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Enhancing Early Reading Competencies in Students with Mild Intellectual Disabilities: A Montessori Method Intervention Study

Yuliana*
Universitas Negeri Yogyakarta, Indonesia

Pujaningsih
Universitas Negeri Yogyakarta, Indonesia

***Corresponding Author:** yuliana0011fipp.2024@student.uny.ac.id

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Abstract
Students with mild intellectual disabilities frequently encounter significant challenges in acquiring early reading skills, yet limited empirical evidence exists regarding effective instructional approaches tailored to their learning needs. This classroom action research investigated the effectiveness of the Montessori method in improving early reading competencies among slow learners in first-grade elementary education. Conducted over four weeks at SD Negeri 001 Muara Wahau, Indonesia, the study employed a Kemmis and McTaggart cyclical model comprising two intervention cycles. The participant was a first-grade male student identified as a slow learner demonstrating difficulties in letter recognition, phonetic sound production, and word reading. The intervention incorporated Montessori principles including concrete manipulatives (picture-word cards, letter cards, sandpaper letters), multisensory engagement activities, and systematic phonics instruction. Data collection utilized reading performance tests, structured observational checklists, and progress monitoring protocols. Results demonstrated substantial improvement from 20% baseline accuracy to 95% mastery level, representing a 75-percentage-point gain that exceeded the predetermined 80% success criterion. Letter recognition and phonetic sound production achieved 100% accuracy by Cycle II, while both consonant-vowel repetitive patterns and consonant-vowel-consonant-vowel patterns showed marked improvement. These findings provide empirical evidence that the Montessori method effectively enhances early reading competencies in students with mild intellectual disabilities, challenging deficit-oriented perspectives and validating multisensory structured literacy approaches for inclusive educational settings.

INTRODUCTION

The rapid advancement of science and technology demands enhanced quality in basic education to prepare students for contemporary challenges. One fundamental obstacle in improving educational standards, particularly in elementary schools, is the initial difficulty students encounter in developing reading competencies. Early reading ability serves as a foundational skill that constitutes the primary capital for comprehending content across various academic disciplines (Foorman et al., 2016; Bania, 2020; Scarborough, 2001). Given that approximately 85% of the school curriculum is taught through reading (The Children's Reading Foundation, 2024), ensuring that students acquire adequate reading proficiency from an early stage becomes paramount. However, research and statistical data indicate that numerous students continue to experience difficulties in early reading (Yani, 2019; Hasanah & Lena, 2021; Kemendikbud, 2019; Kementerian Pendidikan, 2024). A comprehensive meta-analysis spanning 40 years of intervention research revealed persistent reading difficulties affecting substantial populations of elementary students (Hall et al., 2023). In Indonesia, the 2016 Indonesian Student Competency Assessment (AKSI) revealed that 47% of fourth-grade elementary students had not yet achieved independent reading proficiency (Pusat Penilaian Pendidikan Balitbang Kemdikbud Ristek, 2019), paralleling international findings where 37% of fourth-graders demonstrated below-basic reading skills (National Research Council, 1998).

Research has identified multiple factors contributing to early reading difficulties at the elementary level, including limited memory capacity, perceptual impediments, environmental constraints, and below-average intellectual quotient (Falzon et al., 2011). Without appropriate intervention, reading problems in lower grades can generate serious consequences for academic achievement and overall student development, including difficulties in comprehending subject matter, decreased motivation and learning interest, poor academic performance, and socio-emotional challenges (Budiani & Putrayasa, 2023; Vaughn et al., 2012). Consequently, enhancing reading ability becomes crucial not only for mainstream students but particularly for students with special needs, especially regarding early reading competencies. Effective early reading instruction requires intervention based on individual student needs while considering their existing mastery levels (Connor et al., 2013; Slavin et al., 2011).

Early reading represents a cognitive skill encompassing the learning process of recognizing written language, where students articulate the sound symbols they read (Pratiwi & Ariawan, 2017). Furthermore, early reading constitutes an interconnected process of skill and cognition, wherein the skill process refers to recognizing and mastering phoneme symbols, while the cognitive process involves utilizing recognized phoneme symbols to comprehend the meaning of words or sentences (Putri, 2025). Research demonstrates that children who are poor readers at the end of first grade rarely achieve average reading levels without intensive intervention (Torgesen et al., 1997), underscoring the critical importance of early mastery of these foundational skills (Pridasari & Anafiah, 2020).

