difficulties, potentially bridging the gap between conventional instruction and students' diverse learning needs.

METHODS

This study employed Classroom Action Research (CAR) with a qualitative approach, following the Kemmis and McTaggart spiral model. The research was conducted at SDN 006 Telen, East Kutai Regency, East Kalimantan Province, during the second semester of the 2024/2025 academic year. The systematic cyclical approach enabled continuous improvement through iterative planning, implementation, observation, and reflection phases, allowing for adaptive modifications based on classroom dynamics and student responses.

The research participants comprised 15 first-grade students (9 female, 6 male), including two students categorized as having learning difficulties. Participants were selected through purposive sampling based on their early reading skill challenges identified through preliminary assessments. The learning difficulty categorization was determined through initial reading assessments, teacher observations, and consultation with classroom teachers regarding students' academic performance and reading comprehension abilities.

Two primary data collection instruments were utilized: reading competency tests and structured observation sheets. The reading assessment instruments were designed to evaluate students' ability to recognize letters, pronounce syllables with KVKV patterns (Cycle I) and KKVV/KVKK patterns (Cycle II), and demonstrate reading fluency. Assessment rubrics employed a 4-point scale measuring pronunciation accuracy, reading fluency, and comprehension. Observation instruments captured student participation levels, multisensory learning engagement, and collaborative learning behaviors during contextual learning activities using picture media. Teacher performance was evaluated through structured observation focusing on lesson implementation effectiveness, multisensory teaching strategies, and student engagement facilitation.

The research procedure followed two complete cycles, each consisting of three meetings. Each cycle progressed through four systematic phases: planning involved developing lesson plans incorporating picture-based contextual learning media, preparing assessment instruments, and coordinating with collaborators; implementation involved executing learning activities using interactive picture media with contextual learning approaches; observation required systematic documentation of student behaviors, learning responses, and teacher performance by trained collaborators; and reflection encompassed comprehensive evaluation of observed data, identification of strengths and weaknesses, and strategic planning for subsequent cycle improvements.

Data analysis employed both quantitative and qualitative descriptive techniques. Quantitative analysis involved calculating pre-test and post-test mean scores, determining improvement percentages, and computing N-Gain scores using the formula: Gain Score = (Post-test - Pre-test)/(Maximum Score - Pre-test). Gain score interpretations followed Lestari's (2015) classification: high (≥0.7), moderate (0.3-0.69), and low (<0.3). Qualitative analysis involved systematic data reduction, presentation, and conclusion drawing from observation records and field notes.

Validity assurance incorporated multiple strategies: content validity through expert consultation with education specialists to ensure comprehensive coverage of early reading competency aspects; construct validity verification through theoretical alignment between assessment indicators and early

reading development theories; and methodological triangulation comparing test results, observations, and documentation to provide comprehensive understanding of student reading improvement. The research was considered successful if 75% of students achieved the minimum competency criteria (KKM) established by the school, with overall class performance reaching 75% or higher, demonstrating significant improvement in early reading skills through picture-based contextual learning interventions.

RESULTS AND DISCUSSION
Results
Baseline Assessment of Early Reading Abilities

Prior to the intervention implementation, a comprehensive baseline assessment revealed significantly low early reading competencies among participating students. The diagnostic evaluation demonstrated that only 30% of students could consistently recognize all vowels (a, i, u, e, o), while merely 10% showed proficiency in identifying consonants, limited to frequently encountered letters in daily life. Regarding syllable reading capabilities, only one student demonstrated the ability to read open syllables such as "ba," "da," or "la," requiring substantial teacher assistance through repetition and modeling. Most critically, none of the students exhibited independent word reading abilities, struggling to combine syllables into coherent words even for basic vocabulary such as "buku" (book), "mata" (eye), or "pagi" (morning).

The behavioral observations during baseline assessment further revealed concerning patterns of learning disengagement. Students displayed predominantly passive behaviors, frequent attention diversion, and limited enthusiasm during reading activities. This passive stance reflected underlying issues including low learning motivation and diminished self-confidence, likely resulting from repeated academic failures in previous learning experiences.

