

Visual-Textual Integration in Comics: Enhancing Grade VIII Reading Comprehension Through Iterative Classroom Intervention

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ARTICLE HISTORY

Received: 02 Juli 2026

Revised: 16 Agustus 2026

Accepted: 1 September 2026

KEYWORDS

epistemic justice; decoloniality; school management; educational leadership; managing diversity; conceptual framework

HOW TO CITE

Arum, Vanesa Aulia, and Ahmad Madkur. "Visual-Textual Integration in Comics: Enhancing Grade VIII Reading Comprehension Through Iterative Classroom Intervention." *Educational Review: Research and Innovation* X, no. X (2025): xx-xx.

ABSTRACT

Reading comprehension remains a persistent challenge in Indonesian junior high school English language classrooms, with traditional instructional approaches frequently failing to engage low-achieving readers. This study investigates the effectiveness of short comics as a visual-textual scaffold for enhancing reading comprehension among Grade VIII students. Employing a two-cycle classroom action research (CAR) design, the study involved 36 students at SMP Negeri 1 Batanghari, East Lampung, Indonesia (2024–2025 academic year). Data were collected through multiple-choice reading tests (pre-test, post-test I, post-test II), classroom observations, and documentation. Quantitative analysis revealed significant improvement: pre-test baseline showed only 36.11% of students meeting the minimum completion criteria (MCC); after Cycle I, 55.55% achieved MCC; by Cycle II, 80.55% demonstrated mastery. Mean scores increased from 51 (pre-test) to 65 (post-test I) to 79 (post-test II). Observation data indicated enhanced student engagement, critical thinking, and confidence in reading activities. The findings align with cognitive load theory and dual coding theory, demonstrating that integrating visual and textual information through comics reduces cognitive overload and facilitates deeper comprehension. This iterative CAR approach illustrates how systematic reflection and instructional refinement strengthen intervention effectiveness. The study contributes to the growing body of evidence supporting multimodal pedagogies in English language teaching, particularly for struggling readers. Implications suggest integrating short comics into secondary ELT curricula and developing teacher professional development programs in visual literacy. Future research should explore comic effectiveness across proficiency levels, examine long-term retention, and investigate comic design features that optimize learning outcomes.

1. Introduction

Reading comprehension is a foundational skill essential to academic success across all subject areas, yet substantial evidence indicates that many Indonesian junior high school students struggle with understanding written English texts. According to national education assessments, approximately two-thirds of Grade VIII students fail to meet minimum competency standards in English reading (Prastyo, 2021). This challenge is compounded by several factors: limited exposure to authentic reading materials, traditional text-focused instruction that privileges decoding over meaning-making, low motivation to engage with academic reading, and the cognitive load imposed by unfamiliar vocabulary and complex grammatical structures. Research consistently demonstrates that engaged, motivated readers achieve higher comprehension outcomes (Grabe & Stoller, 2019). Visual media, when pedagogically integrated, have shown promise in capturing student interest and facilitating deeper comprehension. However, the question remains: Can a carefully designed, iteratively refined classroom intervention using short comics substantially improve reading comprehension for low-achieving junior high school readers?

1.1 Reading Comprehension in Context

Reading comprehension is defined by Snow (2002) as the process of simultaneously constructing meaning through interaction and engagement with written language. It is not a unitary skill but a complex cognitive process involving multiple interrelated components: phonological awareness, word recognition, vocabulary knowledge, syntactic understanding, and comprehension monitoring (National Institute of Child Health and Human Development, 2000). Perfetti and Hart (2002) introduced the lexical quality hypothesis, which posits that the precision and richness of word knowledge directly influence comprehension outcomes. For second-language learners, comprehension is further complicated by the necessity of simultaneously processing unfamiliar linguistic structures and cultural contexts (Nation & Webb, 2011). In the Indonesian junior high school context, students must develop reading proficiency while navigating the transition from foundational literacy (acquired in primary school) to academic literacy demands. Background knowledge—particularly domain-specific knowledge related to text topics—significantly moderates reading performance (Smith et al., 2021). When students encounter comics, the visual context and narrative scaffolding reduce the cognitive resources required for linguistic decoding, thereby freeing capacity for higher-order comprehension processes.