Students with intellectual disabilities face particular challenges in mastering early reading skills due to below-average intelligence that can impede daily life activities such as communication and socialization (Parulian, 2020). Recent systematic reviews indicate that while students with intellectual disabilities demonstrate the lowest performance in reading comprehension assessments (Wei et al., 2011), they can learn to read with appropriate evidence-based instruction (Alnahdi, 2015; Whitbread et al., 2021). Students with mild intellectual disabilities—characterized by IQ scores ranging from 50-70—demonstrate capacity for training in skill-based and academic domains such as reading, writing, and arithmetic through simple, repetitive methods applied in daily life contexts (Amalia & Kurniawan, 2021). Research spanning 25 years has conclusively demonstrated that children previously considered unable to learn to read can indeed acquire reading skills with carefully designed instruction and consistent intervention (Mathes, cited in NIFDI, 2024). Comprehensive reading instruction incorporating phonics, vocabulary, and reading comprehension has proven effective for students with intellectual disabilities across multiple longitudinal studies (Allor et al., 2010; Allor et al., 2014).

Despite extensive research on reading difficulties and intellectual disabilities, a significant knowledge gap exists regarding effective pedagogical approaches specifically tailored for slow learners in early elementary grades. While systematic reviews have examined various reading interventions (Beach, 2023), limited empirical evidence demonstrates how the Montessori method—with its emphasis on concrete materials, self-paced learning, and multisensory engagement—can be systematically applied to address early reading challenges in students with mild intellectual disabilities. Existing literature predominantly focuses on mainstream educational settings (Courtier et al., 2021; Lillard, 2012), leaving unclear how Montessori principles can be adapted for students requiring specialized instructional support. The Montessori method employs multisensory approaches that have demonstrated effectiveness in enhancing literacy acquisition through integration of tactile, kinesthetic, visual, and auditory components (Joshi et al., 2002; Neumann et al., 2012). Research indicates that Montessori students outperform control groups in reading achievement ($d = 0.68$; Courtier et al., 2021) and show stronger reading skills even when transitioning to non-Montessori settings (Ansari & Winsler, 2020).

This study aims to investigate the effectiveness of the Montessori method in improving early reading competencies among slow learners in first-grade elementary education. This research addresses the critical gap by providing empirical evidence on how structured, multisensory Montessori

approaches can be systematically implemented to enhance letter recognition, phonemic awareness, and word reading skills for students with mild intellectual disabilities. The significance of this study lies in its potential to inform evidence-based instructional practices that can be replicated across inclusive educational settings, ultimately contributing to more equitable learning opportunities for all students regardless of their cognitive abilities.

METHODS

This study employed a classroom action research design utilizing the Kemmis and McTaggart cyclical model, which consists of four interconnected phases: planning, action, observation, and reflection (Arikunto, 2019). This methodological approach was selected as it enables systematic investigation of pedagogical interventions while simultaneously addressing practical classroom challenges through iterative cycles of implementation and refinement. The research was conducted over four weeks at SD Negeri 001 Muara Wahau, located in Muara Wahau Village, Muara Wahau District, East Kutai Regency, East Kalimantan Province, Indonesia.

The research participant was a first-grade male student identified as a slow learner who demonstrated significant difficulties in early reading acquisition. The student exhibited challenges in letter recognition, syllable formation, and word reading, stemming from both internal factors (cognitive processing difficulties) and external factors (inadequate instructional accommodation, inappropriate teaching methods and media, and limited parental guidance). This single-case intensive approach was justified by the need for detailed documentation of the intervention process and individualized learning trajectory, allowing for comprehensive analysis of how Montessori methods can be adapted for students with specific learning challenges (Yin, 2018). The purposive sampling strategy enabled focused examination of intervention effectiveness within an authentic educational context.

