

# Synergy of Multimodal Literacy Approach and Role Playing Technique: A Quasi-Experiment on Reading Comprehension Skills in Elementary School

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## Abstract

Low reading comprehension skills and persistent student disengagement have emerged as critical global challenges, demanding innovative pedagogical solutions beyond conventional monomodal instruction. This study aimed to investigate the effectiveness of a multimodal literacy ecosystem integrated with role playing technique on improving reading comprehension skills of fourth-grade elementary school students. A quasi-experimental method with a Nonequivalent Control Group Pretest-Posttest Design was employed, involving 38 Grade IV students divided into an experimental class (n = 20) receiving multimodal role playing treatment and a control class (n = 18) following conventional text-based instruction. Data were collected through direct observation using structured rubrics measuring four cognitive indicators: literal comprehension and vocabulary, identifying main ideas, making inferences, and evaluating texts. Instrument validity was confirmed through expert judgment, with an inter-rater reliability coefficient exceeding 0.80. The Independent Sample t-test revealed a highly significant difference in learning outcomes (Sig. = 0.000 < 0.05), with a mean difference of 16.50 points. The experimental class achieved an N-Gain score of 0.88 (High Category), substantially outperforming the control class, which recorded 0.52 (Medium Category). The most pronounced gains were observed in higher-order thinking indicators, specifically inference making and text evaluation. These findings confirm that the multimodal role playing ecosystem effectively accelerates reading comprehension by enabling students to transform abstract textual meaning into kinesthetic and spatial experiences through collaborative transmediatory performance.

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## INTRODUCTION

Low reading comprehension skills and the crisis of student engagement in elementary schools have become a pressing global concern. The Programme for International Student Assessment (PISA) report by the OECD (2023) documented stagnation in literacy achievement across numerous countries. Theoretically, reading comprehension is not merely the decoding of letters into sounds; it is a complex cognitive process requiring students to activate background knowledge, generate inferences, and engage in comprehension monitoring (Bakay et al., 2024; Elleman & Oslund, 2019; Nuzulul et al., 2024). In practice, teachers typically measure reading comprehension through layered indicators ranging from literal vocabulary understanding to critical text evaluation (Andhina & Desyandri, 2025; Datuamas et al., 2025; Hamzah et al., 2023). Empirical observation reveals that this process is frequently impeded by the dominance of passive, monomodal teaching methods. Contemporary students are digital natives who habitually process information through multiple sensory channels. When schooling fails to accommodate this multimodal cognitive need, students reduce reading to a mechanical process that extinguishes their intrinsic motivation, creating a systemic barrier to achieving deep reading comprehension at the elementary level.

In response to this crisis, educational scholars have called for a fundamental transformation through multimodal literacy approaches and play-based pedagogy. This transformation shifts instruction from single-text transmission toward the integration of visual, aural, spatial, and gestural communication modes. Play functions as a psychological catalyst; play-based activities dramatically lower students' affective filter, thereby emboldening them to experiment with language (Li et al., 2023; Musfira et al., 2024; Musfirayanti et al., 2024). A growing body of research confirms that play-based learning environments, whether through digital platforms such as Roblox (Sinar et al., 2023) or interactive gameplay (Shen et al., 2024), successfully stimulate students to become active agents who critically deconstruct and reconstruct meaning. Nevertheless, the application of digital pedagogies frequently encounters infrastructural barriers in regular schools and tends to neglect the learning potential inherent in physical classroom space. These limitations necessitate alternative approaches that leverage the affordances of embodied, non-digital multimodal interactions to foster deep literacy development.