1.2 Visual Learning and Cognitive Load Theory

Dual coding theory (Paivio, 1986) proposes that humans process information through two parallel systems: verbal and visual. When information is presented in both modalities, learners encode it more robustly and can retrieve it more readily than when presented unimodally. Mayer (2021) extended this principle through cognitive load theory, arguing that learning is most effective when instructional materials are designed to minimize extraneous cognitive load (the mental effort required to process poorly designed materials) while optimizing intrinsic load (inherent difficulty of the content) and germane load (effort devoted to learning). Comics, by integrating visual narrative with concise text, exemplify this principle. Visual information in comics—character expressions, spatial relationships, action sequences—conveys meaning that might otherwise require lengthy verbal explanation. Consequently, students allocate less cognitive resources to linguistic processing and more to comprehension and inference-making. Clark and Mayer (2016) emphasize that successful visual learning requires coherence (eliminating extraneous visual or verbal information) and continuity (integrating visual and verbal information in temporally synchronized ways). Well-designed educational comics embody these principles.

1.3 Comics as Multimodal Learning Tools in Language Education

Comics are multimodal texts combining linguistic, visual, and spatial modalities to construct narrative meaning. In educational contexts, comics have been categorized as a form of graphic

literature—sequential art that uses panel structure, visual composition, and visual grammar to tell stories (Cabrera, 2021). Short comics—including comic strips and brief narrative sequences—are particularly suitable for classroom use because they are manageable in length, present complete narrative arcs within limited space, and generate high student engagement. Empirical research on comics in language education demonstrates consistent positive effects. Gkouti (2020) found that Greek secondary students using comics for reading instruction showed significantly higher comprehension scores and greater motivation compared to control groups using traditional texts. A mixed-method study by Sentürk (2021) with Grade 6 students in Turkey revealed that educational comics not only improved academic achievement in reading but also increased student engagement and intrinsic motivation. Golding and Verrier (2021), in an intervention study with English primary school children, documented that visual literacy instruction targeting comic comprehension substantially improved both literal comprehension and inferential understanding. These findings align with the broader body of research on multimodal pedagogy, which emphasizes that integrating multiple representational modes aligns with diverse learner preferences and leverages complementary cognitive processing pathways (Kress & Van Leeuwen, 2006).

1.4 Research Gap and Study Objectives

While prior research demonstrates the efficacy of comics for reading comprehension, several gaps persist in the literature. Most studies employ pre-post experimental or quasi-experimental designs with single-point interventions, limiting insight into how instructional refinement affects outcomes. Few studies examine the iterative process of classroom action research (CAR), wherein teachers systematically reflect on evidence and adapt instruction within authentic classroom contexts. Additionally, the majority of comic-based reading research focuses on elementary school learners; junior high school contexts remain underrepresented, despite this developmental stage's unique linguistic and cognitive demands. Most importantly, research on comics in Indonesian English language teaching contexts is scarce. The present study addresses these gaps by employing a two-cycle CAR design to investigate how systematic planning, implementation, observation, and reflection can maximize the effectiveness of short comic instruction for Grade VIII readers. The research question is: Can iterative classroom intervention using short comics significantly improve reading comprehension in low-achieving junior high school students, and does the CAR process itself yield insights into optimal comic-based pedagogy?

2. Method

2.1 Research Design

This study employed a two-cycle classroom action research (CAR) design following the Kemmis and McTaggart model (2014). CAR was selected because it enables systematic investigation of instructional practices within authentic classroom contexts while allowing for iterative refinement based on evidence. Each cycle consisted of four phases: (1) planning (designing lesson materials, assessment tools, and observational protocols), (2) action (implementing instruction), (3) observation (collecting data through tests and classroom observations), and (4) reflection (analyzing results, identifying strengths and weaknesses, and planning improvements for the next cycle). This iterative approach aligns with the broader aims of teacher-practitioner research, which emphasizes that valid understanding of teaching practice emerges through cycles of observation and critical reflection (Burns, 2010).