Data collection employed multiple instruments to ensure triangulation and comprehensive assessment of intervention outcomes. The primary instrument consisted of a reading performance test comprising ten items: five words following the consonant-vowel (CV) repetitive pattern and five words following the consonant-vowel-consonant-vowel (CVCV) pattern with initial consonants /m/ and /p/. Assessment criteria included letter recognition, phonetic sound production, and complete word reading, with scoring based on a rubric ranging from 0 (unable to read with verbal or visual assistance) to 2 (independent reading with accurate pronunciation). Observational data were systematically collected using structured checklists documenting student participation across 15 behavioral indicators and instructional fidelity across 15 procedural steps. These observation protocols were administered throughout each lesson cycle, employing a four-point Likert scale to capture varying levels of engagement and implementation quality. All instruments underwent expert validation through judgment by special education faculty members and experienced inclusive education practitioners to ensure content validity and alignment with research objectives (Arikunto, 2019). The validation process confirmed that instruments adequately measured the targeted constructs and were developmentally appropriate for the participant.

The intervention was implemented across two complete cycles, with each cycle consisting of multiple instructional sessions. Baseline reading ability was established through pre-testing prior to intervention commencement. Each instructional session incorporated Montessori principles, including the use of concrete manipulatives (picture-word cards, letter cards, sandpaper letters), self-paced learning sequences, and multisensory engagement activities. Post-tests were administered following each cycle to measure progress, with the success criterion established at 80% accuracy, reflecting standard mastery expectations in Indonesian elementary curriculum for first-grade reading competencies (Guskey, 2021).

Data analysis employed descriptive quantitative methods to examine changes in reading performance across intervention phases. Reading achievement scores were calculated using the formula NP = (R/SM) × 100%, where NP represents percentage achievement, R indicates obtained score, and SM denotes maximum possible score (Purwanto, 2013). Performance improvements were

quantified by comparing pre-test scores with post-test results from each cycle, calculating percentage increases to determine intervention effectiveness. Observational data regarding student participation and instructional implementation were similarly converted to percentages and categorized using established performance rubrics: 86-100% (excellent), 76-85% (good), 60-75% (adequate), 55-59% (needs improvement), and ≤54% (poor) (Purwanto, 2014). This multi-method analytical approach enabled comprehensive evaluation of both learning outcomes and instructional processes, providing insights into how Montessori methodology supports early reading development for slow learners.

RESULTS AND DISCUSSION

Results

The implementation of the Montessori method for improving early reading competencies in a slow learner was conducted across two complete intervention cycles over four weeks. Table 1 presents the participant's reading performance trajectory from baseline through both intervention cycles, demonstrating systematic improvement across all assessment phases.

Table 1. Reading Performance Across Intervention Phases

Assessment Phase	Score (out of 20)	Percentage	Category	Improvement from Baseline
Pre-test (Baseline)	4	20%	Very Poor	-
Post-test Cycle I	12	60%	Adequate	+40%
Post-test Cycle II	19	95%	Excellent	+75%

As illustrated in Table 1, the participant's baseline reading ability was severely limited, achieving only 20% accuracy with a score of 4 out of 20 possible points. At this initial stage, the student could independently read only two words with consonant-vowel (CV) repetitive patterns ("milo" and "madu") without verbal or visual assistance. However, significant letter-sound confusion was evident, particularly with the consonant /m/, which the student consistently substituted with other consonant sounds. Following the three-session Cycle I intervention, substantial improvement occurred, with the participant's score increasing to 12 (60%), representing a 40-percentage-point gain. By the conclusion of Cycle II, the participant achieved 19 out of 20 possible points (95%), exceeding the predetermined success criterion of 80% and demonstrating mastery-level performance in early reading skills.

The progression of reading acquisition exhibited distinct patterns across word types. Table 2 delineates the participant's performance on specific reading indicators throughout the intervention.

Table 2. Performance on Specific Reading Competencies

Reading Competency	Pre-test	Post-test Cycle I	Post-test Cycle II
Letter Recognition	40% (4/10)	90% (9/10)	100% (10/10)
Phonetic Sound Production	30% (3/10)	85% (8.5/10)	100% (10/10)
CV Pattern Reading	40% (2/5)	80% (4/5)	100% (5/5)
CVCV Pattern Reading	0% (0/5)	40% (2/5)	90% (4.5/5)

Table 2 reveals differential rates of improvement across literacy subskills. Letter recognition demonstrated the most rapid acquisition, progressing from 40% baseline to 90% by Cycle I, and achieving perfect accuracy by Cycle II. Phonetic sound production followed a similar trajectory, indicating successful integration of multisensory learning approaches. Notably, reading performance varied significantly by word complexity. Words following the simpler CV repetitive pattern (e.g., "madu," "milo") reached 80% accuracy by Cycle I, whereas CVCV patterns with initial consonants /m/ and /p/ (e.g., "meja," "pita") required extended practice, achieving only 40% accuracy in Cycle I before substantially improving to 90% in Cycle II.