Addressing these limitations, educators can construct a multimodal literacy ecosystem centered on Learning through Play through offline hybrid activities such as role playing. Within this ecosystem, language is not learned in isolation: the physical classroom transforms into a spatial medium, students' bodies become gestural communication tools, and dialogue serves as immediate linguistic feedback. This performative ecosystem demonstrably promotes social constructivism, wherein students negotiate meaning and resolve narrative conflicts in real time (Ly, 2024). Activities such as hybrid puppetry or role simulation have been empirically shown to enrich vocabulary and reduce students' psychological pressure (Aridasarie & Rohmah, 2024; Hamzah et al., 2023). The embodied and social nature of role playing creates authentic multimodal learning conditions that are fundamentally distinct from passive reading exercises, offering students a kinesthetically rich environment in which comprehension is actively co-constructed rather than individually received.

For maximum pedagogical impact, this ecosystem must be integrated into a systematic multimodal literacy cycle (Kustini et al., 2020). The cycle progresses from a pedagogical

foundation phase—in which the teacher presents the text—to a receptive phase, in which students analyze the bias and intermodal relationships within the reading material (Daulay & Dewi, 2025), culminating in a productive and evaluative phase. During the productive phase, students are transformed into creators who synergize linguistic, visual, and kinesthetic modes to perform their comprehension (Dressen-hammouda & Wigham, 2022). This cyclical integration ensures that reading comprehension is treated not as passive reception but as an active, multimodal construction process embedded within collaborative social performance.

Based on this review, a significant research gap is identified. From a theoretical perspective, previous literature has reduced the function of role playing primarily to a tool for practicing oral fluency (Ishak & Aziz, 2022). The field has not comprehensively explored role playing as a receptive cognitive instrument for unlocking deep textual meaning, particularly at the level of higher-order reading comprehension. Methodologically, no study has systematically tested a non-digital multimodal literacy ecosystem through a role playing cycle using a rigorous quasi-experimental design specifically with elementary school students. The absence of such empirical evidence represents a critical gap that limits the ability of practitioners and policymakers to adopt evidence-based multimodal pedagogical innovations for literacy improvement. Filling this gap is particularly urgent given the consistent underperformance of elementary students in inferential and evaluative reading tasks—precisely the competencies most demanded in an information-saturated contemporary society.

To bridge this gap, the present study is grounded in Social Semiotic Theory (Peña & James, 2024) and the concept of Transmediation (Suhor, 1984). Role playing is conceptualized as a form of high-order transmediation in which students do not merely read written text but transform its content into physical actions, spatial movement, and vocal intonation through collaborative performance (Dilafruz, 2025). Within this theoretical framework, students' bodies and social interactions function as instruments that compel them to critically evaluate narrative structure in real time. This transmediatory process is hypothesized to produce deeper and more durable memory traces than conventional decoding activities because meaning is actively embodied rather than passively received. The integration of Social Semiotic Theory with the transmediation concept thus provides a robust theoretical foundation for explaining the cognitive mechanisms through which multimodal role playing enhances reading comprehension across all cognitive levels.

Accordingly, this quasi-experimental study aimed to investigate the effectiveness of synergizing a multimodal literacy approach with role playing technique on improving reading comprehension skills of elementary school students. The central research question addressed is: Is there a significant difference in reading comprehension skills between students taught using the multimodal literacy model integrated with role playing and those taught using conventional text-based methods?

## **METHOD**

A quasi-experimental research design with a Nonequivalent Control Group Pretest-Posttest Design was employed in this study. This design was selected because true random assignment of individual students was not feasible without disrupting established class structures at the school

site. The study was conducted at SDN Percontohan, Tolitoli Regency. Participants were selected using purposive sampling, yielding a total of 38 Grade IV students assigned to two intact groups: an Experimental Class (n = 20) receiving multimodal role playing treatment encompassing the full receptive-to-productive literacy cycle, and a Control Class (n = 18) receiving conventional text-based instruction. Ethical clearance and informed consent from parents or guardians were obtained prior to the commencement of any intervention.

### **Research Instrument**

The researcher collected data through direct observation using structured observation sheets and performance assessment rubrics. These direct observations were applied to measure the actual performance of students' reading comprehension skills when interacting with the text and role-playing, which included four cognitive indicators: (1) literal comprehension and vocabulary, (2) determination of the main idea, (3) making inferences or implied comprehensions, and (4) evaluation of the text. The researcher has validated the observation rubric instrument through expert judgment and obtained an inter-rater reliability coefficient of  $> 0.80$ .