Implementation Results Across Intervention Cycles
Cycle 1 Implementation Outcomes

The first intervention cycle focused on vowel recognition (a, i, u, e, o) through contextually relevant picture media. Table 1 presents the comprehensive results of student learning outcomes following Cycle 1 implementation.

Table 1. Student Learning Outcomes - Cycle 1

No	Student Initial	Score	Achievement Status
1	Abigael	75	Achieved
2	Sila	70	Achieved
3	Nur febri	-	Absent
4	Fatur	75	Achieved
5	M. Ezzra	60	Not Achieved
6	Muhammad Afandi	65	Not Achieved
7	Saffa	70	Achieved
8	Assiffa .A	75	Achieved
9	Danu	-	Absent
10	Indah N.	75	Achieved
11	Aprilianti	75	Achieved
12	Ahmad Syukur	75	Achieved
13	Mohd. Resa	75	Achieved
14	Adista Anjani	70	Achieved
15	Silvania	-	Absent

The quantitative analysis of Cycle 1 results revealed a class achievement rate of 66.66% (10 out of 15 students), with an average class score of 65. While this represented substantial improvement

from baseline conditions, the achievement rate remained below the targeted 75% threshold, necessitating further intervention refinement in subsequent cycles.

Observational data from Cycle 1 indicated mixed responses among student populations. Regular students demonstrated adequate engagement with picture media and active participation in project-based activities. However, students with learning difficulties continued experiencing challenges in letter recognition, particularly with syllable formation. Their participation in group discussions remained limited, with several students displaying passive behaviors during learning activities.

Cycle 2 Implementation and Enhanced Outcomes

Building upon Cycle 1 reflections, the second intervention cycle incorporated pedagogical refinements including simplified instructional language, enhanced individual guidance for struggling learners, and modified picture media presentations. Table 2 demonstrates the substantial improvements achieved in Cycle 2.

Table 2. Student Learning Outcomes - Cycle 2

No	Student Initial	Score	Achievement Status
1	Abigael	80	Achieved
2	Sila	85	Achieved
3	Nur febri	90	Achieved
4	Fatur	85	Achieved
5	M. Ezzra	80	Achieved
6	Muhammad Afandi	80	Achieved
7	Saffa	85	Achieved
8	Assiffa .A	80	Achieved
9	Danu	80	Achieved
10	Indah N.	90	Achieved
11	Aprilianti	90	Achieved
12	Ahmad Syukur	85	Achieved
13	Mohd. Resa	90	Achieved
14	Adista Anjani	90	Achieved
15	Silvania	-	Absent

The Cycle 2 results demonstrated remarkable improvement, with 93.33% of students (14 out of 15) achieving the competency threshold and an average class score of 87. This substantial enhancement indicated the effectiveness of pedagogical modifications implemented based on Cycle 1 reflections, particularly in addressing the specific needs of students with learning difficulties.

Comparative Analysis of Pre-test and Post-test Performance

The intervention's effectiveness was further validated through comprehensive pre-test and post-test comparisons. Prior to intervention implementation, students averaged a score of 40 on reading competency assessments, reflecting severely limited abilities in letter recognition, syllable formation, and word comprehension. Following the complete intervention protocol, post-test results revealed an average score of 87, representing a substantial 117.5% improvement.

Using the N-Gain calculation formula (Post-test - Pre-test)/(Maximum Score - Pre-test), the study achieved a gain score of (87-40)/(100-40) = 47/60 = 0.78, categorizing the intervention effectiveness as "high" according to established classification standards. This quantitative evidence strongly supports the efficacy of picture-based contextual learning interventions for students at risk of reading difficulties.

Multi-dimensional Development Outcomes

Cognitive Domain Improvements

Beyond basic reading competencies, students demonstrated significant cognitive development across multiple dimensions. Visual memory capabilities showed marked enhancement, with students

exhibiting improved ability to retain and recall letter-sound associations through picture-mediated learning. Letter discrimination skills, particularly challenging for at-risk learners, improved substantially as students learned to differentiate previously confusing letters such as "b" and "d" through contextual picture associations.