Observational data documented systematic increases in student engagement and instructional fidelity throughout the intervention. Figure 1 presents the participant's behavioral engagement levels across all instructional sessions.

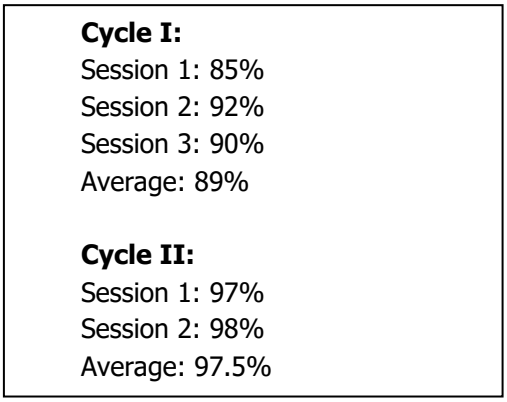

Figure 1. Student Participation Rates Across Intervention Sessions

Participation rates demonstrated consistent upward trends, increasing from an average of 89% in Cycle I to 97.5% in Cycle II. Qualitative observations revealed notable behavioral changes accompanying these quantitative improvements. During initial sessions, the participant required frequent redirection to maintain task focus and exhibited tendency toward off-topic verbalization. However, as familiarity with instructional routines increased, attention span lengthened considerably, verbal digressions decreased, and enthusiasm for learning activities intensified. By Cycle II, the participant spontaneously initiated letter-tracing activities and demonstrated intrinsic motivation to practice newly acquired reading skills.

Instructional implementation fidelity similarly showed progressive refinement. Table 3 summarizes adherence to planned intervention procedures across both cycles.

Table 3. Instructional Fidelity Rates

Cycle	Session 1	Session 2	Session 3	Average
Cycle I	92% (55/60)	95% (57/60)	99% (59/60)	94%
Cycle II	100% (60/60)	100% (60/60)	-	100%

The instructional fidelity data indicate high-quality implementation throughout the study, with average adherence rates of 94% in Cycle I improving to 100% in Cycle II. Minor procedural deviations in early Cycle I sessions—primarily concerning insufficient repetition during finger-tracing activities and incomplete implementation of closing motivational statements—were systematically addressed through reflective practice. Refinements implemented between cycles included: (a) increased repetition (2-3 iterations) during multisensory letter-tracing sequences to enhance phonemic pattern recognition; (b) enhanced complexity in letter card selection during word-building activities to provide appropriate challenge; and (c) strengthened reinforcement of behavioral contracts to minimize off-task verbalization.

An unexpected finding emerged regarding the participant's preferred strategy for word construction. During letter-arrangement tasks, the student consistently assembled words from right to left (e.g., constructing "pare" by sequencing r→a→e→p→pare), contrary to conventional left-to-right sequencing. This idiosyncratic approach, while unconventional, did not impede successful word formation and may represent an adaptive strategy accommodating the participant's unique cognitive processing style.

Progress monitoring data revealed accelerating learning rates across intervention phases. The magnitude of improvement from baseline to Cycle I (40 percentage points) was exceeded by gains between Cycle I and Cycle II (35 percentage points), suggesting that foundational skills established in early intervention sessions enabled more efficient subsequent learning. This pattern of accelerating acquisition indicates appropriate instructional scaffolding and effective utilization of concrete manipulatives to bridge from concrete to abstract literacy concepts.

Discussion

The findings of this study provide empirical evidence that the Montessori method can effectively enhance early reading competencies in students with mild intellectual disabilities. The participant's progression from 20% baseline accuracy to 95% mastery-level performance represents a 75-percentage-point improvement, substantially exceeding the predetermined 80% success criterion. This outcome directly addresses the research question regarding whether Montessori methodology can improve early reading skills in slow learners, providing affirmative evidence for its effectiveness in this population.