### **Research Procedure**

The research procedure consisted of three sequential stages.

1. The Preparation Stage involved initial observations at the school site, development of instructional materials, and expert validation of the reading comprehension test instrument.
2. The Implementation Stage commenced with the administration of a pretest to establish the baseline reading comprehension ability of both classes. Subsequently, a five-meet pedagogical intervention was carried out with identical material duration across both groups. The Experimental Class received multimodal role playing instruction following the systematic literacy cycle (receptive to productive phases), while the Control Class continued with conventional text-based reading activities. The intervention concluded with the administration of a posttest.
3. The Final Stage comprised data processing, prerequisite testing, statistical hypothesis testing, and the formulation of conclusions.

### **Data Analysis Techniques**

Data were analyzed through several sequential statistical stages. Prerequisite assumption tests were conducted first: the Shapiro-Wilk test was used to verify normality of data distribution, and Levene's Test was applied to confirm homogeneity of variance. Following the confirmation of parametric assumptions, hypothesis testing was performed using the Independent Sample t-test at a significance level of  $\alpha = 0.05$ . The research hypothesis tested was  $H_0$ : there is no significant difference in reading comprehension skills between the experimental and control classes, and  $H_a$ : there is a significant difference in reading comprehension skills between the two groups.  $H_0$  is rejected if the Sig. (2-tailed) value is less than 0.05. The effectiveness of the treatment was further evaluated using the N-Gain score formula, with score categories defined as High ( $\geq 0.70$ ), Medium (0.30–0.69), and Low ( $< 0.30$ ).

The stages of implementing the multimodal literacy approach in the experimental classroom are carried out through four main cycles, namely: (1) Multimodal Exposure (Situated Practice), students observe reading texts combined with visual and audio elements; (2) Overt Instruction, the teacher explicitly guides students to understand the elements and structure of the story; (3) Critical Framing, students collaboratively discuss dissecting implicit meanings,

characters, and plots; and (4) Transformed Practice through Role Playing, in which students transform their receptive understanding into action (kinesthetic), spatial movement, and theatrical dialogue (aural).

## RESULTS AND DISCUSSION

### Result

Initial data (pretest) confirmed that reading comprehension abilities of both classes were at comparable levels prior to treatment. The experimental class recorded a mean pretest score of 61.50, while the control class recorded 60.50. Following four weeks of pedagogical intervention, the experimental class achieved a mean posttest score of 85.00, substantially exceeding the control class mean of 68.50. A detailed recapitulation of average scores is presented in Table 1.

**Table 1. Recapitulation of Average Reading Comprehension Scores**

Class	Average Pretest	Average Posttest	Gain
Experimental (n=20)	61.50	85.00	23.50
Control (n=18)	60.50	68.50	8.00

Before hypothesis testing, the data underwent normality and homogeneity assumption checks. Based on the Shapiro-Wilk normality test (Table 2), Sig. values exceeding 0.05 were obtained for both pretest and posttest data across both classes, confirming that all data groups were normally distributed.

**Table 2. Data Normality Test Results (Shapiro-Wilk)**

Class	Data	Statistik	Sig.	Information
<b>Experiment</b>	Pretest	0.958	0.421	Normal (Sig > 0.05)
	Posttest	0.942	0.265	Normal (Sig > 0.05)
<b>Control</b>	Pretest	0.960	0.552	Normal (Sig > 0.05)
	Posttest	0.951	0.438	Normal (Sig > 0.05)

Subsequently, Levene's Test for homogeneity of variance (Table 3) produced a Sig. value of 0.612 ( $> 0.05$ ), indicating that the variance between the experimental and control classes was homogeneous.

