

READING BETWEEN PANELS: COMIC BOOKS AS MULTIMODAL SCAFFOLDS FOR EFL NARRATIVE COMPREHENSION

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ABSTRAK

This quantitative pre-experimental study examined within-group changes in narrative reading comprehension after comic-book-based instruction among 33 Grade X students in class X IPAS 8 at SMAN 9 Banda Aceh. Students completed a pretest, participated in three instructional meetings that integrated sequential images, captions, and dialogue, and then completed a posttest and a ten-item dichotomous questionnaire. Before instruction, 17 students were classified as sufficient and 10 as poor; afterward, 3 were classified as excellent, 26 as very good, and 4 as good. The reported mean normalized gain was 58.43% (range = 37.50%–75.00%). Because the pretest and posttest distributions were non-normal (Shapiro-Wilk $p < .001$ for both), a Wilcoxon signed-rank test was used. All 33 students obtained higher posttest scores, $Z = -5.043$, $p < .001$, with a derived effect size of $r = .88$. Questionnaire responses indicated high enjoyment, motivation, perceived vocabulary support, and perceived comprehension; however, 22 students (66.7%) still endorsed the statement that narrative text remained difficult. The findings indicate substantial improvement within this class and support the pedagogical promise of comics as multimodal scaffolds. They do not establish a causal effect because the study involved one convenience sample, no comparison group, a brief intervention, and incompletely reported instrument validation.

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INTRODUCTION

Reading comprehension is the construction of a coherent mental representation from linguistic information, prior knowledge, and inferences. For learners of English as a foreign language (EFL), the process requires word recognition, vocabulary knowledge, syntactic interpretation, attention, and strategic monitoring. Narrative reading adds the need to connect characters, settings, goals, causes, and consequences across a developing plot. Difficulty at any of these levels can leave readers with isolated details rather than an

integrated account of the story.

Comic books present narrative information through coordinated visual and verbal modes. Panels segment events, captions and speech balloons carry language, and changes between panels invite readers to infer omitted actions or shifts in time and place. Large-scale corpus research confirms that comics systematically organize attentional framing, situational changes, page layout, and multimodal relations rather than merely decorating prose (Cohn et al., 2023). Eye-tracking scholarship similarly characterizes multimodal reading as flexible coordination between textual and visual information, not as a passive response to pictures (Gatcho et al., 2024).

This coordination can function as a scaffold for narrative comprehension. A pictured action may constrain the interpretation of an unfamiliar verb, facial expression may clarify a character's affect, and recurring visual features may help readers maintain reference across panels. In an EFL experiment, students who read a graphic novel outperformed peers who received the comparison material and reported favorable perceptions of the format (Aldahash & Altalhab, 2020). Graphic novels have also been proposed as authentic texts through which English learners can engage with linguistically and conceptually complex themes (Barter-Storm & Wik, 2020).

The presence of images, however, does not make comprehension automatic. Readers must know how to follow panel order, attribute speech, interpret graphic symbols, and bridge gaps between frames. Explicit visual-literacy instruction has improved both comprehension and inferential understanding of educational comics (Golding & Verrier, 2021). Research with children who had developmental language disorder likewise found that knowledge of comic conventions was associated with both graphic-novel and prose comprehension (Wong et al., 2023). These findings make teacher guidance a central part of comic-based reading instruction.

Comics may also broaden the language available for instruction. Direct speech and contextualized interaction can supply pragmatic input that is often limited in language textbooks (Schauer, 2022). In a foreign-language classroom, comic-based work was associated with greater willingness to communicate through speech, writing, social media, and artistic production (Calafato & Gudim, 2022). Research on comic composing further indicates that the medium can support engagement and multimodal meaning-making beyond receptive reading alone (Estrella, 2024).