2.2 Setting and Participants

This research was conducted at SMP Negeri 1 Batanghari, a public junior high school located in East Lampung Regency, Indonesia, during the 2024–2025 academic year. Participants were 36 Grade VIII students (ages 13–14) from a single English language classroom. The school administrator and classroom teacher identified this class as having particularly low reading

comprehension performance (baseline data showed only 34% of students achieving the minimum completion criteria [MCC] of 70 points on standard reading assessments). No specific exclusion criteria were applied; all students in the selected class participated in the study. This naturalistic sampling approach, while limiting generalizability, ensures ecological validity and reflects the realities of school-based intervention research. Ethical approval was obtained from the school administration, and informed consent was requested from school leadership and parents/guardians prior to the study.

2.3 Data Collection and Instruments

Data were collected through multiple methods to capture both achievement outcomes and process observations. (1) Reading comprehension tests: A pre-test assessed baseline reading ability prior to instruction. Identical post-tests were administered following Cycle I and Cycle II to measure learning gains. All tests consisted of 10 multiple-choice items assessing literal comprehension, inference, and main idea identification, aligned with Indonesian curriculum standards for Grade VIII. Test items were piloted with parallel classes to ensure clarity and appropriate difficulty. (2) Classroom observation: Two trained observers used structured observation sheets to record student engagement, participation in discussions, and quality of analytical contributions during reading activities. Observations were conducted during each lesson in both cycles. (3) Teacher observation: A collaborating English teacher recorded observations of instructional implementation fidelity, pacing, student questions, and classroom management. (4) Documentation: Photographs and archival data (student work samples, attendance records) provided supplementary evidence of participation and engagement.

2.4 Intervention Materials

Short comics (comic strips) were specifically designed or selected to align with English curriculum content and student proficiency levels. Comics addressed familiar topics (school celebrations, water conservation) with vocabulary and grammatical structures appropriate to Grade VIII. Each comic strip consisted of 4–6 panels with dialogue and narration. Cognitive load principles guided design: visual compositions were uncluttered; color use supported comprehension; and text was concise. Comics were presented in full-color printed format (8.5" × 11" pages) or projected on a classroom screen during instruction.

2.5 Data Analysis

Quantitative test data were analyzed using descriptive statistics: means, standard deviations, and percentages of students meeting the MCC (≥ 70 points). Improvement between pre-test and post-tests was calculated as the change in mean score and the change in percentage of students achieving MCC. Qualitative observation data were analyzed thematically, with field notes and observation sheets reviewed to identify patterns in student engagement, cognitive processes, and instructional quality. The success indicator was predefined: the intervention would be considered successful if $\geq 70\%$ of students achieved a score of ≥ 70 points on the post-test by the end of Cycle II. If Cycle I results did not meet this benchmark, Cycle II would proceed with instructional refinements based on Cycle I reflection.

3. Results

Results are presented in two parts: quantitative test data and qualitative observational findings.

Table 1. Reading Comprehension Test Scores Across Assessment Points (N = 36)

Assessment Point	Mean (SD)	Students Meeting MCC (%)	Gain from Previous
Pre-test	51.4 (15.2)	36.11%	—

Post-test I (Cycle I)	64.6 (13.8)	55.55%	+13.2 points / +19.44%
Post-test II (Cycle II)	79.3 (11.4)	80.55%	+14.7 points / +25%

The pre-test established the baseline: only 13 of 36 students (36.11%) achieved the MCC of 70 or higher, with a mean score of 51.4 (SD = 15.2). This result confirmed that the classroom had below-average reading comprehension skills and justified the intervention. After Cycle I instruction, post-test scores improved. The mean increased to 64.6 (SD = 13.8), and 20 students (55.55%) met the MCC—a gain of approximately 13 points on average and an increase of 19.44 percentage points. While improvement was evident, nearly half the class still fell short of mastery, prompting continuation to Cycle II. Following refined instruction in Cycle II, post-test II results demonstrated substantial gains. The mean score rose to 79.3 (SD = 11.4), and 29 of 36 students (80.55%) achieved the MCC—a gain of 14.7 points from post-test I and 27.9 percentage points from the pre-test baseline. Six students scored 90 or above, indicating superior comprehension. Only 7 students (19.44%) remained below MCC in post-test II, compared to 63.88% in the pre-test. These improvements met the predefined success criterion of $\geq 70\%$ achieving MCC.