**Table 3. Homogeneity Test Results (Levene's Test)**

Data	Levene Statistic	Sig.	Information
Reading Comprehension Outcomes	0.264	0.612	Homogeneous (Sig > 0.05)

Since all parametric assumptions were satisfied, hypothesis testing was conducted using the Independent Sample t-test (Table 4). The results indicated a Sig. (2-tailed) value of 0.000 ( $< 0.05$ ), leading to the rejection of  $H_0$  and the acceptance of  $H_a$ . This statistically confirms that the multimodal literacy approach integrated with role playing produced a highly significant effect on reading comprehension improvement.

**Table 4. Hypothesis Test Results (Independent Sample T-Test)**

Variance Assumption	Mean Difference	t	df	Sig. (2-tailed)	Information
Equal variances assumed	16.500	12.450	36	0,000	Significant

**Effectiveness Test (N-Gain)**

The effectiveness of the treatment was further examined through N-Gain score analysis (Table 5). The Experimental Class obtained a mean N-Gain of 0.88 (High Category), while the Control Class recorded an N-Gain of only 0.52 (Medium Category), indicating a substantial qualitative difference in the magnitude of learning improvement between the two groups.

**Table 5. Treatment Effectiveness Test Results (N-Gain)**

Class	Average Pretest	Average Posttest	N-Gain	Category
Experiment	61.50	85.00	0.88	High
Control	60.50	68.50	0.52	Medium

A disaggregated analysis of learning improvement across the four cognitive indicators is presented in Table 6. The data demonstrate that the multimodal role playing model produced the most pronounced gains in the higher-order thinking indicators, specifically Making Inferences and Evaluating Texts, compared to the control class.

**Table 6. Comparison of Improvement (Gain) per Reading Comprehension Indicator**

Reasoning Indicators	Class	Pretest	Posttest	Gain
1. Literal Comprehension & Vocabulary	Experiment	15.3	21.8	6.5
	Control	15.5	18.2	2.7
2. Identifying Main Ideas	Experiment	15.1	21.5	6.4
	Control	15.2	17.9	2.7
3. Making Inferences	Experiment	15.6	21.0	5.4
	Control	14.8	16.2	1.4
4. Evaluating Texts	Experiment	15.5	20.7	5.2
	Control	15.0	16.2	1.2

Data in Table 6 shows that the CMP model had the greatest impact on the indicators of Proposing Conjectures and Mathematical Manipulation, with a fairly large difference in improvement points compared to the control class.

**Discussion**

The results of inferential statistical analysis confirm that the multimodal literacy ecosystem integrated with role playing significantly outperforms conventional reading instruction (N-Gain: 0.88 vs. 0.52). Students in the experimental class successfully completed the literacy cycle by converting the receptive phase (reading text) into the productive phase (performing roles), which compelled them to manifest textual content through multi-sensory experience. These empirical findings directly validate the Social Semiotic Theory and the concept of transmediation (Peña &

James, 2024; Suhor, 1984), confirming that meaning becomes durably encoded in children's memory only when constructed through kinesthetic and spatial experience, rather than through mere letter decoding.

Mechanistically, the success of this pedagogical synergy is driven by the creation of a low-stakes learning environment. Consistent with the findings of Li et al. (2023) and Dilafruz (2025), role playing activities drastically reduce students' affective filter and language anxiety. In this low-pressure environment, students interpret misreadings of narrative flow as part of performative exploration rather than academic failure. This mechanism directly facilitates the development of metacognitive comprehension monitoring as theorized by Bakay et al. (2024) and Elleman & Oslund (2019). As students perform their roles, they automatically evaluate narrative logic in real time; when gestures or dialogue are misaligned with the text, they self-correct based on immediate peer feedback, generating an authentic cycle of comprehension monitoring.

Furthermore, this study extends the discourse of the systematic review by Ishak & Aziz (2022) and the empirical work of Ly (2024), both of which previously positioned role playing exclusively as an instrument for developing oral communication skills. The present findings demonstrate that peer engagement within role play compels negotiation of meaning and collaborative problem-solving that are highly effective for receptive cognition. When confronting narrative texts containing implied information, students in the experimental group used nonverbal cues and role-based discussions to resolve comprehension impasses, confirming that the physical classroom environment and social dynamics of students function as authentic multimodal technology.