Perhaps most significantly, students developed enhanced phonological synthesis abilities, progressing from isolated letter recognition to syllable formation and ultimately to complete word reading. This developmental progression represents a fundamental cognitive shift from mechanical letter identification to meaningful reading comprehension.

Affective Domain Transformations

The intervention yielded profound affective improvements among participating students. Learning motivation increased dramatically, with students displaying enhanced enthusiasm for reading activities and spontaneous engagement with learning materials. Self-confidence in reading contexts improved markedly, evidenced by students' willingness to read aloud and participate actively in classroom discussions. Additionally, reading-related anxiety decreased substantially as the supportive, game-based learning environment reduced performance pressure and fear of failure.

Psychomotor Domain Enhancements

Students also demonstrated notable improvements in psychomotor skills supporting literacy development. Eye-hand coordination improved through activities involving picture observation, letter tracing, and word writing. Fine motor skills development was evidenced by increasingly legible handwriting, improved pencil grip, and enhanced precision in letter formation tasks.

Documentation of Student Work Quality

Comparative analysis of student work samples provided compelling evidence of intervention effectiveness. Pre-intervention work samples revealed illegible writing, inappropriate picture-word matching, and limited task completion. Post-intervention documentation demonstrated substantially improved work quality, including legible letter formation, accurate picture-word associations, and comprehensive task completion. Students progressed from producing scattered, unrelated marks to creating organized, meaningful written responses that demonstrated genuine comprehension of reading tasks.

Discussion

This classroom action research demonstrated the substantial effectiveness of picture-based contextual learning interventions in enhancing early reading skills among at-risk first-grade students. The study documented remarkable improvements across two intervention cycles, progressing from a baseline where only 30% of students could recognize vowels to achieving 93.33% competency achievement by the end of Cycle 2. The quantitative evidence revealed a significant increase from pre-test scores averaging 40 to post-test scores averaging 87, representing a 117.5% improvement with an N-Gain score of 0.78, categorized as "high" effectiveness. Beyond cognitive improvements, students demonstrated enhanced motivation, self-confidence, and psychomotor skills, indicating the intervention's comprehensive impact on multiple developmental domains.

The study's findings provide robust empirical support for established theoretical frameworks while addressing critical gaps in early literacy intervention research. The documented progression from isolated letter recognition to comprehensive word reading validates Paivio's dual coding theory, which posits that information processed through both visual and verbal channels enhances retention and comprehension compared to single-modality approaches. The simultaneous presentation of pictures and letter sounds successfully strengthened neural pathways connecting symbolic and semantic information, particularly benefiting students with attention and memory difficulties—a population that Ashman (2005) and Westwood (2003) identified as requiring specialized pedagogical approaches.

The intervention's effectiveness in addressing the limitations of conventional sight word instruction directly validates concerns raised by Katims (2000) and Browder and Xin (1998) regarding traditional approaches for children with intellectual disabilities. While conventional instruction focused primarily on sight word vocabulary development, this study demonstrated that picture-based contextual learning successfully developed both decoding skills and meaningful comprehension abilities. Students progressed beyond memorizing isolated words to understanding letter-sound relationships, addressing Browder and Xin (1998)'s criticism that sight words often fail to become functionally useful in academic or daily living contexts.

The research strongly supports Suryawati & Osman (2017)'s constructivist approach to contextual learning, demonstrating that learning effectiveness increases when students construct knowledge through meaningful experiences rather than passive memorization. By connecting abstract letter symbols with concrete, familiar images from students' daily experiences, the intervention successfully operationalized constructivist principles. This approach proved especially crucial for at-risk learners who, according to Elkins (1983) and the National Health and Medical Research Council (1990), often struggle with traditional instructional methods due to information processing and memory retention difficulties.

The collaborative learning components observed during picture-word matching activities provided strong empirical validation of Vygotsky's (1978) social learning theory, particularly the concept of peer scaffolding and zone of proximal development. Stronger students naturally assisted struggling peers, creating supportive learning communities that enhanced overall classroom achievement. This finding is particularly significant given Vygotsky (1978)'s emphasis that students require assistance from peers and adults in the form of scaffolding to construct knowledge effectively.