Motivation is another plausible pathway, but it should be distinguished from measured comprehension. A region-wide survey of school librarians in Taiwan identified

perceived benefits of comics for voluntary reading, comprehension, and library participation (Lo et al., 2022). Broader reviews show that reading for pleasure is associated with reading attainment and other outcomes, while also emphasizing methodological tensions in the evidence base (Cremin & Scholes, 2024). Regular independent reading practice, text choice, and opportunities to discuss books remain important for sustained literacy development (Mackenzie, 2025). Thus, short-term enthusiasm should be treated as a condition that may support learning, not as proof of durable achievement.

Preliminary observations during teaching assistance at SMAN 9 Banda Aceh in 2022 indicated that some Grade X students had difficulty with narrative vocabulary, inference, background knowledge, event sequence, and character motivation. Attention and low interest further reduced their willingness to reread or request clarification. These classroom needs motivated the use of comic books as visually organized narrative texts.

In the instructional sequence, comics were treated as scaffolds rather than as entertainment detached from the learning objective. Students related images to captions and dialogue, traced changes across panels, discussed characters and events, and inferred information not stated explicitly. This approach was intended to make narrative structure visible while preserving the need for linguistic decoding, evidence-based inference, and teacher feedback.

Despite growing international interest in comics, context-specific evidence from Indonesian secondary EFL classrooms remains limited, and brief one-group interventions require cautious interpretation. The present study therefore focused on two questions:

1. How did the participating students' narrative reading-comprehension scores change after three comic-book-based instructional meetings?
2. How did the students respond to the enjoyment, comprehensibility, motivation, vocabulary support, assistance, interest, and continuing difficulty associated with the lessons?
- 3.

RESEARCH METHOD

Research Design

The study used a quantitative pre-experimental one-group pretest-posttest design. The sequence was O1–X–O2, where O1 represented the narrative comprehension pretest, X represented three comic-book-based instructional meetings, and O2 represented the posttest. The design estimates change within the participating class but does not control for repeated testing, maturation, teacher effects, task familiarity, or concurrent instruction.

Participants and Setting

Participants were 33 Grade X students from the intact class X IPAS 8 at SMAN 9 Banda Aceh. The class was selected because it was accessible within the available instructional period and matched the target grade level; it therefore constituted a convenience sample rather than a probability sample. The sample size supports a classroom-level analysis but limits generalization to other classes, schools, or proficiency levels.

Instructional Procedure

Students first completed a pretest on narrative reading comprehension. Across three subsequent meetings, they read comic sequences and coordinated information from images, captions, and speech balloons. Activities required students to identify characters and settings, trace chronological and causal links, discuss plot development, interpret vocabulary in context, and infer events between panels. A posttest was administered after the final meeting.

Instruments

The outcome measure was a narrative reading-comprehension test administered before and after instruction. Scores were interpreted using five categories (Table 1). Students also completed ten yes-or-no questionnaire items about enjoyment, perceived comprehension, motivation, preference, perceived contribution to comprehension, vocabulary retention, opportunity to request assistance, vocabulary growth, interest, and continuing difficulty. The available study record did not report the number or format of test items, score range, equivalence of pretest and posttest forms, content-validation procedure, or reliability evidence for either instrument. The questionnaire results are therefore interpreted as descriptive self-reports rather than as a validated attitude scale.

Table 1. Reading-Comprehension Score Classification

Score	Grade	Category
90–100	A	Excellent
80–89	B	Very good
65–79	C	Good
55–64	D	Sufficient
0–54	E	Poor

Data Analysis

Pretest and posttest frequencies were summarized by performance category. Normalized gain (N-gain) was reported as a descriptive index of improvement; under the study's adopted interpretation, values below 40% were low, 40%–55% were less effective,

56%–75% were sufficient, and values above 76% were effective. Because the sample contained 33 paired observations, Shapiro–Wilk tests were used to examine normality. Both distributions departed from normality, so the Wilcoxon signed-rank test compared the paired scores at $\alpha = .05$. Effect size r was derived as $|Z|/\sqrt{N}$. Questionnaire answers were summarized as frequencies and percentages.