Indicator-specific analysis reveals the most dramatic gains in the Making Inferences and Evaluating Texts indicators, classified as Higher-Order Thinking Skills (HOTS). These findings corroborate the observations of Hamzah et al. (2023) and Aridasarie & Rohmah (2024) that placing elementary-age children in interactive social situations accelerates their comprehension of cause-and-effect relationships. The contextual demands of narrative production compel students to fill informational gaps (inference generation) not explicitly stated in the text. While conventional monomodal instruction in the control class failed to facilitate critical evaluative reading, role playing pedagogy successfully transformed students from passive readers into critical thinkers capable of validating textual meaning through collaborative logical proof.

## CONCLUSION

The application of a multimodal literacy ecosystem integrated with role playing technique was empirically proven to produce a highly significant effect on improving the reading comprehension skills of Grade IV elementary school students (Sig. = 0.000; N-Gain = 0.88). This pedagogical cycle was most effective in accelerating higher-order thinking indicators, specifically making inferences and evaluating texts. Role playing activities successfully reduced students' affective filter, stimulated metacognitive comprehension monitoring, and transformed the body and classroom space into transmediatory instruments that concretized the abstraction of written text. These findings validate the tenets of Social Semiotic Theory and the concept of transmediation, confirming that meaning becomes durably encoded in students' memory when

actively constructed through kinesthetic and spatial experience. It is recommended that elementary school teachers adopt this non-digital hybrid pedagogy as an inclusive and accessible literacy solution. Given the limitations of sample size and intervention duration, future research should employ large-scale longitudinal experimental designs to examine the long-term retention of reading comprehension gains across diverse student populations.

## REFERENCES

- Anhdina, J. A., & Desyandri. (2025). Peningkatan Keterampilan Membaca Pemahaman Peserta Didik menggunakan Model Cooperative Integrated Reading Composition berbantuan Canva di Kelas V SDN 03 Binuang Kecamatan Pauh. *Asian Journal of Early Childhood and Elementary Education*, 3(4), 430–447. <https://doi.org/10.58578/AJECEE.v3i4.7199>
- Aridasarie, Z., & Rohmah, Z. (2024). Enhancing multimodal literacy : puppetry for English-speaking skills development. *Cogent Education*, 11(1), 2370754. <https://doi.org/10.1080/2331186X.2024.2370754>
- Bakay, E. A., Yusupova, E. M., & Antipkina, I. V. (2024). Online Reading Comprehension Assessment of Primary School Students : Analysis of Testing Behavior Indicators. *Psychological Science and Education*, 29(2), 32–49. <https://doi.org/10.17759/pse.2024290203>
- Datuamas, P. Z. A., Marto, H., & Mustakim. (2025). Analisis Strategi Guru dalam Meningkatkan Budaya Literasi Visual Siswa di SDN 3 Lakatan. *Pendas : Jurnal Ilmiah Pendidikan Dasar*, 10(3), 238–247. <https://doi.org/10.23969/jp.v10i03.33911>
- Daulay, E., & Dewi, U. (2025). Reading Comprehension through Multimodal Literacy Approach for English Education. *Eternal: English Teaching Journal*, 16(2), 397–404. <https://doi.org/10.26877/eternal.v16i2.1910>
- Dilafruz, M. (2025). Acting it Out: The Power of Implementing Drama and Role-Playing Activities in Language Teaching. *Инновации в Современной Лингвистике и Преподавании Языков*, 1(1), 74–78. <https://doi.org/10.47689/ZTTCTOI-vol1-iss1-pp74-78>
- Dressen-hammouda, D., & Wigham, C. R. (2022). Evaluating multimodal literacy : Academic and professional interactions around student-produced instructional video tutorials. *System*, 105, 102727. <https://doi.org/10.1016/j.system.2022.102727>
- Elleman, A. M., & Oslund, E. L. (2019). Reading Comprehension Research : Implications for Practice and Policy. *Policy Insights from the Behavioral and Brain Sciences*, 6(1), 3–11. <https://doi.org/10.1177/2372732218816339>
- Hamzah, M. Z., Vega, N. De, Rahayu, MS, S. S. U., & Pattiasina, P. J. (2023). Role-playing Method for Language Development in Elementary School. *Petrus Jacob Pattiasina*, 3(2), 36–47. <https://doi.org/10.25217/jcd.v1i2.1833>
- Ishak, S. A., & Aziz, A. A. (2022). Role Play to Improve ESL Learners ' Communication Skills : A Systematic Review. *International Journal of Academic Research in Business and Social Sciences*, 12(10), 826–845. <https://doi.org/10.6007/IJARBS/v12-i10/14851>