3.1 Observational Findings

Classroom observations revealed qualitative changes in student engagement and cognitive processes. In Cycle I, students initially showed interest in the comic format—classroom observations noted attentiveness during comic presentation and active participation in guided reading discussions. However, observers recorded that some students struggled to move beyond literal comprehension of comic content; fewer students volunteered inferences or predictions about character motivations or plot developments. In Cycle II, following explicit instruction in visual analysis and inference-making strategies, observations indicated marked improvement. Students demonstrated greater confidence in articulating character interpretations, spontaneously making predictions about narrative outcomes, and connecting comic themes to personal experiences. Small-group discussions became more substantive; students asked clarifying questions and engaged in peer dialogue about comprehension. The teacher observation sheet noted that instructional pacing improved in Cycle II—the teacher allocated more time for student discussion and less time for teacher explanation, indicating a shift toward student-centered pedagogy. Students who had scored below MCC in post-test I were observed actively attempting higher-order comprehension tasks in Cycle II, suggesting increased confidence and reduced anxiety about reading tasks.

4. Discussion

4.1 Effectiveness of Comic-Based Intervention

The quantitative gains documented in this study—from 36.11% to 80.55% meeting MCC—provide robust evidence that short comics, when pedagogically implemented and iteratively refined, effectively enhance reading comprehension in junior high school learners. These outcomes align with and extend the findings of prior research. Sentürk's (2021) mixed-method study found that educational comics improved academic achievement in social studies among Grade 6 students; the present study demonstrates similar efficacy in language arts. Golding and Verrier (2021) reported that visual literacy interventions improved both comprehension and inferential knowledge; our observation data corroborate that explicit instruction in analyzing comic visual elements supported deeper understanding. The magnitude of improvement—a 27.9 percentage point increase in MCC attainment from pre-test to post-test II, and a mean gain of 27.9 points—exceeds typical effect sizes for reading interventions in similar populations (see meta-analysis in Kölin, 2021).

4.2 Theoretical Mechanisms: Cognitive Load and Dual Coding

The findings support the theoretical frameworks referenced in the introduction. Cognitive load theory (Sweller et al., 2011; Mayer, 2021) predicts that instruction minimizing extraneous cognitive load while managing intrinsic load optimizes learning. Comics exemplify this principle: the visual depiction of action and character interactions eliminates the need for lengthy verbal description, reducing the linguistic processing burden for low-proficiency learners. For example, a comic panel showing a character's surprised facial expression conveys emotion more immediately and efficiently than a sentence like 'He felt astonished.' This efficiency frees cognitive resources for comprehension and inference tasks. Dual coding theory (Paivio, 1986) suggests that information encoded in both visual and verbal modalities is retrieved more readily. When students encounter a comic, they encode both the visual narrative (characters, settings, actions) and the accompanying dialogue/narration, creating redundant yet complementary memory representations. In post-reading discussions, students drew upon both modalities: some references to comprehension were visual ('Remember the character's worried face?') and others verbal, suggesting that dual encoding was indeed occurring. The observation that students' analytical talk became more sophisticated in Cycle II suggests that as cognitive burden from basic linguistic processing decreased, students engaged more readily with higher-order thinking.

4.3 The Value of Iterative Refinement Through CAR

A notable contribution of this study is its demonstration that iterative CAR processes substantially amplify intervention effectiveness. Post-test I results (55.55% MCC attainment) were disappointing but informative. Reflection on Cycle I data revealed that students required explicit strategy instruction in visual analysis and inference-making; simply exposing students to comics was insufficient. Teachers identified specific comprehension weaknesses (difficulty with character motivation inference, limited prediction practice) and modified Cycle II instruction accordingly: increased time for guided visual analysis, explicit modeling of inference language, and scaffolded small-group discussion. These refinements yielded dramatic gains. This finding supports Burns' (2010) assertion that teacher-conducted action research generates insider knowledge about what actually works in a specific classroom context, knowledge that cannot be generated by single-shot experimental studies. The CAR design thus provides evidence not only that comics improve comprehension but also how and why they do so when coupled with strategic, reflective instruction.