RESULTS AND DISCUSSION

Results

Changes in Performance Categories

The performance distribution shifted upward after the three instructional meetings (Table 2). Before instruction, no student was classified as excellent, 2 were very good, 4 were good, 17 were sufficient, and 10 were poor. After instruction, 3 students were excellent, 26 were very good, and 4 were good; none remained in the sufficient or poor categories. The result describes a marked change within the class but does not, by itself, identify the cause of that change.

Table 2. Pretest and Posttest Performance Distribution

Category	Score range	Pretest	Posttest
Excellent	90–100	0	3
Very good	80–89	2	26
Good	65–79	4	4
Sufficient	55–64	17	0
Poor	0–54	10	0
Total	—	33	33

Normalized Gain

The reported mean N-gain was 58.43%, which was classified as sufficient under the study's stated scheme. Individual values ranged from 37.50% to 75.00%, showing that improvement varied across students (Table 3). Because raw student-level scores and the maximum possible score were not included in the available record, the N-gain calculations could not be independently reproduced in this revision.

Table 3. Summary of Reported N-Gain Results

Indicator	Value	Study interpretation
Mean N-gain	58.43%	Sufficient
Minimum N-gain	37.50%	Low
Maximum N-gain	75.00%	Sufficient

Normality and Paired-Sample Analysis

Shapiro–Wilk tests indicated non-normal pretest and posttest distributions, $W = .824$ and $.855$, respectively, with $p < .001$ for both (Table 4). The Wilcoxon signed-rank test was

therefore appropriate for the paired comparison.

Table 4. Shapiro-Wilk Normality Tests

Score	W	df	p
Pretest	.824	33	< .001
Posttest	.855	33	< .001

All 33 students obtained higher posttest scores; there were no negative ranks and no ties. Positive ranks had a mean rank of 17.00 and a sum of 561.00. The paired difference was statistically significant, $Z = -5.043$, $p < .001$ (Table 5). The derived effect size was large, $r = .88$. This statistic quantifies the magnitude of the within-group shift and should not be interpreted as a controlled treatment effect.

Table 5. Wilcoxon Signed-Rank Test Summary

Indicator	Value
Negative ranks	0
Positive ranks	33
Ties	0
Mean positive rank	17.00
Sum of positive ranks	561.00
Z	-5.043
p (two-tailed)	< .001
Effect size r	.88

Note. Effect size was derived from the reported statistics as $r = |-5.043|/\sqrt{33} = .88$.

Student Responses

The questionnaire showed broadly positive responses (Table 6). Thirty students (90.9%) reported happiness during the lessons; 26 (78.8%) perceived narrative text as easier to understand; and 28 (84.8%) reported motivation and interest. All 33 students endorsed the statement that comics enriched their narrative comprehension, and 30 (90.9%) perceived new vocabulary as easier to remember.

Table 6. Questionnaire Responses to Comic-Book-Based Lessons

No.	Question	Yes, n (%)	No, n (%)
1	Were you happy during the English lessons?	30 (90.9)	3 (9.1)
2	Did comics make narrative text easier to understand?	26 (78.8)	7 (21.2)
3	Did comic books motivate you to learn English?	28 (84.8)	5 (15.2)
4	Did you like learning narrative text with comics?	26 (78.8)	7 (21.2)
5	Did comics enrich your narrative comprehension?	33 (100.0)	0 (0.0)
6	Did comics help you remember new vocabulary?	30 (90.9)	3 (9.1)
7	Could you ask for help when the task was difficult?	23 (69.7)	10 (30.3)
8	Did you feel that your vocabulary increased?	28 (84.8)	5 (15.2)
9	Were you interested in learning narrative text with comics?	28 (84.8)	5 (15.2)
10	Did narrative text remain difficult when using comics?	22 (66.7)	11 (33.3)

The responses also identify unresolved needs. Only 23 students (69.7%) reported an opportunity to request help when a task was difficult, and 22 (66.7%) endorsed the statement that narrative text remained difficult even when comics were used. Positive affect and perceived support therefore coexisted with substantial continuing difficulty.