The study's results demonstrate remarkable consistency with previous research while extending findings to specifically at-risk populations. The documented achievement rate improvement from 66.66% to 93.33% closely parallels Ali (2021)'s findings regarding picture media effectiveness for second-grade students, reinforcing the robustness of visual learning approaches across different grade levels. The current study's focus on first-grade students with learning difficulties extends Ali (2021)'s work by demonstrating effectiveness with younger, more vulnerable populations who face greater academic risks.

Desa (2023)'s research with children with moderate intellectual disabilities provides particularly relevant comparison points, as both studies addressed special needs populations often excluded from mainstream literacy research. The comparable improvements observed in both studies validate the effectiveness of picture media across different disability categories, supporting the U.S. Department of Education (2007) recognition that many children with intellectual disabilities struggle to learn through conventional methods but can succeed with appropriate interventions.

The progression observed in this study mirrors Dunda (2021)'s findings with first-grade students, where systematic picture media implementation resulted in substantial foundational literacy improvements. However, the current study's N-Gain score of 0.78 represents higher effectiveness than typically reported in single-intervention studies, possibly due to the integration of contextual learning principles that Dunda (2021) did not explicitly incorporate.

The research extends Antariani et al. (2021)'s big book implementation by demonstrating that static picture media, when combined with contextual learning principles, can achieve comparable effectiveness to more elaborate interventions. While Antariani et al. (2021) focused on big book formats requiring specialized materials, this study validates the effectiveness of simpler picture media approaches, enhancing accessibility for resource-constrained educational environments.

The study's success with at-risk populations provides crucial empirical support for Dessemontet et al. (2019), Hill (2016), Joseph and Seery (2004), and Whalon, Otaiba, and Delano (2009)'s arguments that children with intellectual disabilities benefit significantly from phonics-based reading instruction combined with visual supports. The documented improvements in both decoding skills and reading comprehension validate the National Reading Panel (2000)'s recommendations for systematic

phonics instruction, while demonstrating that visual contextual support enhances effectiveness for struggling learners.

Particularly significant is the alignment with Roberts-Tyler et al. (2020)'s meta-analytical findings revealing large overall effects of phonics instruction on decoding skills for children with varying degrees of intellectual disabilities. The current study's N-Gain of 0.78 falls within the high effectiveness range identified in their meta-analysis, while the age-appropriate implementation supports their finding that younger children with less severe disabilities respond more favorably to systematic interventions.

The research also validates Jamaludin et al. (2016)'s findings on synthetic phonics effectiveness for struggling young ESL readers by demonstrating that visual-contextual approaches benefit vulnerable student populations across different cultural and linguistic contexts. The similar achievement patterns suggest universal applicability of multi-modal approaches for at-risk literacy learners.

The study's findings resonate with international research demonstrating the global relevance of visual learning approaches. Khosa (2025)'s investigation of print-rich literacy environments' effects in South African foundation phase classrooms revealed similar improvements, supporting the current study's emphasis on visual learning environments. The documented motivational improvements align with Khosa (2025)'s findings that visually rich environments enhance student engagement and self-confidence.

Oktaviana et al. (2021)'s research on big book media effectiveness for 5-6 year old Indonesian children provides particularly relevant comparison points, given the shared cultural and linguistic context. The current study's success with slightly older students facing learning difficulties validates the scalability of visual media approaches across age groups and ability levels within Indonesian educational settings.

The research extends international perspectives established by Ome & Menendez (2022) in Zambia and Sampa et al. (2018) regarding literacy program efficacy in familiar language contexts. While these studies emphasized parental involvement and community engagement, the current research demonstrates that classroom-based visual interventions can achieve substantial improvements even with limited external support, suggesting multiple pathways for effective literacy intervention in developing educational contexts.

This research makes several unique theoretical contributions to early literacy intervention literature. First, it provides the first comprehensive empirical evidence for integrating Suryawati & Osman (2017)'s contextual learning principles with picture-based media specifically for students at risk of learning difficulties. While previous research examined these approaches separately, this study demonstrates their synergistic effectiveness when systematically combined.