4.4 Limitations

The study has several limitations. (1) Sample size and context: With 36 students from a single school in one region of Indonesia, findings may not generalize to other educational contexts, socioeconomic settings, or language proficiency levels. (2) No control group: The CAR design lacks a comparison group, limiting causal inference. While the dramatic improvements suggest the intervention was responsible, alternative explanations (e.g., increased teacher attention, test familiarity) cannot be fully ruled out. (3) Short time frame: The study spanned only two months, so long-term retention of learning is unknown. (4) Test design: While the multiple-choice comprehension test is aligned with curriculum standards, it does not assess all dimensions of reading proficiency (e.g., rate, fluency, critical evaluation). (5) Implementation fidelity: As with all classroom research, slight variations in instruction between teachers or classes would affect outcomes. (6) Observation bias: Observers, while trained, may have been influenced by knowledge of the intervention hypothesis. Mitigation strategies included structured observation sheets and multiple independent observers, but perfect objectivity was not achieved.

4.5 Implications for Practice and Future Research

Findings suggest several practical implications. For classroom teachers, integrating short comics into English language curricula—particularly for reading comprehension instruction—appears to be a high-impact, feasible strategy. Comics are inexpensive to source (printed or digital),

require minimal technology infrastructure, and generate high student engagement. Importantly, results suggest that comic use is most effective when paired with explicit strategy instruction in visual analysis and comprehension monitoring. Teachers should view comics not as self-explanatory supplements but as texts requiring active pedagogical scaffolding. For curriculum designers and policy makers, these findings support the integration of multimodal literacy instruction into English language curricula, particularly at the secondary level. Professional development programs should equip teachers with competencies in visual literacy and multimodal pedagogy. For researchers, multiple directions for future inquiry are suggested: (a) Longitudinal studies tracking retention of comprehension skills months or years after comic-based instruction; (b) comparative studies with diverse learner populations (different proficiency levels, different age groups, different L1 backgrounds) to clarify the scope of comic effectiveness; (c) investigation of specific comic design features (color, panel layout, visual complexity) and their effects on comprehension; (d) integration of eye-tracking or other cognitive measures to examine visual attention patterns during comic reading; (e) studies combining comics with other multimodal resources (video, animation, audio) to investigate synergistic effects; and (f) replications in other Indonesian contexts to build a region-specific evidence base.

5. Conclusion

This two-cycle classroom action research demonstrates that visual-textual integration through short comics, combined with strategic instructional refinement, significantly enhances reading comprehension in low-achieving Grade VIII students. Quantitatively, the intervention increased the percentage of students achieving mastery from 36.11% to 80.55% across the study period, with corresponding gains in mean achievement scores. Qualitatively, students demonstrated enhanced engagement, confidence, and higher-order comprehension processes. The iterative CAR approach proved invaluable: Cycle I outcomes revealed the necessity for explicit strategy instruction, and Cycle II refinements yielded substantially stronger results. The findings provide empirical evidence supporting multimodal, student-centered approaches to reading instruction and illustrate how systematic reflection within classroom action research generates actionable insights for improving practice. While limitations in sample size, design, and generalizability prevent definitive causal claims, the magnitude of improvement and alignment with established theory (cognitive load, dual coding) suggest that comic-based instruction is a promising, implementable strategy for Indonesian English language teachers seeking to improve secondary students' reading outcomes. Further research in diverse contexts and with diverse populations is warranted to refine understanding of how, when, and for whom comics most effectively support language and literacy development.

Acknowledgments

The authors gratefully acknowledge the principal, English teachers, and students of SMP Negeri 1 Batanghari for their cooperation and participation. We also thank Mr. Hanif S.Pd for serving as collaborating observer and providing valuable feedback throughout the research process. No funding was received for this research.

Author Contribution Statement

VAA conceived the study, designed the methodology, conducted the classroom intervention, collected and analyzed data, and drafted the manuscript. AM supervised the research design, provided critical feedback on data interpretation and manuscript revision. Both authors reviewed and approved the final manuscript.

AI Disclosure Statement

The authors declare that no generative AI or AI-assisted tools were used in the conception, design, data collection, analysis, or interpretation of this study. The manuscript was drafted by the authors and revised through multiple cycles of peer feedback and reflection.

Competing Interests Statement

The authors declare no competing interests.

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