Discussion

The upward distributional shift, positive ranks for every participant, and large within-group effect size indicate that performance improved substantially between the two measurements. This pattern is consistent with experimental EFL evidence in which graphic-novel reading supported comprehension (Aldahash & Altalhab, 2020). The present design is weaker for causal inference, however, because it lacks a comparison condition and cannot separate the contribution of comics from repeated practice or teacher support.

A plausible mechanism is the coordination of visual and verbal information. Panels externalize characters, settings, and event transitions, while captions and dialogue provide linguistic detail. Readers can use one mode to constrain or verify an interpretation formed from the other. Corpus and eye-tracking research underscores that this process depends on attention to layout, framing, sequence, and cross-modal relations (Cohn et al., 2023; Gatcho et al., 2024). The improvement observed here is therefore compatible with visual scaffolding, although the study did not directly measure students' visual attention or integration strategies.

Sequential panels may be especially useful for teaching narrative structure, but readers must learn the conventions that make the sequence intelligible. Golding and Verrier (2021) demonstrated that explicit visual-literacy instruction can improve inferential comprehension of educational comics, and Wong et al. (2023) linked comic-convention

knowledge with both graphic-novel and prose comprehension. Teachers should therefore model panel order, speech attribution, temporal shifts, and the inferences required across the gutter rather than assuming that students will interpret these features automatically.

Vocabulary and contextualized dialogue offer additional instructional affordances. Images can narrow the meaning of unfamiliar words, and repeated characters or actions can reinforce reference. Direct speech can also expose learners to pragmatic routines in context (Schauer, 2022). The high rate of perceived vocabulary support in this study aligns with these affordances, but a self-report item does not establish vocabulary growth. A future study should include a validated vocabulary measure and delayed assessment.

The enjoyment and motivation responses are also consistent with studies that associate comics with willingness to communicate, multimodal participation, and voluntary reading (Calafato & Gudim, 2022; Lo et al., 2022). Comic composing has likewise elicited favorable engagement in EFL instruction (Estrella, 2024). Nevertheless, reading-for-pleasure research cautions that motivation, access, choice, practice, and achievement interact over time (Cremin & Scholes, 2024; Mackenzie, 2025). Three meetings can document an immediate response, not a durable change in reading habits.

The continuing difficulty reported by 22 students is theoretically important. Visual cues cannot replace word decoding, background knowledge, linguistic comprehension, or evidence-based inference. Nor can they compensate for unclear instructions or limited opportunities to ask for assistance. Comics are best treated as one component of explicit reading instruction that also includes vocabulary preparation, prediction, questioning, clarification, summarization, and feedback.

Several limitations bound the findings. The study involved one conveniently selected class, three meetings, and no comparison group. Instrument content, parallel-form equivalence, validity, and reliability were incompletely reported, and the dichotomous questionnaire restricted response nuance. Raw paired scores were unavailable for independent verification. The Wilcoxon test establishes a statistically significant within-group difference, but the evidence does not establish that comics were superior to other forms of narrative instruction.

CONCLUSION

The participating class demonstrated substantial improvement in narrative reading comprehension after three comic-book-based instructional meetings. All 33 students achieved higher posttest scores, the reported mean N-gain was 58.43%, and the Wilcoxon

signed-rank result was significant, $Z = -5.043$, $p < .001$, with a derived within-group effect size of $r = .88$. Students also reported high enjoyment, motivation, interest, and perceived vocabulary and comprehension support.

These outcomes position comic books as promising multimodal scaffolds for making characters, actions, settings, and narrative sequence more visible. They do not demonstrate that comics alone caused the score increase. The single-group design, brief duration, convenience sample, incomplete instrument documentation, and continuing difficulty reported by two-thirds of the class require a bounded interpretation.