Second, the research challenges the traditional separation between special needs and mainstream education interventions identified by Cadman (1976) and Ashman (2005). By demonstrating that inclusive classroom interventions can effectively serve both typical students and those with learning difficulties, the study supports contemporary inclusive education frameworks while providing practical implementation strategies.

Third, the study extends Erlin & Saptono (2025)'s work on structural analytic synthetic methods by demonstrating that less structured, more naturalistic contextual approaches can achieve comparable effectiveness. This finding suggests that the meaningfulness and relevance of learning contexts may be more critical than highly structured instructional sequences for young learners.

The comprehensive assessment approach measuring cognitive, affective, and psychomotor improvements addresses Westwood (2003)'s call for holistic evaluation of learning interventions. By documenting improvements across multiple developmental domains, the study provides evidence that effective literacy interventions support overall academic readiness rather than isolated skill development.

The research provides empirical solutions to systemic challenges identified in special education literature. Roberts-Tyler et al. (2021)'s survey of UK special schools identified access to training and suitable curricula as primary barriers to effective reading instruction. The current study's demonstration that regular classroom teachers can successfully implement picture-based contextual learning interventions addresses these barriers by providing accessible, evidence-based approaches requiring minimal specialized training.

The documented improvements between intervention cycles validate Roberts-Tyler et al. (2021)'s emphasis on systematic teacher preparation and adaptive instruction. The progression from 66.66% to 93.33% achievement rates following pedagogical refinements demonstrates that teacher reflection and instructional adaptation significantly enhance intervention effectiveness.

Furthermore, the study's success with readily available materials addresses resource constraints that Hill (2016) identified as limiting effective intervention implementation in many educational settings. By demonstrating effectiveness with simple picture media and contextual learning approaches, the research provides practical solutions for educators working in resource-limited environments.

The findings have profound implications for addressing contemporary educational challenges identified in the literature. The study's success in reducing achievement gaps supports policy initiatives promoting inclusive education while providing concrete implementation strategies that teachers can readily adopt. The documented effectiveness with at-risk populations validates National Health and Medical Research Council (1990) recommendations for early identification and intervention approaches.

The research also supports Ilham & Desinatalia (2022)'s findings regarding technology integration in literacy instruction while demonstrating that high-tech solutions are not prerequisite for effective intervention. This finding is particularly significant for educational equity, as it demonstrates that effective literacy support can be provided across diverse socioeconomic contexts without requiring substantial technological infrastructure.

CONCLUSION

This research provides comprehensive evidence demonstrating the substantial effectiveness of picture-based contextual learning interventions in enhancing early reading skills among at-risk first-grade students. The study documented remarkable improvements, progressing from baseline conditions where only 30% of students could recognize vowels to achieving 93.33% competency achievement following systematic intervention implementation. The quantitative evidence, including a 117.5% improvement from pre-test to post-test scores and an N-Gain score of 0.78, categorizes the intervention as highly effective. Beyond cognitive improvements, students demonstrated enhanced motivation, self-confidence, and psychomotor skills, indicating comprehensive developmental benefits.

This research makes significant theoretical and practical contributions to early literacy intervention literature. It provides the first comprehensive empirical evidence for integrating Suryawati & Osman's contextual learning principles with picture-based media specifically for students at risk of learning difficulties. The findings validate established theoretical frameworks including Paivio's dual coding theory, constructivist learning principles, and Vygotsky's social learning theory while addressing critical gaps in inclusive education practice. Methodologically, the classroom action research approach demonstrates how systematic reflection and refinement between intervention cycles can optimize teaching effectiveness for vulnerable student populations.

The implications for educational practice are profound and multifaceted. The findings suggest that visual learning approaches should be systematically integrated into early literacy curricula rather than used as supplementary materials, supporting policy initiatives promoting inclusive education and early intervention programs. The research validates the effectiveness of accessible, culturally relevant interventions that regular classroom teachers can successfully implement without specialized equipment or extensive training. For educational equity, the study demonstrates that effective literacy

support can be provided across diverse socioeconomic contexts using readily available materials. Future research should explore long-term retention of gains and cross-cultural validation to enhance understanding of these approaches' generalizability across diverse educational environments.

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