The observed learning trajectory aligns with established theories of literacy acquisition while highlighting adaptations necessary for learners with intellectual disabilities. The participant's initial difficulties with letter-sound correspondence and phonemic awareness mirror patterns documented in previous research on students with cognitive challenges (Afacan & Wilkerson, 2022; Whitbread et al., 2021). The substantial improvements achieved through systematic multisensory instruction corroborate findings from intervention studies demonstrating that students with intellectual disabilities can develop reading skills when provided with appropriate evidence-based instruction (Allor et al., 2010; Allor et al., 2014). Specifically, the 100% achievement in letter recognition and phonetic sound production by Cycle II validates assertions by Lemons and Balasubramanian (2025) that learners with intellectual disabilities benefit from complex, multifaceted reading instruction rather than simplified or fragmented approaches.

The differential acquisition rates observed across word patterns—with CV repetitive patterns mastered more rapidly than CVCV patterns—corresponds with developmental reading theories emphasizing hierarchical skill progression (Ehri, 2022). This finding suggests that instructional sequences for students with intellectual disabilities should be carefully calibrated to word complexity, beginning with simpler phonological structures before advancing to more complex patterns. The eventual mastery of both pattern types by Cycle II demonstrates that given adequate instructional time and appropriate scaffolding, students with mild intellectual disabilities can achieve grade-level literacy competencies.

The effectiveness of Montessori methodology in this context can be attributed to several pedagogical features aligned with best practices for teaching students with special needs. First, the use of concrete manipulatives—including sandpaper letters, picture-word cards, and letter tiles—rendered abstract phonological concepts tangible and accessible (Neumann et al., 2012). Research on multisensory instruction for learners with disabilities emphasizes that tactile and kinesthetic engagement facilitates stronger neural pathway development and enhances memory consolidation (Broadbent et al., 2018; Joshi et al., 2002). The participant's progression from requiring visual and verbal prompts to independent word recognition suggests successful internalization of letter-sound correspondences through repeated multisensory engagement.

Second, the self-paced, individualized nature of Montessori instruction accommodated the participant's unique learning profile. The ability to adjust lesson duration, repetition frequency, and challenge level in response to real-time performance enabled optimal cognitive load management—a critical consideration for students with processing limitations (Connor et al., 2013). This flexibility contrasts with rigid, whole-class instructional approaches that may inadequately serve diverse learners. The observational data documenting reduced need for redirection and increased spontaneous engagement over time indicates that the participant's intrinsic motivation strengthened as competence developed, supporting self-determination theory principles regarding autonomy and mastery as motivational drivers.

Third, the systematic, step-by-step instructional sequence inherent to Montessori methodology provided the explicit, structured teaching required by students with intellectual disabilities (Copeland & Keefe, 2007). Each lesson progressed logically from teacher demonstration through guided practice to independent application, incorporating immediate corrective feedback—a instructional design shown effective in meta-analyses of reading interventions for struggling readers (Hall et al., 2023). The high

instructional fidelity rates (averaging 97% across both cycles) ensured consistent implementation of these evidence-based practices.

The findings from this study complement and extend existing research on Montessori literacy instruction. While previous studies have documented Montessori students' superior reading achievement compared to peers in traditional settings (Ansari & Winsler, 2020; Courtier et al., 2021; Lillard, 2012), these investigations primarily involved typically developing children from mainstream educational contexts. The present study's demonstration of Montessori effectiveness with a slow learner fills an identified gap in the literature, as Beach's (2023) scoping review noted the paucity of research on Montessori approaches for students with special needs. Specifically, this study provides empirical validation for extending Montessori principles beyond their traditional application with general education populations to inclusive settings serving learners with cognitive disabilities.

Comparison with alternative instructional approaches highlights the Montessori method's particular strengths for this population. Traditional phonics programs often emphasize rote memorization through worksheet-based practice, which may insufficiently engage students with intellectual disabilities who benefit from concrete, experiential learning (Alnahdi, 2015). The hands-on manipulation of physical materials in Montessori instruction provides cognitive scaffolding that abstract representations lack. Similarly, whole-language approaches that de-emphasize systematic phonics instruction have proven inadequate for students with decoding difficulties (National Reading Panel, 2001). The Montessori method's integration of systematic phonics within a multisensory, developmentally sequenced framework appears to capitalize on the advantages of both explicit instruction and constructivist learning principles.