Pedagogical Implications

Teachers should explicitly teach comic conventions, preview essential vocabulary, model links between panels, ask students to justify inferences with visual and verbal evidence, and provide structured opportunities for clarification. Comic reading should be connected to retelling, summarizing, sequencing, vocabulary use, and prose reading so that visual support develops rather than replaces transferable comprehension strategies.

Recommendations for Further Research

Future studies should use comparison groups, larger and more diverse samples, longer interventions, equivalent test forms, validated instruments, delayed posttests, and fully reported student-level data. Measures of vocabulary, inferencing, narrative structure, comic-convention knowledge, and reading motivation would help identify which mechanisms account for improvement and whether gains transfer to continuous prose.

REFERENCES

- Aldahash, R., & Altalhab, S. (2020). The effect of graphic novels on EFL learners' reading comprehension. *International Journal of Applied Linguistics and English Literature*, 9(5), 19–26. <https://doi.org/10.7575/aiac.ijalel.v.9n.5p.19>
- Barter-Storm, B., & Wik, T. (2020). Using social justice graphic novels in the ELL classroom. *TESOL Journal*, 11(4), e551. <https://doi.org/10.1002/tesj.551>
- Calafato, R., & Gudim, F. (2022). Comics as a multimodal resource and students' willingness to communicate in Russian. *Journal of Graphic Novels and Comics*, 13(2), 270–286. <https://doi.org/10.1080/21504857.2021.1951788>
- Cohn, N., Cardoso, B., Klomberg, B., & Hacımusaoğlu, I. (2023). The Visual Language Research Corpus (VLRC): An annotated corpus of comics from Asia, Europe, and the United States. *Language Resources and Evaluation*, 57, 1729–1744. <https://doi.org/10.1007/s10579-023-09673-0>
- Cremin, T., & Scholes, L. (2024). Reading for pleasure: Scrutinising the evidence base—Benefits, tensions and recommendations. *Language and Education*, 38(4), 537–559. <https://doi.org/10.1080/09500782.2024.2324948>

- Estrella, F. (2024). Exploring the efficacy of writing comics as a tool for enhancing EFL writing skills of undergraduate Ecuadorian polytechnic students. *Quality Education for All*, 1(1), 106–128. <https://doi.org/10.1108/QEA-12-2023-0028>
- Gatcho, A. R. G., Manuel, J. P. G., & Sarasua, R. J. G. (2024). Eye tracking research on readers' interactions with multimodal texts: A mini-review. *Frontiers in Communication*, 9, 1482105. <https://doi.org/10.3389/fcomm.2024.1482105>
- Golding, S., & Verrier, D. (2021). Teaching people to read comics: The impact of a visual literacy intervention on comprehension of educational comics. *Journal of Graphic Novels and Comics*, 12(5), 824–836. <https://doi.org/10.1080/21504857.2020.1786419>
- Lo, P., Lyu, Y.-P., Chen, J. C.-C., Lu, J.-L., & Stark, A. J. (2022). Measuring the educational value of comic books from the school librarians' perspective: A region-wide quantitative study in Taiwan. *Journal of Librarianship and Information Science*, 54(1), 16–33. <https://doi.org/10.1177/0961000620983430>
- Mackenzie, N. (2025). The power of independent reading. *Qualitative Research Journal*, 25(1), 60–65. <https://doi.org/10.1108/QRJ-09-2024-0200>
- Schauer, G. A. (2022). Exploring the potential of graphic novels for L2 pragmatic teaching and learning—Focus on young learners. *The Language Learning Journal*, 50(4), 491–505. <https://doi.org/10.1080/09571736.2022.2088445>
- Wong, S. W. L., Li, W.-O., & Cheung, A. (2023). Graphic novel reading comprehension in Chinese children with developmental language disorder (DLD). *Reading and Writing*, 36, 1631–1649. <https://doi.org/10.1007/s11145-022-10346-7>