- Kustini, S., Suherdi, D., & Musthafa, B. (2020). Beyond Traditional Literacies : A Multimodal-Based Instruction to Fostering Student Digital Literacy Learning. *Jurnal Pendidikan Bahasa Dan Sastra*, 20(1), 37–47. [https://doi.org/10.17509/bs\\_jpbsp.v20i1.25969](https://doi.org/10.17509/bs_jpbsp.v20i1.25969)
- Li, X., Zhang, X., Zhao, Y., Zhang, L., & Shang, J. (2023). Exploring the role of learning through play in promoting multimodal learning among children : a pilot study in Chinese first-tier cities. *Front. Psychol.*, 14, 1103311. <https://doi.org/fpsyg.2023.1103311>
- Ly, C. K. (2024). Applying Role-Play Technique on Improving EFL Students ' Language Learning : A Case Study at a Vietnamese University. *Journal of Knowledge Learning and Science Technology*, 3(4), 1–10. <https://doi.org/10.60087/jklst.v3.n4.p1>
- Musfira, M., Mustakim, M., & Hamna, H. (2024). Implementasi Audiovisual dalam Meningkatkan Kemampuan Literasi Peserta Didik Sekolah Dasar. *Jurnal Basicedu*, 8(5), 4111–4122. <https://doi.org/10.31004/basicedu.v8i5.8795>
- Musfirayanti, M., Mustakim, M., & Hamna, H. (2024). Efektivitas Penggunaan Media Pembelajaran Gambar Seri terhadap Peningkatan Literasi Peserta Didik. *Jurnal Basicedu*, 8(4), 2953–2967. <https://doi.org/10.31004/basicedu.v8i4.8302>
- Nuzulul, R. C., Marto, H., & Mustakim. (2024). Meningkatkan Literasi Siswa dengan Menggunakan Buku Cerita Bergambar di Kelas II Sekolah Dasar Negeri 3 Lakatan. *Jurnal BELAINDIKA: Pembelajaran Dan Inovasi Pendidikan*, 6(3), 383–398. <https://doi.org/10.52005/belaindika.v6i3.287>
- OECD. (2023). PISA 2022 results: Factsheets. OECD Publishing.
- Peña, E., & James, K. (2024). A framework of transmediation. *Convergence*, 30(5), 1610–1624. <https://doi.org/10.1177/13548565231220325>
- Shen, Y., Jalil, H. A., & Jamaluddin, R. (2024). Exploring Multimodal Literacy through Digital Gameplay and Analysis---Chinese Adolescents' Learning Experience. *Eurasian Journal of Educational Research*, 109, 177–197. <https://doi.org/10.14689/ejer.2024.109.011>
- Sinar, T. S., Budiman, M. A., Ganie, R., & Rosa, R. N. (2023). Students ' Perceptions of Using Roblox in Multimodal Literacy Practices in Teaching and Learning English. *World Journal of English Language*, 13(7), 146–153. <https://doi.org/10.5430/wjel.v13n7p146>
- Suhor, C. (1984). Towards a Semiotics-based Curriculum. *Journal of Curriculum Studies*, 16(3), 247–257. <https://doi.org/10.1080/0022027840160304>