The unexpected finding regarding the participant's right-to-left word construction strategy offers important insights into cognitive flexibility and adaptive learning processes. While conventional literacy instruction assumes left-to-right directionality, the participant's spontaneous adoption of reverse sequencing—which ultimately proved functional—suggests that successful reading acquisition may accommodate alternative processing strategies. This observation aligns with Universal Design for Learning principles advocating multiple means of representation and expression (Rose & Meyer, 2002). It also reinforces the importance of formative assessment and instructional responsiveness rather than rigid adherence to predetermined methods.

Several theoretical frameworks illuminate the mechanisms underlying the intervention's success. From a cognitive perspective, Dual Coding Theory (Paivio, 1971) explains how the simultaneous activation of verbal and visual-spatial processing pathways through picture-word cards and concrete letter manipulatives enhanced encoding and retrieval. The observed improvement in phonemic awareness aligns with Scarborough's (2001) Reading Rope model, which conceptualizes skilled reading as the product of intertwined language comprehension and word recognition strands. By strengthening lower-level decoding skills through multisensory practice, the intervention established the foundation for eventual reading fluency and comprehension.

From a neuroeducational perspective, the multisensory integration inherent to Montessori instruction likely facilitated more robust neural network development than unimodal instruction would provide. Research using neuroimaging techniques has demonstrated that multisensory learning activates broader cortical regions and strengthens cross-modal connections (Broadbent et al., 2018). For students with intellectual disabilities, who often exhibit less efficient neural processing, this enhanced neural recruitment may be particularly beneficial. The participant's progression from labored, phoneme-by-phoneme decoding to more fluent word recognition suggests developing automaticity—a hallmark of mature reading enabled by neural pathway consolidation.

The practical implications of these findings extend to multiple stakeholders in inclusive education. For classroom teachers serving diverse learners, the study demonstrates that evidence-based literacy instruction need not be prohibitively complex or resource-intensive. The materials utilized—picture cards, letter tiles, sandpaper letters—are readily available and can be implemented within existing classroom structures. The systematic lesson sequences employed can be adapted to small-group or

one-on-one instructional formats, accommodating various service delivery models. The high instructional fidelity achieved after minimal adjustments suggests that typical classroom teachers can successfully implement Montessori-inspired literacy instruction with appropriate professional development.

For special education practitioners and school psychologists, the findings validate multisensory, structured literacy approaches as appropriate interventions for students with intellectual disabilities who struggle with reading acquisition. The study provides a replicable intervention protocol that addresses common barriers such as phonemic awareness deficits and letter-sound confusion. The documented success with a slow learner challenges deficit-oriented perspectives that may underestimate these students' learning potential, reinforcing asset-based approaches that emphasize appropriate instruction over presumed inability.

For policymakers and administrators, the research offers evidence supporting the integration of Montessori principles within public school inclusive education frameworks. As educational systems worldwide emphasize evidence-based practices and accountability for all students' learning, demonstrating effectiveness with traditionally underserved populations becomes increasingly important. The study's use of a rigorous single-case experimental design with baseline comparison and systematic progress monitoring aligns with contemporary standards for establishing intervention efficacy.

Several study limitations warrant acknowledgment. First, the single-participant design, while enabling intensive documentation of one learner's trajectory, limits generalizability to broader populations of students with intellectual disabilities. Individual differences in cognitive profiles, prior educational experiences, and support systems may influence responsiveness to Montessori instruction. Replication studies with larger, more diverse samples are needed to establish external validity. Second, the relatively brief four-week intervention period, while sufficient to demonstrate substantial skill acquisition, does not permit assessment of long-term retention or generalization to naturalistic reading contexts beyond the instructional setting. Longitudinal follow-up examining whether observed gains persist and transfer to classroom reading activities would strengthen confidence in the intervention's durability.

Third, the absence of a comparison condition receiving alternative instruction prevents definitive conclusions about Montessori methodology's superiority over other evidence-based approaches. While the magnitude of improvement suggests strong effectiveness, comparative studies employing randomized controlled designs would more rigorously establish relative efficacy. Fourth, the reliance on researcher-designed assessments rather than standardized reading measures may raise questions about measurement validity, although the instruments did undergo expert validation. Future research incorporating nationally normed literacy assessments would facilitate comparison with broader achievement data.

Fifth, the study was conducted in a one-on-one format that may not reflect typical classroom conditions. While this intensive instructional arrangement enabled detailed observation and individualized pacing, questions remain about effectiveness in small-group or whole-class implementations. The resource requirements for individualized instruction may present feasibility challenges in under-resourced educational settings. Finally, the study did not systematically examine which specific Montessori components—concrete materials, self-paced learning, multisensory engagement, or systematic sequencing—contributed most substantially to outcomes. Component analyses isolating active ingredients would inform more efficient intervention design.

Despite these limitations, the study makes important contributions to special education research and practice. It provides empirical evidence addressing a significant gap in the literature regarding effective literacy instruction for students with intellectual disabilities, a population historically underserved by educational research. The detailed documentation of intervention procedures enhances replicability and practical utility. The integration of quantitative performance data with qualitative observational insights offers a comprehensive understanding of both outcomes and

processes. The demonstration that a slow learner can achieve near-mastery of early reading skills within a relatively brief timeframe challenges low-expectation mindsets and advocates for ambitious yet appropriate educational goals for all students.

Future research should extend this work in several directions. Larger-scale studies employing randomized controlled designs with heterogeneous samples of students with various intellectual disability profiles would strengthen evidence of effectiveness and identify potential moderators of intervention response. Longitudinal investigations tracking reading development across multiple school years would clarify whether early gains enable continued literacy growth or whether ongoing specialized instruction remains necessary. Comparative effectiveness research contrasting Montessori approaches with other validated interventions (e.g., explicit phonics programs, multisensory structured literacy methods) would inform evidence-based decision-making regarding optimal instructional approaches for different learner profiles.

Research examining implementation factors—including teacher training requirements, fidelity monitoring procedures, and resource allocation—would facilitate translation from research to practice. Studies investigating combination approaches integrating Montessori principles with other evidence-based practices might identify synergistic effects. Finally, research exploring the applicability of Montessori methodology for students with moderate and severe intellectual disabilities would extend understanding of its potential scope.

In conclusion, this study demonstrates that the Montessori method represents a viable, effective approach for improving early reading competencies in students with mild intellectual disabilities. The participant's substantial achievement gains across letter recognition, phonemic awareness, and word reading validate the pedagogical principles of multisensory engagement, concrete material use, and systematic skill progression. The findings challenge deficit-oriented perspectives by demonstrating that with appropriate instruction, students with cognitive disabilities can achieve meaningful literacy skills. As inclusive education systems strive to ensure all students' academic success, this research contributes evidence supporting differentiated, evidence-based instructional approaches tailored to diverse learning needs. The integration of time-honored Montessori principles with contemporary reading science offers promising directions for advancing literacy instruction in special education contexts.

CONCLUSION

This study provides empirical evidence that the Montessori method effectively enhances early reading competencies in students with mild intellectual disabilities. The first-grade slow learner participant demonstrated substantial improvement from 20% baseline accuracy to 95% mastery level, exceeding the predetermined 80% success criterion through systematic multisensory instruction incorporating concrete manipulatives, self-paced learning, and structured phonics sequences. The 75-percentage-point improvement across two intervention cycles validates the pedagogical efficacy of Montessori principles when adapted for learners with cognitive challenges, particularly in developing letter recognition, phonemic awareness, and word decoding skills.

The research contributes to special education scholarship by addressing a critical gap regarding effective literacy instruction for students with intellectual disabilities, a population traditionally underserved in educational research. By demonstrating that Montessori methodology—previously validated primarily with typically developing children—can be successfully adapted for slow learners in inclusive settings, this study extends the theoretical and practical applications of multisensory structured literacy approaches. The findings challenge deficit-oriented perspectives and advocate for ambitious educational goals grounded in evidence-based, differentiated instruction.

Practically, this research offers replicable intervention protocols for classroom teachers and special educators serving diverse learners in resource-limited contexts. However, the single-participant design and brief intervention period limit generalizability and assessment of long-term retention. Future research should employ randomized controlled designs with larger, heterogeneous samples to

establish external validity, conduct longitudinal investigations to examine sustained effects, and explore comparative effectiveness against alternative evidence-based interventions. Additionally, studies examining implementation factors—including teacher training requirements, scalability to group settings, and applicability to students with moderate and severe intellectual disabilities—would facilitate translation from research to practice, ultimately advancing equitable literacy opportunities for all learners.

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